

THE UNIVERSITY OF CHICAGO

THE EXPLOITATION OF LIVE AVIAN RESOURCES IN PHARAONIC EGYPT:

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ABBREVIATIONS

<i>AF</i>	<i>Altorientalische Forschungen</i> , Berlin.
<i>AfO</i>	<i>Archiv für Orientforschung</i> , Berlin.
<i>AJA</i>	<i>American Journal of Archaeology</i> , New York.
<i>AJSLL</i>	<i>American Journal of Semitic Languages and Literatures</i> , Chicago.
<i>AMHNL</i>	<i>Archives du Muséum d'Histoire Naturelle de Lyon</i>
<i>An. Lex.</i>	<i>Année Lexicographique</i> , Paris.
<i>Ann. Naturhist.</i>	
<i>Mus. Wien</i>	<i>Annalen des Naturhistorischen Museums in Wien</i> .
<i>ASAE</i>	<i>Annales du Service des Antiquités de l'Égypte</i> , Cairo.
<i>ÄuL</i>	<i>Ägypten und Levante</i> , Vienna.
<i>BARCE</i>	<i>Bulletin of the American Research Center in Egypt</i> , New York.
<i>BD</i>	Book of the Dead, notably: Wallis Budge. <i>The Book of the Dead</i> , London.
<i>BdÉ</i>	Bibliothèque d'Étude, Cairo.
<i>BES</i>	<i>Bulletin of the Egyptological Seminar</i> , New York.
<i>BIFAO</i>	<i>Bulletin de l'Institut Français d'Archéologie Orientale (IFAO)</i> , Cairo.
<i>BMFA</i>	<i>Bulletin of the Museum of Fine Arts</i> , Boston.
<i>BMMA</i>	<i>Bulletin of the Metropolitan Museum of Arts</i> , New York.
<i>BSFE</i>	<i>Bulletin de la Société française d'Égyptologie</i> , Paris.
<i>CAJ</i>	<i>Cambridge Archaeological Journal</i> , Cambridge.
<i>CCdE</i>	<i>Cahiers Caribéens d'Égyptologie</i> , Martinique.
<i>CDD</i>	Janet H. Johnson (ed.). Chicago Demotic Dictionary. Chicago. https://oi.uchicago.edu/research/pubs/catalog/cdd/
<i>CdÉ</i>	<i>Chronique d'Égypte</i> , Brussels.
<i>CRIPeL</i>	<i>Cahier de Recherches de l'Institut de Papyrologie et d'Égyptologie de Lille</i> , Paris/Lille.
<i>CT</i>	Coffin Texts, notably: A. de Buck. <i>The Egyptian Coffin Texts</i> . 7 vols., Chicago.
<i>EA</i>	<i>Egyptian Archaeology</i> , London.
<i>EDG</i>	W. Erichsen. <i>Demotisches Glossar</i> , Copenhagen.
<i>EEF</i>	Egypt Exploration Fund
<i>EES</i>	Egypt Exploration Society
<i>ET</i>	<i>Études et Travaux</i> , Warsaw.
<i>ETM</i>	<i>Egypt Travel Magazine</i>
<i>EVO</i>	<i>Egitto e Vicino Oriente</i> , Pisa.
<i>GM</i>	<i>Göttinger Miszellen</i> , Göttingen.
<i>Gr. Md</i>	<i>Grundriss der Medizin der alten Ägypter</i> , Berlin.

HO	J. Černý and A. Gardiner. <i>Hieratic Ostraca</i> , Volume I, Oxford.
HPTebt.	J. Osing. <i>Hieratische Papyri aus Tebtunis I</i> , Copenhagen.
IBAES	Internet-Beitraege zur Aegyptologie und Sudanarchaeologie
IFAO	Institut Français d'Archéologie Orientale
IP	Intermediate Period
JAR	<i>Journal of Archaeological Research</i>
JARCE	<i>Journal of the American Research Center in Egypt</i> , New York.
JASR	<i>Journal of Achaemenid Studies and Researches</i>
JAS	<i>Journal of Archaeological Science</i>
JEA	<i>Journal of Egyptian Archaeology</i> , London.
JEOL	<i>Jaarbericht van het Vooraziatisch-egyptisch Genootschap Ex Oriente Lux</i> , Leiden.
JESHO	<i>Journal of the Economic and Social History of the Orient</i> , Leiden.
JNES	<i>Journal of Near Eastern Studies</i> , Chicago.
JSSEA	<i>Journal of the Society of the Study of Egyptian Antiquities</i> , Toronto.
KRI	K. A. Kitchen, <i>Ramesside Inscriptions</i> , Oxford.
LÄ	Lexikon der Ägyptologie. 7 vols., Wiesbaden.
LD	K. R. Lepsius. <i>Denkmäler aus Ägypten und Äthiopien</i> . 6 vols., Berlin.
LP	Late Period
LSJ	H. G. Liddell, R. Scott, and Henry Stuart Jones. <i>An Intermediate Greek-English Lexicon</i> , Oxford.
MDAIK	<i>Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo</i> , Wiesbaden.
MH	Medinet Habu
MK	Middle Kingdom
MMJ	<i>Metropolitan Museum Journal</i> , New York.
NK	New Kingdom
OEE	Oxford Expedition to Egypt
OLP	<i>Orientalia Lovaniensia Periodica</i> , Louvain.
OK	Old Kingdom
PM	B. Porter and R. Moss. <i>Topographical Bibliography of Ancient Egyptian Hieroglyphic Texts, Reliefs and Paintings</i> . 7 vols., Oxford.
PN	Personal Name
PT	Pyramid Texts, notably: K. Sethe. <i>Die altägyptischen Pyramidentexte</i> . 4 vols, Leipzig; for Utt. 715-759: Raymond O. Faulkner. <i>The Ancient Egyptian Pyramid Texts</i> . 2 vols., Oxford.
Ranke, PN	H. Ranke. <i>Die altägyptischen Personennamen</i> . 2 vols., Glückstadt.
RdÉ	<i>Revue d'Égyptologie</i> , Paris.
RevEg	<i>Revue Égyptologique</i> , Paris

SAAC	<i>Studies in Ancient Art and Civilizations, Warsaw.</i>
SAK	<i>Studien zur Altägyptischen Kultur, Hamburg.</i>
SEP	<i>Studi di Egittologia e di Papirologia, Pisa.</i>
SymbOsl	<i>Symbolae Osloensis</i>
TAPA	<i>Transactions (and Proceedings) of the American Philological Association</i>
TT	Theban Tomb
UPZ	U. Wilcken. <i>Urkunde der Ptolemäerzeit (Ältere Funde)</i> . 2 vols., Berlin.
Urk.	K. Sethe, H.W. Helck, H. Schäfer, H. Grapow, O. Firchow. <i>Urkunden des ägyptischen Altertums</i> . 8 vols, Leipzig.
VA	<i>Varia Aegyptiaca, San Antonio.</i>
WA	<i>World Archaeology</i>
Wb.	A. Erman and W. Grapow. <i>Wörterbuch der ägyptische Sprache</i> . 7 vols., Berlin.
WdO	<i>Die Welt des Orient, Göttingen.</i>
Wresz.	W. Wreszinski. <i>Atlas zur altaegyptischen Kulturgeschichte</i> . 3 vols, Geneva.
WZKM	<i>Wiener Zeitschrift für die Kunde des Morgenlandes, Vienna.</i>
ZÄS	<i>Zeitschrift für ägyptische Sprache und Altertumskunde, Berlin.</i>
ZPE	<i>Zeitschrift für Papyrologie und Epigraphik, Bonn.</i>

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ABSTRACT

Birds were symbolically and pragmatically incorporated into the lives of ancient Egyptians in multiple ways. During the entire span of Pharaonic history they appeared as necessary offerings to appease both the gods and the deceased residing in the Underworld. They also served the needs of the living in the form of proteins, fat, and feathers. This dissertation evaluates how the ancient Egyptians fulfilled these needs in avian products, focusing specifically on the management strategies implemented to acquire birds and to maintain them alive in captivity prior to their final journey to the slaughterhouse and the poulterer's shop.

After a brief overview of the biogeography and avifauna of Egypt, the first section of this dissertation examines the capture of wildfowl, in particular the techniques designed to trap live birds. Analysis of the faunal remains recovered both in domestic and cultic contexts provide insight into the types of feathered game targeted by ancient Egyptians. Each category of birds – waterfowl, quails, perching birds, and ostriches – required different equipment and expertise. To fully exploit these avian resources, often encountered in the marginal lands bordering the Nile Valley, the central administration from the Old Kingdom onwards placed high officials in charge of overseeing the activities of the men employed in these areas, including the fowlers known as *wḥꜥ.w ʒpd.w*.

After falling prey to these fowlers, live birds were gathered into crates and transported to farmyards. The second section of this research project first investigates how institutions,

such as temples and large elite estates, managed to keep birds in captivity. A sizable main-d'oeuvre was needed to tend to the welfare of the captive fowl, from the staff in charge of delivering the feed to the administrators keeping track of the grain poured into the enclosures. In order to gain better control over these avian resources, aviculturists attempted to establish captive breeding programs during the Old Kingdom and ultimately managed to domesticate the goose by the New Kingdom. Notwithstanding the scarcity of information concerning the presence of and value placed on birds in a village setting in Pharaonic Egypt, a model of household poultry husbandry is proposed, which in part relies on ethnographic data collected in 19th and 20th century rural Egypt.

Part 3 of the dissertation acts as an epilogue to this study and presents the changes observed in bird management after the conquest of Alexander the Great. In Greco-Roman Egypt, new birds rose to prominence in bird farms, both in private and temple settings. The chicken became a most valuable resource, especially for its eggs, a commodity rarely mentioned in the record of Dynastic Egypt. In addition to barnyard birds, fowlers and aviculturists developed new techniques to trap and maintain in captivity a different category of temple birds, namely falcon and sacred ibises, destined to serve the needs of Sacred Bird Cults in the form of mummies.

INTRODUCTION: THE ROLE OF BIRDS IN ANCIENT EGYPTIAN SOCIETY

Ancient Egyptians left scholars of the 21st century, eager to better understand the relationship this culture maintained with the environment, a most valuable gift in the form of a vast repertoire of avian iconography, rich both in quantity and quality. A myriad of representations, from the solemn settings of temples and funerary offering chapels, to the more mundane media that are stone flakes and pot sherds, are at our disposal and provide plentiful material for us to evaluate the role of birds in the lives of ancient Egyptians. It has often been assumed that these birds were of great significance in Egyptian culture since they figure so prominently in both literary and artistic compositions. Is this prominence reflected in the actual daily lives of ancient Egyptians or is bird imagery a purely metaphorical, propagandistic, and symbolic construct? To begin this evaluation, I will briefly review in the following paragraphs the many ways in which birds feature in the surviving evidence that Egyptologists have examined, scrutinized, and dissected in their scholarship during the past century.

Each theme discussed in this introduction is worthy of a close examination, which cannot all be addressed in this dissertation. This introductory section is therefore not intended to recapitulate all previous work dedicated to the ancient Egyptian avian world, a task already successfully undertaken by P. Vernus and J. Yoyotte in their ancient Egyptian bestiary.¹ After a

¹ Vernus and Yoyotte 2005, pp. 342-427

presentation of the religious, literary, and artistic relevance of birds in Egyptian society, I will most especially focus my attention on an otherwise overlooked area in ancient Egyptian avian studies, namely their utilitarian role.

1. Iconographic Record of Birds in Prehistoric Egypt

Any hunter-gatherer society, fully dependent on wild resources for its survival, is bound to be thoroughly well acquainted with its environment, the animals living within it, the behavior thereof, in order to successfully exploit these resources. Both human beings and animals lived in relatively close proximity, granting men ample occasions to observe potential preys in their natural setting. Such was the case for Prehistoric Egyptians utilizing the fauna and flora they encountered in the Eastern Sahara and the Nile Valley. When a settled lifestyle, accompanied by the domestication of plants and mammals, decreased the need to depend on wild resources, the ancient Egyptians nevertheless maintained a deep connection with their environment. Their talents of observation and all the symbolic aura surrounding nature were applied to artistic compositions, both iconographic and literary.²

According to the archaeological evidence, the inhabitants of the Eastern Sahara started to memorialize their encounter with local animals as early as 15 000 years ago.³ Several water

² Meeks 2015 (personal communication): it should be noted that the connection the Egyptians maintained with the natural world surrounding them decreased overtime, as revealed by a diachronic analysis of landscape representations in Egyptian art. Later in Egyptian history, depictions of nature and the wild animals living therein become more standardized; the artists rather set their eyes on the domestic animals encountered in the Nile Valley. This shift is perhaps best exemplified in the tomb of *P3-di-Wsir* at Tuna el-Gebel (ca. 320 BC) (Cherpion *et al.* 2007).

³ Huyge and Ikram 2009

birds, especially waterfowl such as geese and ducks, feature among these faunal depictions. Birds continue to appear in the vast repertoire of rock art attested in both the Western and Eastern deserts, most specifically large birds such as ostriches and storks, and also feature on the Decorated Ware characteristic of the Naqada IIC-D period.⁴ Ostriches are shown roaming the edges of the desert. In some instances, they appear as possible targets of hunting expeditions, whose participants are eager to bring back large game from the desert. Yet, the depiction of interactions between birds and humans during the Predynastic period is the exception rather than the norm. Focus is especially set on depicting the large birds in their surroundings: the ostrich, unable to fly, the storks and other wading birds, all of which could have been observed from a distance.⁵ Their presence in a scene has been construed as revealing the environment in which the main action is taking place, either wetlands indicated by the flocks of long-legged flamingoes chosen by Naqada craftsmen to adorn their pottery, or deserts identified by triangular mountains and ostriches.⁶ Storks, herons, and possibly secretary birds (*Sagittarius serpentarius*) are also depicted in orderly rows on the ivory handles of knives, in the company of other savannah animals. While most animals are shown calmly striding in a single file, a few vultures stand out by their active stance. They are engaged in the destruction of reptiles, grabbing them with their feet and tearing their flesh with their sharp beak.⁷ We are

⁴ For a selection of bird depictions identified in rock art, see Winkler 1938; *ibid.* 1939. See Graff 2009 for a study of the iconographic repertoire on Decorated Ware.

⁵ I thank D. Meeks for this suggestion.

⁶ Hendrickx 2000; Graff 2009, pp. 38, 132

⁷ Ciałowicz 1992, pp. 249, 253, fig. 3; Patch 2011c, pp. 152-153

not yet able to fully grasp the exact significance of these designs. For instance, what is the intent of juxtaposing passive birds and aggressive vultures? Is the vulture an early depiction of a local ruler destroying harmful forces in an otherwise 'peaceful' environment?⁸ Amulets and vessels in the shape of crouching vultures are also attested for the late Predynastic period, suggesting that the possession of these items may have protected their owner against potential harmful powers.⁹

2. Birds as Symbols and Conveyors of Royal and Religious Ideology

a. Bird of Prey Imagery

Birds of prey, which could be seen hovering high in the sky or roosting in trees and on buildings, undeniably fascinated and inspired Predynastic and Early Dynastic Egyptians. Falcons and vultures are specifically shown in association with the ruler. From the time of the unification of the two lands and the formation of the Egyptian state onwards, the king adopted the imagery of the mighty falcon, who dominates his territory and subjects from the air. When shown in his human guise, he was often accompanied by a vulture, represented spreading its

⁸ On several of the artifacts associated with Narmer, first ruler of the unified state of Egypt ca. 3100 BC (most especially the macehead discovered at Hierakonpolis and a cylinder unearthed at Abydos), K. Ciałowicz (2001, pp. 217-218) interprets the representation of the vulture not as an early depiction of the goddess Nekhbet, but rather an avian incarnation of the conquering and triumphant king.

⁹ Patch 2011c, p. 147. The representation of vultures as carrion birds is best attested on the Battlefield Palette (British Museum EA20791). Vultures are shown flying towards the fallen enemies of the ruler depicted as a lion, in order to feast on the dead in the company of a few crows. See also Daressy 1922, p. 19, fig. 1.

wings above him. His name, enclosed in a *serekh*, is topped by the falcon god Horus.¹⁰ These motifs were commonplace during the entire span of Pharaonic history. The falcon is unequivocally the most frequently represented bird from the beginning of the Naqada III period onward.¹¹ The king is identified during his life as being the god Horus on earth. The ruler in fact *became* a falcon, as he claimed *ink bik*,¹² “I am a falcon,” thus justifying the choice of feathered motifs on his ceremonial garb.¹³ The queen also adopted avian motifs in her clothing and accessories. As early as the 4th Dynasty and especially during the 18th Dynasty onwards, as she acquired the title of Divine Adoratrix, she is oftentimes depicted with a vulture headdress, the head of the bird lying on her forehead, while the large wings of the bird are hanging on either side of her head.¹⁴ This avian head gear is at times completed by a feathered dress formed by the two large wings of a bird of prey seemingly enveloping the woman’s body. Similar dresses are donned by female goddesses,¹⁵ thus emphasizing the relationship of birds of prey with “higher” powers, whether they were divine or royal.

¹⁰ Patch 2011b, pp. 44-46; *ibid.* 2011c, p. 147. According to S. Hendrickx *et al.* (2011, p. 129), “the falcon is one of the most enduring symbols of kingship in ancient Egypt. It makes its first undeniable appearance in that role in Early Dynastic times; placed atop a *serekh* it is the most important royal symbol of that period.”

¹¹ Hendrickx *et al.* 2011, p. 135

¹² For Hatshepsut herself claiming to be a falcon, see David 2010.

¹³ For the king shown part human-part falcon, see Sauneron 1971, pl. 69; Bryan 1991, pp. 179-180, figs. 27-28; Valbelle 1997; Hirsch 2006; Hardwick and Riggs 2010; Shonkwiler 2012, pp. 49-57; Teeter 2012, p. 137.


¹⁴ Yoyotte 2005, p. 422

¹⁵ The arms of goddesses are also sometimes exchanged for wings. This is especially the case for Isis and Nephthys shown in funerary material enveloping the body of the deceased Osiris, whom they mourn and protect.

When depicted in connection with royalty and deities, falcons and vultures are usually shown in a protective stance, opening their wings wide around the object of their protection. This protective behavior is perhaps best illustrated by the statue of King Khafra discovered in his valley temple at Giza:¹⁶ a small falcon, embodying the god Horus, is shown standing behind the king, spreading its wings around his head and insuring that all evils and dangers are averted from his earthly and human manifestation. The motif of outspread wings, either from a vulture,¹⁷ or shown on either side of a sun disk, early became a standard motif of temple iconography. It is depicted on the ceilings of hallways and above doorways to provide protection to whomsoever walks underneath.¹⁸

As convincingly demonstrated by L. Evans, the same posture is indeed visible in the many representations of birds nesting in the lush vegetation of the marshes, an environment frequently incorporated into the iconography of the offering chapels that accompanied the burials of members of the Egyptian elite.¹⁹ These birds are shown squatting on top of their eggs in basket-shaped nests, with their wings shown extended and placed in front of them. L. Evans,

¹⁶ Cairo Museum JE 10062 CG 14

¹⁷ In Western culture, the vulture generally carries negative connotations, mostly because of its fearful appearance and often gruesome habits, such as feeding on carrion and vomiting on potential predators. In ancient cultures, it is at times associated with death, and in particular with the aftermath of a battle. As mentioned previously, scavenger birds such as vultures and crows are represented gathering on battlefields and feasting on corpses. As a hieroglyph, the vulture head sign  is read *nr* and translated as "terror." The vulture's impressive wingspan, however, along with its habit to deploy its wings to scare away other creatures and to protect its young(s) in the nest from both predators and the powerful rays of the sun came to be seen as a symbol of protection (Kozloff 2012, p. 61).

¹⁸ Shonkwiler 2012; Kozloff 2012, pp. 61-62, figs. 5.5, 5.8

¹⁹ Evans 2010, pp. 140-141

basing her reasoning on ornithological data collected for a wide range of bird species, suggested that these scenes, influenced by the iconographic rules imposed to 2D-representations, in reality depict birds spreading their wings to their sides in order to appear bigger and deter any potential predators from attacking their brood. Protective and defensive behaviors were thus a strong message which ancient Egyptians may have intended to convey in these scenes.²⁰

Birds of prey also captured the imagination of scribes. Falcons were the archetypal creature used to express speed, excellent eyesight, or the prowess of a skilled hunter, qualities which are usually applied to pharaoh. These characteristics distinguish him from the *hoi polloi* and give him the divine right to rule over them. In Thutmose III's "Poetical Stela," the god Amun thus declares: "I have come to empower you to crush the very ends of the earth: All that the ocean encircles is enclosed within your grasp; I shall cause them to know your Majesty as lord of the wings of Horus, One who seizes with (only) his glance whatever he desires."²¹ Falcons and birds of prey such as kites (*Milvus* sp.) can also be portrayed in funerary literature as acting as protectors. For instance, the goddesses Isis and Nephthys are the two kites or female kestrels mourning over the body of their brother Osiris.²² Falcons, along with the *gbg3*-bird,

²⁰ *Ibid.*, pp. 169-177

²¹ *Urk.* IV, 617:5-9; Tobin 2003, p. 354

²² Already in the Pyramid Texts (Pyr. 1254), the two goddesses are referred to as being the *dr.tyw*, the "two kites." In Pyr. 1255, Isis is further said to arrive from the west as a *h3.t*-bird, a "screecher," while Nephthys flies in from the east as a *dr.t*-bird, a "kite" (Sethe 1908 Part II, pp. 209-210; Allen 2005, pp. 164-165). The two goddesses are frequently represented in funerary iconography as two birds standing beside the mummy of Osiris. See for instance the 21st Dynasty vignette on the Book of the Dead papyrus belonging to Queen *Ndm.t*, British Museum EA10541 (Taylor 2010, p. 237); the wall painting in the 19th Dynasty tomb of Queen *Nfr-try* (QV 66; Scalf 2012c, p.

tentatively identified with the crow (*Corvus* sp.), figure as guardians of quarries and caves, possibly imagined as being entrances to the Underworld.²³

b. Ancient Egyptians' Interpretations of Idiosyncratic Avian Behaviors

As previously illustrated, an in-depth analysis of Egyptian representations of animals has revealed that artists and craftsmen incorporated into their work their thorough knowledge of the fauna encountered in their surroundings.²⁴ Migratory birds, in particular, left their mark on the ancient Egyptian psyche. The intimate relationship the Egyptians maintained with their environment led to their awareness that these transient birds were to be distinguished from the resident species and consequently they were granted a specific nomenclature.²⁵ The magnificent and impressive arrival of hundreds of thousands of birds during autumn and spring migrations, linked with the rise of the Nile flood in the fall, came to be imbued with religious significance. Migratory birds were believed to be the reborn souls of the dead, the *ꜥḥw*, entering this world from the northern exit of the Underworld.²⁶ In the Osireion at Abydos,

133). The two goddesses can also be depicted part bird-part human: see Barbotin 2005, p. 92 for examples of iconography of the goddesses as winged women on New Kingdom stone sarcophagi. During the later phases of Egyptian history, religious compositions known as *The Song of Isis and Nephthys*, recorded on the Bremner-Rhind papyrus (pBM EA10188), and *The Lamentations of Isis and Nephthys* (pBerlin 3008), attests to the celebration of festivals in which two women played the role of the sisters of Osiris (Faulkner 1936).

²³ Vandier 1962, p. 136; Meeks 1991, p. 236; Vernus 2005b, p. 43: along with the jackal, the *gbgw*-bird is said to guard the head of Osiris in pJumilhac (IV, 1-5).

²⁴ Evans 2010

²⁵ Goelet 1983; Meeks 1991, pp. 38-42


²⁶ Janák 2007; David 2014, p. 248

migratory birds are also said to come from the chaotic edges of the world.²⁷ They are described as having a bird's body and a human head, which seemingly allows them to express themselves using human language. It is only as they are touched by the rays of the sun that they are fully transformed into the birds that are observed in Egypt. For most of the population, especially fowlers, aviculturists, and poulterers, however, migratory birds probably simply constituted a reliable and extremely generous resource that could be captured, processed for consumption, or sent to poultry-yards for future use, as will be discussed below.

Many other species of birds captivated Egyptian artists and scribes. These men scrupulously observed the birds' characteristic behaviors, which became, in their imagination, representative of abstract human emotions. For example, the king is not the only human being that can be metaphorically depicted as a creature from the animal world. The rest of humanity can also be credited with avian characteristics. The gregarious behavior of the northern lapwing (*Vanellus vanellus*) in the wetlands of the country, their mournful cry and exuberant wing-flapping during the breeding season, their shy yet defensive behavior when under attack, came to be seen as representative of the dominated population of Egyptians living in the flood plain of Egypt under the rule of Pharaoh.²⁸ The motif of the lapwing being under the sway of the king appears in late Predynastic art. In these examples, the birds are shown hanging by the neck

²⁷ Meeks 1990, p. 40

²⁸ Nibbi 1986, pp. 7-66; Meeks 2010, pp. 247-279

from poles.²⁹ Later, this same bird is also depicted in a manner which emphasizes its inability to fly: its wings are crossed behind its back, and it is shown squatting. In most instances, the bird, equipped with human arms raised in adoration, is sitting on a *nb*-basket. In these scenes, the bird, known as *rhyt*, is representing the Egyptian subjects under the control of pharaoh, who are depicted forever as worshipping their leader.³⁰ Ingeniously, scribes and artists have exploited the pictorial character of the hieroglyphic writing system to convey this message in a rebus , *dw3 rhyt nb*, “may all subjects worship,” the presence of the king being alluded to via his name written in a cartouche, his depiction, or his own person when walking by the inscription.

A few other distinctive avian behaviors stroke the ancient Egyptians’ imagination: for example, ostriches (*Struthio camelus*) running and dancing at sunrise were thought to be rejoicing over the return of the sun in the morning.³¹ Moreover, house sparrows (*Passer domesticus aegyptiacus*) were considered to be the archetypal “bad bird.” Their voracious feeding habits caused sufficient damage in the farmland that the sign of this small passerine came to represent the notions of smallness, humility, evil, harm, and ultimately evil.³²


²⁹ See, for instance, the top register on the fragmentary macehead of king Scorpion, now in the Ashmolean Museum, Oxford (Inv. Nr. AN1896-1908.E3632).

³⁰ Griffin 2007, pp. 66-84; *ibid.* 2012, pp. 141-142

³¹ Dautheville 1922; Kuentz 1924

³² Houlihan 1986, pp. 136-137; David 2000

As mentioned previously, a close relationship existed between birds and the divine. Their ability to inhabit the heavens transformed them into divine messengers, who could be sent to the four corners of the world to announce the coronation of a new king or a special victory.³³ Birds were thus released to announce the rebirth of Osiris through Harsiese at Dendera: they carried around their neck small papyri so as to spread the news to the gods residing at all cardinal points.³⁴ The belief that birds could act as intermediaries between men and gods led to the mass production of bird mummies during the later periods of Egyptian history. After their death and the proper funerary rituals, in particular the opening of the mouth ceremony, the mummified birds acted as agents of the deity they represented and brought forth the requests and prayers of devotees.³⁵

As paragons of movement, birds were thought to be capable of travelling between worlds. According to ancient Egyptians, migratory birds were able to fly from the edges of the world to land in the wetlands of Egypt. Similarly, the *b3*, commonly translated as ‘soul,’ is most often depicted as a falcon with a human head .³⁶ It specifically represented the aspect of each individual which was able to leave the tomb and the corpse, fly up through the shaft, and

³³ See Keel 1977, pp. 109-125 for a catalog of scenes attested in a temple setting displaying the release of birds sent forth to spread news of a special event; Quaegebeur 1989, pp. 65-67; Meeks and Favard-Meeks 1996, p. 102

³⁴ LD IV, 57a

³⁵ Ikram 2012, pp. 41-42

³⁶ Žabkar 1968. The *b3* can be defined as being a *bik m hr n pʿt*, “a falcon with the face of mankind” (Junker 1919, p. 26; Meeks 2012, p. 520).

return to the world of the living in order to join the sun in its daily course.³⁷ The *b3* is not the only bird of importance for the deceased during his journey to the Underworld. A series of transformation spells, attested as early as the Pyramid Texts (PT), maintained in the Coffin Texts (CT) and in the Book of the Dead (BD),³⁸ highlight how intensely the deceased wished to transform him/herself and ultimately become (*hpr*) a wide range of animals, most especially birds such as the divine falcon (*bik ntr*, CT 312 and BD 78), the heron (*šnty*, BD 84), or the swallow (*mn.t*, BD 86), on their way to the Afterlife.³⁹ By assuming the distinctive features of these birds, the deceased was eager to simultaneously be endowed with their *b3.w*, i.e. their divine powers and manifestations.⁴⁰ Yet, as a bird, the deceased also needed a spell to avoid being caught in a clap-net.⁴¹

The physical and behavioral characteristics of some birds were deemed to be especially appropriate to represent divine beings.⁴² Thus several major deities are frequently depicted

³⁷ Klotz 2009, pp. 137-139; Scalf 2012e, pp. 201-202. In addition to featuring prominently in various spells from the Book of the Dead, an additional funerary composition known as the “Ba Book” focused more specifically on the journey of the *b3* in the Underworld and is known from two Book of the Dead papyri from the site of Akhmim (Beinlich 2000).

³⁸ During the Greco-Roman period, the funerary composition known as the *Book of Transformations* gathers variants of the transformation spells known from earlier funerary compilations (Smith 2009, pp. 610-649).

³⁹ Allen 1974; Faulkner 2001. The birds into which the deceased wished to be transformed are illustrated in the vignettes accompanying the spells, often with exquisite details, as is best exemplified on the Book of the Dead papyrus from the Ramesside tomb of *3ny*, British Museum EA10470.

⁴⁰ Scalf 2012a, pp. 34-35

⁴¹ BD 153A, “Spell for escaping the net within the valley.” Allen 1974, pp. 151-152; Faulkner 2001, pp. 149, 151-152.

⁴² Meeks 1986

fully or partially as birds. The sacred ibis (*Threskiornis aethiopicus*), with its measured and calm stride as it probes the shallow waters in search for food, was considered to be an appropriate image for Thoth, the god of writing, who dips its beak in the water just as a scribe dips his reed pen in ink.⁴³ Its curved bill in the shape of a moon crescent, along with the sharp contrast between its mostly white plumage and the black skin of its head and neck, and the dark tip of its wing feathers, made him a perfect hypostasis for the lunar god, the white astral body illuminating the world in the midst of darkness.⁴⁴

As discussed previously, birds of prey were especially favored animals to express divine powers. The vulture is most frequently associated with the tutelary goddess of Upper Egypt, Nekhbet, whose enormous wings are dedicated to sheltering the king. She is already a frequent feature of royal iconography during the Early Dynastic period and maintained this strong connection throughout Egyptian history. Other birds, in particular the Egyptian goose (*Alopochen aegytiacus*) tied to the cult of the god Amun in Thebes,⁴⁵ are considered to be sacred to a specific deity, but do not share their feature with him or her.

The tight associations between birds and the divine reach their zenith during the later periods of Egyptian history when an actual living animal and not solely a statue or a two-dimensional representation of the god was considered to be worthy of being the receptacle of

⁴³ "The beak of the Ibis is the finger of the scribe; Take care not to disturb it" (The Instruction of Amenemope 17,7-8: Grumach 1972, Kapitel 15, p. 108; Simpson 2003a, p. 235 for translation).

⁴⁴ For the ibis and its association with the moon, see Meeks 1990, pp. 49-50.

⁴⁵ For discussions on the Egyptian goose, known in Egyptian as *smn*, and its association with the god Amun (*Imn*), see Kuentz 1934; Vandier 1971; El-Adly 1992; Graindorge 1996, pp. 87-89.

the divine essence. Cults of sacred falcons in particular, and possibly also of a sacred ibis of Thoth,⁴⁶ are attested in both textual and iconographical material and left a significant mark in the archaeology in the form of millions of bird mummies deposited in catacombs and derelict tombs associated with the cult centers of these sacred birds.⁴⁷

c. Humans in Conflict with Birds

While some birds are known to exert their powers and their strength to protect pharaoh, the king himself can also use his own powers against birds in an attempt to control them. The massive flocks of migratory birds flying over and stopping in the wetlands of Egypt came in part to symbolize the forces of untamed and chaotic nature, which could possibly become destructive if left unchecked.⁴⁸ As early as the 1st Dynasty, the king is depicted as a fowler pulling the cable of a large clap-net in which a number of waterfowl have congregated (**Figure 1**).⁴⁹ This same theme was adopted by Sahura, among others.⁵⁰ In the causeway leading

⁴⁶ It has yet to be fully ascertained whether there was in Hermopolis, the main cult center of the god Thoth, or in the other shrines dedicated to this avian deity, one special ibis selected to be in living incarnation of the god and celebrated as such during its life.

⁴⁷ See Ikram 2012 for an overview of the phenomenon of bird mummification, which developed in conjunction with the cults of sacred birds.

⁴⁸ The author of the 22nd Dynasty composition, known as *The Chronicles of Prince Osorkon*, was inspired by the noise, the movement, and the mass of bodies observed in the wetlands of Egypt during the fall migration, and used this sensorial experience to describe an army: "... with the fluttering of an army like that of a bird pond when it swarms at the season of inundation" (Caminos 1958, p. 163; Ritner 2009, pp. 362, 364). See also Meeks 1990, p. 39.

⁴⁹ Year-label of king Den discovered at Umm el-Qaab showing the king pulling the rope of a net, in which waterfowl appear to be imprisoned (Dreyer *et al.* 1998, pp. 163-164, pl. 12f: Inv. Nr. Ab K 2520 (T-O); Altenmüller 2008, p. 7, fig. 3). A similar motif may also be present on the ebony label showcasing this same king Den performing the *sed*-festival (London BM EA32650; I thank D. Meeks for bringing this artifact to my attention). In a damaged register located below the *sed*-festival scene, the heads of four waterfowl can be identified as rising from a net, whose meshes are now barely visible. See Midant-Reynes 2004, p. 23 on the representations of Pharaoh during the late



to his mortuary temple of Abusir, the 5th Dynasty pharaoh had himself represented in charge of ten clap-nets, which he successfully closes single handedly.⁵¹ This motif is later incorporated into temple iconography. In this setting, the king benefits from the help of several gods in order to perform his task successfully. The god overseeing the whole action is himself a bird. It is the ibis god Thoth, who acts as *imy-r3 wh^c.w 3pd.w*, “overseer of fowlers,” ensuring that the net is successfully filled with a multitude of waterfowl. In these instances, as clearly indicated in the text accompanying the representation, the king is acting as a destroyer of chaos, keeping under control all these wild forces of nature flying into the wetlands of Egypt and simultaneously delivering masses of birds to be given as offerings to the gods. These birds are frequently identified with the enemies of Egypt that subsequently need to be exterminated on the altars of the gods.⁵² *The Prophecies of Neferty* indeed foretold the arrival of foreign birds nesting in the marshes of Lower Egypt.⁵³ In some instances, the birds, labeled more specifically as being the enemies of Osiris, are annihilated in the form of burnt offerings.⁵⁴ Similar imagery is

Dynasty 0 and early 1st Dynasty, in particular the dichotomy between the king represented with animal attributes or even as an animal, and the king being a hunter of wild game.

⁵⁰ See El Awady 2009, p. 65 for a list of kings including this scene in their mortuary iconographic repertoire.

⁵¹ Altenmüller 2008; El Awady 2009, pp. 63-65, 215-228 and pl. 13-14.

⁵² Edfou VI, 56, 12-13 (Chassinat 1931); Alliot 1946, pp. 82-87. P. Vernus (2005b, p. 42) translates this passage as follows: “Il (= le pharaon tendeur) va chercher les poissons dans les secteurs aquatiques et aussi, bien sûr, les oiseaux dans les zones de pièges. S’il va chercher les poissons, c’est en tant qu’(ils représentent) les Asiatiques, et les oiseaux, c’est en tant qu’(ils représentent) les Nubiens (*Sttyw*).”

⁵³ “Foreign birds ( *3pd.w drdri.t*) will breed in the Delta marshes, having made their *zš.w* () beside people, for men have let them approach through laxness” (Helck 1970a, pp. 25-26: Abschnitt VI.f.g; Tobin 2003, p. 217 for translation).

⁵⁴ Vernus 2005b, pp. 23-24

attested in many royal propagandistic texts: the king, no longer portrayed as a fowler but as a falcon, is described as chasing and preying on smaller birds.⁵⁵

Members of the elite are also frequently shown performing the task of maintaining order, this time in the context of their tombs. As early as the 4th Dynasty, the tomb owner is represented visiting the marginal land of the Delta in the company of his family, in order to to spear a tilapia and a *lates* fish and to hurl his throwstick(s) towards the many birds he is flushing as he makes his way through the papyrus thickets. Several Egyptologists have dedicated many articles to understanding the meaning of these scenes, which featured as a common *topos* in most decorated tombs throughout the country from the beginning of the Old Kingdom to the 19th Dynasty, with a short-lived resurgence during the Late Period.⁵⁶ It is now widely accepted that this scene is multi-layered in meaning. According to A. David, “procuring food for the dead, establishing order in chaos, enjoying tapping into nature’s resources in an outdoor activity, and status related implications may always be accounted for, but sometimes a more erotic symbolism and bolder solar connotations are added.”⁵⁷ The birds the deceased is targeting (and in a few instances successfully hitting) can represent the wild and unpredictable forces of chaos the deceased wants to get rid of so as to secure a peaceful transition in his afterlife. As

⁵⁵ This metaphor is not always employed to describe the ruler in a positive light. In the tale of *The Eloquent Peasant*, the protagonist *Hwi-n-Inpu* uses this imagery in the midst of his argumentation to criticize high officials taking advantage of their position of power to prey on more humble, weaker victims (B1 205-207; Parkinson 2012, p. 173: “Behold, you <are> a hawk to the folk, who lives on the wretched birds”).

⁵⁶ Alliot 1946; Westerman 1988; Herb 1991; Feucht 1992, pp. 168-169; Binder 2000; Hartwig 2004, pp. 103-106; Altenmüller 2005; Meeks 2006, pp. 204-205, 231-232.

⁵⁷ David 2014, p. 251

waterfowl, they also represent a welcome source of food. Finally, it has been demonstrated that the ducks and geese included in these scenes can also be seen as erotic symbols, especially when held in the arms of a young woman adorned or surrounded by lotus blooms, further guaranteeing that the deceased will retain his sexual potency in his afterlife.⁵⁸ In the context of the marshes, a primeval landscape viewed as being the source of all life, these funerary motifs can magically ensure that the deceased will be granted a new and enjoyable life after death.⁵⁹

d. Birds in their Multitude in Elite Offering Chapels

P. Vernus reminds Egyptologists and Ornithologists, eager to grasp the meaning of every single detail in avian representations, that “la notion d’exactitude naturaliste est quelque peu hors propos s’agissant de l’utilisation de la faune dans l’imaginaire de l’Égypte pharaonique. Elle y est traitée, non pas en tant qu’objet de description scientifique rigoureuse, mais comme matériau sémiotique qui doit être informé pour donner du sens.”⁶⁰ Yet, as L. Evans demonstrated in her systematic analysis of animal representations in the Memphite necropolis during the Old Kingdom, “the vital nature of animals is thoroughly incorporated into ancient Egyptian images. They are presented in postures and situations that seem designed to

⁵⁸ Ancient Egyptian love poetry is also filled with allusions to the beloved man being a bird, especially a goose, which the young lady may be attempting to capture with her trap and net (Foster 1974; Derchain 2002). For an overview of ducks and geese as erotic symbols, see Bailleul-LeSuer 2012, p. 157.

⁵⁹ Germond 2002-3

⁶⁰ This same advice applies when analyzing the colors selected for each of the bird hieroglyphs. “Les scripteurs visaient à faire valoir les connotations symboliques des oiseaux et non faire oeuvre d’ornithologue” (Vernus 2005a, p. 39).

emphasize their movement. In other words, they appear as they do in nature: they behave!”⁶¹

While they may not satisfy the strict scientific criteria of 21st century biologists, these representations inform us on what ancient Egyptian artisans noticed and what they believed as important and characteristic of particular species. Birds are therefore shown in motion (walking, swimming, flying), preening, feeding and drinking, hunting, incubating, threatening and protecting their brood, providing food to nestlings, and even vocalizing, a notion conveyed by the ancient Egyptian artists by the motif of the protruding tongue. “In short, animals do in wall scenes what humans do not. [...] They are unruly and so must be physically controlled and restrained. [...] Their uninhibited behavior is the very antithesis of that of the depicted Egyptians. [...] The lack of self-control exhibited by depicted species also hints that the Egyptians may have viewed themselves as at least morally superior to animals.”⁶²

3. Birds in the Egyptian Script and Language













Birds are omnipresent in Egyptian inscriptions simply because of their being a major component of the hieroglyphic system.⁶³ In his sign-list,⁶⁴ A. Gardiner has recorded 65 signs

⁶¹ Evans 2010, p. 11

⁶² Evans 2010, p. 195. While it is not the case with the representations of birds, it may be suggestive that a few animals, in particular cows (see Martin 1987, pp. 29-30; pl. 24.70, 51.70), goats (see in tomb of *Ἰρῳϣ*, TT 217; Davies 1927, pls. 30, 34), and horses (see *talatat* Brooklyn 60.28), are at times depicted frontally during the New Kingdom, a feature of Egyptian art usually reserved for the representation of foreigners, frequently described indeed as belonging to an inferior class (Volkhine 2000).

⁶³ Keimer 1927; *Ibid.* 1930; *Ibid.* 1938; *Ibid.* 1942; *Ibid.* 1957; Davies 1940; Godron 1957a; Wolterman 1991-92; Schneider *et al.* 1994; Houlihan 2002; Janák 2007; Bailleul-LeSuer 2012, pp. 167-176; Wyatt 2012.

⁶⁴ This list is based only on the signs encountered in texts dated from the Middle Kingdom, excluding the Coffin Texts, until the end of the reign of Thutmose III. Some signs depicting birds, such as the crane and the pelican, are

representing different species of birds and parts thereof, which he listed in sections G:⁶⁵ Birds and H: Parts of Birds.⁶⁶ The birds are not only depicted by themselves at rest, but they can also be grouped with other signs, be involved in distinctive activities such as eating ( G51 and  G52), vocalizing and/or begging for food ( G47 and  G48), flying ( G40 and  G41), roosting ( G32), even possibly swimming ( G49, group of waterfowl shown in a body of water). Each stage of a bird's life is also showcased: first the egg ( H8), then youth ( G47)⁶⁷ and adulthood (for instance,  G38), and finally death, shown in the form of a butchered fowl destined to be consumed ( G54).⁶⁸ In the latter sign, the bird's head is oriented in the direction opposite to that of the other living beings represented in the inscription, a clear indication that its neck has been broken.⁶⁹ During the Ptolemaic period, the

attested in Old Kingdom inscriptions and disappear from the range of commonly used signs afterwards (Vernus 2005c, pp. 63-67; Vernus and Yoyotte 2005, p. 348).

⁶⁵ Gardiner 1957, p. 545

⁶⁶ It should be kept in mind that the list compiled by A. Gardiner is far from encompassing all the variety of bird signs represented in inscriptions prior to the Ptolemaic period. During the Old and early Middle Kingdoms, other bird species were incorporated into the hieroglyphic system, such as the pelican or the spoonbill. Details such as colors, behavior, interactions with other signs, are also more varied than what is gathered in the standardized typographic list created by Gardiner.

⁶⁷ Davies 1941

⁶⁸ I thank W. R. Johnson for bringing to my attention the lifecycle of birds incorporated into the hieroglyphic system.

⁶⁹ Fischer 1977, pp. 127-129

number of bird hieroglyphs increased significantly under the imaginative hands of scribes.⁷⁰

Also during this period, a few demotic texts specifically record the order of the ancient Egyptian alphabet, making use of the names of birds and trees starting with the same letter as a mnemonic device used to memorize the specific order of these letters.⁷¹ The iconographic nature of hieroglyphs, in addition to their linguistic use, is further demonstrated in funerary contexts. The hieroglyphs representing potentially dangerous creatures are intentionally ‘mutilated’ by the scribes, anxious to prevent these creatures from negatively impacting the cosmos of the tomb, after they had ritually been activated and made effective by spells recited at the funeral. Even birds suffer this treatment: bird hieroglyphs can be represented with no legs, or be limited to the sole depiction of their head.⁷²


One “bird” hieroglyph was of crucial significance in Egyptian philosophy throughout history. As stated by M. Williams, “the sign of the [bird’s] egg was a particularly potent sign of fertility and creation [...]. First and foremost, the egg is a tool of creation and a sign of existence itself.”⁷³ She also demonstrates that “equated with the womb, the egg was the place where gods, kings, and individuals dwelt before birth as well as the sarcophagus and the shroud where

⁷⁰ Daumas 1988, pp. 292-348. It should be noted that no new bird species is incorporated into the Ptolemaic writing system. Instead, scribes designed hieroglyphs which often combined multiple signs and showed the previous known species in different attitudes.

⁷¹ Smith and Tait 1983, pp.212-213; Gaudard 2009; *Ibid.* 2012, pp. 65-70; Devauchelle 2014.

⁷² Bailleul-LeSuer 2012, p. 167

⁷³ Williams 2011, p. 128

one dwelt prior to rebirth.”⁷⁴ The hieroglyphic sign of the bird’s egg, at times depicted with a chick inside ( H34), and the word itself (*swḥ.t*) were greatly exploited by scribes and used in multiple creation myths, in propagandistic texts legitimating the rule of pharaoh,⁷⁵ and ultimately in funerary spells, the coffin becoming the egg from which the deceased waited to hatch anew as the *b3*-bird.⁷⁶

The rich variety of avifauna encountered by ancient Egyptians is reflected in the long list of words attested and known to refer to birds.⁷⁷ In addition to individual names for different avian types, birds have also been organized according to their favored habitat. Thus birds as a whole (*iry.w p.t*)⁷⁸ are differentiated from other creatures by their distinct ability to inhabit the heavens were separated into those that fly high in the sky, such as raptors (*p3y.wt*), those that are found closer to the ground (*ḥnn.wt*),⁷⁹ and those that come only during the fall and spring migrations from the *kbḥw*-region. The latter birds can be called *kbḥw* themselves, but also *g(3)ḥ*

⁷⁴ *Ibid.*, p. 129

⁷⁵ Kozloff 2012

⁷⁶ See Williams 2011, pp. 129-154 and pl. 36-39 for a thorough review of the use of the egg as a sign and as a metaphor in Egyptian art, inscriptions, and literature.

⁷⁷ For discussions on specific bird names, see Faulkner 1952; Godron 1957a; Roquet 1982, p. 24; Wassell 1991, pp. 108-138; Wolterman 1991-92; Bojowald 2003a; *Ibid.* 2003b; *Ibid.* 2004; *Ibid.* 2005; *Ibid.* 2010; Mathieu 2004.

⁷⁸ Literally, “those who pertain to the sky.” Wb I p. 104 §4; Meeks 2012, p. 540

⁷⁹ Gardiner 1947, p. 256: *py (w) ḥn[nt]*, “those that fly and alight (?), i.e. all birds.” Meeks 2006, p. 95 n. 255: *p3y.t-ḥnn.t*, “volatiles.” According to M. Alliot (1946, p. 72 n. 3), *ḥnn.t* designates not only the birds ‘that alight,’ but also the birds that are found in poultry-yards and are domesticated.

and *htyw-t3*.⁸⁰ Many of these terms are *hapax legomenon* and cannot be readily translated, their avian origin being purely indicated by the presence of a bird determinative. Thus, more than 200 terms can be identified as referring to birds.⁸¹ Some of them are attested throughout Egyptian history, while others had a more restricted use, either in terms of the period of attestation or in terms of the type of documents in which they are encountered (religious and funerary vs. literary and economic texts). The reasons for such a detailed classification system are unclear. Having an intimate knowledge of one's prey is crucial for hunters, and giving specific names for birds with distinct behaviors may have facilitated their tasks. Yet many of these avian names are attested solely in funerary literature, especially the Pyramid and Coffin Texts. An economic motivation may not be as relevant in this context as the desire on the part of the scribes to select a specific bird known by ancient Egyptians for its peculiar behavior or its unique features, which would convey a precise meaning or image.⁸²

It is undeniable that a strong bond linked the Egyptian civilization to the animal world. In funerary texts, most especially in the long list of negative confessions gathered in BD 125, the deceased claimed to have respected animals during his lifetime.⁸³ This special fondness for the

⁸⁰ Goelet 1983; Van der Plas 1986, p. 80

⁸¹ A large selection of these terms are listed in Hannig and Vomberg 1999, pp. 211-217.

⁸² One cannot help but envy the ethnographers able to accompany the members of primitive cultures in "birding" expeditions, in order to scientifically relate the folk names given by these societies to the birds present in their surroundings. See Diamond 1966 for a better understanding of the zoological classification system and folk taxonomy used by the Fore cultural group of the Eastern Highlands of New Guinea; and Forth 2009 for insight into the folk ornithology of the Indonesian Nage society.

⁸³ Allen 1974, p. 196; Ritner 2003, p. 270. PT 270 further asserts that "there is no accusation of a *z.t*-duck against the king," such as Unas (*n srh.w z.t ir (Wnis)*); Sethe 1908, p. 201; Griffiths 1991, p. 151; Allen 2005, p. 50).

animal kingdom is perhaps best illustrated by the choice of animal names, and in particular bird names, to be used as personal names.⁸⁴ This practice is attested as early as the Early Dynastic period, with ladies bearing the names of the kite (*drwyt*),⁸⁵ the *bg.t*-bird, the *nw(r)*-heron,⁸⁶ and it continued throughout the Pharaonic era into the Coptic period, with names as diverse as *Tb/ne* (Lady swallow)⁸⁷ and *Tbacbc* (Lady *bsbs*-duck).⁸⁸ It is possible that the choice of these avian names was linked to the presence of a local religious cult involving the birds encountered in personal names, such as *Bnw-iy.w*, “The phoenix has come,”⁸⁹ or *Smn.t Imn*, “The (female) goose of Amun,”⁹⁰ the name thus acquiring a protective function. It could also simply be a celebration and recognition of the intrinsic beauty of certain birds, such as the swallow or the duck.⁹¹

⁸⁴ A series of examples is listed in Ranke 1925.

⁸⁵ Petrie 1901, pls. 27 (# 133), 30A; Godron 1957b, pp. 191-194

⁸⁶ Lacau and Lauer 1965, p. 55 (#127)

⁸⁷ Crum 1939, p. 40a

⁸⁸ Westendorf 1965, p. 27; Černý 1976, p. 27; Vysichl 1986, p. 32. This practice continues to be attested in many cultures today. The dove is a favored bird adopted as a personal name: *Colombe* in French, *Paloma* in Spanish, and *Thanina* in Kabyl Berber, just to name a few.

⁸⁹ Ranke, *PN II*, 277:10

⁹⁰ Ranke, *PN I*, 307:15

⁹¹ While personal names have been identified for individual animals, in particular dogs, cats, lions, monkeys, cows, horses, and donkeys, no similar attestation has been encountered for birds, to the extent of my knowledge, either kept as a pet or in a farm-yard setting.

4. Utilitarian Role of Birds

The utilitarian role of birds in ancient Egypt has not yet been fully investigated. Such a lacuna in our knowledge of ancient Egyptian aviculture and poultry farming may derive from the challenge met when attempting to evaluate which documents contribute to our understanding of how birds were concretely incorporated in the daily lives of ancient Egyptians, and which ones are simply reflections of an ideal. Furthermore, the available information may appear to be as too meager and too far apart chronologically to allow us to grasp the position of birds in the ancient Egyptian economic system. Despite the scarcity of data, scholars have not hesitated to claim that birds were an important component of the Egyptian diet, available and consumed by all, and that flocks of ducks and geese were a permanent presence in the Egyptian countryside.⁹² In my opinion, such statements are brought forth too hastily and without sufficient proof, and it is therefore my intention to verify how correct these assumptions may be.

a. Birds as a Commodity

The belief that ancient Egyptians viewed themselves as morally superior to birds, as proposed by L. Evans,⁹³ may be additional justification for the ancient Egyptians' wish to control birds and exploit them. After all, even though all beings were equally created and provided for

⁹² Darby *et al.* 1977, p. 265: “[Migratory birds formed] a substantial part of the seasonal diet of Egyptians”; Brewer *et al.* 1994, p. 120: “Migratory and non-migratory birds served as important sources of food”; Ikram 1995, p. 24: “The Egyptians consumed a great deal of poultry”; Germond 2002-3, p. 75: “[Le canards pilet (*Anas acuta*) était] un hôte permanent de la basse-cour égyptienne dès l’Ancien Empire.”

⁹³ Evans 2010, p. 195

by the creator god,⁹⁴ *The Instructions of King Merikare* also clearly state that this same god provided human beings sustenance in the form of plants and animals, including birds (*3pd.w*).⁹⁵ Ancient Egyptians fully utilized the birds which were at their disposal. While mostly valued for their meat, birds were also exploited to a lesser extent for their by-products. The eggs they might have produced, the feathers and blood removed during poultry processing, as well as the bones discarded from the table, all served specific purposes in ancient Egyptian society; some of these roles were purely utilitarian, others were symbolic in nature and, as a consequence, were incorporated into cultic and funerary practices.

i. Meat

Little data is available to help us determine how important a role poultry played in the ancient Egyptian diet.⁹⁶ Because of the presence of large flocks of migratory birds flying through

⁹⁴ pChester Beatty IV, r^o 7, 5-6: "Praise to you, Amun-Ra-Atum-Horakhty, who spoke with his mouth and there came into being men, gods, large and small cattle, **the birds that fly and those that alight** (*pwty hny*) in their totality" (Gardiner 1935a, p. 32; *Ibid.* 1935b, pl. 15). In pBoulaq 17, VI, 3-7, Amun is said to have provided the food needed for the birds to survive (Luiselli 2004, pp. 23-24 (translation) and 73-78 (text)). The god Khnum is also credited to have molded birds on his potter's wheel (Sauneron 1960).

⁹⁵ Merikare E 132-133: "it is for them (i.e. human being) that he created plants (*sm.w*) and cattle (*ꜥw.t*), birds (*3pd.w*) and fish (*rm.w*), in order to feed them." See Quack 1992, pp. 78-79, 96 for transcription and translation; Tobin 2003, p. 164 for translation.

⁹⁶ Mahmoud 1991, pp 258-259. Stable isotope analyses have recently been conducted on a selection of ancient Egyptian mummies from the Musée des Confluences, Lyon. Hair and bone samples were collected on human remains whose dates range from the 4th Dynasty to the Coptic period. The results reveal that meat was infrequently consumed by these individuals. "Using the carbon isotope ratios of mummy hairs, the contribution of animal protein was estimated here at $29 \pm 1.9\%$, corresponding to an ovo-lacto-vegetarian diet. [...] Sulfur isotope ratios of mummy hairs further indicate that freshwater fish, such as the Nile Perch, was not consumed in significant proportions" (Touzeau *et al.* 2014, 123). Prior to the Coptic period, a large proportion of the diet of these individuals thus appeared to be plant-based, most especially wheat, barley, and vegetables grown locally. Animals would have provided sources of proteins in the form of their by-products (milk and eggs) rather than their meat. Finally, surprisingly, the consumption of fish such as the Nile perch could not be readily identified in the mummies selected for this study. The authors, however, do not exclude the possible consumption of smaller fish and shellfish.

the country, it has often been assumed that wildfowl could be captured by anyone and therefore had entered the diet of even the most humble Egyptian.⁹⁷ While such a suggestion is plausible, no direct evidence conclusively proves it. The presence of fowl among the food items the deceased wished to partake in the afterlife indicates that the ancient Egyptian elite, to whom the large majority of the extant evidence belongs, indeed enjoyed eating poultry during their life and hoped to continue to do so after their death. A few scenes carved and painted in funerary tomb chapels depict members of these upper classes holding to their mouth a small cooked bird.⁹⁸ The modest size of the bird thus shown could lead us to believe that nobles favored young birds or *Columbidae* (doves and pigeons). However, the similarities between the various depictions separated by several centuries suggest that this motif had been designed early in the Old Kingdom and used by generations of artists as a convention to clearly illustrate the inclusion of poultry among the dishes depicted on the wall. As a consequence, these scenes cannot not provide insight into the type of birds favored by ancient Egyptians.

As demonstrated by S. Ikram, access to meat in general may have varied greatly within Egyptian society and was a function of a person's position in the hierarchy.⁹⁹ Textual and iconographic evidence suggests that meat was consumed on a regular basis by the royal

⁹⁷ Ikram 1995, p. 24

⁹⁸ For the Old Kingdom: LD II, 52, from the 5th Dynasty tomb of *Iy-mry* in Giza; Duell 1938, pl. 44, from the tomb of *Mrrw-k3.i* in Saqqara; Junker 1943, pp. 124-125, fig. 39. For the New Kingdom, royal ladies from Amarna are shown nibbling on roasted poultry: Cairo Museum JE 48035 (artist study of a princess eating a bird); Davies 1905b, pl. 4: in the tomb of *Hwy3*, Queen Nefertiti is depicted eating a bird, while several servants are in the register below bringing more poultry.

⁹⁹ Ikram 1995, pp. 199-229

family,¹⁰⁰ as well as members of the upper echelons of the nobility and priesthood. This disparity is illustrated in a banquet scene from the Memphite tomb of Horemheb.¹⁰¹ A number of male guests are shown sitting in front of tables laden with a wide range of food. Yet, only a few of these tables include poultry among the prepared dishes. Is it simply a reflection of personal taste, or rather a societal distinction between the many guests? The men wearing heavy wigs, tunics, and elaborate kilts are offered more generous portions than the more modestly dressed guests, suggesting that the distinction is more likely to reflect the relative position and importance of each man. Among the lower classes of society, it seems reasonable to assume that bird catchers were likely to keep some of the captured wild fowl for their own table. In funerary iconography, amidst the many registers dedicated to activities in the marshes, fowling is often shown bringing some of their catch to poulterers, who then process the geese and ducks by removing the feathers and internal organs.¹⁰² The birds are subsequently hung from a beam in order to improve the quality of the flesh.¹⁰³ While scenes from New Kingdom tombs show the poulterers placing the processed birds in jars and amphorae,¹⁰⁴ clap-netting

¹⁰⁰ See pAnast. IV 14,4-5 (*trp stt 10 trp mgr 40*: “10 plucked and 40 baked (?) white-fronted geese”) and 15,9 (*pr hpn mnw n smw*, “fatted quails and doves of the Shemu-season”) for a list of birds needed to be ready for the arrival of Pharaoh (Gardiner 1937, pp. 50, 52; Caminos 1954, pp. 198-201).

¹⁰¹ Martin 1989, pp. 40-42, pl. 31

¹⁰² For a list of Poultry Processing Scenes listed in PM I-IV, see Ikram 1995, p. 303. See also for the Old Kingdom: Moussa and Altenmüller 1977, pl. 9; Harpur and Scremin 2010, p. 131, fig. 140 from the mastaba of *Ny-ḥn-hnm* and *Hnm-htp*; for the Middle Kingdom: fragmentary relief from the tomb of *Nht*, originally in Lisht North, currently in New York (MMA 15.3.1164).

¹⁰³ Ikram 1995, pp. 57-60

¹⁰⁴ See Mahmoud 1991, pp. 264-266; Ikram 1995, pp. 145-174 and 183-188 for a complete presentation of the poultry preservation capabilities of ancient Egyptians.



representations from the Old and Middle Kingdoms more frequently include additional vignettes of cooking scenes, in which waterfowl are roasted on a pit over a fire, or cooked in large vessels.¹⁰⁵ None of these birds, however, are shown being consumed by members of the fowling team. Officials, identifiable by their staff and long kilt are sometimes depicted eating and drinking alongside the fowlers;¹⁰⁶ yet, to the extent of my knowledge, they are never represented holding these birds to their mouths. We, as viewers, are left to guess the recipients of these roasted, grilled, and stewed geese, which cooks are busy preparing.

As will be discussed in Part 1 of this dissertation, avian remains recovered in settlement contexts shed some light on the birds present and possibly exploited by the local population. Yet, the information, which can be drawn from the meager bird bone assemblages, is limited; it is rarely possible to positively argue what the birds were used for. The site of Deir el-Medina, inhabited by the craftsmen in charge of building, carving, painting, and inscribing the tombs of the New Kingdom kings on the West bank of Thebes, is unique in part because of the bounty of written material discovered therein. The location of the village in the arid cliffs of Western Thebes, in addition to the higher rate of literacy of the population, have allowed archaeologists to recover a significant number of texts on both papyri and ostraca. This providential written evidence sheds light on some of the more mundane aspects of daily life. Despite the quasi

¹⁰⁵ Verhoeven 1984, pp. 34-38, 59-60, 151-154; Mahmoud 1991, pp. 259-264. Examples from the Old Kingdom: LD II, 52, from the 5th Dynasty tomb of *Ḳy-mry* in Giza; Lloyd *et al.* 2008, pl. 15, from the tomb of *Nfr-sšm-Pth*. For the Middle Kingdom: wooden model of man roasting bird over fire (Cairo Museum CG 245); Newberry 1893b, pl. 33, from the tomb of *B3k.t* II in Beni Hassan, labeled BH 33.

¹⁰⁶ A representative example of workers eating in a hut seemingly located near the fowling pond is found in the 6th Dynasty tomb of *Ppy-ḥnh: Ḳni Km* in Meir (Blackman and Apted 1953 Part V, pl. 30).



absence of faunal remains analyzed at the site,¹⁰⁷ details recorded in letters, memoranda, accounts, and lists of goods brought to the village indicate which items of food most frequently entered the workers' diet.¹⁰⁸ Rations consisted for the most part of grain, making bread and beer the first items on the menu, followed closely by fish, delivered in large quantity and in a wide variety, since 18 different terms referring to fish have been identified in the record. On the other hand, meat, whether beef, pork, or poultry, appears to have been less frequent an occurrence on the workmen's tables. Nevertheless, *3pd.w* and *3pd.w mr*, "birds of the canal, pond fowl" figure among the goods delivered at times as gifts from Pharaoh.¹⁰⁹ Some of the birds came to Deir el-Medina preserved in jars, as attested by the discovery of broken

amphorae labeled with their content, in this case *3pd.w mr*  ()¹¹⁰. Birds also figure

¹⁰⁷ This type of material was not systematically collected when B. Bruyère, the first Egyptologist to excavate the site extensively, was working in the village (1922-1951). Only the best preserved and most interesting specimens were recorded, and the other fragmentary faunal material was most likely discarded.

¹⁰⁸ Valbelle 1985, pp. 267-281; Malaise 1988; Gal 2013, p. 43

¹⁰⁹ Valbelle 1985, p. 277

¹¹⁰ As listed by D. Valbelle (1985, p. 278), the delivery of jars filled with preserved poultry are known from the following ostraca: DM 6166-6181; O. Turin 57270-57271 and 57515 along with two additional ostraca published in Bonnet and Valbelle 1976, pp. 333-334, fig. 7 n^{os} 6 (here shown in the text) and 9. Similar inscribed ostraca have been recovered at the site of Malqata, both in the ruins of the palace of Amenhotep III and in the Birket Habu (Hayes 1951, fig 13; Leahy 1978, p. 17 n^{os} 81-85, pl. 8). These jars were part of the food delivered for the celebrations of the king's three *sed*-festivals. Among the several hundreds of labels from jars filled with meat, 22 fragmentary amphorae are said to have contained preserved poultry of various kinds. Most of them also refer to *3pd.w mr*, "pond fowl." A few labels further describe the *3pd.w mr* as being  *msy.t*-birds and  *s.t*-birds (Hayes 1951, fig. 13 n^{os} 177-178, 180). The high quality of several jar contents (*nfr*, good and *nfr nfr/nfr.wy*, very good) is further attestation that these items of food were most likely expected to be consumed and enjoyed during the festivals' celebrations.

among the goods exchanged among the village inhabitants,¹¹¹ leading us to believe that live birds were probably also present at the site, being kept and raised by individual households, so as to have a constant and fresh supply.

ii. Feathers¹¹²

The feathers plucked from killed waterfowl were not put to waste.¹¹³ The soft downy feathers were used to stuff pillows.¹¹⁴ Wing and tail feathers were of special interest to archers, who could trim them and affix them to their arrows as fletching.¹¹⁵ The feathers of ostriches are those most frequently encountered in the archaeology, iconography, and written records. A luxury item coveted by the Egyptian elite,¹¹⁶ they feature among the many goods brought forth


¹¹¹ Deir el-Medina Database (<http://www.leidenuniv.nl/nino/dmd/dmd.html>. Last accessed April 16th, 2015); See Appendix 7 for a list of the texts consulted for this study, which mentions birds as being exchanged in the village.

¹¹² For a discussion of the role of feathers in ancient Egyptian royal and religious iconography, see Behrens, LÄ VI, cols. 77-82; Teeter 2010.

¹¹³ Lucas and Harris 1962, pp. 28-29: "The feathers employed were chiefly those of the ostrich, though feathers possibly from the night heron, the crow or raven, and a water-fowl respectively have also been found in tombs, and in one instance pigeon feathers." An offering list from king Ramesses IV and inscribed in the Karnak temple also lists falcon feathers among the goods delivered to the god Amun-Ra (KR/ VI, 8-9; Haring 1997, p. 410).

¹¹⁴ For an ancient Egyptian example of a pillow stuffed with feathers, see British Museum EA15170. Several linen pillows filled with white down have also been recovered from the tomb KV 63 in Western Thebes by O. Schaeffer and his team in 2006 (www.kv.63.com/photosmay20062007.html. Last accessed April 20th, 2015). To the extent of my knowledge, ancient Egyptians were not in the habit of plucking the feathers of live birds, especially geese, for profit, as was practiced in ancient Rome (cf. Pliny, *Natural History* 10.52-54).

¹¹⁵ Friedman 2006, pp. 19-25. Well-preserved examples of arrows with fletching in situ have been excavated at Hierakonpolis. The tomb of Tutankhamun also included arrows in the arsenal of weapons deposited with the young king. See Carter 1963b, pl. 46 for photos of these arrows.

¹¹⁶ Lady *Wbh.t* from Deir el-Medina was seemingly fortunate enough to be able to purchase two such feathers, as evidence by the presence of this item in a list of goods purchased by *Wbh.t*:  || *mhy.w(t)* *ni.t* 2 (British Museum O. 5633 in Demarée 2002, p. 17, pl. 23). Live ostriches, along with their eggs and feathers, are also shown in processions being presented to the deceased as part of the game captured in the desert (Theban tombs TT 21 (*Wsr*) and A5 (*Nfr-htp*); Decker and Herb 1994b, section J, pls. 157 and 167 respectively).

before Pharaoh by foreign dignitaries from Syria, Nubia, Libya, and Punt during the New Kingdom.¹¹⁷ These long and soft feathers made very effective fans for the king, which devoted fan bearers would sway back and forth during the warmest days of the summer.¹¹⁸ Ostrich feathers were also of special significance to Libyan and Nubian cultural groups.¹¹⁹ These ethnic groups are readily identifiable in representations, wearing one or several ostrich feathers in their hair in an arrangement characteristic of each group.¹²⁰

iii. Fat¹²¹

In addition to providing soft feathers for pillows and tasty flesh for the table, geese were also good providers of fat, *ꜥḏ*,¹²² a prized commodity for ancient Egyptians.¹²³ Fat from *ḥꜣp-*, *r3-*, and *sri.t-* geese were especially favored and feature among offerings delivered to temples, or

¹¹⁷ Phillips 2000, p. 332. See Davies 1905a, pls. 38, 40 (tomb of *Mry-Rꜥ* II); *Ibid.* 1905b, pl. 15 (Tomb of *Hwy3*) for representations of tribute scenes dated from the reign of Akhenaten. See also Hartwig 2004, pp. 73-76 for an analysis of tribute scenes in tombs dated from the reigns of Thutmose IV and Amenhotep III.

¹¹⁸ Several fans with preserved ostrich feathers have been found intact in the tomb of Tutankhamun: Carter 1963b, pls. 17A, 43.

¹¹⁹ Friedman 1996, pp. 4-5; *Ibid.* 1997, pp. 13-14; *Ibid.* 1999, pp. 18-29: a deposit of ostrich feathers was discovered at Hierakonpolis in a locality labeled HK64 and is believed to be an offering members of the Nubian C-group made to the goddess Hathor.

¹²⁰ For an example of the different feather arrangements displayed on the head of various ethnic groups, see Davies 1905b, pl. 15 (tomb of *Hwy3*). The cultural importance of these feather headdresses worn by Libyan chiefs is highlighted in the Israel stela, from the time of King Merneptah (Cairo Museum JE 34025): "The vile enemy chief of Libya fled all alone in the deep of the night, **no feather on his head** and his feet unshod. [...] When he reached his country, he was in laments; every survivor in his land was loath to receive him. "The chief whom an evil fate has **shorn of the feather!**" all those of his town were saying about him" (*KRI* IV, 14:10; 14:16-15:1; Wente 2003, p. 357). See also Laufer 1926, pp. 36-37 for the use of headdresses with ostrich feathers in 19th century Africa.

¹²¹ Serpico and White 2000, pp. 390, 407-409. On the practice of fat rendering, see *Ibid.*, pp. 408-409; Ikram 2000, pp. 656-671.


¹²² On *ꜥḏ*, as fat, and more precisely bird fat, see Wb I p. 239 §12.

¹²³ Ikram 1995, pp. 175-177

ingredients needed for Pharaoh's table.¹²⁴ Being renowned for its fine taste, it was used in the confection of cakes.¹²⁵ Geese were thus specifically fattened not only to improve the quality of the flesh, but also to increase the production of fat.¹²⁶ Preservation of meat being of special concern in a climate as hot as that of Egypt, goose fat could also be used to preserve meat.¹²⁷ Furthermore, it also entered into the pharmacopeia of Egyptian doctors,¹²⁸ along with the fat of other birds, such as the pintail duck (*z.t*), the golden oriole (*gnw*), and the ostrich (*niw*).¹²⁹

iv. Eggs

The importance of the egg motif in Egyptian religion and symbolism is undeniable;¹³⁰ yet their consumption in Dynastic Egypt is harder to ascertain. In the Middle Kingdom literary

¹²⁴ Bird fat was considered a luxury item worthy of being deposited in royal tombs as early as the 1st Dynasty. An ivory label excavated at Umm el-Qaab, Abydos, reads  *mrh 3pd(?)*, probably bird-fat based oil (OIM E6192; Mac Arthur and Teeter 2011, p. 229). Goose fat was also a common item listed in temple offerings. See for instance *ꜥd r3*, "fat (from) the r3-goose," in pHarris I (15a,8) and (63c,16) (Grandet 1994). For bird fat used to cook, see pAnast. IV 15,10 (Gardiner 1937, p. 52; Caminos 1954, pp. 200, 212): *ꜥd sri(.t)*.

¹²⁵ Vernus 2005I, p. 398

¹²⁶ Several terms are used to describe the fattening of fowl, such as *wš3*, *šd*, and *hpn*. This practice will be discussed further in Part 2.

¹²⁷ Ikram 1995, p. 169

¹²⁸ To cite passages from medical papyri, I will use the following abbreviations: Eb,: Papyrus Ebers; Bln: Berlin Medical Berlin; Hrst: Smith Medical Papyrus: Smith; Papyrus Hearst: Hearst; Medical Papyrus from the Ramesseum n^o III: Ram. III; Papyrus Brooklyn n^o 47.218.48.85: Brooklyn, as cited in Bardinet 1995.

¹²⁹ Ostrich fat was used in recipes meant to cure baldness (Eb. 449 (65, 5-7)). As for the fat of the pintail duck, it was reserved for eye diseases and infections of the *ib* (resp. Eb. 368 (59, 6-10a) and Eb. 209 (43, 4-8)). Finally, the fat of the golden oriole seemingly was effective to prevent flies from biting (Eb. 845 (97, 20-21)). M. Serpico and R. White (2000, p. 408) propose that other birds attested in ancient Egypt, such as the cranes, herons, doves, partridges, and quails, could also have been source of animal fat. This suggestion has yet to be validated by chemical analysis of ancient Egyptian organic residues.

¹³⁰ Williams 2011, pp. 128-154. In the tombs of *Nht* and *Mnn3*, respectively TT 52 and TT 69, nests filled with eggs and hatchlings figure among the offerings piled before the seated tomb owner (Hartwig 2001a, p. 392; *ibid.* 2001b,

composition entitled *The Pleasures of Fishing and Fowling* by A. Gardiner,¹³¹ the protagonist is said to be living *m swḥ.t ḥr bit*, “on **egg** and honey.”¹³² If understood correctly, this passage is a rare written attestation of birds’ eggs entering the ancient Egyptian diet. While eggs may have been ingredients in recipes, I am not aware of such documents being available to attest to such use before the Greco-Roman period. Prior to the introduction of the domestic fowl in the Egyptian farmyards, a bird renowned to this day for being a prolific egg producer, eggs were only available during the breeding season of wildfowl and captive birds, usually spring and possibly early summer. Eggs were therefore unlikely to be a common item for most Egyptian households. It might be more relevant to consider them as a fortuitous source of proteins, which was taken advantage of when the opportunity arose. For example, the discovery of eggshells from a variety of wild birds at the site of El Kharafish, near the Dakhla Oasis, has led Zooarchaeologists to surmise that the local pastoral nomads, known as the Sheikh Muftah

p. 403). A few eggs also figured among the offerings deposited in TT 1, the tomb of *Sn-ndm* at Deir el-Medina (Valbelle 1985, pp. 278, 296-297). One might surmise that these unusual goods presented to the deceased have a symbolic character connected to rebirth and regeneration, and may not have been intended as actual articles of food. However, the lack of written material on this subject does not allow us to fully understand the meaning and value of the eggs in these scenes. The representation of egg offerings was also incorporated into the iconographic repertoire of the temple of Medinet Habu. In the Chapel of the Living King, Ramesses III is depicted being offered by one of his daughters a tray filled with eggs and hatchlings. The text accompanying the scene thus states that these were gifts made possible by the god Amun (The Epigraphic Survey 1957, pl. 340; Meeks 2012, pp. 540-541). Once again, the exact purpose of the offering remains unclear: is the princess symbolically wishing her father to be eternally young, like a young bird emerging from the egg?

¹³¹ Gardiner 1952, p. 584

¹³² Caminos 1956, p. 8, pl. 1; Quirke 2004b, p. 216. The eggs the protagonist is said to have eaten were most likely gathered in the nests of wild birds encountered during his forays in the marshes. Such a detail indicates that the fowling expedition was likely to have taken place during the spring, when a large majority of birds are known to breed.

culture,¹³³ were exploiting to their fullest the local resources. The eggs of the birds breeding in this area during spring were thus gathered and presumably eaten.¹³⁴ Moreover, the representation of a basket filled with eggs near a flock of pelicans in the New Kingdom tomb of *Hr-m-ḥb* may be proof that eggs were collected from the nests of wild birds, including pelicans, during spring fowling expeditions in the wetlands of the country (**Figure 2**).¹³⁵

By far, the most frequently encountered eggshells recovered in faunal assemblages are those of the ostrich.¹³⁶ Alongside the bird' feathers, ostrich eggs are shown being deposited in the piles of gifts accumulated before Pharaoh and carried in baskets held by foreigners and Egyptians alike. The thick shell and large capacity of these eggs made them ideal containers to hold liquids. Small disc-shaped beads were also manufactured with broken eggshells as early as the Predynastic period and have been recovered in massive numbers especially at Nubian sites.¹³⁷ In Egypt, the frequent discovery of ostrich eggs in sacred spaces, such as cult sites and

¹³³ According to H. Riemer and colleagues (2008, p. 585), “[t]he Sheikh Muftah culture is believed to be the indigenous culture of the oases depressions of Dakhla and Kharga in the Western Desert of Egypt that lasted from the late Predynastic till the end of the Old Kingdom, coexisting during the 4th to 6th Dynasty with the “Egyptian” occupants in Dakhla.”

¹³⁴ Pöllath 2011, pp. 340-344

¹³⁵ Brack and Brack 1980, p. 63, pl. 73b. This scene is unusual in many respects. For example, why is the overseer of fowling *Pth-ms* squatting in front of the group of pelicans and baskets filled with eggs and birds, while the haulers are located further to the left? One may argue that the artists at work on this wall were trying to make the maximum use of the space by adding these details between the screen of papyrus and the fowling. It is more likely that, in reality, the birds and baskets of eggs were gathered in an area away from the active netting of waterfowl.

¹³⁶ Lucas and Harris 1962, p. 38; Behrens, LÄ VI, cols. 75-78; Phillips 2009. On average, an ostrich egg weighs 1.5 kilograms, the equivalent of approximately 24 chicken eggs. It can be up to 15 centimeters long, with a diameter of 13 centimeters. The shell itself is 3.5 millimeters thick (Camps-Farber 1995, p. 436).

¹³⁷ The Oriental Institute Museum holds in its collection such gatherings of ostrich eggshell beads from Nubian sites excavated by the Institute in the 1960s: OIM E19841 from Serra East; OIM E21519 from Qustul; OIMs E23065-7, 23073, 23200, 23399 from Adindan; OIM E42460 from Bab Kalabsha.

tombs, implies that a deeper religious connotation was associated with the possession of this object.¹³⁸ Whether the content of the eggs was consumed by Egyptians is unlikely. All evidence available to us points to these artifacts being acquired in part via trade; the likelihood of the eggs being fresh when reaching their final destination was slim to nil.

Despite the difficulty to obtain eggs if one were to gather them in the wild, their shell and possibly content were incorporated into a few medicinal prescriptions. For instance, along with other ingredients such as cat placenta and fat, the eggs of the *g3bg3/g3bgw*-bird were recommended to prevent hair loss.¹³⁹ An ancient Egyptian facelift recipe also required some ground ostrich eggshell. The pasty mixture was applied on the face every day, perhaps with the hope to acquire a skin as smooth and flawless as the surface of the egg.¹⁴⁰ Finally, vulture's eggs were thought to be beneficial for the treatment of eye diseases.¹⁴¹

The proteinic nature of eggs has made them a useful ingredient for painters, who use both the white and the yoke as a binding medium with which to mix color pigments. Scholars of the late 19th century had claimed that egg white, or ovalbumin, was used by Egyptian painters as early as the 12th Dynasty, a claim challenged by A. Harris and J. R. Lucas, who considered that

¹³⁸ Cherpion 2001; Muir and Friedman 2011; Scalf 2012b

¹³⁹ Eb. 453 (65, 10-12). D. Meeks (1991, pp. 235-236) and P. Vernus (2005h, p. 365) propose that the *g3bg3*-bird may be the crow (*Corvus corone*).

¹⁴⁰ Eb. 718 (87, 10-12). Ostrich eggs are also mentioned in the following treatments: Eb.374 (59, 18-20), 444 (64, 21-65), 539 (71, 14-16), 710 (86, 11-13); Hearst 260 (17,16-18,3); Smith Description # 9 (4,19-5,5);Brooklyn §88a.

¹⁴¹ Eb. 409 (62, 10-12)

not enough evidence was available at the time to conclusively prove such as statement.¹⁴²

More recently, the presence of egg white in the paint applied on cartonnage coffins of the Greco-Roman period has been identified in samples examined with a combination of analytical methods.¹⁴³ Evidence is still lacking for the Dynastic period. The absence of a constant supply of fresh eggs prior to the common exploitation of chicken makes it unlikely, in my opinion, that eggs were used as a binder in the composition of paint in Pharaonic Egypt. Other more readily available products such as plant gum would have been favored.

According to Aristotle (*Historia Animalium* VI, 2), Egyptians had devised a method to incubate and hatch eggs artificially: “[eggs] are hatched spontaneously in the ground, by being buried in dung heaps.” The natural heat radiated by the decomposing organic material present in the dung was, based on the writing of the Greek philosopher, similar to that provided by the brooding mother bird. To the extent of my knowledge, no such practice is described in ancient Egyptian texts, and no artificial incubation facilities have been identified in Pharaonic Egypt.¹⁴⁴ It remains possible, however, that artificial incubation was practiced during the later periods of

¹⁴² Harris and Lucas 1962, pp. 1-2

¹⁴³ The binding media used on these fragments of cartonnage were analyzed with Enzyme-Linked Immunosorbent Assay (ELISA), employing polyclonal antibodies against ovalbumin (egg white), as well as with Gas Chromatography/Mass Spectrometry (GC/MS). Such methods only detect egg white. As stated by the authors, “it cannot be excluded that whole egg (both yolk and white) was used” (Scott *et al.* 2009, p. 929).

¹⁴⁴ Darby *et al.* 1977, p. 330; Meeks 1997. The oldest artificial incubation system identified in the archaeology comes from Kellia and dates from the 6th century AD.

Egyptian history to provide the large numbers of ibises needed to fulfill the needs of centers dedicated to cult of the Sacred Ibis of Thoth.¹⁴⁵

v. Other Avian By-Products

A range of bird fluids and body parts entered the pharmacopeia of the ancient Egyptian physicians. In addition to the fat and the eggs of several species of birds, the blood and feces of many other kinds were added to medicinal recipes to allegedly help cure various ailments.¹⁴⁶ In most instances, the avian “components” were included in ointments and mixtures used externally. Bird feces¹⁴⁷ were often used for fumigations.¹⁴⁸ Pelican feces were also a special ingredient included in topical ointments to treat eye diseases or to induce sweating to prevent infection.¹⁴⁹ An ointment prepared with the blood of a swallow (*mn.t*), an Egyptian goose (*smn*), a vulture (*nr.t*), and a dove (*mni.t*) all mixed together was thought to be a powerful balm to treat skin diseases.¹⁵⁰ Moreover, both the blood of the spine and the spine itself of the *g3bgw*-bird were sought after ingredients in ointments renowned for promoting hair growth.¹⁵¹ Snake

¹⁴⁵ Meeks 1997. See Part 3 for a more in depth presentation of this hypothesis.

¹⁴⁶ For a list of birds, bird parts, and fluids considered to have medical properties, see *Gr. Md.* IX, p. 44.

¹⁴⁷ Ostrich (Bln 68 bis (6, 8-9)); Swallow (Bln 69 (6, 9-10) and Bln 70 (6, 10-11)); Goose (Bln 69 (6, 9-10)).

¹⁴⁸ Fumigations with a concoction made with the legs of a golden oriole (*ins.t n.t gny*) were supposedly efficient to treat women’s headaches (pUC32057, 4; Collier and Quirke 2004, p. 58). Another concoction included the rump of a quail: when burnt, the smoke was said to help a person rid of the *w3wy*-demon, which had settled in his/her flesh (Bln 69 (6, 9-10)).

¹⁴⁹ Eb. 365 (59, 1-2); Brooklyn §66a

¹⁵⁰ Eb. 737 (88, 21-22)

¹⁵¹ Eb. 452 (65, 9-10) and 457 (65, 16-18)

bites could also be treated by means of balms including bird ingredients, such as the the leg of a vulture.¹⁵² The liver of a swallow provided a welcome relief to women with gynecological problems.¹⁵³ Finally, possibly a whole *shh.t*-bird could be dried up and ground, so as to be applied on a painful knee.¹⁵⁴

Only a few treatments required that the patient ingested or internally inserted parts of a bird's body, its fluids, or its droppings. For instance, the heart of a *mš3*-bird was incorporated into the confection of cakes, which, after being eaten for a certain length of time, were said to help get rid of intestinal parasites.¹⁵⁵ Similarly, the feces of the *idw*-bird, alongside many other ingredients, were eaten for four days to kill the *ghw*-parasites.¹⁵⁶ The *sh.t* of the greylag and white-fronted geese (respectively *r3* and *trp*), along with the *mm* of a white-fronted goose, were deemed efficacious to treat some intestinal problems when inserted as a suppository into the anus.¹⁵⁷

Finally, some treatments required that spells be recited over parts of birds prior to their being incorporated into medicinal recipes in order to fully benefit from the positive properties

¹⁵² Respectively Brooklyn §§ 90c and 95a

¹⁵³ Eb. 809 (95, 3-5)

¹⁵⁴ Eb. 606 (77, 3-4); Ram III, B, 1-2. P. Vernus (2005n, p. 415) wonders if the use of the *shh.t*-bird, identified as being the purple gallinule (*Porphyrio porphyrio*), in the treatment of painful knees is due to the long legs and toes of the bird, which give it the remarkable ability to walk on aquatic vegetation.

¹⁵⁵ Eb. 81 (22, 14-15)

¹⁵⁶ Eb. 326 bis (55, 2-4)

¹⁵⁷ Eb. 146 (32, 3-4)

of these animal remains. An ostrakon from Deir el-Medina,¹⁵⁸ for instance, records what one should do to stop the harmful attacks of dead spirits: spells needed to be recited over the two eyes of a vulture, the two eyes of a crocodile, some resin and malachite. All the ingredients were to be cooked and then applied on the eyes of the patient. Furthermore, to benefit from the protection of the vulture goddess Nekhbet, spells were recited over two vulture feathers, and protection against potential diseases was guaranteed for a whole year.¹⁵⁹

b. Birds as Offerings

Surviving textual and iconographic material presents birds in ancient Egypt as being first and foremost valued as offerings, which both the gods and deceased Egyptians expected to receive. As such, birds served several purposes in the sacred space of temples and tombs. As stated by P. Vernus, “en tant qu’offrande, le statut des animaux oscille entre celui de victuaille et celui de victime expiatoire.”¹⁶⁰ Fowl was indeed considered a dish of choice, generously provided by the creator god Ra-Atum to both human and divine beings to sustain them, as cited in *The Instructions of King Merikare*.⁹⁵ Therefore, the arrival of massive numbers of migratory waterfowl would have been viewed as a bounty falling from the sky. Yet, as previously described, these throngs of birds appearing haphazardly in waves during their migration also embodied the uncontrolled and potentially dangerous forces of nature threatening the balance and peace, which characterized Egypt under the rule of Pharaoh. Flying in from the north in the

¹⁵⁸ O. DeM 1062, 2-7: Posener 1938, pls. 34 and 34A; Bardinet 1995, p. 479

¹⁵⁹ Smith 18, 1-11


¹⁶⁰ Vernus 2005a, p. 24


fall and from the south in the spring, migratory birds became not only a most suitable metaphor to describe the reviled enemies of Egypt, but also came to be seen as the actual embodiment of enemy forces. Thus slaughtering a wildfowl symbolically also destroyed the targeted enemies.¹⁶¹ Sacrificing birds as part of funerary and temple practices thus had the double advantage of providing fresh victuals to offering tables, and also of insuring the destruction of *isft*, the chaotic forces embodied in these wild and feathered creatures, while ingesting and appropriating their forces and energy.¹⁶² To help provide these avian sacrificial victims, Sekhet, the goddess of the Catch, is at times depicted on temple walls and in a few tomb chapels holding birds by the wings and presenting them to the sanctuary's god or to the tomb owner.¹⁶³ She is often accompanied by the Nile god Hapy. He is shown with his arms laden with the fruits of the river, among which waterfowl feature prominently,¹⁶⁴ since it is during his annual flood that birds were arriving in massive numbers from the north.

¹⁶¹ Meeks 1990, pp. 42-43. See Graindorge 1996 for a review of the role of geese in royal rituals and temple festivals. For bird imagery is used at times to describe foreigners, see footnotes 52 and 53 *supra*.

¹⁶² For an anthropological presentation of the concept of bird sacrifice, with its combined notions of gift, killing, and consumption, see Minunno 2013, pp. 10-19.

¹⁶³ For example, see the scene of Sekhet offering birds in the tomb of *It(=i)-ib(=i)-ikr* in Asyut (El-Khadragi 2007, fig.6) and the procession of Sekhet, Hapy, and other agricultural gods in the temple of Amenhotep III at Wadi Sebua (Leibovitch 1953, p. 93, fig. 17). A variety of other deities connected with the Nile River, the marshes, the birds and plants flourishing within, are remarkably depicted on a fragmentary relief from a temple of Ramesses II, now in the Kunsthistorische Museum in Vienna (Inv. Nr. 5081-82). Furthermore, a few statues from the New Kingdom and the 3rd Intermediate Period portray a few pharaohs (Thutmose III, Amenhotep III, as well as Sheshonq) in the guise of the fertility god Hapy, bearing bouquets of live birds (waterfowl and quails), as well as papyrus and lotus blooms (Leibovitch 1953, pp. 101-104, figs. 27-30). For more information on the goddess Sekhet, see Guglielmi and Brunner 1974.

¹⁶⁴ Both the fish and fowl, trapped and offered as a gifts from Hapy, are referred to in inscriptions as *rzf*,  (Wb II p. 449 §§4-6). In the mortuary temple of Ramesses III, at the temple of Medinet Habu, for instance, the god Hapy is said to be bringing *rzf 3pd.w*, "offering of birds" (The Epigraphic Survey 1957, pl. 259A).

Occasionally, both pharaoh and the tomb owner took an active role in fowling activities: under the benevolence of Sekhet and Hapy, they acted as fowlers and captured entire flocks of birds in the meshes of clap-nets.¹⁶⁵ Labeled as being *inw n sh.t*, “gifts of the *sh.t*-marshland,” in tomb chapels, these birds benefit the *k3* of the deceased in his afterlife.¹⁶⁶ The trapped birds are thereafter shown being sacrificed by having their neck wrung (*wšn*, )¹⁶⁷. Chaos, metaphorically identified with the wild fowl, has successfully been annihilated and replaced by the image of abundance, in the form of a richly laden offering table. In some instances, to further secure the complete destruction of the enemies which they represent, birds could be decapitated¹⁶⁸ or also thrown into a fire.¹⁶⁹

More pragmatically, the distribution of offerings, and more specifically birds, was incorporated into an intricate network linking together temples, royal funerary complexes, and

¹⁶⁵ Werbrouck 1949, pp. 37-38; Westerman 1988; Bleiberg 1996, pp. 57-58; Altenmüller 2008; El Awady 2009, pp. 63-65 and 215-228. For non-royal individuals taking the role of fowler in charge of pulling the hauling cable of a clap-net, see the notable Middle Kingdom examples of *Hnm-htp* II in Beni Hassan and *Dhwtj-htp* in Dayr al-Barshā (respectively Kanawati and Evans 2010, pl. 67; Newberry 1893-94, pl. 17).

¹⁶⁶ See Bleiberg 1996, pp. 57-87 for a discussion of the role of the king and high officials as *wh^c.w*, ‘trappers,’ and their acquisition of *inw* from nature.

¹⁶⁷ Wb I p. 374 §6

¹⁶⁸ Decapitated birds are represented as early as the Old Kingdom on tomb stelae (slab stela of Princess *Nfr.t i3b.t*, Louvre E 15591 (**Figure 3**)), models (model of a butcher’s block, with knife and bird’s head: OIM E10644), and chapel walls (as part of the ceremony of the opening of the mouth, represented in the tomb of *Hr-m-hb* in Thebes, TT 78 (Brack and Brank 1980, pl. 68c). During the Ptolemaic period, a *smn*-goose was also beheaded, along with a goat, when a new temple was consecrated, as recorded on the walls of the temple of Edfu (Blackman and Fairman 1946, pp. 77, 83).

¹⁶⁹ Many iconographic examples of avian burnt offerings have survived in Theban tombs of the New Kingdom, as for example in the tombs of *Pwi-m-R^c*, TT 39 (Davies 1923 part II, pls. 53-54) and *Mn-htp-R^c-snb*, TT 86 (Davies 1933, pls. 16, 23). In *The Pleasures of Fishing and Fowling*, the main protagonist and his companions offer some of the birds and fish they caught to the god Sobek: they burnt them in a brazier as a “holocaust of feathers and scales” (Caminos 1956, p.8).

the offerings chapels of the high officials buried in mastabas and tombs near their rulers. The chance survival of the administrative documents known as the Abusir Papyri, discovered in the pyramid temple of the 5th Dynasty king Neferirkare-Kakai, provide us with an *a priori* unbiased image of the system set in place to insure the proper functioning of this king's funerary cult.¹⁷⁰ Rather than coming directly from the domains founded specifically to endow the cult of the deceased pharaoh, as would have been expected, provisions for the king's offering tables were provided on a daily basis by his Sun Temple, named *S.t-ib-R^c*, located in the pyramid's vicinity.¹⁷¹ The Sun temple solely acted as an intermediary since it was itself receiving its supplies from the Royal Residence of the reigning king and from the *R3-š-K3k3i*, an economic institution in charge of gathering the goods produced on the land belonging to the funerary endowment.¹⁷² A large and efficient body of administrators needed to be in place to keep track at all times of all the goods circulating in this complex network, so as to ensure the proper supply of funerary offerings. According to the Abusir Papyri, 22 birds were thus expected for the cult of the dead king every day.¹⁷³ This was probably not the end of the birds' journey, having been previously delivered from the Sun temple, equipped with bird-keeping facilities. Some of them were likely to be distributed as ration to the personnel of the funerary temple. After being consecrated to the cult of the dead king, the birds could also be given to *hm.w-k3*,

¹⁷⁰ Posener-Krieger 1976

¹⁷¹ *Ibid.* 1979, p. 139

¹⁷² *Ibid.*, pp. 141-147

¹⁷³ *Ibid.* 1976, p. 247

funerary priests, in charge of the cults of high officials buried in the cemetery attached to the pyramid, in the spirit of reversion of offerings, or *wdb-rd*, well-established throughout Egyptian history.¹⁷⁴

The intricate network of offering distribution brought to light by the discovery of these 5th Dynasty papyri and their subsequent analysis by P. Posener-Kriéger¹⁷⁰ is not unique and has been observed for the management of royal funerary offerings during the Middle and New Kingdoms.¹⁷⁵ An in-depth study of these networks, of the different producers and intermediaries, and of the place of live birds within, will be addressed in Parts 2 and 3 of this dissertation. I will now present, as an introduction to this topic, the many types of birds, which had been selected as being worthy of becoming divine and funerary provisions. I will review in turn the avian categories mentioned in the lists of divine offerings and in the tabular offering lists inscribed in mortuary chapels.

i. Birds as Divine Offerings

While it is attested that pharaohs took part in ritual bird trapping expeditions,¹⁶⁵ most of the bird offerings required to fulfill the needs of all the temples in the land had to be provided by professional teams of fowlers and aviculturists, as will be presented in Parts 1 and 2 *infra*. Official offering lists were devised to ensure that the gods' tables would never lack the choicest

¹⁷⁴ See Haring 1997, pp. 7-12 for a presentation of the system of reversion of offerings from the Old to the New Kingdom.

¹⁷⁵ Helck 1975. *Ibid*, LÄ IV 590-594. See especially the work of B. Haring (1997) on the complex pattern of economic interdependence established to insure the provisioning of the Theban royal mortuary temples of the New Kingdom.

cuts of meat, the juiciest and fattest birds, along with bread, beer, and other diverse provisions. The importance of keeping the gods satisfied with plentiful offerings is emphasized in the royal declarations and edicts composed after periods of internal turmoil. For instance, after the disruptive reign of Akhenaten, during which numerous temples, shrines, and sanctuaries throughout the country had been closed, Tutankhamun returned the god Amun to prominence as State deity and made it a priority to erect “monuments for the gods [...], building their shrines anew as monuments for the length of continuity [...]; instituting divine offerings for them, consisting of regular daily sacrifices, and providing their food offerings on earth.”¹⁷⁶ By insuring the proper supply of altars and temple magazines, the king acted in accordance with the concept of *mꜣ.t* and thus preserved the proper cosmic balance in the land. As King Tutankhamun further declared, he especially desired to placate the gods “by doing that which their Ka(s) desire, so that they will preserve the Tilled Land (i.e. Egypt).”¹⁷⁷

Known as Festival Calendars, certain offering lists were presented in a table format, clearly indicating which products were to be provided daily, each month, and also at the occasions of annual festivals.¹⁷⁸ The earliest extant festival calendars date from the 5th Dynasty, having been identified on fragments from the funerary temple of Sahura at Abusir and on blocks from the Sun Temple of Niuserra at Abu Ghurob.¹⁷⁹ While few lists dated from the Old

¹⁷⁶ Restoration Inscription of Tutankhamun, now in the Cairo Museum (JE 51504 and 41565): *Urk. IV*, 2029:1-6 for transcription and Murnane 1995, p. 213 for translation.

¹⁷⁷ *Urk. IV*, 2030:10

¹⁷⁸ Kitchen, LÄ II 191-192; El-Sabban 2000

¹⁷⁹ Haring 1997, p. 56; El-Sabban 2000, pp. 1-2

and Middle Kingdom have survived, the fragmentary material is nevertheless testimony to the ancestry and continuity of a tradition best attested during the New Kingdom, a period for which the extant material, in particular from the Theban region, is particularly rich. In the midst of a wide range of products, birds are consistently present as being a necessary offering to satisfy the gods, as illustrated by the material ranging from the Old Kingdom to the Late Period gathered in Appendix 1 (**Tables 23-27**). They are frequently delivered daily to altars, at times listed simply under the general term *ꜥpd*, “bird,” as in some entries of the Old Kingdom festival calendar of Niuserra¹⁸⁰ and pBoulaq 18, dated from the 13th dynasty.¹⁸¹ More frequently, however, specific bird types are expected, such as geese, most especially the greylag (*rꜥ*), ducks, the pintail (*z.t*) being the most common, doves (*mnw.t*), along with other kinds of birds, such as *ꜥꜥ*, *ꜥtꜥ*, or *msi.t*, whose exact identification continues to elude scholars. Quantities were modest in most instances: one to three specimens were often expected to be deposited on each altar on a daily basis. More generous offerings were delivered on festival days, as demonstrated by the massive numbers of birds recorded in pHarris I, which provides a detailed account of the many offerings delivered to major temples during the reign of Ramesses III.¹⁸² Such practices continued to be implemented during the Late Period: donation stelae from the 26th Dynasty, such as stela Æ1037 Ny Carlsberg Glyptotek from the reign of Apries, indeed

¹⁸⁰ Helck 1977; Strudwick 2005, pp. 86-91.

¹⁸¹ Griffith 1891, pp. 102-116; Scharff 1922; Spalinger 1986; Quirke 1990, pp. 9-121

¹⁸² Grandet 1994; *ibid.* 1999

record how fattened greylag geese (*r3-šd*) and *zr.t*-birds, were donated to various deities daily, along with some land presumably where the birds could be led to graze.¹⁸³

ii. Birds as Funerary Offerings

The deeply rooted belief in ancient Egypt that all did not end at death, but rather that a new “existence” could be granted to the deceased’s *k3*, justified the efforts undertaken by Egyptians to ascertain the well-being of their dead relatives and to prepare for their own afterlife. Since this posthumous existence mirrored that experienced on this earth, nourishment was just as necessary to the dead as it was to the living. Ancient Egyptians are known to have deposited food offerings with the deceased as early as the Predynastic period, and this tradition is attested for the entire span of Pharaonic history. Niche-stones from the 2nd Dynasty already depict the deceased seated in front of a table filled with a variety of foodstuffs including birds. In addition to these fully drawn goods, an abbreviated offering list was carved in front of the table to ensure that the deceased was adequately provided for in the afterlife. The slab stela of a princess, excavated at Saqqara by W. B. Emery, already includes a list of four birds, simply indicated by their head and their name inscribed above (**Figure 4**).¹⁸⁴ Only three of these four birds are named. They are: *r3* (greylag goose), *t(rp)* (white-fronted goose), and *z(.t)* (pintail duck). These stelae, originally placed in a niche in the mudbrick wall of Early Dynastic mastabas, used to mark the site where offerings were to be deposited for the benefit of the deceased. More elaborate and exquisitely carved slab stela have survived from the 4th dynasty, the most

¹⁸³ Meeks 1979a, p. 678; Christensen 1983; Vernus 1991

¹⁸⁴ Smith and Simpson 1998, p. 22, fig. 31

well-known example probably being that of Princess *Nfr.t-i3b.t*, now in the Louvre (**Figure 3**).¹⁸⁵ Just as the size of tomb chapels grew during the Old Kingdom, the representations of offerings and offerings bearers were multiplied exponentially on the walls, most especially as one grew nearer to the shrine and false door, through which the tomb owner's *k3* could circulate to access these offerings.¹⁸⁶ As clearly stated in the inscriptions accompanying these depictions, all the goods brought forward were specifically for the deceased's *k3* (*n k3 n PN*).¹⁸⁷

The deposition of these food offerings was a major phase of the funeral. It was thereafter expected that such rituals would continue to be performed on special occasions, primarily festivals, either by the eldest son (*s3 smsw*), or by funerary *k3*-priests (*hm.w k3*). In addition or as substitute to real offerings, the offering formula, known as the *htp di ny-swt* formula, further guaranteed the proper supply of the many commodities needed in the afterlife. A typical example of this formula runs as follows:


htp di ny-swt (n) Wsir nb Ddw ntr 3 nb 3bdw di=f prt-hrw (m) t hnk.t k3w 3pd.w šs mnht h.t nb.t nfr.t w^cb.t 3nh.t ntr im=s n k3 n im3hw PN m3^c hrw

“An offering, which the king gives (to) Osiris, lord of Busiris, the great god, lord of Abydos, that he may give invocation offerings consisting of bread and beer, oxen and **birds**, alabaster and clothing, all things good and pure on which a god lives, for the *k3* of revered PN, true of voice.”

¹⁸⁵ Louvre E 15591: Arnold and Ziegler 1999, pp. 242-244

¹⁸⁶ See Brunner-Traut 1957, pp. 23-32 for an iconographic analysis and typology of the depictions of bird offerings in Old Kingdom mastabas of Giza and Saqqara.

¹⁸⁷ For examples of the phrase *n k3 n PN*, see for example Kanawati and Abder-Raziq 1999, pl. 62: *dd=sn [hm.w-k3 nw pr-d.t] iw nn n k3 n Hzi*, “May they (i.e. the *k3*-priests of the funerary estate) say: these (goods) are for the *k3* of *Hzi*.” The north wall of *K3.i-m-3nh*'s offering chapel, in Giza, includes a most valuable procession of birds, most of which are labeled with their name and the phrase *h3 n K3.i-m-3nh*, “1000 (of each type of bird) for *K3.i-m-3nh*”

(Junker 1940, pl. 7). It would not be unreasonable to surmise that the sign  written in the deceased's name was used not only to identify this individual, but also to refer to his actual *k3*, the sign being written once to serve two purposes (*h3 n <k3> K3.i-m-3nh*, “1000 (of each type of bird) for (the *k3* of) *K3.i-m-3nh*”).

The sole involvement of the king as the offering provider in this formula is derived from his role as an intermediary between gods and mankind, and thus as high priest in temples. He was theoretically in charge of presenting the daily offerings to the many gods of the country, thus fulfilling his role as guarantor of peace, justice, and balance, i.e. *mꜣꜥ.t*, in the universe. In addition to its reality at a symbolical level, the offering formula also reflected the fact that, at least early in Egyptian history, the king was also indirectly providing the goods delivered to private offering chapels through the practice of reversion of offerings cited previously.¹⁷⁴ A complex offering distribution network was organized under the direction of the *imy-rꜣ ḥtp.t ntr*, overseer of the god's offering, and the *zš ḥtp.t ntr*, scribe of god's offering.¹⁸⁸ After being presented to the main deity of a sanctuary, food offerings continued their journey within the temple walls and were brought before the gods in subsidiary chapels, as well as statues of kings and private individuals erected in the temple courts. The offerings were then transported to the necropolis, where they first entered the chapels of members of the royal family, to finally end in the chapels of high officials as *inw*, or official gift.¹⁸⁹ Because of the prestige associated with the offering of *inw* from the king's estates, this practice was recorded on the walls of several Old Kingdom elite tombs, such as that of *Pr-sn*.¹⁹⁰ Before being brought to the offering table of

¹⁸⁸ Englund 2005; Grander 1994 part I, p. 226: Ramesses III himself wished to receive as offerings the goods which had previously deposited before the god Amun, as indicated in pHarris I (3,6): ... "May I eat the bread and provisions (*dfꜣ.w*) of your (i.e. Amun) divine offering (*ḥtp-ntr*)."

¹⁸⁹ Bleiberg 1996, p. 53

¹⁹⁰ *Urk.* I, 37: (1) *in.t pr.t ḥrw n šḥd Pr-ꜣꜣ* (2) *Pr-sn m wdb n* (3) *ḥt pꜣt zft ḥpp.t* (4) *m ḥwt-ntr Ptḥ rꜣy inb=f n* (5) *mw.t ny-sw.t Nfr-ḥtp=s m* (6) *ḥr.t ḥrw rꜥn b m ꜣw.t d.t rdi n=f* (7) *r pr.t ḥrw im m rk Sꜣw-Rꜥ*, "Bringing the invocation offerings for the inspector of the Great House, *Pr-sn*, as part of the reversion of offerings consisting of *ḥt*- and *pꜣt*-bread, of *zft*-oil, which travel from the temple of Ptah, south of his wall to the royal mother *Nfr-ḥtp=s* daily, every

his tomb, the *ḥt*- and *pzt*-bread, along with some *zft*-oil had first been presented to Ptah, in his temple in Memphis, and then to Queen *Nfr-ḥtp=s*. Similarly, in his tomb in Saqqara, *Hnw* requested that be brought for him, [*pr.t-ḥrw m*] *wḏb-rd n Wnis*, “[invocation offerings from] the reversionary offerings of *Wnis*.”¹⁹¹ As also inscribed in tomb chapels, especially above the long lines of offering bearers advancing towards the shrine, the large majority of goods presented to the deceased, labeled as *nḏ.t-ḥr* (“gifts”) and *pr.t ḥrw* (“invocation offerings) distinct from the *inw*, came from his *pr-ḏ.t*.¹⁹² As defined by J. C. Moreno Garcia, the *pr-ḏ.t* was an intellectual construct, which encompassed a wide variety of assets (a house, land, workers, cattle, villages, diverse goods, funerary priests) bestowed upon a private individual by the king, as remuneration of his services.¹⁹³ Among the workers granted by the king, fowlers, labeled as *wh^c.w pr-ḏ.t*,¹⁹⁴ “trappers of the funerary estate,” were responsible for the capture of the birds

day, for the breadth of eternity; granted to him to be invocation offerings therein in the time of Sahura” (Strudwick 2005, pp. 411-412). The tomb of this official was located in North Saqqara and is now in Berlin (ÄM 15004).


¹⁹¹ Altenmüller 1974b, pp. 14-15; Strudwick 2005, p. 292

¹⁹² Tomb of *ḥt-ḥtp* (Davies 1901a, pl. 14): *ip inw n niw.wt n pr-ḏ.t inn rsy r pr.t ḥrw in s3=f smsw mry=f s3b ḥd-mr Pth-ḥtp*, “counting the official gifts from the towns of the funerary estate, which are brought south so as to be invocation offerings, by his beloved eldest son, the senior administrator *Pth-ḥtp*”; Tomb of *Ssm-nfr* [III] (Junker 1938, pl. 3): *m33 zš n nḏ.t-ḥr inn.t r pr.t-ḥrw m niw.wt nt pr-ḏ.t*, “inspecting the recording of the gifts which are brought so as to be invocation offerings from the towns of the funerary estate”; Tomb of *Hzi* (Kanawati and Abder-Raziq 1999, pl. 62): [*s*] *ḥpt stp.t k3.w wšn.w rnp.t nb.t. inn.t n ḥw.wt=f m niw.wt=f m s.wt=f nt T3 Mḥw Šm^cw i[n] hm.w-k3 nw pr ḏ.t*, “bringing as offering the choice items of oxen, sacrificial fowl, all sorts of vegetables, which are brought from his *ḥwt*-estates, from his towns, and from his places of Lower and Upper Egypt, by the *k3*-priests of the funerary estate.”

¹⁹³ Moreno Garcia 1999, p. 221

¹⁹⁴ For instance, during the Old Kingdom: tomb of *Pth-ḥtp* [I]: *šḥt 3pd.w in wh^c.w pr-ḏ.t*, “the capture of birds by the trappers of the funerary estate” (Murray 1905, pl. 2); tomb of *Nfr-ḥr-n-Pth*: *šḥt ḥb3.w in wh^c(.w) n pr-ḏ.t* “the capture of *ḥb3*-birds by the trappers of the funerary estate” (Altenmüller 1982, p. 11).

destined to be presented as *wšn.w*, or sacrificial bird offerings, as promised in the *ḥtp di ny-sw.t* formula.


The provisions traditionally brought to the offering table, in front of which the deceased was shown seated, were introduced by the hieroglyph  *ḥ3*, indicating that a thousand of each item was to magically be available after recitation of the formula. Offering lists further included in the iconographic repertoire of tomb chapels and burial chambers provide a detailed wish list of the diverse goods briefly summarized in the *ḥtp di ny-sw.t* formula, with more modest quantities assigned to each. Many types of birds, with one specimen requested for each type, were considered to be delectable in the afterlife, as summarized in Appendix 1 (**Table 28**). Several types of waterfowl in particular feature in this list, all of which have yet to be identified by species, such as *s* and *mz(3).t*. While cranes (*d3.t*) were at times in favor,¹⁹⁵ five birds consistently dominate the offering requests for most of Egyptian history.¹⁹⁶ They are traditionally listed in the following order: (1) *r3/sr*; (2) *trp*; (3) *z.t*; (4) *s(r)*; and (5) *mn(w).t* (**Figure 5**).


Birds labeled as *sr* have most puzzled Egyptologists, since the same spelling could be used to indicate two *a priori* distinct birds in the same offering list. Indeed, in the Old Kingdom

¹⁹⁵ See Stupko 2010, pp. 164-166 for a discussion of the inclusion of cranes in the bird offering lists of the early Old Kingdom.





¹⁹⁶ Barta 1963

tomb of *Nfr* in Giza,¹⁹⁷ as well as in the Middle Kingdom tomb of *Int=f-ikr* in Thebes (TT 60),¹⁹⁸



both the 1st and 4th birds in the list are written *sr* , respectively standing for the more common *r3*-goose and the *s*-duck, well attested during the latter part of the Old Kingdom. The




first bird of the list is also written at times with an additional , *srw*, as in the tomb of *Mrw*, in Sheikh Said.¹⁹⁹ Close examination of numerous lists ranging from the Old to the New Kingdoms

have led several scholars to conclude that both the terms *r3* and *sr(w)* referred to the same bird, namely the greylag goose (*Anser anser*), and could be interchanged.²⁰⁰ Similarly, the original spelling *s* for the duck possibly identified as the Eurasian Teal (*Anas crecca*) was later abandoned to be replaced by *sr(i)*.²⁰¹ Another variant of these terms is written with the sign




 (O 34), frequently ending with a *t*:   , *sr.t*. It becomes more frequent in

inscriptions dated from the New Kingdom onwards. Is this simply a Late Egyptian variant of the

¹⁹⁷ Tomb of *Nfr*: Junker 1943, p. 47. It is interesting to note that the sign  is reversed in both words: .

¹⁹⁸ In the tomb of *Int=f-ikr* (Davies 1920, pl. 32), the first term is written   and the second .

¹⁹⁹ Davies 1901, pl. 20. As demonstrated in A. de Buck's publications of the Coffin texts, different versions of spell 62 (De Buck 1935, p. 269 §j) and spell 159 (De Buck 1938, p. 365 §b) include the words *rw*, *rw.w*, *r3.w*, *srw*, *srw.w*, and even *srw.w*, thus suggesting that the two words *r3* and *srw* most likely refer to the same or a similar bird. Moreover, the quail chick in *srw* is an integral part of the word, hence its plural being written *srw.w*. The weak consonant is omitted at times; yet it prevents the word from being abbreviated to *s*, distinguishing it from the name of the other smaller waterfowl, the *s(r)*-duck.

²⁰⁰ It is indicated as such in Wb IV p. 191 §16: “  *sr.w*, später dafür die  Gans.”





²⁰¹ Boessneck 1960, pp. 196-198; Wassell 1991, pp. 108-109; Mahmoud 1991, pp. 47-52.

older *sr(w)*, as has been suggested previously in scholarship?²⁰² Or is it the designation of a different bird all together, such as the domestic goose (*Anser anser domesticus*)? This issue deserves to be investigated and will be discussed in Part 3 of this dissertation.



This presentation on the birds mentioned in ritual offering lists is summarized in the recapitulative **Table 1** below. Birds used as divine offering are indicated by a black checkmark ✓, and birds used as funerary offering by a red checkmark ✓.

Table 1. Birds mentioned in ritual offering lists of the Dynastic Period

<i>Bird names listed as offering</i>	<i>Possible Identification</i>	<i>Old Kingdom</i>	<i>Middle Kingdom</i>	<i>New Kingdom</i>	<i>3rd Intermediate Period</i>	<i>Late Period</i>
<i>r3, sr(w)</i>	Greylag goose (<i>Anser anser</i>)	✓✓	✓	✓✓	✓✓	✓✓
<i>trp</i>	White-fronted goose (<i>Anser albifrons</i>)	✓	✓	✓✓	✓	✓
<i>z.t</i>	Pintail duck (<i>Anas acuta</i>)	✓✓	✓✓	✓		✓
<i>s, s(r)</i>	Eurasian teal (<i>Anas crecca</i>)	✓✓				
<i>smn</i>	Egyptian goose (<i>Alopochen aegyptiacus</i>)	✓		✓		
<i>d3.t</i>	Eurasian crane (<i>Grus grus</i>)	✓		✓	✓	
<i>ꜥꜥ3</i>	****	✓	✓			
<i>htꜥ3</i>	****		✓	✓		
<i>mz(3).t</i>	****	✓		✓	✓	
<i>mn(w).t</i>	Turtle dove (<i>Streptopelia turtur</i>)	✓✓	✓✓	✓✓	✓	✓
<i>zr(.t)</i>	****			✓		✓
<i>3pd.wꜥꜥ3/sꜥꜥ3</i>	****	✓		✓		
<i>3pd n mw</i>	Waterfowl			✓		
General term <i>3pd, ipd, ipt</i>	Bird, fowl	✓	✓	✓	✓	✓


²⁰² J. Černý (1929, p. 250) proposed that the term “*zri.t*” was very probably a Late Egyptian spelling of the old   *srw*,” an hypothesis which has been accepted by most Egyptologists. In Wb IV p. 191 §§17-19 and p. 192 §§1-7, the words  *zr* and  *zr.t* are considered to refer to two different types of birds.

Several birds stand out as being valued both as divine and/or funerary offerings for the entire span of Egyptian history: the greylag (*r3*) and white-fronted (*trp*) geese, the pintail duck (*z.t*), and the turtle dove (*mnw.t*). A few other bird types were especially favored as temple

offerings. The  *ht^{c3}*²⁰³ and , often transliterated as *3pd.w^{c33}*,²⁰⁴ were thus standard fowl deposited on altars during the New Kingdom. From the 3rd Intermediate Period onwards, the birds mentioned in texts as being destined for temples appear limited to the *r3*-geese, which were fattened beforehand (*r3 šd*), as well as the *zr(.t)*-bird. Flocks of these birds were placed under the care of *mniw*, “guardians,” who ensured that the temple flocks flourished.

This survey of the avian composition of divine and funerary offerings as indicated in lists only provides a partial picture of the range of bird species, which may have been incorporated into the ancient Egyptian religious and funerary practices. Indeed, processions of unlabeled birds, most frequently accompanied by attendants, often held in their arms and hands, or carried in crates and baskets, are omnipresent on monuments built in the sacred spaces that are temples and necropoleis. While the taxa depicted may illustrate the birds brought as offerings, they may also be a reflection of an artistic tradition, which was not intended to represent the actual goods deposited in sanctuaries, but rather to illustrate an ideal. These representations should therefore be considered with caution when attempting to better

²⁰³ I am aware of only one attestation of the *ht^{c3}*-bird in a funerary setting. In the 5th Dynasty tomb of *Ty* at Saqqara, this bird is depicted being fed in a *hrt-mw* enclosure (Épron and Daumas 1939, pls. 6-8). Based on its depiction, it was likely to be a type of waterfowl, most likely a *Anser*-goose.

²⁰⁴ The possible identification of the bird  will be discussed in Part 2.

evaluate the avian variety incorporated into rituals. Nevertheless, it is undeniable that birds were seen as an intrinsic part of the daily life of temples. One can also imagine that cages filled with noisy birds were brought to cemeteries on a regular basis, so as to be presented before deceased individuals in their offering chapels. These scenarios raise many questions which remain to be investigated:

- What motivated ancient Egyptians to select these birds as being worthy of being offered to the gods and the dead? Can we identify an ideological and symbolical motive for this selection? Or was the choice based on more pragmatic considerations, such as the availability of resources, the relative ease of capturing and raising the various types of birds, or their nutritional value and palatability?
- Where do all these birds come from? Were they all captured in the wild? Once caught, where were they transported? Where were they kept until they served their purpose (offering and/or food)?
- Do we have evidence of birds being not only maintained but also bred in captivity?

I will endeavour, in this dissertation, to propose answers addressing each of these issues.

5. Live Birds in Ancient Egypt: Their Exploitation and Economic Significance

As revealed by this overview of their role in Pharaonic Egypt, birds were symbolically and pragmatically incorporated into the lives in ancient Egyptians in multiple ways. They appeared as necessary offerings to appease both the gods and the deceased residing in the

Underworld. Birds also served the needs of the living, in the form of proteins, fat, and feathers. This dissertation is dedicated to evaluating how the ancient Egyptians fulfilled these needs in avian products, focusing specifically on their management strategies to acquire birds and to maintain them alive in captivity prior to their final journey to the slaughterhouse and the poulterer's shop.

Since the birth of Egyptology as a field of study, scholars have endeavored to catch glimpses at aspects of daily life along the banks of the Nile, in a land under the control of a proclaimed divine ruler and of his 'army' of administrators. In 1837, J. G. Wilkinson started this inquisitive journey into the everyday life of ancient Egyptians by publishing the three volumes of his *Manners and Customs of the Ancient Egyptians*. Following in his footsteps a century later, P. Montet and J. Vandier scrupulously reviewed the representations of the seemingly mundane activities depicted in the tomb chapels of elite members of Egyptian society.²⁰⁵ Funerary iconography is undeniably a valuable resource to get acquainted with the Egyptians' relationship and knowledge of the avifauna surrounding them. Ancient Egyptians endeavored to include them in their multiplicity in the activity taking place in the marshes. As I described previously, birds are depicted thriving in the papyrus thickets growing in swamps and wetlands, an ideal habitat where they find cover, food, and the protection they need to roost and build their nest, despite the threatening presence of marauding mongooses and genets. These mammals are not the only ones preying on these birds: these funerary scenes reveal that

²⁰⁵ Montet 1925; Vandier 1964-1978

ancient Egyptians did too. A multitude of scenes depict teams of fowlers, under the leadership of an overseer, trapping large flocks of waterfowl. Imprisoned in the fine meshes of the net, the birds were released from the trap only to be caged up in crates. Other registers showcase flocks of waterfowl, doves, and cranes being kept in enclosures, where food was provided in generous amount by farm hands. Some birds were separated from their peers and kept in smaller facilities, so as to be force fed, thus becoming a more desirable commodity. These scenes, best attested in monuments dated from the Old Kingdom, were the focus of O. Mahmoud's work.²⁰⁶

O. Mahmoud started an in-depth analysis of the importance of poultry in Old Kingdom economy, extensively using the work of P. Montet and J. Vandier. This study is an important resource, as it includes a comprehensive record of Old Kingdom fowling and poultry-yard scenes, as well as a detailed list of the birds represented therein. Whereas caution should be applied when using funerary material to gain insight into ancient Egyptian society, O. Mahmoud's analysis often takes the representations at face value and fails to discuss the motives the officials, who commissioned the offering chapels, might have had when selecting these scenes to adorn their tomb. His conclusions, for the most part based on iconographic data gathered in funerary settings, only provide a general and idealized view of the potentials offered by the massive flocks of birds present in Egypt during migration. Attempts at evaluating the journey undertaken by live birds, from the site where wildfowl were captured to the poultry-yard where they would await their fate, have yet to be implemented.

²⁰⁶ Mahmoud 1990

The research presented in this dissertation provides new insights into the network of distribution set in place to provide ancient Egyptians with the birds needed to fulfill all their needs in poultry. To reach as plausible an assessment of this network as can be obtained for an ancient culture, this study applies a multi-disciplinary approach and analyzes data from a wide range of material evidence. The information obtained with a critical eye from funerary iconography is refined and complemented by findings gathered in textual sources, the archaeological record, and faunal assemblages. Furthermore, because of the challenges presented by the data, unevenly represented both chronologically and geographically, a diachronic approach is favored and data from all periods of Pharaonic history are taken into consideration, from the Early Dynastic to the Late Period. While an exhaustive catalog of all attestations of live birds in the written and iconographic repertoire of Pharaonic history is beyond the scope of this project, selections of representative material is introduced to illustrate the major themes presented in this work.

This dissertation is structured into three parts. After a brief overview of the biogeography and avifauna of Egypt, Part 1 investigates the capture of wildfowl, from the types of birds selected by ancient Egyptian fowling, the various techniques employed to fill game bags, to the locations of fowling expeditions and the men in charge of capturing this wild feathered game. Part 2 focuses on the maintenance and care of birds in captivity. While the large majority of the evidence available for this section gives some insight into temple aviculture, special attention is set on evaluating the presence of and value placed on birds in a village setting. Evidence for the presence of domesticated birds in ancient Egypt is also

revisited. Part 3 acts as an epilogue to this study and presents the changes observed in bird management, both in private and temple settings, with the arrival of the Greeks and Romans in Egypt.

PART 1: THE CAPTURE OF WILD BIRDS

1. Biogeography

a. Bird Migration

That strange and mysterious phenomenon in the life of birds, their migratory journeys, repeated at fixed intervals, and with unerring exactness, has for thousands of years called forth the astonishment and admiration of mankind. From times of hoary antiquity the shores of the Mediterranean have presented to the eye of the spectator and inquirer the picture of countless hosts of feathered strangers pouring into these sunny lands from the dark and dismal regions of the North, and after a few months' stay in milder clime, returning once more to their mysterious homes.”¹

The long distance travel of birds from the northern hemisphere towards Africa each autumn started after the end of the last Ice Age, 10,000 years ago.² Even if they could not explain this phenomenon, prehistoric hunter-gatherers and, later, farmers undoubtedly noticed the cyclical changes in the surrounding avifauna, and most likely came to rely on the providential and seasonal arrival of large flocks of birds. For some, it indicated the changes of seasons;³ for others, it provided a hunting opportunity and the possibility to easily acquire significant quantities of meat.⁴

¹ Gätke 1895, p.3

² Serjeantson 2009, p. 14. “The current migratory patterns are thought to have been preceded in the Pleistocene by shorter migrations because the temperate climatic zone at the time was more compressed.”

³ *ibid*, p. 15: “Even the Palaeolithic hunters who shared a cave with nesting swallows and martins must have watched for their arrival as a sign of spring and their departure as a sign of approaching winter.”

⁴ Interestingly, as Serjeantson remarks (2009, p. 15), “the migratory patterns of birds, which were a boon for the people living in the regions where the birds bred, stopped either to break their journey or to spend the winter during migration, also allowed for the population of birds to maintain healthy numbers. The fact they did not remain all year long in the same location prevented numbers from being reduced too much by predation – either animals or humans.”

As remarked by Ornithologists P. Meininger and W. Mullié, “historically, Egypt stood at the crossroads of the world’s migration.”⁵ Located at the junction of the Asian and African continents, the Sinai region has acted since time immemorial as a bridge for the movements of people (settlers, traders, craftsmen, armies, etc.) and animals alike.⁶ Every year, the region of the Nile Delta continues to witness the passage of myriads of Palearctic⁷ migratory birds, as they fly each fall to their winter grounds in Sub Saharan Africa,⁸ and each spring when they return to their northerly breeding grounds. Egypt is ideally located for these millions of passage migrants, this country being surrounded by the inhospitable landscapes of the Sinai, Western and Eastern deserts, as well as the large bodies of waters that are the Mediterranean and Red seas. While many species of large soaring birds continue their journey along the coastlines of the Red Sea, enormous flocks of waterfowl, exhausted from their long flight, take advantage of the wetlands of the Nile Delta to rest and refuel before continuing further south along the Nile Valley. Ancient Egyptians had already recorded during the 5th dynasty the regular and massive passage of transient birds,⁹ which came to be associated with a specific time of the year and

⁵ Meininger and Mullié 1981, p. 5

⁶ Baha el-Din 1999, pp. 13-14: During migrations, many birds “congregate at bottlenecks, in particular soaring birds such as birds of prey and storks. Such well-known bottlenecks are the Suez and Hurghada areas. Waterbirds also gather at such areas: the Zaranik protected area in the Northern Sinai is well-known as an important bottleneck area for migratory waterfowl.”

⁷ This term refers to the geographical division comprising Europe, Africa north of the tropic of Cancer, the northern part of the Arabian Peninsula, and Asia north of the Himalayas.

⁸ Meininger and Mullié 1981, p. 5. Numerous species of migratory birds winter along the Great Rift Valley.

⁹ Reliefs of the so-called “Chamber of Seasons” at the Sun temple of Niuserre, Abu Ghurob. See Von Bissing 1955; Edel 1961; *Ibid* 1963; Smith 1965; Wenig 1966; Bailleul-LeSuer 2006.

hence reflected the passage of time.¹⁰ Ample evidence – archaeological, iconographical, and textual – demonstrates that they too capitalized on the massive number of birds interrupting their journey on their territory. Before tackling the review and analysis of ancient data, a preliminary presentation of the phenomenon of bird migration, species distribution, and the various habitats welcoming bird populations in modern Egypt will provide the foundation on which it becomes possible to understand the ancient record. This modern data will cautiously be applied to ancient times through bioarchaeological and historical investigation.¹¹ The modern preliminary study will contribute to our understanding of birds’ behaviors and habitats and consequently the possible avian resources that were likely to have been available to ancient Egyptians.¹²

While these massive numbers of birds continue to be expected every year both by native Egyptians and sport hunters who wish to fill their game bags, another set of people keep their eyes to the skies searching and counting these birds. Ornithologists have indeed been observing and studying in Egypt the seasonal patterns of these birds for more than a century,¹³

¹⁰ Meeks 1990, p. 39

¹¹ Gilbert 2000, p. 153

¹² A good grasp of the modern data is indeed crucial for a more accurate representation of the birds present in ancient Egypt, as evidenced by the numerous inaccuracies observed in early scholarship on this topic, which were mostly due to the lack of research conducted at the time on Egyptian avifauna.

¹³ As I. Newton (2008, pp 19-20) remarks, “two hundred years ago practically no evidence was available that birds migrated, apart from their seasonal appearance and disappearance in particular areas. Hibernation was often thought to be responsible for the disappearance of many species from high latitudes in winter, a notion that gained support even from the scientific community, but again without evidence. An early indication that individual birds could actually travel long distances to winter elsewhere was provided by a White Stork which was seen in Germany in 1822 flying around with a spear stuck through its body. When the bird was shot, it was found that the spear could be attributed from its design to a part from West Africa.”

first by shooting the birds to identify them, then by tagging individual specimen with extrinsic markers such as leg rings¹⁴ and plumage dyes. More recently, remote-sensing techniques (miniature radio-transmitters or satellite technology¹⁵) and intrinsic biogeochemical markers (analyses of stable isotopes and trace elements in feathers and other tissues¹⁶) allow biologists to gather an ever-increasing amount of data on migration routes and wintering areas of numerous bird species. Thus, large soaring birds such as white storks (*Ciconia ciconia*), birds of prey, and pelicans (*Pelecanus* sp.) fitted with radio transmitters on their backs can be individually followed during their journey. It has thus become apparent that these birds take advantage of the warm air currents rising from the land surfaces to glide and minimize energy expenditure. They traditionally avoid flying over the large expanses of water of the Mediterranean Sea, and follow the coastlines of the Levant, arriving in Egypt by crossing the Sinai, which constitute a bottleneck for both soaring birds and for migratory waterfowl.⁶ Migrating passerines and some water birds, such as ducks, terns, and herons do not shun flying over water.¹⁷ Two main flyways are thus used by birds migrating to and through Egypt: the Black Sea/Mediterranean and the East Asia/East Africa flyways (**Figure 6**).¹⁸ These bird

¹⁴ Birds were first fitted with rings from the Giza Zoological Museum in 1937. The major ringing programs took place in 1937-48; 1949-54; 1966-73. S. M. Goodman and P Meininger (1989, p. 7) estimated that, by the end of the 1980s, approximately 100,000 birds had been ringed in Egypt.

¹⁵ Bobek *et al.* 2008; Kölzsch and Blasius 2008; Sokolov 2011

¹⁶ Newton 2008, pp. 19-41: Movement patterns of populations can be inferred from the stable isotope ratios present in the feathers of migrating birds. Specific breeding grounds can thus be linked to particular wintering habitats.

¹⁷ Gilbert 2000, p. 172

¹⁸ www.birdlife.org. Last accessed February 24th, 2016.

migrations take place in massive numbers: it has recently been estimated that more than two billion passerines and near passerines, two and a half million waterfowl, and two million birds of prey travel each fall and each spring between Eurasia and tropical Africa.¹⁹

A thorough knowledge of the Egyptian avifauna remained elusive²⁰ until the pioneering work of Meininger and Mullié in the 1970s, pursued by S. M. Goodman in the 1980s, culminating in the publication of *The Birds of Egypt* in 1989. The foundation of the Egyptian Wildlife Service (EWS) in 1979 and of the Ornithological Society of Egypt (OSE) in 1982 facilitated ornithological field studies and led to a better knowledge of the local avifauna, even in remote areas. S. and M.²¹ Baha el-Din's current efforts to evaluate the changes observed in the Egyptian avifauna and to preserve key natural areas provide us with as accurate a picture as possible of the bird world in Egypt today.²²

¹⁹ Meininger and Mullié 1981, p. 5. British Ornithologist R. E. Moreau (1961, p. 376) had estimated that "at 250 [paleartic] migrants to the square mile, the autumn flood of birds setting out for the tropics from west of 34° can be estimated at 600 millions [...] Enormous as are the numbers in transit, it is virtually certain that in recent historical past, they were greater. Habitat destruction, especially marsh, woodlands, and scrubes, and direct human predation, are bound to have an effect." See Moreau 1972 for a species by species review of the Palearctic birds migrating from Europe to Africa.

²⁰ In 1961, R.E. Moreau mentioned the lack of data available on Egyptian avifauna, especially with respects to bird migration. "Even now extremely little about migrants has been recorded from Upper Egypt and hardly any observation from the coast of the Delta at either migration season" (Moreau 1961, p. 406). For a complete review of the research and field work conducted on Egyptian birds, see Goodman and Meininger 1989, pp. 3-7.

²¹ For decades and until her unexpected death from a stroke in 2013, Mindy Baha el-Din dedicated all her energy to raising the Egyptian officials' awareness of the need to protect Egyptian avifauna, constantly under the threat of hunters and poachers and suffering from habitat loss.

²² Baha el-Din 2012

b. Variety of Environments Offered to Birds in Egypt

Currently described as having a predominantly hyper-arid environment, Egypt is located not only along major migratory flyways, but also at the junction of four biogeographical regions,²³ each one being characterized by a specific vegetation cover. The country thus offers a wide variety of habitats suitable for just as varied an avifauna.²⁴ More than 470²⁵ species of birds have been recorded in Egypt, with 150 species being native and breeding in the country.²⁶ The majority of the avifauna observed at various times of the year in the country is composed of non-breeding Palearctic passage migrants and a selection of species that choose to spend the winter months in the Nile Delta and Valley.

S. M. Goodman and P. Meininger describe Egypt as being “a great desert in which the Nile is a thin linear oasis.”²⁷ The desert, or the *Dšr.t*, “Red Land,” as described by the ancient Egyptians, occupies about 96% of the country. The immense expanse of shrubs, escarpments, rocky outcrops with *wadis*, and sandy dunes is not completely devoid of birdlife (see *infra*).

²³ These regions are: Saharo-Sindian; Irano-Turanian (Sinai highlands); Mediterranean (Mediterranean coast) and Afrotropical.

²⁴ Goodman and Meininger 1989, pp. 22-66; Baha el-Din 1999, pp. 13-14: “Egypt’s avifauna is the most diverse and prominent of all the country’s non-aquatic vertebrate fauna.”

²⁵ Baha el-Din 1999, pp. 13-14: “There are no endemic species, though several are sub-species confined to unique Egyptian habitats, such as the Nile Delta and the valley. [...] There are about 18 species with relatively small world distributions, for which Egypt constitutes an important part of their range.”

²⁶ *Ibid.* These 150 species include 90 species of Palearctic affinities, for the most part encountered in the agricultural and semi-desertic areas; 30 species favoring the Saharo-Sindian environment (they may be the most important of Egypt’s native avifauna in terms of global diversity, with their lifestyle adapted to arid environments) and 30 species with strong Afro-tropical influence are observed in the Eastern Desert Mountains and the Red Sea Coast. Some of these latter species also migrate further south during the winter.

²⁷ Goodman and Meininger 1989, p. 23

Nevertheless, the large majority of birds in Egypt are observed near sources of water. I will briefly present the characteristic features of riverine and maritime environments that appeal to significant numbers and a wide variety of birds, followed by an overview of the vast, yet sparsely populated, Egyptian deserts.

i. Wetlands

The Convention on Wetlands of International Importance, also known as the Ramsar Convention, broadly defines wetlands as being “areas of marsh, fen, peat land or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine waters, the depth of which at low tide does not exceed 6 m. It thus includes: lakes and rivers; swamp and marshes; wet grasslands and peatlands; oases; estuaries; deltas and tidal flats; near-shore marine areas; mangrove and coral reefs; human-made sites such as fish ponds, rice paddies, reservoirs and salt pans.”²⁸ Most of these wetland habitats can be encountered in modern Egypt, many of which are supported by the Nile waters, a stark contrast with the overall Mediterranean region, for the most part lacking in marshy environments.²⁹ In fact, 25% of all the Mediterranean wetlands are located in the Northern Nile Delta, further explaining the great attraction of this area for migrating

²⁸ www.ramsar.org: “This Convention on Wetlands (Ramsar, Iran, 1971) is an intergovernmental treaty that embodies the commitments of its member countries to maintain the ecological character of their Wetlands of International Importance and to plan for the “wise use”, or sustainable use, of all of the wetlands in their territories.” Egyptian wetlands are the second most important habitat in term of biodiversity, behind the Red Sea coral reef (Baha el-Din 1999, p. 15).

²⁹ Baha el-Din 2005, p. 63

Palaearctic birds.³⁰ The work of Ornithologists during the past few decades has revealed how crucial these wetlands are, as they support the greatest diversity and density of bird species in the country.³¹ They provide food, breeding grounds, and protection for both resident species and migrating visitors, which use them as staging or wintering areas.³² The three major wetlands encountered in Egypt, along with the main species of birds observed therein are described in Appendix 2 (**Table 29**).

The Nile Valley, the *Khm.t* or “Black land” of the ancient Egyptians, has been settled and exploited since Neolithic times (ca. 5300 BC) and is therefore the habitat most transformed by human actions in Egypt. Today, agricultural fields and urban environments have replaced the native vegetation, which used to grow on the banks of the Nile and in the flood plain.³³ The latest – and also most drastic – stage of this transformation started at the turn of the 20th century and ended with the inauguration of the Aswan High Dam and the creation of Lake

³⁰ Henein 2010, p. 269. The ornithological research conducted in Egypt during the 1980s has led to the conclusion that the importance of the migrating waterbirds populations in the local wetlands places Egypt in the second position behind North America. Egypt thus became a contracting party of the Ramsar Convention on September 9th, 1988, with four Ramsar sites, totalizing 415,532 ha (1,026,800 acres) of preserved wetlands.

³¹ Baha el-Din 1999, p. 15

³² Gilbert 2000, p. 163

³³ Gautier and Van Neer 1989, p. 157: “During several millennia, tree cutting for building or making fuel, overgrazing by small livestock, the irrigation practices of the indefatigable fellaheen, and the introduction of various exotic plants have totally altered the natural vegetation within the boundaries of the Egyptian Nile Valley. In particular, the effects of increasingly elaborate and continuous irrigation have distorted the way we imagine the natural landscape of the valley. Naturally, it must have been appreciably less green and less productive than the huge, elongated oasis that now stretches from Nubia to the Delta.”

Nasser in 1970.³⁴ Prior to the completion of this dam, the arrival of millions of migratory birds from Eurasia in the fall coincided with the beginning of the annual inundation of the Nile River, initiated by the summer monsoon rains in the highlands of Ethiopia. The floodplain of Upper Egypt was ideally fully covered by the end of August. The water would then “spread out through major and minor overflow channels and by breaches across low levees, to spill over into successive flood plains.”³⁵ The flood waters usually reached Lower Egypt and the Delta four to six weeks later. Over the next several weeks and months, silt was slowly deposited in the basins, bringing fertility to the agricultural plain by replenishing the soil with nutrients. Simultaneously, water levels gradually dropped through evaporation, soil infiltration, and natural drainage, revealing mud flats and shallow waters, an ideal feeding ground for the waterfowl and wading birds crossing the Egyptian skies towards their winter grounds at that time of the year. “The first basins in southern Egypt are normally dry by early October, and by late November all but the lowest basin hollows in the northernmost valley are drained, with persistent marsh in isolated, valley margin backswamps³⁶ or in the cutoff, oxbow lakes of

³⁴ The macehead of king Scorpion (Ashmolean Museum AN 1986-1908.E3632) already attests to the desire of the ancient Egyptian to control their environment and especially improve their agricultural possibilities by developing artificial irrigation. “Changes in birdlife exemplify apparently the positive as well as negative effects of the Aswan High Dam on the Nile wildlife. The growth of *Phragmites* and *Typha* plants on sand bars that would have remained bare because of repeated inundation have allowed the breeding range of reed-dwelling birds to expand. Lake Nasser provides breeding habitat suitable for several species of Afrotropical birds (Goodman and Meininger 1989, pp. 31-32). See also Baha el-Din 2012.

³⁵ Butzer 1976, p. 17. As stated by S. M. Goodman and P. Meininger (1989, pp. 29-30), “the large scale conversion of agricultural land from basin to perennial irrigation began after 1800. To retain water and distribute it to summer crops, barrages were constructed on the Nile below Cairo and on 30,000 km of new canals. Increasingly large dams were built on the Nile at Aswan. In 1950, about 15% of Egypt’s cultivated land remained under basin irrigation. The final conversion to perennial irrigation took place with the construction of the Aswan High Dam (beginning 1960).”

³⁶ Backswamps are marshy low spots, mainly located near the desert edge. Some of these ponds were filled by water seepage from the rising ground water table during the Nile flood (Baker and Gautier 1997, p. 58).

abandoned meanders.”³⁷ These temporary wetlands along the Nile Valley, a providential source of water and food so near the arid landscape of the surrounding deserts, would have welcomed a wide variety of native and migratory bird species. Both the Faiyum and the Nile Delta especially displayed perennial swamps, where immense flocks of waterfowl took advantage of the large supply of food and plant cover to spend the winter. Initially exploited during the Neolithic period (see *infra*), these regions continue to be a favored location for hunters, mostly native Egyptians, but also foreign sportsmen capitalizing on the bird migration and the unique bird diversity of the country. “Just how plentiful and comparatively easy water birds (not just water fowl but also wading birds) are to obtain in Egypt can be seen from the fact that, from 1979 to 1986, by a conservative estimate, between 260,000 and 374,000 of them were taken annually, mostly during the winter months, without firearms in the Nile Delta alone, using essentially ancient technology.”³⁸ Furthermore, during fall migration, it is also estimated that a quarter of a million common quails (*Coturnix coturnix*) are trapped along the Egyptian Mediterranean coast.³⁹ Passerines and, to a smaller extent, birds of prey destined to be sold to falconers are also the targets of hunters.⁴⁰

³⁷ Butzer 1976, p. 18

³⁸ Houlihan 2001b, p. 59

³⁹ Baha el-Din 2005, p. 4

⁴⁰ Baha el-Din and Salama 1991

ii. Desert Habitats

The green and fertile Nile Valley is flanked on both sides by arid landscapes, the Western and Eastern deserts, each with its own geomorphological characteristics. One of the most common and also most relevant denominators for these regions is the low density of avifauna inhabiting them. The Western desert, which occupies about two third of the current territory of Egypt, is an especially vast and barren land covered with sand and gravel. A series of depressions in the Nubian sandstone has allowed water to accumulate during the periods of abundant rainfall, and thereby created several oases, the principal ones being, from North to South, Siwa, Bahariya, Farafra, Dakhla, Kharga, Kurkur and Dungul.⁴¹ These sources of water and areas with fertile soil and vegetation have attracted people and animals alike for millennia, and have been inhabited and modified by men ever since.⁴² Recent work on bird migration has also demonstrated that some species travel across the Western desert and use these oases as stopovers during their journey, thus avoiding the Nile Valley all together.⁴³

With a more rugged topography, the Eastern desert is also characterized by a hyper-arid climate, with less than 3 mm of annual rainfall. Series of large *wadis*, or dry river beds, meander through this mountainous region and exhibit enough moisture to support a limited vegetation

⁴¹ Goodman and Meininger 1989, pp. 39-40

⁴² *Ibid.*, pp. 40, 43: "The typical western depression is nearly or completely encircled by steep escarpments," an attractive feature for those who could observe from a vantage view point the wildlife coming to drink. "Its floor, near or below sea-level, is filled with deep alluvial deposits. In some locales, waters carried through the Nubian sandstone break to the surface as artesian springs. In poorly drained low-lying areas of depression floors, excess water accumulates in saline lakes surrounded by salt-marsh vegetation."

⁴³ Moreau 1927; *Ibid.* 1928; *Ibid.* 1934; *Ibid.* 1961, pp. 379-383, 386-390; Pettet 1984; Biebach *et al.* 2000

of desert grasses and shrubs. Sources of fresh water can also be encountered sporadically along the Red Sea coast, a welcome resource for all wildlife, including local and migrant birds, in the harsh environment of this region.⁴⁴ In Egypt's south eastern corner, the mountainous area of Gebel Elba distinguishes itself by the unique and diverse biota that inhabits it. With an altitude culminating at 1,437 m, this region receives as much as 400 mm of rainfall annually, moisture which is often complemented by dew, mist, and clouds covering the mountain. It is the home of 458 species of plants, 23 mammals, 22 reptiles and amphibians and 40 breeding species of birds, including the ostrich (*Struthio camelus*).⁴⁵ "It is the only place in the Eastern Desert of Egypt where the desert looks like a forest."⁴⁶

c. Evolution of the Egyptian Landscape during the Early Holocene (ca. 10,000-3500 BC)

This brief review highlights the variety of ecosystems identified in modern Egypt. Yet, it is undeniable that birds inhabiting this country all year long or passing by during their migratory journey would have encountered drastically different landscapes in the whole region of the Eastern Sahara over the millennia. Some of the changes were due to climatic reasons; others were the results of man's manipulations of his environment. The climatic reconstructions proposed for the early Holocene (ca. 10,000-3500 BC) have yielded clues as to the impact of

⁴⁴ I thank N. Moeller for bringing this fact to my attention.

⁴⁵ Goodman and Meininger 1989, p. 50

⁴⁶ *Ibid.*, p. 51

these changes on the landscape and consequently on the living conditions of the animal and human populations inhabiting the Nile Valley and its surrounding “deserts.”⁴⁷

By the beginning of the Old Kingdom (ca. 2700 BC), the Nile Valley was already surrounded by hyper-arid deserts, just as it is today. Prior to and during the crucial period leading to the formation of the Egyptian state at the end of the 4th millennium, however, the Eastern Sahara had witnessed a more clement and humid climatic phase⁴⁸ during which the Western desert of Egypt was subject to more frequent rainfall favoring the growth of vegetation, in turn leading to an increased variety in the local fauna.⁴⁹ The collaborative research conducted by the University of Cologne in their ACACIA (Arid Climate Adaptation and Cultural Innovation in Africa) and B. O. S. (Besiedlungsgeschichte der Ost-Sahara)⁵⁰ projects has greatly enhanced our knowledge of the palaeoclimatic conditions of the Eastern Sahara, the region’s changing environments, and the various cultures inhabiting it during the late Pleistocene and early Holocene periods. Based on their understanding of the spatial and temporal variations of rainfall in this section of the Sahara during the past 12,000 years, R. Kuper and S. Kröpelin have demonstrated that, ca. 8500 BC, an abrupt 800 km northward shift of the tropical rain belt transformed the Western desert into a semi-arid environment. The

⁴⁷ Krzyzaniak *et al.* 1993

⁴⁸ This period (ca. 7000/6500 – 4000 cal. BC) is often referred to as the Neolithic Subpluvial, also called the Holocene Wet Phase.

⁴⁹ Briois and Midant-Reynes 2010, p. 44

⁵⁰ A 21-volume series entitled *Africa Praehistorica* has been published by the University of Cologne in part to release the results and discoveries of the many projects undertaken in the Eastern Sahara (1989-2011). Additional publications are forthcoming.

monsoon rains favored the development of a savanna-like environment with steppe vegetation. Lakes, both ephemeral and permanent, as well as rivers appeared in the landscape. These bodies of water attracted wildlife (not only large mammals such as elephants, giraffes, gazelles, and bovines, but also water birds,⁵¹ which may have resided at these sites seasonally or permanently, as well as ostriches, guinea-fowl, and sand partridges from the nearby savanna grasslands) and enticed people to settle on their shores.⁵² By ca. 5300 BC, just as it had moved abruptly northward, the rainfall belt shifted back southward. Increasing aridity in the Western desert led to the abandonment of most settlements in this now hostile region and to an *en masse* movement towards the oases and the more welcoming Nile Valley. By ca. 3500 BC, the Western desert had become the hyper-arid region that it is today, with virtually no rainfall in its center (less than 2 mm per year) and less than 30 mm of precipitation per year in its periphery.⁵³

The widespread occupation of the Eastern Sahara prior to ca. 5300 BC had placed the many groups of hunter-gatherers and semi-pastoralists roaming the landscape in frequent contact with the wildlife also living in the semi-arid environment. With the subsequent disappearance of the vegetation ground cover, animals favoring a savanna habitat migrated southwards into Nubia or moved closer to the Nile River. During the 4th millennium BC, the

⁵¹ Gautier, 1980, pp. 285-287, 307; Gautier 1987a, p. 439; Churcher 1999; Churcher *et al.* 1999; Bochenski and Tomek 2001

⁵² Wendorf and Hassan 1980, p. 409; Kuper 1993, p. 221.

⁵³ Kuper and Kröpelin 2006, pp. 803-807

desert edges and *wadis* supported a vegetation abundant enough to attract animals such as ungulates, able graze on the alluvial plain that had yet to be fully claimed for agricultural purposes. The early settlers of the Nile Valley had ample opportunity to observe this desert fauna and familiarize themselves with the different animal behaviors, some characteristics of which became embedded in the rich symbolism already attested during the Predynastic period.⁵⁴ Millennia of man-wildlife frequent contacts ultimately left their mark on the cultures who had lived side by side with these animals in a close predator-prey relationship and who had learned to rely on them for their survival.⁵⁵

A glimpse at the avifauna the early settlers of the Egyptian territory encountered, as well as their interaction with it, can be gathered in part from both the contemporary zooarchaeological and iconographical evidence, which I will review in turn. As D. Brewer rightfully warns researchers, it is important to keep in mind that an accurate census of species abundance for this period cannot be solely deduced from the frequency of representation and of archaeological recovery nor is the recovered data a reliable indicator of their economic significance.⁵⁶ Nevertheless, this evidence remains the only source of information available on the birds that surrounded these early settlers, attracted their attention, and/or filled their game bag.

⁵⁴ Hendrickx 2010, p. 107

⁵⁵ Gauthier 2001, p. 634

⁵⁶ Brewer 2001b, p. 508

After analyzing the clues left by Prehistoric Egyptians giving insight into their interest in and exploitation of wild birds, I will present the feathered game known to have been targeted and captured in Dynastic times. Each source of evidence – zooarchaeological, iconographic, and textual – will first be reviewed independently and subsequently compared to identify possible discrepancies between these various datasets.

2. Diachronic Presentation of the Birds Trapped by Ancient Egyptians

a. The Late Palaeolithic and Neolithic Periods (ca. 20,000-3200 BC)

Until the advent of animal domestication, ancient societies had to rely solely on the wild resources at their disposal to fulfill their needs in meat. As mentioned *supra*, the close contact between prey and hunters led to a thorough knowledge of the prey's behavior and its seasonality. Archaeologist G. Clark, who conducted his research on the subsistence economy of communities of prehistoric Europe with the intention to evaluate the value placed on avian resources, observed that fowling rarely played a role as important as hunting and fishing in the quest for food for most of these communities.⁵⁷ Nevertheless, he was able to ascertain that birds could become a valuable and sought after commodity during certain seasons of the year, especially at times when other sources of food were becoming scarce. Similar conclusions have been drawn regarding the importance of bird hunting in Egypt during the Late Palaeolithic period. P. Baker and A. Gautier's examination of the animal remains collected at a selection of sites dated from the Kubbaniyan period (ca. 17,000-15,000 BC) has revealed that "the major

⁵⁷ Clark 1948, p. 116

economic activities focused on a strategy of exploiting a variety of seasonally variable foods, with fish, marshland plants, winter birds, and shellfish as the important food resources utilized.”⁵⁸

Eager to obtain an optimal yield, the prehistoric hunter was indeed influenced by multiple factors when catching birds for food, including the weight of the prey, its social behavior (solitary bird vs. flock), its mobility (how quickly and easily the bird could elude capture), the non-food benefits (mostly feathers, but in some cases also fat and bones), and the technology required.⁵⁹ Birds, by their very nature, are challenging targets for hunters because of their ability to take flight and rapidly escape. They are also relatively small in size and provide little meat in comparison with mammalian game, whereas significant time and effort are necessary to hunt and process them.⁶⁰ Nevertheless, the seasonal and reliable arrival of massive flocks of birds counterbalanced the challenges encountered when attempting to capture these elusive creatures and the relatively low yield of meat acquired even after a successful expedition.⁶¹ It has been noted that birds tend to change their social behavior during

⁵⁸ Baker and Gautier 1997, p. 58

⁵⁹ Serjeantson 2009, p. 230

⁶⁰ *Ibid.*, p. 233

⁶¹ As D. Serjeantson (2009, p. 231) noted, “size has been an important criterion in the selection of birds for food. [...] Birds below 1 kg in weight provided enough meat for a group larger than a nuclear family, and a bird below about 200 g such as a snipe or a thrush is insufficient even for a single individual. To provide a significant quantity of food, birds smaller than about 200 g have to be caught in large numbers, hence the importance of birds which can be caught in a flock.”

the winter, even if they did not migrate. Because of the limited supply of food, they tend to congregate in large flocks, making them more attractive targets for fowlers.⁶²

In spite of the favorable conditions in Egypt for the preservation of many organic artifacts such as papyri and wooden objects, the fowling implements which had been devised during this era have not survived the millennia or have yet to be identified. Clues as to the importance of birds and their capture by prehistoric Egyptians can nevertheless be estimated from the iconographical and zooarchaeological evidence, complemented by ethnographic studies of birds caught in the region. While this dissertation is for the most part centered on the exploitation of live avian resources during the historical period, it is nonetheless crucial to evaluate how the prehistoric societies of Egypt were impacted by the abundant and varied avifauna around them. As remarked by D. Huyge, “Pharaonic culture was a gradual outgrowth of indigenous prehistoric traditions.”⁶³ Was the Predynastic period also formative with regards to the way the ancient Egyptians apprehended wildlife and exploited it, possibly seeing it as a valuable resource? To evaluate the economic importance granted to birds during this period, I will first analyze the faunal remains discovered at prehistoric sites both in the Western desert and in the Nile Valley, in search for evidence of bird capture. I will compare these findings with the depictions of birds in the art of the period, from the petroglyphs covering the cliff faces of the *wadis* of the Eastern and Western deserts to the avian representations on a variety of artifacts from the Late Predynastic period, from pottery to palettes.

⁶² *Ibid.*, p. 15

⁶³ Huyge 2009, p. 8

i. Faunal Remains⁶⁴

Significant quantities of faunal remains have been discovered in Egyptian sites dated from the Late Pleistocene and Early Holocene periods (ca. 10,000-3500 BC). The challenge met by Zooarchaeologists⁶⁵ is thus not the lack of material with which to work, but rather the frequent inability to identify the various taxa represented by small bone fragments. Specialists of avian remains deal with additional trials, which are tied to the nature of their working material. Bird bones are often unevenly and infrequently recorded in archaeological reports and at best only represent a small percentage of the faunal remains identified and catalogued. The reasons for this discrepancy are many. The adaptation of the avian skeleton to flight – the thinning and lightening of the bone cortex, along with the pneumatisation of part of this skeleton⁶⁶ – further contribute to the fragility of birds' bones. They do not always survive food preparation and consumption⁶⁷ and are greatly damaged by taphonomic processes⁶⁸ after

⁶⁴ It is important to keep in mind that, in most cases, faunal assemblages are composed of the bones of large mammals: at first, wild ungulates such as aurochs, hartebeest and gazelles, later to be replaced by domesticates most especially ovicaprids and bovines. In Lower Egypt, the hippopotamus is also a relatively common find. When recovered, the number of bird bones is frequently quite low. In some instances, Zooarchaeologists expect that much loss in avian bones has taken place, a hypothesis which should be taken into consideration for the final evaluation of the exploitation of animals at any site (Boessneck and von den Driesch 1989; Gilbert 2000, p. 163).

⁶⁵ American nomenclature. This subfield of archaeology is named archaeozoology in Europe.

⁶⁶ Proctor and Lynch 1993, p. 117: "Although birds share a similar skeleton plan with all other advanced vertebrate, their skeletons have been heavily modified to meet the demands of flight. Birds have evolved both a strong skeletal framework characterized by extensive fusion of bones for rigidity and a unique system of hollow 'pneumatic' bones interconnected with the respiratory system." The bone cortex is also thinner and lighter than that of mammals. Just like the pneumatic nature of the avian skeleton, this light bone cortex is a further adaptation to flight (Serjeantson 2009, pp. 17-18).

⁶⁷ Gilbert 2000, p. 171; Serjeantson 2009, pp. 130-164.

⁶⁸ Gautier 1987b; Gilbert 2002, p. 8; Döhle 2005, p. 111; Serjeantson 2009, p. 58. Taphonomy is a term used by Zooarchaeologists to encompass all the changes that take place after the death of an organism (animal or vegetal)

deposition, especially in a desert environment.⁶⁹ Being prone to fragmentation, bird bones are often missed,⁷⁰ disregarded, or discarded during excavation. The bones may also have become so fragmentary as to be unidentifiable.⁷¹ Therefore, their representation at archaeological sites is heavily biased and the absence of birds, while at times real, may also be due to the choice of recovery methods of the excavation rather than the lack of their exploitation by the local populations.⁷² Moreover, as noted by D. Brewer, “archaeological work conducted on prehistoric wild terrestrial fauna is uneven with respect to regional coverage. It is difficult to draw definite conclusions concerning human-animal relationships for periods earlier than Predynastic. Most

and affect its preservation. The term diagenesis applies to the physical and chemical changes imposed by long-term burial.

⁶⁹ Pöllath 2009, p. 84. Subjected to wind and sun exposure, bones rapidly become desiccated, leading to fragmentation into small splinters. In such contexts, bird remains are often poorly preserved and the precise identification of the species, even the genus, is frequently impossible. In the Nile Valley, when the remains are imbedded in the soil and protected by some vegetation cover, the bones have suffered less from the destructive effects of the elements. However, the problems with rising ground water in the Delta have also had an impact on the preservation of bones. Fish and bird bones become especially friable and are often recovered as unidentifiable fragments (Boessneck and von den Driesch 1989).

⁷⁰ The paucity of bird remains collected can also be due to the hazard of the sampling strategy applied at the site. This is especially the case whenever bone remains are simply collected by hand and sieving is not implemented.

⁷¹ It should be noted that the paucity of Zooarchaeologists specialized in avian remains often requires that bird skeletal debris be sent away for further study. As A. Gautier (2001, p. 610) himself experienced when working with samples collected in the region of Nabta Playa and Bir Kiseiba, these remains sometimes get lost and may never be returned to the archeologists. In many instances, zooarchaeology reports mention the presence of bird bones, without qualifying their origin, either anthropogenic or natural, thus preventing further analysis. It clearly demonstrates how easy it is for bird bones to be overlooked or misidentified. One cannot help but wonder how many bird bones from Egyptian sites are currently waiting for identification in storage rooms in Egypt, in zooarchaeology laboratory, and in museums.

⁷² Serjeantson 2009, p. 393; Garrard *et al.* 1999, p. 65. “Remains of birds, especially passeriforms, were not yet thoroughly studied, or samples were too small to permit a meaningful study.” Furthermore, it is important to emphasize that the real relative importance of consumed animals will always remain imprecise since it is difficult to estimate the differential destruction of each groups of faunal remains. In spite of all these challenges, W. Van Neer (2002, p. 537) believes that “même si on ne parvient pas à reconstituer parfaitement la composition de la faune originelle, il est possible de comparer des contextes si on accepte que les conditions de préservations (et les méthodes de récolte) aient été identiques partout sur le site ou au sein d’un seul secteur.”

of the available evidence about Palaeolithic hunting economies has come from the Western desert.”⁷³ The various obstacles listed above do not allow for a precise, quantitative, and global evaluation of the importance of birds in the food procurement strategies implemented by Prehistoric Egyptians. Nevertheless, while only yielding a partial picture, the available data help researchers reach a better understanding of the role of birds in the economic life of the various communities under study.

Bird remains are not limited to bones, but also include feathers, eggshell, and gizzard stones.⁷⁴ When such remains have been recovered and collected at an archaeological site, the next challenge for Zooarchaeologist is to identify their origin. They can be qualified as being:

- **Intrusive/accidental**, i.e. not related to the occupation period under study, or deposited at the site naturally, without any intentional human interventions (for example, remains of birds of prey’s meal or animals dying naturally at the site). When these intrusive remains date to the period under study, they are qualified as being penecontemporaneous. Intrusive remains are of special interest when attempting to identify the palaeo-environment and habitats encountered near the excavated site.
- **Anthropogenic**. When discovered in association with material culture and/or depictions, faunal remains are direct physical evidence of the use of the corresponding animals by

⁷³ Brewer 2002, p. 428

⁷⁴ Serjeantson 2009, p. 3

ancient Egyptians.⁷⁵ The analysis of such remains potentially sheds some light on the subsistence strategy and husbandry systems of the sites' inhabitants. They are most often "consumption offal"⁷⁶ and remnants of faunal material used for making various objects and such object themselves."⁷⁷ When discovered in a religious or funerary context, these remains may represent the remnants of offerings or animal burials.⁷⁸ In the case of food refuse, human modification may be visible on the bones, in the form of cut marks, human chewing, and burning. A thorough analysis of these remains may answer some of the questions that arise when dealing with such findings:

- Was the animal killed or scavenged?
- If the bird was hunted, was the main purpose of the chase the provision of food, feathers, or other by-products?
- Were the animals' carcasses processed at the settlement or at the kill site? This question is especially relevant in the case of the ostrich.
- For later periods of Egyptian history, are the remains those of wild or domestic species? This point is especially relevant when analyzing the remains of *Anseridae* (geese and ducks). To avoid misidentifications, it also becomes

⁷⁵ Linseele and Van Neer 2009, p. 49

⁷⁶ Offal is defined as being the parts of a butchered animal that are considered inedible by human beings; carrion; parts of a butchered animal removed in dressing; viscera.

⁷⁷ Gautier 2001, p. 630

⁷⁸ Linseele and Van Neer 2009, p. 49

important to consider “to which extent the natural environment of the site met the ecological and physiological requirements of the species identified.”⁷⁹

While penecontemporaneous intrusives may give some indication on the type of environment present at the site during the period of occupation, only anthropogenic remains reveal which kind of birds had been targeted by the site’s inhabitants and used for pragmatic purposes. Being able to clearly differentiate these two categories of remains is a constant challenge for Zooarchaeologists and is rarely devoid of bias on their part. Unlike mammals, birds were processed to a much lesser extent for human consumption. They were not skinned and only the larger species of birds were butchered. Cut marks, a clear indication of human intervention, are therefore rarely identifiable or visible on bird bones.

As aforementioned, because of the uneven character of the faunal record in terms of territorial coverage,⁸⁰ it is unrealistic at this stage of the research to draw some definitive conclusions concerning the economic interest in birds for these early periods. The evidence recovered thus far for the Palaeolithic period in the Eastern Sahara indicates that large mammals were the favored preys, in particular aurochs and hartebeests in the Nile Valley, and (dorcas) gazelles in the desert.⁸¹ Nearer the Nile Valley, such as the sites excavated in the Wadi Kubbaniya, the lower density of large ungulates grazing near the river may have motivated

⁷⁹ Döhle 2005, p. 112

⁸⁰ Pöllath 2009, p. 85: “The differential identifiability of material from desert and Nile Valley sites also hampers the comparability of these materials.”

⁸¹ Linseele and Van Neer 2009, p. 47

Palaeolithic hunters to target more predictable quarries.⁸² Fish was thus the second source of proteins, especially for the groups living in the Faiyum, where more than 70% of the faunal assemblage recovered consisted of fish remains.⁸³ It is also attested that Late Palaeolithic hunter-gatherers took advantage of the rich and abundant avifauna. The number of bird bones recovered yields too small a sample to determine whether fowling was opportunistic, whether it involved one or more hunters at a time, or which type of equipment was used. Yet, it is clear that birds were hunted alongside mammals in the Western desert and captured during fishing expeditions near the Nile River.⁸⁴ Since most avian skeletal remains collected for this period are very fragmentary, Zooarchaeologists are solely able to safely identify the birds at the family level; only in a few instances can the genus and species be proposed. The most common birds identified in the assemblages dated from the Palaeolithic period in Egypt are listed in the following table.⁸⁵

⁸² Gautier and Van Neer 1989, pp. 158-159

⁸³ Brewer 1986

⁸⁴ Gautier and Van Neer 1989, pp. 158-159. As identified by P. Baker and A. Gautier (1997, p. 59), “the third important food resource in the Kubbanian sites was winter birds, particularly ducks and geese, and they were taken in great quantities, presumably during the fall and winter months. It is interesting to note that by weight the bones of the winter birds exceeded those of the large mammals.”

⁸⁵ See Appendix 3, **Table 31** for a detailed list of the birds remains recovered at Prehistoric sites.

Table 2. Summary of the bird remains recovered at Palaeolithic sites in Egypt

<i>Bird Type</i>	<i>Current Status in Egypt^a</i>	<i>Frequency^b</i>	<i>Location of recovery</i>
Ostrich (<i>Struthio camelus</i>)	RB	Eggshell Fragments: F Bones: R	Kom Ombo, Abu Ballas, Gifl Kebir, Selima Sandsheet
Little Grebe (<i>Tachybaptus rufficollis</i>)	RB, WV	F	Nile Valley; Wadi Kubbaniya
Family <i>Podicipedidae</i> - Grebes	Most species are WV	R	Nile Valley
Cormorant (<i>Phalacrocorax carbo</i>)	PV, WV	R	Nile Valley
White Pelican (<i>Pelecanus onocrotalus</i>)	PV, WV	R	Nile Valley
Family <i>Ardeidae</i> - Egrets and Herons	Most species are RB, with additional WV from Eurasia	R	Nile Valley, Wadi Kubbaniya
Spoonbill (<i>Platalea leucorodia</i>)	RB, PW, WV	R	Nile Valley
Family <i>Anatidae</i> – Swans, Ducks and Geese	Most species are PV, WV	F	Nile Valley, Wadi Kubbaniya
Common Quail (<i>Coturnix coturnix</i>)	PV, WV	R	Nile Valley
Family <i>Rallidae</i> – Rails, Crakes, Coot, Moorhen and Gallinule	Crakes: PV, WV Moorhen: RB, PV, WV Gallinule: RB Coot: RB, WV	F	Nile Valley, Wadi Kubbaniya
Family <i>Gruidae</i> – Cranes	PV	R	Nile Valley

^a Abbreviations based on Goodman and Meininger 1989, p. 15. MB: Migrant Breeder; RB: Resident Breeder; AV: Accidental Visitor or Vagrant; PV: Passage Visitor; WV: Winter Visitor

^b F: Frequent; R: Rare

The majority of the birds identified can be characterized as water birds, i.e. living on or near water, with a predominance of members of the *Rallidae* family, most likely represented by the coot, as well as little grebes and a variety of *Anatidae* (ducks⁸⁶ and geese). Most of these birds are currently passage migrants and winter visitors in Egypt, thus suggesting that Palaeolithic hunters occupied the excavated sites seasonally and hunted the local avifauna

⁸⁶ The different taxa of ducks are renowned for being difficult to differentiate because of the large extent of overlap in the measurements of the bones of the different species.

during the fall and winter months, possibly from October to March.⁸⁷ Birds were exploited alongside other major food resources, such as small mammals, fish, soft-shelled turtles, mollusks, and plants.⁵⁸

During the Neolithic period (5th millennium BC), as the resources of the desert were becoming scarcer and living conditions harsher, the various groups of pastoralists who had formerly flourished in the Western desert settled closer to the Nile Valley and favored animal husbandry (ovicaprids, cattle, and pigs) over the exploitation of wild mammals as a source of food and valuable secondary products.⁸⁸ Hunting large wild animals, more scarcely found in Egypt than in the previous period, seemingly became a prerogative of the elite, as revealed by the discoveries of animal remains in locality HK29A and cemetery HK6 in Predynastic Hierakonpolis.⁸⁹ On the other hand, fishing became a predominant activity practiced year round and provided the main source of protein for the majority of the Egyptian population.⁹⁰ Yet, fish continued to be complemented by some of the birds captured along the Nile Valley, in the food plain, or by the river banks.⁹¹ The bird remains recovered at sites dated from the Neolithic period are presented in the following table:⁸⁵

⁸⁷ Gautier 1987; *Ibid.* 1988; Gautier and Van Neer 1989, p. 160; Wendorf *et al.* 1997, pp. 58-59; Midant-Reynes 2000, p. 53.

⁸⁸ Kuper and Kröpelin 2006, p. 806; Linseele and Van Neer 2009, pp. 54-56

⁸⁹ Linseele and Van Neer 2009, pp. 56, 62-63; Linseele *et al.* 2009

⁹⁰ Brewer 1986; von den Driesch 1986; Boessneck and von den Driesch 1989, p. 95; *Ibid.* 1994; Van Neer 2002; Gautier and Van Neer 2009

⁹¹ Van Neer 2002, pp. 536-537

Table 3. Summary of the bird remains recovered at Neolithic sites in Egypt

Bird Type	Current Status in Egypt^a	Frequency^b	Location of recovery
Ostrich (<i>Struthio camelus</i>)	RB	Eggshell Fragments: F Bones: R	Merimde, Maadi, Omari, Faiyum region, Naqada region, Armant region, Adaima
Little Grebe (<i>Tachybaptus rufficollis</i>)	RB, WV	R	Faiyum
Cormorant (<i>Phalacrocorax carbo</i>)	PV, WV	R	Merimde
African Darter (<i>Anhinga rufa</i>)	AV	R	Merimde, Faiyum
White Pelican (<i>Pelecanus onocrotalus</i>)	PV, WV	R	Merimde
Family <i>Ardeidae</i> – Bitterns, Egrets and Herons	Most species are RB, with additional WV	R	Merimde, Tell es-Iswid, Omari, Naqada, Armant region, Adaima
Family <i>Ciconiidae</i> - Storks	Most species are PV	R	Naqada region, Adaima, Nabta Playa
Goose Species (<i>Anser</i> sp.)	Most species are WV, AV	F	Merimde, Maadi, Omari, Faiyum
Large Dabbling Ducks (<i>Tadorna</i> sp., <i>Alopochen aegyptiaca</i> , <i>Plectropterus gambesii</i>)	Most species are PV, WV <i>Alopochen aegyptiaca</i> : RB	R	Omari, Nabta Playa
Middle-sized Dabbling Ducks (<i>Anas penelope</i> , <i>A. strepera</i> , <i>A. acuta</i> , <i>A. platyrhynchos</i>)	Most species are PV, WV	F	Merimde, Maadi, Tell es-Iswid, Buto, Omari, Faiyum, Hierakonpolis Cemetery HK6
Small Dabbling Ducks (<i>Anas crecca</i> , <i>A. querquedula</i> , <i>A. clypeata</i>)	Most species are PV, WV	F	Merimde, Maadi, Tell es-Iswid, Buto, Omari, Faiyum, Hierakonpolis Cemetery HK6, Nabta Playa
Diving Ducks (<i>Aythya ferina</i> , <i>Ay. Ferina</i> , <i>Ay. Fuligula</i>)	Most species are PV, WV	R	Merimde, Maadi, Buto, Faiyum regiob, Nabta Playa
Common Quail (<i>Coturnix coturnix</i>)	PV, WV	R	Merimde, Omari, Naqada, Nabta Playa
Helmeted Guineafowl (<i>Numida meleagris</i>)	AV	R	Nabta Playa
Family <i>Rallidae</i> – Rails, Crakes, Coot, Moorhen and Gallinules	Crakes: PV, WV Moorhen: RB, PV, WV Gallinule: RB	F	Merimde, Adaima, Nabta Playa
Family <i>Gruidae</i> – Cranes	PV	R	Merimde, Maadi, Naqada region, Nabta Playa
Doves and Pigeons (<i>Columba</i> and <i>Streptopelia</i> sp.)	Rock Dove: RB Turtle Dove: MB, PV Palm dove: RB	R	Naqada, Hierakonpolis Cemetery HK 6, Adaima

^a Abbreviations based on Goodman and Meininger 1989, p. 15. MB: Migrant Breeder; RB: Resident Breeder; AV: Accidental Visitor or Vagrant; PV: Passage Visitor; WV: Winter Visitor

^b F: Frequent; R: Rare

The birds dominating the Neolithic and Predynastic faunal assemblages are, as in the Palaeolithic period, water birds that hunters would encounter nearby or on the Nile River, in swamps and flooded land that appeared throughout the country during the annual flood in the autumn and remained for several of the winter months. The variety of species recovered, seemingly wider than what had been observed for more ancient sites, may simply be the result of the hazards of preservation and the choice of recovery methods employed at these sites. It thus appears that ducks and geese continued to be of special interest, and hunters also added cormorants, darters, herons, and egrets to their game bags. It is possible, however, that the latter birds, known to be great consumers of fish, had been hunted because of their competing with fish harvesting.⁹² If this was the case, their flesh may not have been consumed. Some of these birds may also have been hunted not only for meat but also for their attractive feathers.⁹³ Moreover, the site of Nabta Playa yielded several remains of birds encountered in drier habitats, such as the guinea fowl (*Numida meleagris*), otherwise extremely rare in the faunal record of Egypt. Ostrich eggshell continues to be frequent at Predynastic sites all along the Nile Valley.⁹⁴ For the most part, Zooarchaeologists express doubt as to this large desert bird being

⁹² Gautier and Van Neer 1989, p. 159; Döhle 2005, p. 123

⁹³ As noted by W. Van Neer (2002, p. 536), “il n’est pas toujours facile de déterminer s’ils (les oiseaux) ont été capturés pour la consommation ou si certaines espèces ont servi pour les plumes ou si elles ont simplement été tuées parce que leur présence dans l’aire d’habitation était considérée comme nuisible (le milan et le corbeau).”

⁹⁴ Muir and Friedman 2011, pp. 584-588

the object of the hunt, since its bones have been unearthed very infrequently. It is only attested at Merimde Beni Salame and a few sites in the Eastern Sahara.⁹⁵

At Hierakonpolis, the discovery of some avian remains in the cemetery HK6 (Naqada IC-IIB)⁹⁶ and the ceremonial center HK 29A (Naqada IIB-C) revealed that the capture of birds⁹⁷ was not limited to providing a supply of food but had already acquired a ritual purpose. It has been posited that the wild animals recovered at HK29A were the remains of sacrifices symbolizing the ritual destruction of chaos and/or enemies, while the birds deposited in tomb 16 of HK6 were offered to deities and /or the dead, practices which are both well attested for the historic period.⁹⁸

Prehistoric sites in Egypt have also yielded a few remains of birds of prey: black kite (*Milvus migrans*) in the Paleolithic Nile Valley and in Neolithic Buto and Adaima; lappet-faced vulture (*Torgos tracheliotus*) in Neolithic Maadi; goshawk (*Accipiter gentilis*) and sparrowhawk (*Accipiter nisus*) in Neolithic Adaima; imperial eagle (*Aquila heliaca*) in Neolithic Maadi. While these remains may be intrusive, i.e. the death of these birds was not at the hand of the

⁹⁵ Boessneck and von den Driesch 1990; Gautier and Van Neer 2009

⁹⁶ Van Neer *et al.* 2004, p. 101: "Tomb 16 (in cemetery HK 6) is the only tomb that yielded a number of bird bones attributable to several species, but they are represented by only one or two remains each. These specimens include turtle dove (*Streptopelia turtur*), a duck (*Anas* sp.) of the size of a green-winged teal (*Anas crecca*), and cattle egret (*Bubulcus ibis*)."

⁹⁷ At least 13 species were identified.

⁹⁸ Linseele and Van Neer 2002, p. 7; *Ibid.* 2009, pp. 56, 63; Van Neer *et al.* 2004, pp. 121-124

settlers, it is also possible that they had been targeted for their tail and wing feathers, which could have been used as fletching on arrows.⁹⁹

ii. Iconography¹⁰⁰

In addition to the faunal remains that may constitute a testimony of their exploitation of the local avifauna, prehistoric Egyptians also left evidence of their activities in the form of a diverse material culture. Scenes have been etched on rock surfaces in the Eastern and Western deserts. One tomb still exhibits the remains of wall paintings. Pottery, palettes, ivory objects, and stone vessels were also the media through which ancient Egyptian artisans manifested their interest in the wildlife surrounding them, be they large mammals such as wild cattle and antelopes, or ostriches and various water birds. Although a wealth of evidence is available for the periods preceding the rise of the Egyptian state (ca. 3200 BC), the analysis and decoding of the possible message conveyed in these millennia old representations are no easy tasks for modern researchers. In many instances, the presence of birds in these scenes does not appear to have a specific purpose other than identifying the environment in which the main action takes place. It is also possible that, in some instances, their symbolic value and their function as potential game have yet to be determined. It is clear, however, that these various avian forms had caught the eye of and had been observed by the Egyptian craftsmen and artists, who manufactured these artifacts. I will review the various categories of representational evidence

⁹⁹ Döhle 2005, p. 123

¹⁰⁰ Falcon and vulture iconography is not going to be considered in this essay because of their well-established association with kingship and religion, as mentioned in the Introduction.

that survived from this period, placing special emphasis on the depiction of birds targeted by prehistoric hunters.

1. Rock Art¹⁰¹

Egyptian rock art can be defined as “non-utilitarian anthropic markings on natural rock surfaces, made either by additive process (pictogram) or by a reductive process (petroglyph), within a planned decoration program.”¹⁰² These representations, present both along the Nile Valley in Upper Egypt and in Nubia, as well as in areas of the Eastern and Western deserts, are notoriously difficult to date. The laborious research conducted by rock art specialists during the past three decades has revealed that a large majority of the petroglyphs identified in Egypt were designed by members of Predynastic cultures immediately prior to the birth of the Pharaonic state and should thus be assigned mainly to the 4th millennium BC.¹⁰³ The earliest representations of birds in rock art, however, are significantly older. They have recently been identified at the site of Qurta along the northern edge of the Kom Ombo plain and are attributed to members of the Ballanan-Silsilian culture exploiting the resources of the area

¹⁰¹ See Huyge 2009, pp. 9-12 and Morrow *et al.* 2010, pp. 250-251 for detailed bibliographical lists on rock art in Egypt.

¹⁰² Bednarik *et al.* 2003, p. 16, as cited in Huyge 2009, pp. 1-2

¹⁰³ Huyge 2009, p. 6. See also Morrow *et al.* 2010, pp. 16-22. These drawings take the form of engravings, pecks, scratches, and incisions. Researchers rely on comparative dating methods: they evaluate the identity of the fauna represented, the difference in patination amongst the various representations; they also compare with artifacts displaying similar iconography. Finally, contextual and stylistic dating is applied, by taking into consideration the location and petroglyphic history of the site. Absolute dating is possible, yet difficult and expensive at this time. For example, Huyge used AMS (Accelerator Mass Spectrometry) on some of the petroglyphs he studied and ¹⁴C dating on some organic substances trapped in the incisions of the petroglyphs at El-Hosh and Qurta.

approximately 15,000 years ago.¹⁰⁴ On the rock faces of the Nubian sandstone cliffs located on the East bank of the Nile, approximately 180 individual images have been incised. Whereas bovine motifs are the most common, a few birds figure among these vignettes of the local wildlife.¹⁰⁵ They are for the most part Anatids (ducks and geese), and possibly also a pelican (*Pelecanus* sp.) or spoonbill (*Platalea* sp.), birds which can all be assigned to a riverine environment.¹⁰⁶ It is conceivable that hunters depicted on these cliffs the animals they wish to capture, as they were surveying the area from their elevated shelter. Is it “hunting magic” or are these early depictions of wild animals already expressions of cosmological symbolism and power ideology, as suggested by D. Huyge?¹⁰⁷ Any interpretation of these early representations, which seem devoid of any narrative, can only remain speculative at best.

Several millennia later, during the 4th millennium BC, the focus of the Egyptians leaving the numerous avian depictions in the Western¹⁰⁸ and Eastern¹⁰⁹ deserts and along the margins

¹⁰⁴ Huyge 2008, p. 287 fig. 7; *Ibid.* 2009; Huyge and Claes 2009; Huyge and Ikram 2009

¹⁰⁵ Huyge and Ikram 2009, p. 159. “Over 83% of the animals represented in the Qurta rock art belong to the bovine category.” The next most frequent animals depicted are birds (6% of the total assemblage).

¹⁰⁶ Huyge and Ikram 2009, pp. 162-164

¹⁰⁷ Huyge 2002, pp. 202-204

¹⁰⁸ Winkler 1938-39; Graziosi 1942; Rhotert 1952; Huard 1965; Darnell 2002

¹⁰⁹ Rohl 2000; Lankester 2008; Judd 2010; Morrow *et al.* 2010. D. Huyge (2009, p. 6) suggests that “the Eastern Desert rock art was the work of “proto-Bedouin” – that is nomads who resided in the desert on a semi-permanent basis, but were in regular contact with Nile Valley dwellers and had an intimate knowledge of the natural and cultural environment.”

of the Nile Valley shifts from a riverine environment to the surrounding deserts.¹¹⁰ The majority of the birds identified in the rock art of the Predynastic period are to a large extent ostriches, easily recognizable by their long erect neck and legs, the oval shape of their body, and the relatively small bean-shaped head. They are often represented in the company of other desert animals, such as wild cattle, gazelles, and ibexes, either as a single bird or as part of a flock, which can include as many as 30 individuals.¹¹¹ In a few scenes, an ostrich with its wings deployed can be seen attempting to escape the attack of a hunting dog.¹¹² Other depictions include hunters pointing bow and arrows or a throwstick towards a fleeing bird (**Figure 7**).¹¹³ A third set of scenes is characterized by birds being restrained, either by having both their legs tied with a rope,¹¹⁴ or one foot caught in a noose.¹¹⁵ While a statistical analysis of the frequency of ostrich iconography vs. that of other wild game is beyond the scope of this dissertation, an overview of the published petroglyphs reveals that ostriches were a relatively frequent motif included in these representations. For the most part, the large birds belong to the backdrop in

¹¹⁰ Hendrickx 2010, p. 107 n. 2: “Le terme ‘animaux du désert’ désigne non seulement les animaux vivant dans le désert Oriental et le désert Occidental de l’Égypte mais surtout les animaux qui évoluent en dehors de la plaine alluviale – le bas-désert – et qui souvent dépendent des ressources en eau. Il faut, de plus, considérer que pendant le 4^e millénaire la limite entre le désert et la plaine alluviale n’était pas aussi nette que pour les périodes plus récentes. Le bas-désert et surtout les wadis, d’un côté, étaient encore couverts de végétation, alors que la plaine alluviale, de l’autre côté, n’était pas encore intégralement cultivée. L’homme était encore alors très proche à cette époque de la faune du ‘désert’.”

¹¹¹ Lankester 2008, p. 98; Morrow *et al.* 2010, *passim*

¹¹² Rhotert 1952, pl. 11.4-8, 12.3

¹¹³ Winkler 1938, pl. 23.3; Rhotert 1952, pl. 11.5-6, 12.2; Rohl 2000, *passim*

¹¹⁴ Rohl 2000, p. 91; Hendrickx *et al.* 2009, pp. 200 (fig. 14), 204 (fig. 170)

¹¹⁵ Winkler 1939, pl. 33.1; Rhotert 1952, pl. 12.4

which the main action – usually the capture and chase of large ungulates – is taking place. Either flocks of young males or families of adult birds with their chicks are witness to the hunt. It has been proposed that “animals depicted in rock art are taken to represent species that were familiar to the artists because they were indigenous at the time when the images were drawn, although it is not inconceivable that in some cases later artists may have copied earlier work. [...] It is possible that some of the carvings commemorate abnormal and apparently anachronistic events.”¹¹⁶

S. Hendrickx believes that rock art representations are testimony to the frequent hunting excursions into the Western and Eastern deserts during the late Predynastic period and can be “considered as a direct illustration of what actually happened at a particular place in the desert, unlike the hunting scenes on other media. In some cases, the rock art sites coincide with very favorable hunting locations, facilitating an interpretation of the rock art as occurring in the context of hunting expeditions.”¹¹⁷ He also argues that many of these hunting sites were located far out in the desert, at a distance from the Nile Valley that could not be covered in one day. The paucity of desert animal remains recovered at Predynastic settlements located in the Valley (see *supra*) has revealed that the inhabitants of these villages did not rely on these hunting expeditions to acquire the meat needed to fulfill their need in animal proteins. Domestic mammals and fish caught in the river and alluvial plain during the flood, more reliable

¹¹⁶ Morrow *et al.* 2010, p. 16

¹¹⁷ Hendrickx 2013, p. 250

and accessible, had supplanted the previous heavy reliance on wild game.¹¹⁸ On the other hand, as S. Hendrickx proposes, these hunting ventures into the inhospitable and potentially merciless desert environment organized by members of the ruling class, who exploited these opportunities to showcase their martial skills and bravery.¹¹⁹ Proof of their mastery over the symbolic forces of chaos roaming the desert and embodied in the wild game, as suggested by S. Hendrickx,¹²⁰ may have been seen in the distinguishing feathers adorning their headdress and the tail tied to their belts,¹²¹ or the carcasses brought back for ritual consumption. However, it cannot be excluded that some of the rock art may also record the hunting exploits of hunters from semi-nomadic groups settled in the oases of the Western desert.

Such hypotheses would suggest that the hunters responsible for the many scenes attested in the Eastern Sahara had the opportunity to observe ostriches in their natural habitat, at a time when more frequent and heavier rainfall had turned this region into a savannah landscape, the habitat of choice for these large land birds. Some hunters may have targeted ostriches using bows and arrows, a hunting technique well attested in prehistoric Egypt.¹²² The

¹¹⁸ Linseele and Van Neer 2013; Lesur 2013

¹¹⁹ Hendrickx 2010; *Ibid.* 2013, p. 253; Lesur 2013, p. 34

¹²⁰ Hendrickx 2013, p. 256

¹²¹ These adornments are especially well attested on the Hunters' Palette (British Museum EA20790 and Louvre E 11254). On this artifact, a large group of hunters is represented brandishing their weapons in the midst of wild animals, many of which have already been hit by multiple arrows. All these men wear a feather in their hair, and display an animal tail attached to the back of their kilt. A few hunting dogs provide additional help and chase wild game such as ostriches.

¹²² Riemer 2009, p. 178: lithic arrowheads have been discovered in archaeological assemblages of this period. It has also been suggested, based on representations carved in the Libyan Desert, that prehistoric hunters also used large nets to capture ostriches (Wheye and Kennedy 2008, pp. 18-19, pls. 10-11).

representation of an ostrich with its leg(s) caught in a trap, most likely intended to capture a gazelle or other mammals of the desert, possibly commemorates an opportunistic and unexpected capture.¹²³ As aforementioned, based on the frequency of the representations of ostriches in Egyptian prehistory, the bird was seemingly a familiar sight and an attractive quarry for hunters who wished to capture it in part for its remarkable feathers. A successful capture would represent quite a feat on the part of the hunter, since these fast running birds are known to reach speeds of 60-70 km per hour when pursued by a predator.¹²⁴ Moreover, it is possible that, during these hunting expeditions, opportunities arose to gather ostrich eggs from nests that members of the expedition chanced upon during their journey.

It is important to keep in mind, however, that the birds incorporated in petroglyphs are far from being representative of the variety of bird life that was likely to surround the Late Palaeolithic and Neolithic inhabitants of the Eastern Sahara and Nile Valley, at a time when a more humid climate was propitious not only to Palearctic migrants but also a wider variety of Afrotropical birds than is observed today. If one were to solely consider these representations and take them at face value, prehistoric Egyptians solely hunted desert ungulates, hippopotami, crocodiles, and included the ostrich in their game bag on rare occasions. On the other hand, they neglected the large flocks of waterfowl that undoubtedly already lived and migrated

¹²³ Riemer 2009, Hendricks *et al.* 2009. See *infra* for a discussion of the various traps and pitfalls currently used by Bedouins in the Eastern desert to hunt desert game.

¹²⁴ Brown *et al.* 1982, p. 33

through the country, a hypothesis contradicted by the analysis of avian remains presented *supra*.

2. Wall Painting: Tomb 100 at Hierakonpolis¹²⁵

During the middle of the 4th millennium BC, most especially during the Naqada II period (ca. 3700-3300 BC), social stratification start to be visible in the cemeteries excavated in Upper Egypt, such as those at Naqada and Hierakonpolis.¹²⁶ Certain areas of necropoleis came to be dedicated to a specific class of citizens, buried in more elaborate tombs, often rectangular in shape and filled with a variety of funerary offerings. At Hierakonpolis, one tomb, excavated by J. E. Quibell and F. W. Green in 1899, stood out by the presence of a painted representation on the plastered mudbrick wall lining the sides of the rectangular pit (**Figure 7**).¹²⁷ Dated from the Naqada IIC period (ca. 3600 BC), the scene is dominated by the representation on a beige background of six large boats with curved hulls, around which a multitude of human and animal figures painted in black, dark red, and white fills in the space in an *a priori* haphazard fashion.¹²⁸

Large mammals, such as antelopes, oryxes, and/or gazelles, are the most common animals drawn on the wall, with only a few rare birds present in their midst. Three possible

¹²⁵ The discovery of decorated linen fragments in a tomb at Gebelein testifies to the practice of including scenes similar to those observed on the wall of Hierakonpolis tomb 100 on organic and hence perishable material such as linen. The fragments now held in the Turin Museum reveal that the themes of hunting and fishing in the Nile Valley were part of the funerary iconographic repertoire of the time. No bird representation, however, is visible on these surviving fragments (Patch 2011b, p. 64).

¹²⁶ Midant-Reynes 2003, pp. 191-208

¹²⁷ *Ibid.*, p. 331; Hendrickx 2011a, pp. 76-77, fig. 8.20

¹²⁸ Quibell and Green 1902, pls. 76-78

waterfowl, one of which has been identified as being a red-breasted goose (*Branta ruficollis*),¹²⁹ may indicate the environment and season in which the action is taking place, i.e. the banks of the Nile during bird migration since, in ancient times, the red-breasted goose would most likely have been a brief visitor to Egypt, favoring shallow waters and feeding primarily on the vegetation growing near wetlands. It is noteworthy that the birds are not shown as being involved in the many activities depicted, in particular the hunting scenes, where desert game is being preyed upon by groups of hunters scattered across the wall. This type of feathered game did not seem to be considered as a worthy target to be commemorated on this tomb's wall.

3. Predynastic Material Culture

The series of artifacts specifically addressed in this section are for the most part functional and portable objects adorned with or shaped as figural designs.¹³⁰ As early as Naqada I in Upper Egypt, under the aegis of members of the ruling class, it became possible for specialized craftsmen to fully dedicate their time so as to produce not only exquisite and refined objects but also mass produced goods¹³¹ most frequently recovered by archaeologists in funerary contexts.¹³² Despite ultimately being deposited in tombs, many of these objects may have served a specific function during the life of the tomb owners, acting as an overt display of

¹²⁹ Wyatt 2012, p. 87, fig. 9.8

¹³⁰ Wengrow 2009; Patch 2011a

¹³¹ It is important to note that evidence of mass production can be observed as early as Naqada II. S. Hendrickx (2011, p. 98) believes that this type of production was first sponsored by and under the control of the upper classes of early Predynastic society.

¹³² Wengrow 2009, p. 1; Stevenson 2011a, p. 65

wealth and social prominence in a progressively more complex and hierarchical society.¹³³ It is therefore already the elite's perspective of the world which is evoked in this art, as will continue to be the case in most of Dynastic artistic creation.¹³⁴

Their natural surroundings, in particular the animals encountered in the Nile Valley and on the River, as well as at the desert margins and on the hills, did not fail to be a source of inspiration for Predynastic artisans. As G. Graff remarks, however:

“La représentation animale pose le problème de l'identification des espèces peintes.¹³⁵ Il peut y avoir un certain décalage entre la perception actuelle de l'animal et son mode de représentation nagadien. Les caractéristiques de telle ou telle espèce qui permettent de l'identifier aujourd'hui ont pu changer en 6000 ans, et les échelles de représentation des animaux par rapport aux autres éléments du décor ne sont pas respectées, en fonction des normes réalistes.”¹³⁶

Nevertheless, while it may not be possible to readily identify which specific species or even genera were chosen as models, a study of Predynastic art forms quickly reveals that birds were a favorite motif for a variety of artifacts.¹³⁷

¹³³ Stevenson 2011a

¹³⁴ Hendrickx 2011b, p. 97

¹³⁵ The same observation applies for the animal representations carved in stone and ivory or molded in clay.

¹³⁶ Graff 2009, p. 22


¹³⁷ Graff 2009, p. 85: “On peut estimer que les représentations dont on dispose ne seront pas un reflet fidèle du vécu, puisqu'en aucun cas il semble que les peintres de vases n'aient souhaité donner une image de leur société. Les animaux chassés ne sont pas forcément ceux qui ont la plus grande importance du point de vue de l'alimentation (les crocodiles et les hippopotames par exemple). [...] On peut estimer toutefois qu'ils accordaient une valeur particulière à ce qu'ils ont choisi de représenter.”

a. Decorated Ware

The buff-color vessels with dark red painted designs are characteristic of the Naqada IIC-D period (ca. 3600-3350 BC). Artistic representations had reached a certain level of standardization and the consistency in terms of subject and execution indicates that this pottery was produced in a few select workshops and thereafter distributed via trade.¹³⁸

G. Graff has systematically studied the elements of decoration on these vessels and has identified ten elements which depict birds or bird parts.¹³⁹ The scenes in which birds are included do not reveal what purpose they serve. They are not part of any activity nor do they interact with the humans depicted on many of the vases. It has been proposed that their presence hints at the setting in which the main action is taking place, as already surmised for rock art. Thus, ostriches



() near triangular hills may be indicative of the desert edge; wading birds () near wavy lines and boat depictions allude to the fact that the scene is taking place near a body of water, most likely the Nile River. A few vases with rows of animals have been interpreted as “presentation scenes” and are compared with the rows of animals depicted on the ivory handles of knives (see *infra*). It appears that most of the bird genera chosen by the artists of this period, namely wading birds, most likely flamingoes (*Phoenicopterus* sp.), and ostriches, are characterized by their large size and thus would have been visible even from a distance.

Passerines and song birds are entirely absent from the record. Another set of vases with bands

¹³⁸ Hendrickx 2011, p. 79; Patch 2011b, p. 67

¹³⁹ Graff 2009, pp. 61-63, 164-165

of cross-hatching, suggestive of netting, and groups of birds painted below the net have been described as possibly representing a ritual hunt in the desert.¹⁴⁰

One jar excavated at the Eastern Delta site of Tell el-Farkha is worth mentioning in this section. While it does not strictly belong to this specific category of ware,¹⁴¹ it is decorated with a desert scene, which includes an ostrich, a male and a female wild bovine, and a gazelle. The jar was discovered filled with 62 votive objects, among which figure a statuette of a swan (*Cygnus* sp.). Archaeologist K. Ciałowicz suggests that the animals depicted were no longer present in this part of the Delta and had already become imbued with cultic or symbolic significance.¹⁴²

b. Theriomorphic Stone Vases and Clay Vessels

A series of vessels in the shape of birds has puzzled Egyptologists as to their exact purpose and only tentative interpretations have been advanced thus far.¹⁴³ Some are made of stone, while others are fashioned in clay. A few of them belong to the category of Decorated Ware discussed above. Many of these objects have no known provenience and were purchased by museums; a few rare exceptions were excavated in cemeteries. For the most part, the vases have the shape of birds usually encountered in a Nilotic environment, such as waterfowl (ducks

¹⁴⁰ Hendrickx 2013, p. 243, fig. 7

¹⁴¹ It is dated from the Naqada IIIB/IIIC1 period (Ciałowicz 2008, p. 22).

¹⁴² K. Ciałowicz (2008, p. 32) thinks that the ostrich eggs excavated at the site of Tell el-Farkha had been acquired via trade from the South, since, according to him, ostriches were no longer present in the Eastern Desert and the Sinai.

¹⁴³ Vandier 1952, pp. 309-312; Stevenson 2011, p. 194; Bailleul-LeSuer 2012, pp. 159-160.

and/or geese) or even an ibis.¹⁴⁴ The artist may have intended for the duck representation to serve several purposes. Not only did the vase possibly contain food for the afterworld, the vessel itself may also have been intended to magically become a source of food. After all, ducks become one of the most common offerings in Dynastic times.¹⁴⁵ Was it a way to add imperishable waterfowl to the menu? A selection of this category of theriomorphic ware is listed in **Table 4**.

Table 4. Theriomorphic stone vases and clay vessels with bird motifs

<i>Description of item and Museum number</i>	<i>Bird taxon represented</i>	<i>Proposed date</i>
Red polished ware (Boston MFA 09.379) ^a	Duck (?)	Naqada IC
Limestone jar inlaid with shell, in the shape of a squatting or nesting bird (Berlin ÄS 18592) ^b	Waterfowl (?)	Naqada III-early Dynasty 1
Red limestone breccia vessel (Berlin ÄS 24100) ^c	Ibis	Naqada III-early Dynasty 1
Red limestone breccia vessel (Chicago OIM E10859) ^d	Swimming duck	Naqada III
Red limestone breccia vessel (British Museum EA35306) ^e	Dove (?)	Naqada III-early Dynasty 1
Decorated Ware (UC 15354) ^f	Swimming duck	Naqada II
Decorated Ware (Private collection, Bâle) ^g	Stylized shape, possibly swimming waterfowl (?)	Naqada II
Decorated Ware (Cairo Museum JE 26638) ^h	Stylized shape, possibly swimming waterfowl (?)	Naqada II

^a <http://www.mfa.org/collections/object/bowl-in-the-form-of-a-bird-138243>. Last accessed May 9th, 2016.

^b Patch 2011b, p. 42, Cat. 32

^c *Ibid.*, p. 43, Cat. 33

^d Bailleul-LeSuer 2012, pp. 159-160

^e Glanville 1926; Vandier 1952, pp. 311-312

^f Graff 2009, p. 380, Cat. 559

^g *Ibid.*, p. 381, Cat. 564

^h *Ibid.*, p. 379, Cat. 556

¹⁴⁴ The red breccia vase in the shape of an Ibis is even more problematic, and it has been proposed that it might not belong to a funerary context, but rather may have been deposited in a temple (Patch 2011b, p. 43).

¹⁴⁵ See Faulkner 1952 for a discussion of *ꜥpd*, “bird” originally strictly having the meaning “duck.”

iii. Analysis of the Evidence:

This review of both the faunal remains recovered at prehistoric sites and the contemporary iconography clearly shows that these two sets of data do not corroborate each other. The analysis of faunal assemblages revealed that the exploitation of wild animals in general and of birds in particular were of secondary economic importance by the end of the Predynastic period. Domesticated animals (ovicaprids, cattle, and pigs) and fish provided most of the proteins incorporated into the ancient Egyptian diet. During the formative time leading to the rise of the Egyptian state, the birds included in the iconography reflect some nascent social concepts and distinctions.¹⁴⁶ They acted as markers of social boundaries within prehistoric society, as demonstrated by the role played by the ostrich. This large game bird is the only one to figure both in the iconography as object of the chase (in rock art and on a few ceremonial palettes¹⁴⁷) and in faunal assemblages. It is unclear how frequently hunters exploring the Eastern Sahara would have had the chance to encounter groups of ostriches.¹⁴⁸ The adaptation of this huge flightless bird to escape by running extremely fast also makes it a challenging target. It is possible that, because of the difficulty to successfully capture the bird,

¹⁴⁶ Hendrickx 2010; *Ibid.* 2011

¹⁴⁷ Ostrich Palette, Manchester Museum 5476; Two Dogs Palette (Ashmolean Museum, Oxford AN 1896-1908.E.3924); Hunters Palette (British Museum EA20790 and 20792). For additional examples of palettes including ostriches in their design, see Hendrickx *et al.* 2011, p. 138 n. 36.

¹⁴⁸ Pöllath 2009, p. 92: "The ostrich [...] could have been relatively frequent in some parts of the region since it is more or less independent from surface water and can therefore also inhabit arid environments as long as there is enough vegetation to meet its moisture and food requirements."

hunting ostriches appeared at this time as a prerogative of a class of society no longer directly connected with food production, and thus became a status symbol.¹⁴⁹

While ostrich eggshells have been recovered at most prehistoric sites in the Western desert¹⁵⁰ and the Nile Valley,¹⁵¹ the bones of this large desert game bird are extremely rare, and no anthropogenic markings (butchery marks, evidence of being cooked and/or burnt) have been identified on them, as could be expected on large osseous kitchen wastes. The lack of any markings had led A. Gautier to remark that “one may ask whether these finds represent evidence of sporadic hunting of ostriches or opportunistic scavenging of animals already dead.”¹⁵² For practical reasons, since an adult bird weighs on average 100 kg, it is also possible that only the desired parts of the bird (meat and feathers) were collected and the remains of the carcass left at the kill site. The bird’s distinctive and desirable feathers would, once worn as a headdress,¹⁵³ differentiate these men from the rest of the population, excluded from these hunting forays in the desert and remaining in the Nile Valley. On the other hand, one can also surmise that ostrich meat was consumed at camp sites, perhaps as part of a ritual feast only

¹⁴⁹ N. Pöllath (2009, pp. 87-89) suggests that ostriches never have been a preferred game for either regular or occasional hunters. The frequent representation of these animals is in fact a reflection of the ideal, where wild animals are controlled and exploited by men. A. Gautier (2001, p. 615) proposes that the flesh may have been considered taboo.

¹⁵⁰ Gautier 2001, p. 614

¹⁵¹ Complete ostrich eggs have been recovered in the Nile Valley in elite funerary contexts (Kantor 1948; Muir 2009; Hendrickx 2011, pp. 158-159; Scalf 2012b, pp. 131-132). The thick shell was also used to make beads. It is important to keep in mind that the presence of ostrich eggshell at a site is not indicative of the presence of this bird in the site’s vicinity. These artifacts were traded over long distances.

¹⁵² Gautier 2001, p. 616

¹⁵³ See *supra* for a discussion on the ostrich feather worn as an ethnic identifier in Pharaonic times.

accessible and available for hunters.¹⁵⁴ Such a practice could thus account for the rarity of ostrich bones excavated in Egypt.

The early inhabitants of the Nile Valley valued other bird taxa as a possible source of food, as attested by the discovery of burnt avian bones at prehistoric sites, interpreted as being the remains of cooked dishes.¹⁵⁵ Waterfowl, encountered in large numbers during migration and the winter months, constituted attractive targets because of their seasonal reliability.¹⁵⁶ Bones of various species of dabbling and diving ducks are the most common bird remains identified in faunal assemblages, followed by the bones of geese and coots, most of which favor shallow waters. These birds could have been captured in the flood plain, seasonal marshes, or along the banks of the Nile.

The presence of birds tied to the funerary realm is also first attested, both in the form of bones and as artifacts either in the shape of waterfowl or displaying a bird motif on their surface, excavated in cemeteries.¹⁵⁷ Ducks were thus favored by both the living and the dead, a prominence which continued to grow throughout Pharaonic history. Despite the concrete

¹⁵⁴ Brewer and Redford 1994, p. 5: "These [wild] animals have been used for interregional trade and have been salient features of cuisines that marked social class boundaries within societies..." It should not be excluded that oasis dwellers and other cultural groups living outside of the Egyptian Nile Valley also hunted and consumed ostriches.

¹⁵⁵ Midant-Reynes 2000, p. 96

¹⁵⁶ The presence or absence of waterfowl in faunal assemblages has enabled zooarcheologists to identify in which season specific camp sites were occupied (Baker and Gautier 1997, p. 59). Thus, the lack of remains of migratory bird species at the site of Elkab during prehistoric times has led P. Vermeersch to conclude that hunters used it as a summer encampment (Vermeersch 1978; Midant-Reynes 2000, p. 81).

¹⁵⁷ Flores 2004

evidence of their exploitation in the archaeological record, the capture of waterfowl is seemingly absent from the prehistoric iconographic repertoire. It appears for the first time in both royal and private contexts during the 1st Dynasty. King Den (*ca.* 2800 BC) is depicted on a label capturing birds with a large net (**Figure 1**);⁴⁹ his vizier *Hm3-k3* included among his funerary assemblage a disc adorned with the design of large birds (possibly cranes) being caught in a clap net (**Figure 9**).¹⁵⁸ Although it failed to leave traces in the record, it seems fair to assume that the technique of netting birds had been developed over time during the Predynastic period.

As mentioned above, large game was targeted by prehistoric members of the upper classes desirous to highlight their elite status in society,¹⁵⁹ with the ostrich being the only feathered game represented. During the Early Dynastic period, a new motif is incorporated into the propagandistic and symbolic iconography used by the new monarchs and nobles alike: the netting of birds (waterfowl for the most part). One can wonder if the disappearance of the ostrich from their immediate surroundings and the aridification of the environment had led artists to modify the original motif of rulers controlling the natural world: large flocks of waterfowl then became the embodiment of the avian forces of the wild at first symbolized by the ostrich. One very large bird from the desert was thus replaced by huge numbers of waterfowl caught in a net in the wetlands of the Nile Valley.

¹⁵⁸ Altenmüller 1974

¹⁵⁹ Hendrickx 2013; Lesur 2013. It may have also invoked their former lifestyle in the desert, when it was a savannah, before settling on the Nile (S. Bumbaugh, personal communication).

While other avian species frequently figure in the art of the period, they are frequently indicative of the setting (location and season) of the activities depicted. In some other instances, their presence is more difficult to explain: should we already assign to them a propagandistic, ideological, or religious meaning, as has been proposed for the Dynastic Period? The presence of storks and/or herons, most frequent on ivory knife handles and combs,¹⁶⁰ is especially puzzling. As K. Ciałowicz remarks, these large wading birds were certainly of significance to the people who commissioned these objects, but no clear meaning for their presence of these birds, whether symbolic, religious, or propagandistic, has yet been securely evaluated in Predynastic art.¹⁶¹ Bone remains of a variety of both large (herons and egrets) and small (sandpipers, rails) wading birds are also attested at the sites of Merimde Beni-Salame and Maadi. They may have fallen prey alongside the more favored ducks and geese, or may have been the result of opportunistic fowling. They do not seem, however, to have been a major component of the prehistoric fowler's bag.

b. Dynastic Period (ca. 2900-332 BC)

In her study of the faunal remains gathered during the excavation of the workmen's village at Amarna, R. Luff observed that Egyptologists often refer to the large quantities of birds consumed by ancient Egyptians,⁹² mostly basing their assertion on the fowling, bird procession, and offering scenes represented throughout the country on temple and tomb walls from the

¹⁶⁰ Representative examples of the representations of these birds can be seen on the Brooklyn knife (Inv. Nr. 09.889.118), the Pitt-Rivers knife (British Museum EA68512), the Carnavon knife handle (MMA 26.7.1281), and the Davis comb (MMA 30.8.224).

¹⁶¹ Ciałowicz 1992, p. 254

Early Dynastic to the Roman era.¹⁶² As previously discussed, Egypt is indeed visited by huge numbers of birds during their migration. Nevertheless, scant empirical data is available to confirm the common inclusion of fowl in the diet of ancient Egyptians. To shed some light on the capture of wildfowl destined to be consumed, it is indispensable to consider the presence of avian skeletal remains in the archeological repertoire, which will complement the data gathered from the representations of birds being hunted or offered to the gods and the dead as well as their attestations in the written record of the Dynastic era.

i. Faunal Remains

A thorough review of the archaeological reports of pharaonic settlements located not only in the Nile Valley, the Delta, and the Faiyum, but also in the oases, once again reveals the challenges encountered by Zooarchaeologists, restricted in their enquiries on the one hand by the small amount of avian remains often systematically and carefully excavated at sites, and on the other hand, by the difficulty in assigning precise taxa to the often degraded osteological material recovered.¹⁶³ The analysis of the recovered remains merely provides a glimpse at the specific use of the birds identified in the various communities included in this study and only allows us to formulate a hypothesis as to the relevance of these birds in the daily life of the individuals living in these settlements at a given time. Attempts will be made to corroborate if these suggestions can be verified by the information gathered from the evaluation of the iconographic and extant written evidence.

¹⁶² Luff 2001, p. 357

¹⁶³ Flores 2002, p. 735

Furthermore, the period under consideration for this research project is vast – more than 3000 years – which renders the task of extracting useful information related to bird exploitation challenging, even daunting. I will therefore first tackle the remains dated from the period preceding the arrival of Alexander the Great in Egypt, organizing them according to their possible function as food (secular origin) or as offering (sacred or funerary origin). The data securely dated from Greco-Roman stratigraphic layers will be addressed in Part 3. It is important to note that the large majority of the recovered avian remains belong to wild species presumably captured by fowlers. In a few instances, however, the remnants of domesticated species of birds have been identified alongside wild game. Their presence in settlements and their adoption in poultry husbandry will be discussed in Part 2 of this dissertation.

1. Settlement Contexts

The growing awareness that all faunal remains are important for a thorough reconstruction of ancient Egyptian society has increasingly motivated archaeologists, whenever possible, to sieve the soil of settlement sites with a small mesh (\varnothing 2 mm) so as to gather as much faunal material as possible, in particular the tiny bones of fish, small mammals, and birds.¹⁶⁴ At sites where the preservation of organic remains is especially good, the list of identified species of birds grows significantly. At Tell el-Dab'a and Tell Maskhuta, for example,

¹⁶⁴ Boessneck 1981; Van Neer 2002, p. 522. At the site of Tell el-Dab'a, excavated by the Austrian Archaeological Institute in Cairo for more than 40 years (1966-69 and 1975-present), Boessneck reported that screening and sieving was only introduced in the collection of faunal remains in 1978 (Boessneck and von den Driesch 1992). Therefore, there is little chance that bird remains would have been recovered beforehand, and their presence at the site is therefore unknown. This situation is, I believe, standard for sites excavated prior to the early 1980s, where the focus of faunal analysis was set on the exploitation of large mammals, especially the domestic quartet (cattle, sheep, goat, and pig).

more than 50 avian species have been proposed by J Boessneck and A. von den Driesch for the remains recovered at these Delta sites.¹⁶⁵

According to the data gathered in **Table 33**, Zooarchaeologists have identified approximately 80 different genera and/or species among the avian skeletal remains excavated in settlements. Among these birds, some are likely to be intrusives, such as carrion eaters - birds of prey (kites and vultures) and corvids (crows and ravens). The skeletal remains of small passerines (larks, warblers, starlings, and sparrows) are also unlikely to have survived cooking preparation, ingestion, and diagenesis processes after deposition. Their presence at a site is therefore presumably accidental. After excluding these possible intrusives, about 70 avian species remain likely to have been captured and exploited by ancient Egyptians. The great overlap in bone sizes among species of geese and among dabbling and diving ducks, in addition to the fragmentary nature of the material, have rendered precise identification of these waterfowl impossible in many instances.¹⁶⁶ Remains have thus been organized either by genera or according to the birds' size (large, medium, or small duck) whenever appropriate.¹⁶⁷ For the sake of simplicity, since the methods of recovery are not consistent throughout the selection of

¹⁶⁵ 52 different species of birds have been identified at Tell el-Dab'a (Boessneck and von den Driesch 1992, pp. 125-6, Tab. 6) and 73 different species at Tell Maskhuta (Boessneck 1986, pp. 331-333).

¹⁶⁶ Boessneck and von den Driesch 1992, p. 38; *ibid.* 1997, p. 207; Luff 2001, p. 357

¹⁶⁷ The faunal assemblages of many of the sites considered in this study have been scrupulously examined by the Zooarchaeologists of Ludwig-Maximilian University in Munich – Paläanatomie, Domestikationsforschung und Geschichte der Tiermedizin Department, at first represented by J. Boessneck and A. von den Driesch, and currently by J. Peters and N. Pöllath. It is thus fair to assume the existence of a high degree of consistency in the methods of recovery employed at these various locations, allowing us to compare the data with greater confidence.

sites in this catalog, I indicate the relative frequency of the bird species recovered in each settlement, whether they are well represented (F) or not (R) in the faunal assemblages.

Table 5. Summary of the bird remains recovered in domestic contexts at Dynastic settlement sites

<i>Bird Type</i>	<i>Current Status in Egypt^a</i>	<i>Frequency^b</i>	<i>Location of recovery</i>
Ostrich (<i>Struthio camelus</i>)	RB	Eggshell Fragments: R Bones: R	Tell el-Dab'a, Elephantine, Gebel Zeit, Ayn Asil/Balat
Family <i>Podicipedidae</i> - Grebes	Most species are WV	R	Tell el-Dab'a
Cormorant (<i>Phalacrocorax carbo</i>)	PV, WV	F	Buto, Tell el-Dab'a, Amarna (Workmen's Village)
White Pelican (<i>Pelecanus onocrotalus</i>)	PV, WV	R	Elephantine
Family <i>Ardeidae</i> – Bitterns, Egrets and Herons	Most species are RB, with additional WV from Eurasia	R	Buto, Tell el-Dab'a, Tell es-Iswid, Elephantine
Family <i>Ciconiidae</i> - Storks	Most species are PV	F	Tell el-Dab'a, Elephantine , Abydos
Family <i>Threskiornithidae</i> – Ibises and Spoonbills	Most species are PV, WV. <i>Platalea leucorodia</i> : also RB <i>Threskiornis aethiopicus</i> : FB	R	Tell el-Dab'a, Elephantine
Greater Flamingo (<i>Phoenicopterus ruber</i>)	RB, PV, WV	Relatively Frequent	Tell el-Dab'a
Goose Species (<i>Anser</i> sp.)	Most species are WV, AV	F	Buto, Tell el-Dab'a, Qasr el Sagha, Amarna (House of Panhesy), Elephantine
Large Dabbling Ducks (<i>Tadorna</i> sp., <i>Alopochen aegyptiaca</i> , <i>Pectopterus gambesis</i>)	Most species are PV, WV <i>Alopochen aegyptiaca</i> : RB	R	Buto, Tell el-Dab'a, Giza, Amarna (Workmen's Village), Elephantine
Large Dabbling Ducks (<i>Tadorna</i> sp., <i>Alopochen aegyptiaca</i> , <i>Pectopterus gambesis</i>)	Most species are PV, WV <i>Alopochen aegyptiaca</i> : RB	R	Buto, Tell el-Dab'a, Giza, Amarna (Workmen's Village), Elephantine
Small Dabbling Ducks (<i>Anas crecca</i> , <i>A. querquedula</i> , <i>A. clypeata</i>)	Most species are PV, WV	F	Buto, Tell el-Dab'a , Giza, Amarna (Workmen's Village) , Elephantine

Table 5, continued.

<i>Bird Type</i>	<i>Current Status in Egypt^a</i>	<i>Frequency^b</i>	<i>Location of recovery</i>
Small Dabbling Ducks (<i>Anas crecca</i> , <i>A. querquedula</i> , <i>A. clypeata</i>)	Most species are PV, WV	F	Buto, Tell el-Dab'a , Giza, Amarna (Workmen's Village) , Elephantine
Diving Ducks (<i>Aythya ferina</i> , <i>Ay. ferina</i> , <i>Ay. Fuligula</i>)	Most species are PV, WV	R	Buto, Tell el-Dab'a , Giza, Amarna (Workmen's Village) , Elephantine
Family <i>Rallidae</i> – Rails, Crakes, Coot, Moorhen and Gallinules	Coot: RB, WV Crakes: PV, WV Moorhen: RB, PV, WV Gallinule: RB	F	Buto, Tell el-Dab'a (Coot) , Giza, Elephantine
Family <i>Gruidae</i> – Cranes	PV	F	Buto, Tell el-Dab'a, Giza , Abydos, Elephantine
Small Wading Birds (Snipe, Ruff, Godwit sp.)	Most species are PV, WV	R	Tell el-Dab'a, El Kharafish, Elephantine
Doves and Pigeons (<i>Columba</i> and <i>Streptopelia</i> sp.)	Rock Dove: RB Turtle Dove: MB, PV Palm dove: RB	R	Amarna (Workmen's Village), Abydos
Domesticated Species: Domesticated Goose (<i>Anser anser domesticus</i>)	*****	R	Tell el-Dab'a (?)

^a Abbreviations based on Goodman and Meininger 1989, p. 15. MB: Migrant Breeder; RB: Resident Breeder; AV: Accidental Visitor or Vagrant; PV: Passage Visitor; WV: Winter Visitor

^b F: Frequent; R: Rare

^c In the following tables, in each row, I have indicated in bold the sites where the bird remains under consideration dominate the avian assemblages.

The conclusions obtained by L. Linseele and W. Van Neer in their study of the exploitation of desert mammals, namely that “the general pattern observed in the animal species’ proportion for the Predynastic era continues into the Dynastic period, with domestic animals largely dominating most faunal samples,”¹⁶⁸ also applies when taking into special considerations the avian remains included in these samples. By the end of the Predynastic period, the classical mammalian quartet of domesticates (cattle, sheep, goat, and pig) provided the large majority of meat needed as food and offerings. Fishing was also an important

¹⁶⁸ Linseele and Van Neere 2009, p. 64

yearlong activity.¹⁶⁹ Hunting had become an economic activity of minor importance, mostly imbued with social and religious significance. Fowling thus remained on the margins of subsistence, only complementing the ancient Egyptian diet in an opportunistic fashion when other resources became unavailable.¹⁷⁰

While not granting us the opportunity to propose quantitative suggestions as to the relevance of birds in the economic life of ancient Egyptians, faunal assemblage analyses have revealed that Egyptians continued to exploit a wide range of bird species. Gregarious water birds – geese, ducks, and coots in particular, most of which are winter visitors in Egypt – were the favored and most fruitful quarries for ancient Egyptian fowlers. They dominate most assemblages and were captured *en masse* at several Delta sites (Tell el Dab’a, Buto).¹⁷¹ The fowlers’ game bag also included significant numbers of wading birds, such as members of the *Ardeidae* (herons, egrets, bitterns), *Charadriidae* (plovers), and *Scolopacidae* (ruff, snipe, black-tailed godwit) families, all encountered in areas with shallow water, thus demonstrating that ancient Egyptians very early became proficient in exploiting the abundant resources of the Delta region all year long depending on their availability.¹⁷²

¹⁶⁹ Lesur 2013, p. 44

¹⁷⁰ Boessneck and von den Driesch 1992, p. 36; Payne 2004, p. 26; von den Driesch and Peters 2008, p. 661; Linseele and Van Neer 2009, pp. 70-1

¹⁷¹ Boessneck and von den Driesch 1992; *ibid.* 1997

¹⁷² Lesur 2013, p. 44

Several settlements stand out on account of the unusual nature of the dominant bird species recovered in the faunal sample, in some cases these birds being more prevalent than the expected Anatids. As will be discussed below, these differences may be indicative of regional preferences and hunting strategies.¹⁷³

a. Tell el-Dab'a¹⁷⁴

In addition to the expected large numbers of waterfowl which the local fowlers could capture in the wetlands present in the vicinity of the city, the large proportions of bones of greater flamingoes (*Phoenicopterus roseus*) indicate that the fowlers at Tell el-Dab'a also targeted the large flocks of these magnificent red and pink birds, feeding and most likely also breeding in the nearby shallow brackish lakes and lagoons.¹⁷⁵ According to A. E. Brehm, a 19th century German zoologist recording his observations during his journey through North Africa, flamingoes could be purchased at selective markets in the Delta, and were then considered a delicacy by contemporary Egyptians, just as they were by the wealthy Romans during the Imperial era (1st-5th centuries AD).¹⁷⁶ Ornithologists P. Meininger and W. Mullié, when visiting

¹⁷³ J. Lesur had already noted that as early as the Predynastic period, certain animal species were seemingly selected over others. She proposes that these variations were connected to the function of a site or the social position of its inhabitants (*Ibid.*, p. 47).

¹⁷⁴ Boessneck 1976, pp. 34-35; Boessneck and von den Driesch 1992, pp. 36-41; von den Driesch 2015

¹⁷⁵ According to M. Bietak (2010, pp. 13, 27, fig. 27), the city of Avaris (Tell el-Dab'a) was built near perennial swamps and acted as an entrance into the Delta for all travelers coming from the Sinai. These wetlands, fed in part by the Bahr el-Baqar, would have been home to a wide range of birds all year long and especially during migration times, thus acting as an attractive fowling place for hunters.

¹⁷⁶ Brehm 1874, pp. 831-832. Arnott 2007, pp. 189-190. Juvenal (11.139), Pliny (*Natural History*, 10.133) and Suetonius (*Vitellius* 13) wrote that flamingo tongue was especially enjoyed as a dish. Martial (13.71) singled out the wings as deserving special praise. Two recipes are extant in the 5th century AD cookbook of Apicius (6.6.1-2).

the bird markets of Port Said and Dumyat in 1979 and 1980, observed that a few flamingoes were still offered for sale.¹⁷⁷ During the winter of 1979-1980, they counted as many as 6,400 birds on El Malaha, south east of Port Said and formerly part of Lake Manzala, and 790 on Lake Bardawil.¹⁷⁸ These Ornithologists also report that the netting of flamingoes used to be a popular activity on Lake Manzala, when large flocks visited the lake.¹⁷⁹

The discovery of a burnt sacred ibis (*Threskiornis aethiopicus*) leg bone (tarsometatarsus) in the refuse of the excavation area F/I, dated from the Middle Kingdom and early 15th Dynasty (ca. 1960-1590 BC)¹⁸⁰ raises the question as to whether this species of ibises was consumed alongside flamingoes.¹⁸¹ Was this bird caught in the midst of a flock of flamingoes? Was it specifically targeted? Only the discovery of additional ibis bones in kitchen midden will help solve this issue.

¹⁷⁷ Meininger and Mullié 1983, pp. 33-34, tab. 5

¹⁷⁸ *ibid.* 1981, p.71

¹⁷⁹ *ibid.* 1981, p. 84. N. Henein (2010, pp. 320, 410) also reports the following: "Certains habitants de la province de Manzala consomment (le flamant rose) et le préparent selon différentes recettes. On dit que sa chair n'a pas l'odeur de la vase, car il ne mange pas de poissons."

¹⁸⁰ www.auaris.at/html/history_en.html. Last accessed October 17th, 2015.

¹⁸¹ Boessneck and von den Driesch 1992, p. 36. The fragmentary relief, now in Florence (Inv. Nr. 5412), on which an ibis is included among the birds being reared in a poultry yard had raised the question whether the birds were already being bred for cultic purposes, as part of a sacred animal cult, or whether its flesh also entered among the dishes enjoyed by ancient Egyptians. The discovery of some of these bones in a settlement setting further gives fuel to the discussion. For further discussion of the maintenance of ibises in captivity, see Part 3.

b. Tell el-Amarna – Workmen’s Village¹⁸²

Great cormorants (*Phalacrocorax carbo*) are the most common bird remains recovered in the rubbish deposits located at the edge of the ancient Workmen’s Village of the city of Amarna. “Where there is an abundance of fish, there is an abundance of fish-eating birds.”¹⁸³ As convincingly asserted by R. Luff, the two activities of fishing and fowling, often represented side by side in iconography, should also be considered together when analyzing faunal assemblages. Fish-eating birds, such as the cormorants encountered by fishermen busy catching mullets in the river, were also hunted, perhaps in part to prevent the birds from preying too heavily on the fish the inhabitants of Amarna were attempting to catch. The presence of butchery marks on some birds’ bones, indicative of jointing, is proof that they were also processed for consumption.¹⁸⁴ In this instance, the workers providing the Workmen’s Village of Amarna with fresh fish and poultry may have acted simultaneously as fishermen and fowlers (see *infra*). Similar conclusions have been proposed for the Old Kingdom site of Kom el-Hisn, where fishing and duck hunting were proposed to be combined activities during certain periods of the year.¹⁸⁵

The great cormorant is currently a passage migrant and winter visitor to Egypt. The discovery of bones belonging to a fledging cormorant at the site of Buto may suggest that this

¹⁸² Luff 2001, pp. 357-363

¹⁸³ *Ibid.*, p. 361

¹⁸⁴ *Ibid.*, pp. 360-361, fig. 2

¹⁸⁵ Wenke *et al.* 1988, p. 18

bird used to be a breeding resident near this Delta site.¹⁸⁶ Such a hypothesis is not unrealistic, since these birds would have been able to find fish aplenty and minimal human disturbance throughout the year in this region. Although bird markets sometimes include cormorants in their inventory,¹⁸⁷ these birds are not a common fare in Egypt today.¹⁸⁸

c. Gebel Zeit¹⁸⁹ and Elephantine¹⁹⁰

Sites located on the major flyways of migratory species became grounds for specialized hunting. The mining camp of Gebel Zeit, located on the Red Sea coast, used to witness every fall the passage of massive flocks of white storks (*Ciconia ciconia*), which were using the warm air currents rising along the rugged seashore to glide and minimize energy expenditures during their migratory journey. As elsewhere in Egypt, most of the meat requirements at this camp were fulfilled by domesticates brought from the Valley, especially small ruminants such as goats. Some of the inhabitants seized the opportunity to add variety in their diet by hunting the

¹⁸⁶ Boessneck and von den Driesch 1997, p. 212

¹⁸⁷ In the Port-Said market, only eight birds were for sale for the period between January 1979 and December 1986. However, 36 dead birds could be purchased at this same market for the period between January and May 1990. It remains a low number when compared to more than 700 moorhens, 350 coots, and hundreds of ducks hunted for this same period (de Roder *et al.* 1994, p. 280, Tab. 18.3).

¹⁸⁸ Goodman and Meininger 1989, p. 80, Tab. 4.3. Cormorants, especially the great (*Phalacrocorax carbo*) and Socotra (*Ph. nigrogularis*) cormorants, were exploited and consumed in large numbers in regions of the Persian Gulf as early as the 3rd millennium BC and during the Hellenistic period (Tomé 2005).

¹⁸⁹ von den Driesch 2001, pp. 346-356

¹⁹⁰ Boessneck and von den Driesch 1982; von den Driesch and Peters 2008

large soaring birds as they flew overhead, as evidenced by the significant presence of stork remains at the site.¹⁹¹

As white storks pursued their journey south, joining the Nile Valley at the Qena bend region, they became a target for the inhabitants of Elephantine Island. The passage of these birds over the island was seemingly seen as a boon for the local inhabitants, especially at times of high water during the annual flood, when fishing was difficult, even impossible. 66% of bird bones recovered at the site belong to four members of the *Ciconiidae* family, with three species of them recovered in significant amounts: white stork, black stork (*Ciconia nigra*),¹⁹² and, to a lesser extent, yellow-billed stork (*Mycteria ibis*). Stork hunting seemingly became a local tradition which lasted for centuries: high numbers of both black and white stork remains have indeed been recorded throughout the site and in most stratigraphic layers (see **Tables 6-7**).¹⁹³

¹⁹¹ von den Driesch 2001, p. 353

¹⁹² The black stork is an uncommon sight in Egypt today. Zooarchaeologists were thus surprised to unearth an important amount of this species' remains at Elephantine. It is likely that these birds were more numerous and more frequent in Egypt in antiquity (von den Driesch and Peters 2008, p. 662, Tab. 1).

¹⁹³ Despite the remains being recovered near the ritual spaces of the island, Zooarchaeologists have concluded that they belonged to food refuse and probably do not constitute the remains of ritual activities, such as offerings. No complete skeleton was unearthed, as can be expected of temple offerings. Rather, wing tips, feet, and heads are missing. Several humeri and femurs also exhibit knife marks, and thus leading to the belief that the birds were butchered and processed for consumption (*Ibid.*, p. 665).

Table 6. Chronological distribution of the bird remains by family and area of the site of Elephantine

Main bird families represented in assemblages	Satet-East 0-1 st Dyn.	Satet- East Fort. 2 nd Dyn.	Eastern town 2 nd -4 th Dyn.	Southern Town 2 nd -5 th Dyn.	Town, from MK to 2IP	West- Museum Garden 11 th -12 th Dyn.	Heqaib 11 th -12 th Dyn.	Upper Town Late Period 21 st -25 th Dyn	Roman settlement near Khnum Temple
<i>Pelecanidae</i>	0	1	40	1	32	0	4	7	6
<i>Ardeidae</i>	2	5	10	1	8	1	0	0	0
<i>Ciconiidae</i>	29	165	190	54	237	9	6	38	70
<i>Threskiornithidae</i>	1	1	5	0	62	0	0	1	2
<i>Anatidae</i>	0	7	9	1	27	5	1	3	2
<i>Phasianidae</i> : G: Guinea Fowl C: Chicken (red for domestic species)	0	0	1	0	0	6 G	0	2 C	2 C
<i>Gruidae</i>	0	6	2	1	4	0	0	0	4

Table 7. Detailed avian assemblage of individual houses for the Old, Middle and New Kingdoms, and 2nd Intermediate Period (after von den Driesch and Peters 2008, pp. 668-9, Tab. 6a and 6b).

Main bird families represented in assemblages	House 136, Southern town Late 6 th Dyn.	House 2, Southern group of houses Late 12 th Dyn.	House 86, Northern town, 12 th Dyn.	House 84, Northern town, Late 12 th Dyn.	House 50, Northern town, 12 th - 13 th Dyn.	Houses 51 and 81, Northern Town, 13 th Dyn.	House 57, Northern Town, 17 th Dyn.	House 45, Northern Town, 17 th -18 th Dyn.	House 118, Northern Town, early 18 th Dyn.	House 55, Northern Town, 19 th Dyn.
Ostrich	1	0	0	0	0	0	0	0	0	0
<i>Ardeidae</i>	0	1	0	2	0	0	0	1	0	1
<i>Pelecanidae</i>	0	0	0	0	5	3	1	6	4	1
<i>Ciconiidae</i>	4	12	44	3	24	3	8	7	16	9
Spoonbills (S) and Ibises (I)	0	7	0	0	12	3 I	2	1 S	4 Sacred Ibis	7
Ducks (D) and Geese (G)	0	0	1 D	3 D	0	0	0		2 D	3 G
<i>Gruidae</i>	1	0	0	0	3	1	0		0	0
Spur-winged plover	0	0	0	1	0	0	0		0	0
<i>Columbidae</i>	0	0	0	0	0	2	0		0	1

Since most species of ducks and geese prefer calm and clear waters to feed, the more tumultuous Nile waters of the 1st cataract were not a favored feeding ground, especially during the height of the flood during the summer and early fall. The people of Elephantine then turned their eyes to the skies and, possibly with bows and arrows, felled not only storks, but also pelicans, ibises, and spoonbills, as they migrated and flew above the island. While many of

these birds could be caught during their northerly or southerly migrations, the discovery of bones of juvenile storks, hunted during their first journey south from their breeding ground, is a clear indication that stork hunting was taking place at least in the autumn. The summer months offered other targets to the local fowlers. Yellow-billed storks, today only encountered south of the Sahara, used to visit Egypt regularly during the summer, as far north as the Delta.¹⁹⁴ The shallow waters near the 1st cataract would allow these birds to search for fish, amphibians, and aquatic insects. The sacred ibis, another summer breeding migrant from further south in Africa, may have been found feeding alongside the yellow-billed storks. The presence of these birds in the food refuse on the island of Elephantine clearly indicates that they entered the inhabitants' diet. They may have been hunted on the banks of the Nile by fowlers from the island, who subsequently brought their catch back to Elephantine. They could have also been purchased on the mainland.¹⁹⁵

2. Birds as Gifts of the Desert?

Remains of birds favoring the drier environment at the edges of the greener flood plain are extremely rare in all faunal assemblages. Bones of chestnut-bellied and spotted sandgrouse (*Pterocles exustus* and *P. senegallus*) have been identified at Tell Maskhuta and Elephantine.¹⁹⁶ While they prefer arid environments, these birds are dependent on sources of fresh water, and thus may have been caught during their daily visit to ponds and waterholes located near the

¹⁹⁴ Boessneck and von den Driesch 1997, Tab. 8; von den Driesch and Peters 2008, p. 671

¹⁹⁵ von den Driesch and Peters 2008, pp. 671-2

¹⁹⁶ Boessneck 1986, p. 332, Tab. 2; von den Driesch and Peters 2008, p. 663, Tab. 1

Valley.¹⁹⁷ Ostrich eggshells¹⁹⁸ and bones have only been recovered at a few sites: Gebel Zeit, Elephantine, Tell el-Dab'a, and Balat in the Dakhla Oasis. It is clear that ostriches were of no economic importance.¹⁹⁹ They remained a source of luxury goods in the form of eggs and feathers, possibly meat,²⁰⁰ and also fat. L. Pantalacci and J. Lesur-Gebremariam suggest that either these large birds were brought alive to the Valley and kept in captivity, or the items themselves were traded.²⁰¹ The rarity of ostrich remains in the Valley seems to point towards the latter suggestion.

Few Dynastic sites in the Eastern and Western deserts have yielded faunal remains.²⁰² Yet the few published zooarchaeological reports reveal at times unexpected findings. While, as N. Pöllath remarks, "avian remains are often a great reflection of the environment in which the site is located,"²⁰³ since she believes that birds, other than the ostrich, were captured locally and were rarely acquired via trade, these remains can also be a reflection of seasonal fowling

¹⁹⁷ Boessneck 1986, p. 329

¹⁹⁸ As comprehensively reviewed by N. Cherpion (2001, pp. 285-286), ostrich eggshells have only been recorded in a settlement setting at Kerma. These remains are dated from the First Intermediate and Middle Kingdom.

¹⁹⁹ Herb and Förster 2009, pp. 25, 33; Pöllath 2009, p. 103

²⁰⁰ The remains from the site of Balat exhibit butchery marks: the metatarsal was sawn transversely, perhaps to collect the bone marrow (Pantalacci and Lesur-Gebremariam 2009, p. 253). At Elephantine, Zooarchaeologists recovered the remains of a young bird, which, they surmise, had been taken from a nest (von den Driesch and Peters 2008, p. 676). At Tell el Dab'a, the bones were recovered in a fragmentary state and should be considered food waste (Boessneck and von den Driesch 1992, p. 36).

²⁰¹ Pantalacci and Lesur-Gebremariam 2009, p. 253

²⁰² Pöllath 2011, p. 346: "The importance of fowling is difficult to assess since the preservation of bird bones is especially bad in most faunal assemblages from the desert. Usually none or only few often very fragmented bird bones are among hundreds of mammal bones."

²⁰³ Riemer *et al.* 2008, p. 599

and hunting practices, whenever the hunters' targets include migratory species flying over the Eastern Sahara. The site of El Kharafish 02/5 in the Western desert north of the Dakhla Oasis is a perfect example of the importance of faunal analysis in order to better understand the specific use of a site. This desert camp was intermittently occupied during the Early Dynastic and Old Kingdom (ca. 3000-2200 BC) by members of the Late Sheikh Muftah culture, indigenous to the oases depression of Dakhla and Kharga and coexisting with the Egyptian occupants of the Dakhla Oasis during this period.²⁰⁴ In addition to their pastoral activities, they complemented their diet with wild animals, especially gazelles, but also migratory birds caught during their journey and eggs of resident breeders.²⁰⁵ The presence in the faunal assemblage of skeletal remains of fetal and neonate gazelles, migratory bird species, and fragments of eggshell points to the occupation of the site by Sheikh Muftah pastoralist groups during the late Winter and Spring months.²⁰⁶

3. Temple and Funerary Contexts

Much of our knowledge of the Egyptian Predynastic period has derived from the funerary assemblages excavated in prehistoric cemeteries all along the Nile Valley. Provisioning for the *k3* of the deceased in the Afterlife was clearly an important aspect of Predynastic

²⁰⁴ Riemer *et al.* 2008, p. 585

²⁰⁵ The five species of birds identified are mostly passage migrants, such as the quail (*Coturnix coturnix*), corncrake (*Crex crex*), and European bee-eater (*Merops apiaster*). The common snipe (*Gallinago gallinago*) and spotted crake (*Porzana porzana*) are known to be both passage migrants and winter visitors. Furthermore, N. Pöllath proposes that the eggs identified may have been laid by a spotted sandgrouse (*Pterocles senegallus*), a kestrel (*Falco tinnunculus*), and/or a stone curlew (*Burhinus oedicephalus*) (Pöllath 2011, p. 344, Tab. 5).

²⁰⁶ Riemer *et al.* 2008, p. 599

funerary culture and remained so for all periods of Egyptian history. A variety of foodstuffs, including bread, beer, and especially meat, were included among the goods deposited in the tomb. Ideally, choice cuts of beef were most desired, followed by fowl.²⁰⁷ Whereas the avian remains excavated at settlements seemingly indicate that birds may not have been a common or regular component of the menu of ancient Egyptians, they regularly figure as offerings for the dead. Such deposits are well attested as early as the 1st dynasty, most notably at Abydos in the tombs of Kings Aha and Qa'a, as well as in tomb M13.²⁰⁸ To guarantee that food would never be lacking, models in the shape of these same victuals were at times added to the funerary offerings.²⁰⁹ Bird statuettes were shaped as ducks and geese, with the head turned backwards, often lying on the birds' belly. When the model retains its painted decoration, the bird is shown with its feathers plucked.²¹⁰ In all cases, the wing tips and feet are displayed as having been removed. A summary of the avian remains recovered on sacred grounds (temples and cemeteries) are presented in the following table:²¹¹

²⁰⁷ Ikram 1995, pp. 231-296. The oldest bird offering recovered thus far was excavated at El Amrah, in the cemetery B. In tomb B50, a jar placed in a recess contained a few seeds and the skeletal remains of a small bird (Randall-Maclver and Mace 1902, pp. 28-9; Atherton 2012, p. 47). It may be dated from the Naqada IIIB period.

²⁰⁸ Petrie 1902, p. 18; Boessneck 1986, pp. 325-26; von den Driesch and Peters 1996, p. 77

²⁰⁹ For examples dated from the Old Kingdom, see MMA 64.66.6; MFA Boston 14.1222 and 21.2819. Originally from the tomb of *Dhwtj-Nht* (Tomb 10A) at Dayr al-Barshā and dated from the 11th-12th Dynasty is MFA Boston 21.465.

²¹⁰ See for instance MFA Boston 21.465

²¹¹ For a complete report of the finds, see Appendix 5, **Tables 40-42**.

Table 8. Summary of the bird remains recovered in cultic and funerary contexts

<i>Bird Type</i>	<i>Current Status in Egypt^a</i>	<i>Frequency^b</i>	<i>Location of recovery</i>
Ostrich (<i>Struthio camelus</i>)	RB	Eggshell: ^c R	Abydos, El Kab, Balat
		Feathers: ^d R	Thebes, Hierakonpolis
Goose Species (<i>Anser</i> sp.)	Most species are WV, AV	F	Dahshur, Abydos (Umm el-Qaab), Theban Votive Mummies and Unwrapped Offerings
Large Dabbling Ducks (<i>Tadorna</i> sp., <i>Alopochen aegyptiaca</i> , <i>Pectopterus gambesis</i>)	Most species are PV, WV; <i>Alopochen aegyptiaca</i> : RB	R	Abydos (Umm el-Qaab), Thebes (Temple of Thutmose III)
Middle-sized Dabbling Ducks (<i>Anas penelope</i> , <i>A. streptera</i> , <i>A. acuta</i> , <i>A. platyrhynchos</i>)	Most species are PV, WV	F	Dahshur, Thebes (Banquet Tutankhamun; Votive Mummies; Unwrapped Offerings)
Small Dabbling Ducks (<i>Anas crecca</i> , <i>A. querquedula</i> , <i>A. clypeata</i>)	Most species are PV, WV	F	Dahshur, Thebes (Banquet Tutankhamun; Votive Mummies; Unwrapped Offerings)
Quail (<i>Coturnix coturnix</i>) (?)	(RB), PV, WV	R	Foundation deposits at Deir el-Bahri and Armant; Funerary offering in Saqqara
Family <i>Gruidae</i> – Cranes	PV	R	Dayr al-Barshā
Doves and Pigeons (<i>Columba</i> and <i>Streptopelia</i> sp.)	Rock Dove: RB Turtle Dove: MB, PV Palm dove: RB	Relatively frequent	Dahshur, Theban Votive Mummies and Unwrapped Offerings

^a Abbreviations based on Goodman and Meininger 1989, p. 15. MB: Migrant Breeder; RB: Resident Breeder; AV: Accidental Visitor or Vagrant; PV: Passage Visitor; WV: Winter Visitor

^b F: Frequent; R: Rare

^c See Cherpion 2001: the egg excavated at Abydos is now in Brussels, Musée Royal d'Art et d'Histoire, inv. No E 2770; the egg from El Kab is now in Cairo Museum, JE 31708. They are both dated as being from the Middle Kingdom. At Balat, three ostrich eggs were also recovered in the tomb of *Im3-Ppi* (Mastaba II); another ostrich egg was discovered in the tomb of *Hnty-k3*, in connection with the burial of a female relative (Mastaba III), now in the Cairo Museum JE 98774. These mastabas date from the 6th dynasty.

^d Ostrich feathers have been recovered in two contexts: as part of fans in a funerary setting, such as in the tomb of Tutankhamun (KV 62), or as part of ritual deposits.

Whenever examples of offerings were recovered in a secure context, the birds had been prepared in a variety of ways:

- Some birds had seemingly been offered as part of a cooked dish, ready for “immediate” consumption.

- 2nd Dynasty tomb 3477 at Saqqara: pigeon stew and cooked quail laid on pottery dishes, as recorded by W. Emery²¹²
- Unwrapped birds, either whole or parts thereof, were deposited on a dish or in a bowl.²¹³

These offerings have often been lost: what remains are brief references to the presence of “bird bones” in early excavation reports. It is therefore not always possible to provide more specific data.

- 12th Dynasty tombs in Dahshur and Lisht²¹⁴
- 18th Dynasty tomb of *H^c* (TT 8) at Deir el-Medina: remains of birds now in Turin (Inv. Nr. 8251)²¹⁵
- Deir el-Medina: remains of birds now held in Le Louvre (Inv. Nr. E 14551)²¹⁶
- A few tombs included jars filled with preserved fowl.
 - 6th Dynasty tomb of Medunefter, at Balat²¹⁷
 - 18th Dynasty tomb of *H^c* (TT 8) at Deir el Medina (Turin Inv. Nr. 8526)²¹⁸
- During the New Kingdom, mummified meat offerings, frequently labeled as vidual mummies, gained popularity and have been found gathered in boxes in royal and elite

²¹² Emery 1962, p.6 and pl. 6

²¹³ During the Old Kingdom, these offerings were deposited inside limestone offering cases, shaped as trussed birds, with feet and wing tips removed. Many such cases have been discovered at Giza, for example in the passage leading to tomb G 2385A and in a burial chamber G 2381Z. In the latter chamber, G. Reisner found 17 of these cases with animal bones inside, including birds (Brovarski 2000, pp. 127-128 and pl. 99).

²¹⁴ Boessneck and von den Driesch 1982, pp. 120-135; Ikram 1995, pp. 286-287

²¹⁵ Ikram 1995, pp. 288-289

²¹⁶ Ikram 1995, p. 160 n.11; Andreu 2002, p. 109 cat. 49

²¹⁷ Valloggia 1986, p. 208

²¹⁸ Ikram 1995, pp. 286-287

tombs of the Theban necropolis.²¹⁹ Alongside offerings of bread, fruits, and grain, these well-preserved cuts of beef and poultry had been wrapped with linen and deposited inside wooden cases in the burial chambers of these wealthy individuals. The last victual mummies are dated from the 21st dynasty and had been offered to *3s.t-m.hb*, the wife of Pinudjem II.²²⁰ S. M. Goodman and S. Ikram's examinations and, in some cases, dissections of a large number of such mummies have revealed that many of the birds were treated in a similar fashion. In most cases, all feathers had been plucked. Their head, feet, and wing tips had then been cut. Finally, their abdominal cavity had been eviscerated, with the heart, liver, and kidneys in some cases left in situ. A ball of linen was then inserted in the cavity.²²¹ It has been proposed that the processed poultry could be left to air dry or be desiccated in natron before being wrapped with linen bandages. The mummified bird was ultimately treated with oils and resins to prevent further decay, as in the case of human mummies.²²² Victual offerings had originally been deposited in the following locations:²²³

²¹⁹ See Goodman 1987; Ikram and Iskander 2002; Ikram 1995, pp. 239-284; *Ibid.* 2004; *Ibid.* 2005, pp. 4-5; *Ibid.* 2012.

²²⁰ Ikram 2004

²²¹ In the Oriental Institute Collection, at the University of Chicago, one victual mummy (OIM E18275) was both X-Rayed and CT-scanned. The analysis of the data obtained during these imaging sessions confirms the findings of S. M. Goodman and S. Ikram (Bailleul-LeSuer 2012, pp. 212-213).

²²² Ikram 2005, pp. 26-7; Clark *et al.* 2013

²²³ Between parentheses are indicated the number of **complete** victual mummies discovered at these locations. I did not include the empty cases. See Ikram 1995, Appendix II, for a complete list of all the food offerings deposited in these tombs. A detailed list of avian remains identified in victual mummies is included in Appendix 5, **Table 37**.

- In the Valley of the Kings: KV 35 (2);²²⁴ KV 36 (4); KV 43 (6); KV 46 (6 or 7); KV 60 (3); KV 62 (11)
- In the Valley of the Queens: QV 46 (25); QV 51 (4)
- In the Theban Necropolis: TT 320 (4); TT 358 (1); tomb of *Imn-m-h3.t* Q (42)

The bird remains that could be identified are in large majority members of the *Anatidae* family (ducks and geese, the white-fronted goose (*Anser albifrons*) being most frequently identified). A few smaller mummies have been said to contain the remains of *Columbidae* (pigeons or doves).²²⁵

- In a few rare instances, ostrich eggs were deposited into tombs. They could be transformed into vases, with the addition of a stone top and base (Cairo JE 98774 and JE 31708; Brussels E2770). Most of the examples recovered so far date from a period extending from the end of the Old Kingdom (6th dynasty examples from Balat) to the 2nd Intermediate period.²²⁶

Food offerings have also been identified in association with buildings' foundations, in particular temples, private and royal tombs, forts, and palaces. J. M. Weinstein defines these foundation deposits as being "a type of votive offering placed in or beneath the foundations of a building or in its vicinity at the time of its founding. [...] They are best known for temples,

²²⁴ V. Loret (1898, p. 107), who directed the excavation of Amenhotep II's tomb (KV 35), recorded making a most striking discovery, namely "tout un garde-manger momifié, emmailloté et enfermé dans des cercueils de bois blanc présentant la forme exacte de l'animal: oies, canards, pigeons, cailles, etc., etc."

²²⁵ According to Boessneck (1986, p. 324), the identified remains of *Columbidae* all belong to wild species, such as the turtle and laughing doves (*Streptopelia turtur* and *S. senegalensis*), or the rock pigeon (*Columba livia*).

²²⁶ Cherpion 2001, pp. 286-7. See also Laufer 1926; Conwell 1987; Camps-Farber 1995; Zuckerman 2011 for additional information of the use of ostrich eggshells to manufacture vessels in the ancient Near East and the Mediterranean regions.

where they occur regularly at the four corners of the structure."²²⁷ While the composition of these deposits varies through time, food offerings consisting of bovine and fowl sacrifice remain a standard feature. Once again, the knowledge of these deposits, often located at the structures' corners, is limited to brief mentions of bird bones in excavation reports (Tanis, Anta Temple Complex; Deir el-Bahri, Mortuary temple of Mentuhotep II).²²⁸ Complete birds could be deposited in these foundation trenches, such as the pigeon discovered with legs and wings tied in the Deir el-Bahri tomb of *Sn-n-mwt* (TT 353), and the Egyptian geese deposited at the temple of Satet at Elephantine during the reign of Senusret I, and at the temple of Thutmose III at Gurna.²²⁹ In a few instances, however, only the birds' heads seem to have been used as offering (Deir el-Bahri, Mortuary temple of Mentuhotep II; Medinet Habu, Mortuary temple of Ay).²³⁰ These discoveries leave one to wonder whether these heads are representative of the ritual extermination of enemies, which could disturb the integrity of these structures. While the use of ducks and geese as foundation offerings is consistent with their frequent association with enemies needed to be controlled and repelled, the presence of quails and *Columbidae* is more puzzling. According to J. M. Weinstein, quail sacrifices have been identified at Deir el-Bahri and Armant, in religious structures dated from the reign of Hatshepsut. He also proposes that the so

²²⁷ Weinstein 1973, p. lxix

²²⁸ Weinstein 1973, pp. 59-60, 314, 375-376

²²⁹ Lortet and Gaillard 1909, pp. 154-5; Dorman 1991, p. 157, Cat. 67 and pl. 91h. The remains of the birds from TT 353 are now in the Metropolitan Museum of Art, Inv. Nr. MMA 27.3.512. In September 2014, I have had a chance to examine the Egyptian Geese, now held in the Musée des Confluences, Lyon. The feathers of the birds have retained their natural colors. They did not undergo any mummification treatment involving the use of resins and balms. They also differ from standard food offerings, since no body part had been removed.

²³⁰ Weinstein 1973, pp. 60, 219-20

called “pigeon” sacrifices reported at other sites may in fact also be quail offerings.²³¹ However, more precise identification of the bird remains had yet to be conducted. In addition to these possible sacrifices of quails during foundation rituals, a small number of Theban tombs also showcase the presentation of quails, tied to sheaves of grains, to the goddess Renenutet during harvest festivals, a characteristic motif which will be discussed in the following section.

ii. The Capture of Birds as Illustrated in Iconography

In the tomb chapels of high officials and members of the elite, the representations of activities in the Egyptian Nile Valley and surrounding deserts, in addition to the depiction of multitudes of birds being presented to the deceased, either alive or already slaughtered, constitute an invaluable source of information on the ancient Egyptian avifauna and the Egyptians’ perception, interaction, and “relationship” with it.²³² The Memphite canon of elite funerary and religious art, devised early in Egyptian history and already well-established by the 4th Dynasty, provides Egyptologists with an aspect of this relationship embedded with complex symbolism.²³³ In most instances, the so-called scenes of daily life featuring these

²³¹ Weinstein 1973, pp. 134-135

²³² Fitzenreiter 2009, p. 311: “Not very surprisingly for those familiar to this period (i.e. the Old Kingdom) and despite a growing corpus of other archaeological evidence, the decoration of funerary chapels remains one of our most important sources to collect information about the role and reflection of animal based food.” The author then provides a useful list of bibliographical references dedicated to the study of food production and nutrition in ancient Egypt.

²³³ Davis 1989; Baines 1994, pp. 88-90; *Ibid.* 2007, pp. 3-30; Vernus 2009-10. M. Hartwig (2004, p. 38) remarks that “through the manipulable link between a given object and its depiction, 2- and 3-dimensional images of people, things, and texts in the tomb acted as sophisticated series of magical reinforcements to aid and provide for the tomb owner in his afterlife.” A. David (2014, p. 242) considers that “the tomb decoration is a multilayered construct, both practical and symbolic, conditioned by the Egyptian system of depiction and its conceptual world.”

aforementioned activities are considered to be idealized representations of a world in which the tomb owner is acting as the efficient high official who has full control over the resources placed under his jurisdiction.²³⁴ Caution should thus be applied when analyzing the scenes and proposing possible interpretations. Moreover, this funerary iconography, in addition to serving important functions in ritual contexts, is unlikely to provide much insight into the lives of the large majority of the population, information which may remain elusive to our modern enquiries. The data, which will be presented in the following pages, can therefore be only applied to official, institutional, and elite practices.²³⁵

It is undeniable that ancient Egyptian artists were accomplished at representing wildlife.²³⁶ Their gift of observation combined with their artistic skills prompted ancient Egyptian craftsmen to represent the environment and animals in their immediate surroundings in the Nile Valley, as well as those they encountered in the wilderness often with exquisite details. Early epigraphers and Egyptologists, yet unacquainted with the animals living in the Egyptian countryside of their time, were fascinated by the wildlife they could see on the walls of ruined temples and tombs, or in the hieroglyphic texts accompanying these depictions. Several Egyptologists and Naturalists, such as P. H. Boussac, C. Gaillard, and L. Keimer strove to

²³⁴ See Hartwig 2004, pp. 49-50 for a review of the scholarship dedicated to analyzing the so-called daily life scenes. See also Fitzenreiter 2009, pp. 314-326 for a discussion of the representations of animals and animal-based food in tomb decoration.

²³⁵ Moreno Garcia 2003; Vernus 2009-10

²³⁶ Kanawati 2001, p. 83: "It is generally agreed that the Egyptian artist was sensitive to nature and allowed himself more freedom in representing it." In her seminal work, L. Evans (2010) has endeavored to further demonstrate the talents of ancient Egyptian artists at accurately depicting a wide variety of animal behaviors, and their ability to incorporate faunal characteristic features and attitudes in their abstract symbolic and religious worlds.

identify them.²³⁷ These early attempts at identifying the animals of ancient Egypt have been revisited and reviewed on multiple occasions, at the same time as our understanding and knowledge of the local wildlife was improving and expanding. Nonetheless, we owe a huge debt to these scholars, who, in their quest to become acquainted with the ancient Egyptian fauna, kept detailed records of scenes which have now disappeared or whose colors and details have vanished.²³⁸ The task they had chosen to undertake was not an easy one to accomplish: it was hampered not only by the lack of existing ornithological studies on Egyptian avifauna²³⁹ but also by the “unscientific” representations of birds executed by ancient Egyptian artists. The goals of these ancient painters was not to render nature as accurately as possible; rather they selected field marks and other features that were deemed characteristic of a bird – either type or even species – in their eyes and that were of special relevance in certain contexts.²⁴⁰ These

²³⁷ For a complete list of the publications these scholars dedicated to birds in ancient Egypt, see the entries under their individual names in the bibliography.

²³⁸ This statement is especially valid when considering the work of J. G. Wilkinson, I. Rosellini, and J.-F. Champollion in the first few decades of the 19th century, followed in their footsteps by P. Newberry, N. and N. de Garis Davies at the beginning of the 20th century. Their careful recording of scenes and extant colors they could observe continues to be an extremely valuable resource to this day.

²³⁹ These scholars relied on *The handbook to the birds of Egypt* by G.E. Shelley (1872), whose observations on Egyptian avifauna was gathered during shooting expeditions along the Nile, a common winter hobby for wealthy Europeans.

²⁴⁰ Mahmoud 1991, pp. 17-18. L. Evans (2010, p. 7) further suggests that “what mattered was to represent things as the artist knew them to be rather than how they appeared.” According to P. Vernus (2009-10, p. 67), “l’art égyptien a la suprême habileté à donner l’illusion du naturel à une vision reconstruite du monde.” He ends his analysis of elite funerary iconography as follows: “Contrairement aux apparences, rien de spontané, rien de réaliste, rien de nature dans le décor des chapelles funéraires des membres de l’élite.” While I advise for caution in the analysis of these scenes, I do not believe that no element of truth is incorporated therein, as stated by P. Vernus. Being able to extricate the elements of reality from the sophisticated network of symbols and idealized motifs is certainly a challenging task, and we may not possess the key piece to solve the puzzle. Nevertheless, the more these scenes are analyzed using a multi-disciplinary approach – for instance reliance on ornithological and biogeographical knowledge, as in this study – the better the chances for us to uncover clues on the daily life of ancient Egyptians.

characteristic features were at times as varied as the number of artists employed to represent these scenes. Despite these challenges, some genera and species of birds can readily be identified, in particular when colors on reliefs and wall paintings have survived.²⁴¹

Among the scenes frequently incorporated into the funerary iconographic repertoire, activities in the marshes, in orchards and gardens include the capture of a variety of birds, a cynegetic theme which remained popular from the 4th to the 18th Dynasties. The numerous mastabas and rock-cut tombs from the Old Kingdom excavated both in the Memphite region and in the provinces supply the largest sample of scenes, filled with details informing the modern viewer about the interactions of ancient Egyptians with the wild avifauna and their exploitation thereof.²⁴² Two large scale projects, based at the Universities of Leiden and Oxford, have systematically reviewed all the extant scenes adorning the walls of tombs dated from this period and have endeavored to organize them by type-scenes. I have listed in **Table 9** the scene-details susceptible to provide information on the exploitation of birds in ancient Egypt, using the terminology recorded in the Oxford Expedition to Egypt (OEE) database.²⁴³ This table further indicates the periods of Egyptian history during which these scenes have been

²⁴¹ Ancient Egyptian representations of wildlife are significant not only for Egyptologists, but also for the study of animal in other ancient Near Eastern cultures, since no other extant record is as detailed and descriptive as that encountered in Egypt. See for example the works of B. Janković (2004) and E. von der Osten (2015) on fowling and poultry farming in the ancient Near East, with emphasis on Mesopotamia. Both these publications rely heavily on the ancient Egyptian avian data.

²⁴² The iconographic material of this period has already been explored in the works of P. Montet (1914, 1925) and J. Vandier (1969), more recently by O. Mahmoud (1991), as well as W. Decker and M. Herb (1994).

²⁴³ http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006/queryThemes.cfm?CFID=93173&CFTOKEN=FE34AC6D-AA2D-41CF-BE233E7FE2FE85B5 (accessed May 15th, 2014)

identified in the archaeological record. It is noteworthy that, in the course of my research, I was able to identify only one scene, which, *a priori*, had not been carved in a funerary or ritual space. A net filled with birds and operated by at least one one man was uncovered in the Western desert, summarily etched in the rock near a desert police station located on a hill about 20 km southwest of Balat (**Figure 10**).²⁴⁴

Table 9. List of scene-details in iconography providing insight into the exploitation of birds in ancient Egypt

Scene number in OEE database	Scene-detail Title	Attestation of scenes consulted for each period			
		OK	MK	NK	Late Period
1.1	Double-Scene: Fishing with spear and fowling with a throwstick	X	X	X	X
1.13	Clap-net or bird-trapping scene (such as quails)	X	X	X	X
2.1.32	Ostrich in the desert	X	X	X	
2.1.33	Guinea-fowl in the desert	X			
2.2	Hunters returning from the desert with avian game		X	X	
5.2	Bird netting in an orchard	X	X		
5.3.1	Flocked birds trapped in a tree net or flying freely outside	X	X		
5.4	Trapping birds in hand-set traps	X	X		
7.1.6	Bird procession scenes: Cranes	X	X		X
7.1.7	Bird procession scenes: Geese	X	X	X	X
7.1.8	Bird procession scenes: Ducks	X			X
7.1.9	Bird procession scenes: Chicks	X		X	X?
7.1.10	Bird procession scenes: Pigeons	X			X?
7.1.11	Bird procession scenes: Swan	X			
7.1.12	Individual bird species named in hieroglyphs in a bird procession scene	X	X		
7.1.13	Flock number written next to the birds	X			
7.1.14	Species, generally small birds, depicted in sub-registers in a bird procession scene	X	X		
7.2	Poultry-yard scene	X	X?	X?	
7.3	Force-feeding of poultry	X	X		
9.3	Preparing fowl for consumption	X	X	X	
11.2.13	Animals (more specifically birds) on a freight boat	X		X	
*****	Lists of offerings, with specific bird names mentioned	X	X	X	X
*****	Piles of offerings, presented to deceased and gods	X	X	X	X

²⁴⁴ Kuhlmann 2002, pp. 132-133, fig. 1

Ornithologists and Egyptologists working collaboratively have identified 103 different species of birds represented in art.²⁴⁵ These numerous birds can be divided as follows:²⁴⁶

- Terrestrial birds: Ostrich, Bustards (3)
- **Water birds: Grebes, Pelicans, Cormorants, Finfoot, Terns (9)**
- **Large wading birds: Herons, Egrets, Ibises, Spoonbill, Flamingo (20)**
- **Small wading birds: Snipe, Avocet, Plovers, Sandpipers (9)**
- Storks (3)
- **Waterfowl: Swans, Geese, Ducks (21)**
- Birds of Prey: Eagles, Falcons, Hawks, Kite, Osprey (9)
- Vultures (1)
- Galliforms: Guineafowl, Quail, Red Jungle Fowl, Peacock (4)
- **Rallidae: Coot, Gallinules, Moorhen (4)**
- Cranes (4)
- Sandgrouse (1)
- Doves and Pigeons (3)
- Cuckoos (2)
- Owls (3)
- **Kingfishers**, Hoopoe, Roller (5)
- Passerines: Wagtail, Redstart, Oriole, Shrike, Sparrows (11)

Highlighted in bold are groups of birds that are mostly, in some cases even solely, encountered near and/or on water. Many of these water birds are represented inhabiting the lush and thick papyrus thickets depicted as backdrops for the various activities taking place in the ancient Egyptian marshes. They are shown roosting, nesting, protecting their young, and feeding. Some of these birds were also targeted by ancient Egyptian fowling and were trapped, netted, and captured, so as to be further exploited. The following list specifically recapitulates the most common birds, which can be identified in the various type-scenes relevant for this

²⁴⁵ Houlihan 1986; J. Wyatt, personal communication. This number does not include the birds identified in the hieroglyphic system.

²⁴⁶ Between parentheses is indicated the number of identified species in each avian group.

research project and incorporated into funerary iconographic repertoires, from the 4th Dynasty in the Old Kingdom until the end of the Late Period (ca. 2500-332 BC).

- Ostrich (*Struthio camelus*)
- Pelican (*Pelecanus* sp.)
- Wading birds:
 - Bittern (*Botaurus stellaris*)
 - Night heron (*Nycticorax nycticorax*)
 - Egret (*Egretta* sp.)
 - Grey heron (*Ardea cinerea*)
 - Pied avocet (*Recurvirostra avosetta*)
- Waterfowl:
 - Swan (*Cygnus* sp.)
 - Species of geese: greylag (*Anser anser*) and white-fronted (*A. albifrons*) geese
 - Species of ducks:
 - Egyptian goose (*Alopochen aegyptiacus*)
 - Common and ruddy shelducks (*Tadorna tadorna* and *T. ferruginea*)
 - Widgeon (*Anas penelope*)
 - Teal (*Anas crecca*)
 - Mallard (*Anas platyrhynchos*)
 - Pintail (*Anas acuta*)
- Common quail (*Coturnix coturnix*)
- Coot (*Fulica atra*)
- Species of cranes: common (*Grus grus*) and Demoiselle (*Anthropoides virgo*) cranes
- Turtle dove (*Streptopelia turtur*)
- Roller (*Coracias garrulus*)
- Hoopoe (*Upupa epops*)
- Golden oriole (*Oriolus oriolus*)

It transpires that ducks and geese are the most frequently and abundantly depicted birds for all periods of Egyptian history, whether in marsh settings or in offering scenes, and thus seemingly held the most appeal for the ancient Egyptians. Such an observation is fully in line with the presence in Egypt of large flocks of migratory waterfowl, which fly to and through the country twice a year. Among the myriads of birds represented on walls, a few species can

be readily recognized, in particular the male pintail duck (*Anas acuta*), due to its characteristically long central tail feather and its slender neck (**Figure 11**).²⁴⁷ Scenes from several Middle Kingdom tombs whose wall paintings have retained some of their pigments are dominated by large flocks of these attractive grey and brown ducks. They can be accompanied by groups of mallards (*Anas platyrhynchos*), characterized by their green heads, as well as widgeons (*Anas Penelope*), Eurasian teals (*Anas crecca*), or ruddy shelducks (*Tadorna ferruginea*). It is such a varied flock of dabbling ducks that is represented gathered in the pond, where *Hnm-htp* II had previously installed his clap-net (**Figure 12A**).²⁴⁸ In addition to figuring prominently in fowling representations, pintails are also a favored offering and are omnipresent in the midst of goods piled up before the deceased and deities (**Figures 12B-C**).

Whenever colors have disappeared, most of the other waterfowl can only receive the more general appellation of “duck” or “goose,” depending on their size (**Figures 13A-B**).²⁴⁹ Despite the frequent absence of clear field marks, the birds gathered on the pool where bird trapping is about to take place can readily be identified as diverse species of ducks and geese, most of which were migratory species, alongside some resident breeders, such as the Egyptian goose (*Alopochen aegyptiacus*). Moreover, a stylistic trend is readily identifiable in several

²⁴⁷ Houlihan 1986, pp. 71-73; Germond 2002-3

²⁴⁸ Kanawati and Woods, photographs # 19 and 191; Kanawati and Evans 2014, pls. 70-73

²⁴⁹ In a few rare instances, some of the distinctive features of various types of waterfowl have been carefully carved in the stone. For example, the artist(s) in the tomb of *Ty* at Saqqara represented some of the birds in the poultry-yard as clearly stouter and with a thicker bone structure than others, with streaks etched in the limestone to indicate the natural patterns of the birds' plumage. All these features can be associated with geese of the *Anser* family, such as the greylag or the white-fronted goose (Épron and Daumas 1939, pls. 25 and 33).

Theban tombs dated from the 18th dynasty. In spite of the presence of colors on the walls of many of these tombs, the waterfowl represented inhabiting the marshes appear as composite birds, using the pintail as a base model (the long tail feather is clearly visible) and combining diverse features from other birds that artists could possibly have observed in their surroundings. This artificial “creation” should be understood as conveying the general notion of “hunted waterfowl,” and was liberally applied like a stencil on tomb walls. To avoid monotony, different colors were used for the head feathers, mostly brown and green. The tombs of *Hnsw* (TT 31), *Hr-m-ḥb* (TT 78), *Kn-Imn* (TT 93), and *Iy* (KV 23) are perfect examples displaying these stylized avian motifs (**Figure 14**).²⁵⁰

Because of the archaizing tradition of the Late Period (664-332 BC), during which artists drew inspiration from the rich repertoire of the Old, Middle, and New Kingdoms, the few surviving fragments featuring avian life scarcely contribute towards a better knowledge of the exploited avifauna, despite the exquisite quality of the carvings in many of the Theban tombs of this period (**Figure 15A**).²⁵¹ Thereafter, in particular during the 30th dynasty (ca. 350 BC), the vibrant, at times whimsical and unrealistic, depictions of birds and other animals transported

²⁵⁰ For TT 31, see http://www.osirisnet.net/tombes/nobles/khonsou31/e_khonsou31_01.htm (last accessed July 3, 2015); for TT 78, see Brack and Brack 1980, pl. 67; for TT 93, see Davies 1930, pl. 51.A; for KV 23, see <http://www.thebanmappingproject.com/database/image.asp?ID=14125> (last accessed July 3, 2015).

²⁵¹ See Kahl 2010 for a review of the archaizing trend adopted by artists of the later periods of Egyptian history, along with a list of the important scholarship on the subject. For an example of Late Period representations in the Theban region, see the offering bearers holding waterfowl in the tomb of *Ššnḳ*, TT 27, dated from 26th Dynasty (Donadoni 1976, pl. 6). In the illustrated fragment, the sculptor carefully modeled the features of the waterfowl held in the arm of one of the men included in the procession of offerings. The scaly skin of the legs and feet are minutely carved, even though the craftsman failed to notice that geese and ducks have characteristic webbed feet. Similarly, feathers on the wings and back are individually represented, along with some details of the plumage represented as simple lines.

and accompanying offering bearers further confirm the notion that exact renditions of the birds and their behaviors was not the ultimate intention of artists of this period.²⁵² Some birds are displayed as exhibiting an erratic behavior: they are shown standing on top of or fluttering above the bouquets of flowers and marsh plants presented to the deceased, as if they were proceeding towards the tomb owner of their own volition (**Figure 15B**). Others, on the other hand, are kept prisoners by having their wings tied to bouquets of marsh plants. As has been documented from other motifs identified in Late Period tombs, it is possible that the cranes, pintail ducks, and geese, which continue to be represented being held by offering bearers, had been copied from older monuments. Yet, the choice of these bird species might also reflect a funerary tradition, namely to deposit fowl in tomb chapels, which continued to be implemented by Late Period Egyptians.

Whereas the scenes of waterfowl trapping and hunting are commonplace in the marsh pursuits represented in tomb chapels, the capture of other types of birds is seldom attested. Cranes – mostly Eurasian cranes (*Grus grus*), with Demoiselle cranes (*Anthropoides virgo*) in a few instances joining their larger congeners (**Figures 16A-B**) – are represented as offerings, both in tomb and temple settings, throughout Egyptian history.²⁵³ Yet the depiction of their

²⁵² For a study of the iconography in tombs dated from the Late Period, most specifically in Lower Egypt, see the work of L. Montagno Leahy (1988). For representative depictions of bird offerings during this period of Egyptian history, see the wall fragment from the tomb of *P3-wn-(r-) ḥ3t=f* (Berlin ÄM 15001) (Montagno Leahy 1988, pp. 541-544); the representations of offering bearers in the tomb of *Hn3t [rn=f nfr Hnm-ib-r^c-mn]*, (*ibid.*, p. 619); the fragmentary reliefs from the tomb of *T3-nfr* (Cairo JE 29211) and from the tomb of *P3-di-Wsir* in Heliopolis (Baltimore, Walters Art Gallery 22.97); and the tomb of *P3-di-Wsir* at Tuna el-Gebel (Lefebvre 1924, pl. 35 and 46, as well as Cherpion *et al.* 2007, pp. 93, 113, 115, 136, 145-146).

²⁵³ See Stupko 2010 for a study of the bird's iconography from the Old Kingdom until the reign of Hatshepsut.

capture is rare: only two scenes are known, dating from the 1st and the 6th Dynasties, respectively in the tombs of *Hm3-k3* and *Mhw* (**Figures 9 and 16C**).²⁵⁴ Similarly, *Columbidae* (doves and pigeons) are depicted being captured using a clap-net in solely two scenes dated from the 5th Dynasty, located in the Sun Temple of Niuserra at Abu-Ghurob and in the tomb chapel of *Nfr-hr-n-Pth* (**Figure 17**).²⁵⁵ The same observation applies for the trapping of common quail (*Coturnix coturnix*; **Figure 18A**), which can be seen taking place in the wheat fields of the tombs of *Mrrw-k3.i* and *Hzi*, in the Teti cemetery at Saqqara, and also a millennium later in the Theban tomb of *Nb-Imn* (**Figures 18B-D**).²⁵⁶ During the Old and Middle Kingdoms, a few tomb chapels record the trapping of the insect- and fruit-eating birds that are the golden orioles (*Oriolus oriolus*), along with other possible perching birds, as they gather in trees and get entangled in the meshes of the net spread over the tree's crown (**Figure 19**), or become captive of spring traps, placed underneath these trees. In the tomb of *Nfr-hr-n-Pth*, the characteristic black markings around the male orioles' eyes, along with their black wings and tails, have remained visible on a few of the birds already crammed into crates (**Figures 20A-B**). The other human–bird interactions, attested during the New Kingdom in particular, frequently consisted

²⁵⁴ Emery and Saad 1938, pl. 12; Altenmüller 1974; *ibid.* 1998, pl. 7-8; Henein 2002; *ibid.* 2010, p. 323 n.25: cranes are no longer hunted in the region of Lake Manzala. “Ayant informé les oiseleurs que les anciens Égyptiens capturaient des grues, ils m’ont répondu que les filets étaient certainement posés à l’endroit où les oiseaux passaient la nuit.”

²⁵⁵ For the scene in the Chamber of Seasons, see Von Bissing 1955, pl. 13 (Fragment 255). For illustrations of the scene from the tomb of *Nfr-hr-n-Pth*, see See Wenzel 2007, p. 347, fig. 13 (I thank D. Meeks for bringing this reference to my attention) and http://www.osirisnet.net/mastabas/neferherenptah/e_neferherenptah_01.htm (last accessed July 3, 2015).

²⁵⁶ For *Mrrw-k3.i*: Duell 1938, pl. 168; Kanawati et al. 2011, pl. 24, 27-28, 82, 84. For *Hzi*: Kanawati and Abder-Raziq 1999, pl. 52. For the fragmentary wall painting from the 18th Dynasty tomb of *Nb-Imn* (Inv. Nr. ÄM 18529) currently on display in the British Museum, London: Parkinson 2008, p. 118, fig. 123.

of people making noise or wide gestures (with or without a cloth), with the intention to scare the birds away from trees or grain piles.²⁵⁷

Two Middle Kingdom tombs stand out by the presence of unusual representations of birds, shown in a row with each bird's name indicated in a caption beside it. These avian scenes belong to the tombs of *B3kt* III and *Hti*,²⁵⁸ both located in the provincial cemetery of Beni Hassan and dated from the late 11th Dynasty (ca. 2080-1940 BC). The birds have best survived the passage of time in the tomb of *B3kt* (**Figures 21A-B**); only the outlines of a few birds are slightly visible in the tomb of *Hti*. Four registers of birds, located on both sides of a fowling scene, have puzzled scholars for decades. It has been surmised that *B3kt* was fond of birds and desired to have these feathered creatures for his personal enjoyment in his afterlife.²⁵⁹ The bird vignettes follow the iconographic trend identified in this tomb, BH 15, which consists of displaying both activities and beings (humans and animals alike) in a linear and organized fashion. *B3kt* is thus shown in full control of his nome, well aware of the activities and of the creatures which can be found within.²⁶⁰ The birds have seemingly been organized according to

²⁵⁷ This motif is present in TT 217, tomb of *Ipwy* (Davies 1927, pl. 30), and possibly in TT 284, tomb of *P3-hm-ntr* (Davies 1939, pl. 19). A talatat uncovered at Hermopolis also depicts people scaring away birds: Brooklyn 60.1973 (Romano 2002, p. 37 fig. 25).

²⁵⁸ Newberry 1893, pls. 4 and 13. These tombs have been labeled BH 15 for that of *B3kt* and BH 17 for that of *Hti*. See Bailleul-LeSuer and Wyatt 2013 for a study of this unique motif.

²⁵⁹ Davies 1949; Houlihan 1996, pp. 156-158

²⁶⁰ Bailleul-LeSuer and Wyatt 2013, pp. 21-22

their favored habitat: land birds to the left and water birds to the right. The following bird species have been proposed:²⁶¹

Table 10. Tentative identification of the birds depicted in the tomb of *B3kt* III (BH 15) in Beni Hassan

<i>Bird Number</i>	<i>Hieroglyphic Caption</i>	<i>Proposed Species</i>
1	<i>shh.t</i>	Allen's Gallinule (<i>Porphyrio alleni</i>)
3	<i>nhb.t</i>	Pied Kingfisher (<i>Ceryle rudis</i>)
4	<i>g33b.t</i>	Gallinule?
5	<i>whc.t</i>	Coot (<i>Fulica atra</i>)
6	<i>tnf</i>	Spur-winged Plover (<i>Vanellus spinosus</i>)
7	<i>mrwry.t</i>	Juvenile Black Stork (<i>Ciconia nigra</i>)
8	?	Crowned or Sociable Plover
11	?	Crane-like bird?
12	<i>s3w</i>	Black-crowned Night Heron (<i>Nycticorax nycticorax</i>)
13	<i>bng</i>	Caspian tern (<i>Hydroprogne caspia</i>)?
14	<i>dgy.t</i>	Female Painted Snipe (<i>Rostratula benghalensis</i>)
15	<i>k3pw</i>	Bittern (<i>Botaurus stellaris</i>)
16	<i>dms</i>	Pied Avocet (<i>Recurvirostra avosetta</i>)

<i>Bird Number</i>	<i>Hieroglyphic Caption</i>	<i>Proposed Species</i>
17	<i>s33</i>	Songbird?
18	<i>hnti/hntš</i>	Little Bittern?
19	<i>sdh</i>	Ringed Plover (<i>Charadrius hiaticula</i>)
20	<i>3m^c</i>	Bittern? Black-headed Gull? ^a
21	<i>im/im tr</i>	Female Golden Oriole (<i>Oriolus oriolus</i>)
22	<i>gnw</i>	Male Golden Oriole (<i>Oriolus oriolus</i>)
23	<i>ih/ih tr</i>	Small songbird?
24	<i>ir.t</i>	Small songbird?
25	<i>cnbw</i>	Small white bird
26	<i>s3bw</i>	Masked Shrike (<i>Lanus collario</i>)
28	<i>swrw</i>	European Roller (<i>Coracias garrullus</i>)
29	<i>bdw</i>	Pin-tailed Sandgrouse (<i>Pterocles alchata</i>)

^a For the identification of the *3m^c* as being a species of bittern, see Gaillard 1933; *Ibid.* 1934. For it being the black-headed gull, see Hannig and Vomberg 1999, p. 211.

In most instances, rows of birds encountered in funerary iconography are considered to be lists of fowl destined to be sacrificed for the cult of the deceased. Are these avian lists in Beni Hassan records of birds captured by the deceased and later consumed in a ritual meal, during which creatures from the entire nome were eaten? The absence of an explanatory

²⁶¹ In this table, I follow the numbering system established in Davies 1949. Not included in this list are the birds, whose inscriptions and representations are too faint to allow identification. They are the birds N. Davies labeled as # 2, 9, 10, and 27. Even though ancient Egyptians considered them to be birds, I will not discuss the three depictions of bats drawn in this scene. I thank J. Wyatt for identifying many of the birds presented in this table.

inscription and the unique character of the motif leave the question unanswered. Yet many of the birds present in these vignettes are known to be captured and sold at bird markets in modern Egypt (water birds such as gallinules; wading birds such as snipes and plovers; passerines such as the golden orioles; galliforms such as the pin-tailed grouse).²⁶² Some of these birds are also depicted as being the target of fowlers in other Middle Kingdom tombs located at Beni Hassan and Dayr al-Barshā: pied avocets (*Recurvirostra avosetta*) are shown hanging alive from the ceiling of a fowler's cabin in the tomb of *Dhwtj-ḥtp* at Dayr al-Barshā (**Figures 22A-B**);²⁶³ golden orioles and European rollers (*Coracias garrulus*) can be seen fluttering around fruit trees, at the foot of which a spring trap has been positioned in the tomb of *B3kt* III at Beni Hassan (**Figure 23**).²⁶⁴ Finally, the black-crowned night heron and bittern might have been captured and kept in captivity to serve as decoys, as demonstrated by Old Kingdom scenes where these birds are standing beside the cages filled with the birds recently caught in the clap-net.²⁶⁵ It is therefore possible that the remarkable bird list displayed on the North wall of *B3kt*'s tomb may be more than a mere inventory of the local birdlife, but possibly a record of the unusual birds captured and exploited by the nomarch.

²⁶² Goodman and Meininger 1989, pp. 75-95; Baha el-Din and Salama 1991

²⁶³ Newberry 1893-94, pls. 17, 20, 23



²⁶⁴ Newberry 1893b, pl. 6. In the neighboring tomb of *Hty* (BH 17), a similar scene exhibits an interesting detail: one of the perching birds is shown tied by the leg with a rope (*Ibid.*, pl. 16). It is possible that it may have fallen victim to its gluttony and was caught in a noose. This bird may also have been a decoy to catch a falcon, known to prey on other birds. Using live avian bait to trap birds of prey is common practice in Egypt and Saudi Arabia today (Baha el-Din and Salama 1991, pp. 22-33).

²⁶⁵ For example in the Saqqara tombs of *ḥnḥ-m-ḥr* (Badawy 1978, pl. 41 and fig. 33); *Hzi* (Kanawati and Abder-Raziq 1999, pl. 55); *Mtt* (now in Le Louvre, Inv. Nr. E25508; Ziegler 1990, p. 143); In Giza, from the tomb of *K3-wḥb*, now in the MFA, Boston, Inv. Nr. 34.59.

iii. Wild Birds and their Capture described in Scene Captions

1. Fowling Scenes

The inscriptions accompanying the various themes and motifs reviewed previously can rarely be relied upon to help the modern viewer identify the species of birds involved in these activities. For the most part, the text simply refers to the birds as being *3pd.w*, written with a

goose or pintail duck sign as determinative (G38  and G39 , respectively, in A.

Gardiner's sign-list).²⁶⁶ In most instances, the word is written phonetically, the plural being

indicated by the addition of three similar bird signs. A few examples with extant colors,

however, reveal that the artist underscored the avian diversity of the flock by painting these

birds with three distinct plumages.²⁶⁷ In these contexts, the term *3pd.w* is often translated as

'wildfowl.'²⁶⁸ For instance, when the tomb owner is fowling on a skiff, he is described as:

ꜥm3 *3pd.w* m *ph.w*:²⁶⁹ "Hurling a throwstick at the birds in the marshlands."²⁷⁰

²⁶⁶ Mahmoud 1991, p. 21: in some instances, the term *3pd.wt* is employed. The feminine plural noun is used in this instance as a collective noun, encompassing all types of birds (waterfowl, cranes, doves, etc.). For instance, in the tomb of *Pth-htp* [II] in Saqqara, *wd.t 3pd.wt m tb*, 'placing birds into crates' (Davies 1901, pl. 5).


²⁶⁷ See for example the tomb of *Ppy-ꜥnh* the Middle, in Meir, in Kanawati 2012. On the north wall of Room 3, above the offering bearers burdened with waterfowl and other goods destined for the deceased, the word *3pd.w* is written with three different birds: a male ruddy shelduck (*Tadorna ferruginea*), a goose, and possibly a female pintail duck (Kanawati 2012, pl. 60 (a)).

²⁶⁸ The word *3pd* acquired a more specific meaning in texts dated from the later periods of Egyptian history. While W. Faulkner (1952, p. 128) had proposed that it originally specifically meant 'duck,' it later seemed to refer to birds in general. Finally, in administrative texts dated from the 3rd intermediate period, the term *3pd*, or rather *ipt*, as it came to be read at that time, came to mean 'goose.'



²⁶⁹ For example, in the 6th Dynasty tomb of *Hzi*, at Saqqara (Kanawati and Abder-Raziq 1999, pl. 53)

²⁷⁰ A few Old Kingdom fowling scenes, where the tomb owner is aiming a throwstick at the birds rising from the vegetation, stand out by the unusual terminology describing the action. The nobleman is said to *hsb hnm.w*, the latter term having three different birds, a gallinule, a hoopoe, and a kingfisher as determinatives. In the tomb of

When he is depicted towering above the registers vibrant with the many activities and duties performed on his behalf, such as leading cattle through the marshes, filling fowling and fishing nets with multitude of birds and fish, the tomb owner is said to be:

m33 k3.t nb.t nfr.t ir.t m sh.t () *nt Šmꜥw T3 Mhw:*²⁷¹ ... “Viewing all the good work, which has been done in the *sh.t* of Upper and Lower Egypt.”

Or, more precisely as:

m33 k3.t sh.t () *sh.t* ()²⁷² *3pd.w h3m rm.w ꜥ3 wr.t:*²⁷³ ... “Viewing the work in the *sh.t*: the netting of birds and the catching of a very large amount of fish...”

While the majority of the birds captured are first placed in crates and then transported by boat to their next destination, several senior officials, seemingly accompanying the fowlers in their trapping expedition, gather some of the birds recently caught and bring them forwards towards the tomb owner who is overseeing all the action. They declare:

Ny-ꜥnh-Hnm and *Hnm-htp*, three officials accompany *Ny-ꜥnh-Hnm*: each one is shown holding in one hand one of the birds previously mentioned and a throwstick in the other (Moussa and Altenmüller 1977, p. 60 and pl. 6). Translating this phrase ‘breaking the neck and wings, slaughtering the *hnm.w*-birds,’ M. Herb (1991) analyzes this caption as being an accurate description of what the owner is aiming to do with his weapon. In fowling scenes dated from the Old and Middle Kingdoms, rarely are birds depicted being actually hit by the stick; a successful hit on the part of the tomb owner is for the first time depicted during 18th Dynasty. The declared intent to kill the *hnm.w*-birds, traditionally seen as being a collective reference to swamp birds, leads one to believe that the presence of this scene and caption in a funerary setting provided additional assistance for the destruction of the potential forces of chaos, which may have disturbed the tomb’s cosmos. Provisioning fowl for the afterlife does not appear as being the main intent.


²⁷¹ Tomb of *Ny-ꜥnh-Ppy* in Meir (Blackman and Apted 1953 part V, pl. 30)

²⁷² Wb IV p. 262 §§3-11: *sh.t*, Vogel mit dem Netz fangen.

²⁷³ Tomb of *Ppy-ꜥnh: Hni Km* also in Meir (*ibid.*, pl. 13)

*shp.t /in.t wšn.w:*²⁷⁴ “Bringing birds offerings.”

In this instance, the wildfowl is no longer referred to as *ʒpd.w*, but rather as *wšn.w*. By being selected by these officials, they have become sacrificial offerings, whose neck is destined to be ritually broken: *wšn ʒpd.w n k3 n PN*, “breaking the neck of birds for the *k3* of” the tomb owner.²⁷⁵

In the large majority of clap-netting scenes, the fowlers (*wh^c [ʒpd.w]*) themselves are simply said to *sh^t* (²⁷²) *ʒpd.w*, “trap birds in a net.” The specific type of bird targeted is mentioned in a few occasions, such as in the tomb of *Nfr-ḥr-n-Pth* at Saqqara, where is represented:

*sh^t ʿb3 in wh^c(.w) ʿb3 nw pr-d.t.*²⁷⁶ “The netting the ʿb3-birds by the trappers of ʿb3-birds of the funerary estate.”

The ʿb3-bird is also present on fragmentary reliefs recovered from the “Chamber of Seasons” in the Sun temple of Niuserra at Abu Ghurob.²⁷⁷ A few blocks depicting the activities and natural phenomena taking place during the *ʒht* season feature the arrival of the ʿb3- and *šzmt*-birds in

²⁷⁴ For example: tombs of *ʒht-htp* (Davies 1901, pl. 5); *Ny-ʿnh-ḥnm* and *Ḥnm-htp* (Moussa and Altenmüller 1977, pl. 12); *Mḥw* (Altenmüller 1998, pls. 8 and 34). In the latter tomb, several of these bird offerings are specifically brought by the inspector of funerary priests (*shd ḥm.w-k3*) *Msn*. All these Old Kingdom tombs are in Saqqara.

²⁷⁵ See Mahmoud 1991, pp. 22-23 for a complete discussion about the early meaning of *wšn.w* during the Old Kingdom, and its evolution through time. The fish presented to the deceased in many wall scenes are also called *wšn.w*, further emphasizing the sacrificial character of the offering, regardless of the type of animal brought forth before the nobleman. The term *wšn* as a verb in the expression *wšn ʒpd* “to wring the neck of a bird,” is first attested in the Middle Kingdom (Wb I p. 374 §6; Fischer 1977, p. 129 n. 423).

²⁷⁶ Altenmüller 1982, p. 11; Wenzel 2007, p. 347 fig. 13; see www.osirisnet.net/mastaba/neferherenptah/e_neferherenptah_03.htm for a picture of this scene (Last accessed March 25th, 2015).

²⁷⁷ Edel 1961, pp. 229, 246.

the Delta (*iw.t (r) (t3) mħi.t (in) ʿb3 šzmt*, going to the Delta by the ʿb3 and šzmt-birds), alongside other migratory birds, a boon which is seemingly taken advantage of by a fowler (*wħʿ*), ready to pull the rope of a clap-net already deployed.²⁷⁸ During the Šmw season, *ħtʿ3*-birds are the targets of fowlers and are also captured by means of a clap-net (*sħt ħtʿ3*, “trapping *ħtʿ3*-birds”).²⁷⁹ It may be these *ħtʿ3*-birds, which, having been trapped in the meshes of the net, are represented in the register above being placed in a crate, thus leading many scholars to propose that the *ħtʿ3* are some species of migratory geese.

Similarly, when golden orioles are shown being captured in orchards using a tree net, the action is described as:

*swħ gnw / dw gnw m tħ*²⁸⁰

“Rounding up orioles and placing them (lit. the orioles) in a crate.”

Captions in the tombs of *Hzi* at Saqqara and *Ppy-ʿnh: Hni Km* at Meir clearly state the purpose of these hunting expeditions, namely to gather birds, including orioles, for the benefit of the tomb owner’s funerary cult.


s(w)ħ gnw ʿ3 n k3 n ħry-tp ny-sw.t... “Collecting golden orioles in large quantities for the

k3 of the royal chamberlain ...”²⁸¹

²⁷⁸ Berlin ÄM 20035. Von Bissing 1955, pl. 13, fragment 255 (line drawing); Arnold and Ziegler 1999, pp. 356-357 (photograph).

²⁷⁹ Berlin ÄM 20038: Von Bissing 1955, pl. 15b, fragment 266 (line drawing); Arnold and Ziegler 1999, pp. 354-355 (photograph). The possible identification of the ʿb3-, šzmt-, and *ħtʿ3*-birds will be further discussed in Part 2 of this dissertation.

²⁸⁰ Tomb of *Ny-ʿnh-Hnm* and *Hnm-ħtp* (Moussa and Altenmüller 1977, pp. 77-78, pl. 9)

iw nn ḏd3 n wš3(.w) () *sh.t n k3 n Ḥni Km nb(=i)* “These fat ones from among (lit. of) the plumb birds of the *sh.t* are for the *k3* of *Ḥni Km*, my lord.”²⁸²

2. Scenes of Bird Presentation

In funerary iconography, two additional type-scenes can be isolated as providing clues regarding the types of birds favored and desired by ancient Egyptians. The most common scene, which is also the one with the longest history of attestation, is characterized by the countless lines of offering bearers carrying massive quantities of goods intended for the funerary cult of the deceased. A less common motif is the depiction of flocks of birds led before the tomb owner for inspection, usually under the guidance of a guardian.

a. Processions of Offering Bearers:



Prior to the Ramesside period, much of the iconography adorning the walls of tomb chapels was dedicated to the provisioning of the deceased with food offerings, which were believed to ritually become effective in the netherworld and to act as supplement or substitutes to the actual victuals brought by family members and *k3*-priests after the owner’s death. Processions of offering bearers dominate the iconographic repertoire as one gets deeper into the tomb chapel and approaches the shrine (**Figure 24**). These attendants, the large majority of whom are labeled as being *ḥm.w-k3*, “*k3*-priests,” are seen with their arms overflowing with a wide range of products, among which birds are frequently represented in

²⁸¹ Tomb of *Hzi* (Kanawati and Abder-Raziq 1999, p. 34, pl. 56)

²⁸² Tomb of *Ppy-ḥnh: Ḥni Km* (Blackman and Apted 1953 Part V, p. 37, pl. 30)

the company of cattle, antelopes, gazelles, and in some instances hares and hedgehogs. They are sometimes said to specifically *shp(.t) 3pd.w*, “bring offerings of birds.”²⁸³ These birds are seen being brought alive, grasped by their wings, legs, or neck. Larger birds such as geese and cranes were carefully held in the bearers’ arms. The long and potentially harmful bill of the cranes was kept at bay, away from the eyes, with one hand.²⁸⁴ Other smaller birds were also brought forward in cages and baskets.

The names of the birds present among these lines of offerings are generally not specified. In the absence of color, it remains possible to readily recognize the morphology of the Eurasian and Demoiselle cranes (resp. *Grus grus* and *Anthropoides virgo*, the latter having ear tufts, which distinguish it from its larger relative); of *Anser*-geese, such as the greylag or white-fronted geese (*Anser anser* and *A. albifrons*); of the pintail duck (*Anas acuta*); and less frequently members of the *Columbidae* family, either doves or pigeons. As discussed in the Introduction, these birds feature as traditional funerary and religious offerings for the entire span of Egyptian history. When the colors applied on wall paintings, carved reliefs, and wooden coffins are well preserved, other identifiable species emerge in the midst of all the goods being delivered to the deceased. During the Old Kingdom, ruddy shelducks (*Tadorna ferruginea*) and

²⁸³ See, for instance, the scene of offering bearers in the tomb of *ḥnḥ-mḥ-ḥr* (Badawy 1978, figs. 39-40); to avoid monotony and also to bring “life” to the inscription, the word *3pd.w* is written in one instance with three juxtaposed birds signs, slightly overlapping one another ; on the opposite wall, one of the birds in the inscription is shown pecking the ground, looking for seeds to eat , a motif often encountered in the scenes of birds being presented to the tomb owner.

²⁸⁴ On cranes as offerings, see Schüz 1966 and Stupko 2010.

Egyptian geese (*Alopochen aegyptiacus*) frequently figure among the “bouquets” of birds carried by the wings by offering bearers.²⁸⁵ Dated from ca. 2000 BC and recovered in tomb 10A at Dayr al-Barshā, the interior decoration of *Dhwtj-Nht*'s coffin has also retained a remarkable vibrancy and wealth of details, which bear testimony to the mastery and accuracy of the artists' hands.²⁸⁶ A turtle dove (*Streptopelia turtur*), with its wings deployed, figures among the many goods accumulated before *Dhwtj-Nht* (**Figures 25A-B**). Two waterfowl have already been sacrificed and their broken necks are depicted intertwined (**Figure 12B**). One of them is a pintail duck, readily identifiable with its brown head and grey plumage, whose various hues are represented by thin black scallops on the bird's body. The other bird, smaller yet displaying a similar morphology and a brown plumage, may be a female of the same species.

Offering scenes from the New Kingdom include a few additional bird species which join the more traditional offerings listed above. The common quail (*Coturnix coturnix*), in particular, appears as an offering of choice during harvest festivals. It is shown tied to sheaves of wheat, alongside some other birds, which also favor grasslands and wheat fields, potentially identified as being corncrakes (*Crex crex*) (**Figures 26A-B**).²⁸⁷ These two species of birds possibly also

²⁸⁵ These species of birds can be seen in the tomb of *Mhw* (Altenmüller 1998, pl. 101); in the fragmentary wall paintings from the tomb of *Mtj* (Ziegler 1990, p. 143), and in the tomb of *Ppy-nh* the Middle in Meir (Kanawati 2012, pl. 58).

²⁸⁶ Berman 2009, pp. 104, 115 and figs. 70-73

²⁸⁷ I thank J. Wyatt for suggesting this possible identification.

figure on offering tables piled high with various goods before the deceased tomb owner and his wife.²⁸⁸

As mentioned above, the fanciful representations of the Late Period can rarely be relied upon when attempting to identify the birds exploited at the time. Cranes, geese, ducks, smaller perching birds continue to be offered to the deceased. The tomb of *P3-di-Wsir* at Tuna el-Gebel, however, includes a newcomer shown in the midst of live animals brought forth.²⁸⁹ A readily identifiable rooster (*Gallus gallus domesticus*) is shown perched on the hand of a female offering bearer. Another woman also holds a rooster in the palm of one hand (**Figures 27A-B**). Moreover, baskets filled with small birds, possibly chicks, may suggest that the supplies of bird offerings originated not only from wild resources, but also from captive breeding programs.


A diachronic overview of the offering scenes encountered in a funerary setting reveals that the variety of bird offerings, characteristic of the Old Kingdom, especially the 5th and early 6th Dynasties, is not retained in later periods of Egyptian history. Only a small number of birds were selected as being representative types: the Eurasian crane, the 'generic' *Anser*-goose, and the pintail duck. Other birds may be featured alongside this trio, such as perching birds (orioles), quails, and doves. They are not, however, systematically represented and may instead

²⁸⁸ Quails and similar grassland birds such as the corncrake are attested in the following Theban tombs: *Nht* (TT 52; Davies 1927, pl. 20); *H^c-m-h3t* (TT 57; Wresz. I, pl. 198; Klebs 1934, p. 16 fig. 10); *Mnn3* (TT 69; Wresz. I, pl. 231; Hartwig 2013, Fig. 2.3a); *Nb-Imn* (TT 180; Davies 1925, pl. 8); *Hrw=f* (TT 192; The Epigraphic Survey 1980, pl. 42); *Wnsw* (TT A4; Manniche 1988, Fig. 22). One talatat, known held in New York (MMA 1985.328.4) also possibly displays a bouquet of live quails tied by their legs, hanging from a pillar. See Guglielmi 1976 for a study of the motif of birds tied to sheaves encountered in both funerary and temple iconography.

²⁸⁹ Cherpion *et al.* 2007, pp. 115, 145

be hallmarks of a specific workshop or artist; it may also disclose a special preference on the part of the tomb owner.

b. Bird Processions and Flock Presentations.²⁹⁰

Another subset of “bird presentation” scenes susceptible of providing valuable information regarding the different kinds of wild fowl captured by ancient Egyptian fowling has been labeled by scholars as ‘Bird Processions’.²⁹¹ These scenes are characterized by the orderly depictions of rows of birds, often organized over two or three registers, most frequently accompanied by an attendant leading or following them and equipped with a staff characteristic of his function (**Figure 28**).²⁹² The birds appear to be organized according to their size, the tall Eurasian crane leading the flock, which is closed by the turtle dove and goslings. For the most part attested in the Memphite necropolis during the Old Kingdom, these lists of birds are conveniently accompanied by a caption giving the birds’ name and, in some instances, the number in the owner’s flocks, or simply the sign  for 1,000, the traditional number omnipresent in offering formulae.²⁹³ According to the text accompanying the procession, the deceased is said to be:

²⁹⁰ See Mahmoud 1991, pp. 24-97 for a complete list of bird procession scenes attested during the Old Kingdom.

²⁹¹ Harpur 1987, p. 81

²⁹² Fischer 1978, pp. 7-10. The titles of these attendants, *mnw*, *sd 3pd.w*, and *hm-k3* (tomb of *R^c-m-k3* in Saqqara; Mariette 1889, p. 181), will be discussed in Part 2.

²⁹³ In the OEE database, 48 tombs with these motifs have been recorded for the Old Kingdom alone (http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006. Last accessed July 13th, 2015).

*m33 iw3 ʕw.t*²⁹⁴ *h3s.t 3pd.w inn m niw.wt pr-dt*:²⁹⁵ viewing the oxen, desert game, and birds, which are brought from the towns of the funerary estate.

Or *m33 nd.t-hr in.t m niw.wt-f n.t pr-d.t*:²⁹⁶ viewing the gifts brought from the towns of the funerary estate.

Or again *m33 nd.t-hr iw3 ʕw.t h3s.t 3pd.w inn.t m niw.wt=f*:²⁹⁷ viewing the gifts of oxen, desert game, and birds, which are brought from his towns.

These gifts, said to be intended as *pr.t-hrw*, invocation offerings, for the cult of the deceased, were depicted as being delivered from the many properties the tomb owner may have had in his holdings in the country.²⁹⁸ In addition to the herds of cattle (*iw3*) and ungulates of the desert (for the most part oryxes, but also antelopes and gazelles, listed under the term *ʕwt*), the tomb owner is also showcasing the diversity of bird life, which had been gathered from the wild and brought to poultry yards to await their fate as sacrificial offerings to his cult. As many as 25 different bird names have been identified in the bird lists recorded during the Old Kingdom alone, which can be organized in the following categories:

²⁹⁴ For a discussion of the meaning *ʕw.t* as being an animal brought into strict human control, whether as domesticate (in particular sheep and goats), or as captured game kept in captivity so as to become offering, see Meeks 2012, pp. 523-525.

²⁹⁵ Tomb of *Shm-ʕnh-Pth* (Badawy 1976, fig. 20)

²⁹⁶ Tomb of *Rʕ-Šps* (LD II, pl. 61)

²⁹⁷ Tomb of *K3-hi=f* (Junker 1943, fig. 40, pl. 11)

²⁹⁸ Moreno-Garcia 1999, pp. 211-221

Table 11. List of the bird names featured as offerings in Old Kingdom tombs

Cranes	<i>d3.t, ʿw, g3</i>	Eurasian crane (<i>Grus grus</i>)
	<i>wḏʿ</i>	Demoiselle crane (<i>Anthropoides virgo</i>)
Geese	<i>r3/srw</i>	Greylag goose (<i>Anser anser</i>)
	<i>trp</i>	White-fronted goose (<i>Anser albifrons</i>)
	<i>ḥd</i>	White goose: domesticated bird?
	<i>ḏnw, gb</i>	Unidentified species of geese
	<i>wn, wnn, wnwn</i>	Possibly a gosling or duckling
Ducks	<i>smn</i>	Egyptian goose (<i>Alopochen aegyptiaca</i>)
	<i>z.t</i>	Pintail duck (<i>Anas acuta</i>)
	<i>s/sr</i>	Possibly teal (<i>Anas crecca</i>)
	<i>wš3t</i>	Eurasian widgeon (<i>Anas penelope</i>)
	<i>pht, bḏ3, bsbs, ḥp, mšt, m3š, ms(i).t, sšn, whʿt</i>	Unidentified species of ducks
<i>Rallidae</i>	<i>sbḥ</i>	Gallinule? Moorhen?
<i>Columbidae</i>	<i>mnw.t</i>	Turtle dove (<i>Streptopelia turtur</i>)

Not all 25 species are present in one single tomb;²⁹⁹ rather a combination of the names listed above was selected, with the *d3.t*-crane, the *r3/srw*-goose, the *z.t*- and *pht*-ducks, and the *mnw.t*-dove being standard features during the 5th Dynasty.³⁰⁰ By the end of the Old Kingdom, cranes lose their prominence in these presentation scenes. While these large birds do not fully disappear from offering scenes, since they can still be seen being held in the arms of offering bearers after the Old Kingdom, the *r3/sr*- and *trp*-geese, the *z.t*- and *s*-ducks, and the *mnw.t*-doves appear as the most frequent birds being led to the deceased. Not surprisingly, these same five kinds of fowl are also the most common bird offerings listed in a tabular form in tomb offering chapels (**Figure 4**). In these lists, more realistically, the deceased only hopes to receive one of each of these birds for the many festivals celebrated throughout the year.

²⁹⁹ Harpur 1986, fig. 6; Mahmoud 1991, p. 36: two fragments from the tomb of *Spd-ḥtp*, originally at Saqqara, are known to display the largest avian diversity in such a procession, with 16 different bird names listed. These blocks are East Berlin 14642 (Wresz. III, pl. 83c) and an unnumbered fragment from Turin (Harpur 1986, fig. 5).

³⁰⁰ Mahmoud 1991, p. 37

The variety of birds presented to the deceased disappears after the end of the Old Kingdom. Only a few scenes attested for the Middle and New Kingdoms feature flocks of birds, no longer labeled with name or number and walking as a group under the surveillance of a guardian leading or following them. During the Middle Kingdom, 'monospecific' flocks of cranes, geese, ducks, and doves appear on tomb walls, in particular at Beni Hassan and at Dayr al-Barshā. The types of birds are each represented on a separate register, with their own herder. On the North wall of the tomb of *Hnm-ḥtp* II in Beni Hassan, the flocks of geese, ducks, and doves are depicted to the right of a group of fowlers capturing waterfowl with a clap-net, and bringing them afterwards to a farmyard (**Figure 29**). This succession of vignettes may be a visual indication of the origin of the birds gathered in the flocks, previously trapped from the wild.³⁰¹ Interestingly, also on the North wall, a flock of cranes is part of the registers dedicated to hunting expeditions in the desert. It is depicted to the right of the well-known group of Asiatics, who are coming to bring tribute to *Hnm-ḥtp*. The herder in charge of the cranes, however, is shown as a traditional Egyptian. Is this juxtaposition pure coincidence, a simple choice on the part of the artist(s) eager to maximize the use of space on the wall? Or is it possible that the cranes had also been captured in the more arid lands bordering the Nile Valley? During the New Kingdom, gaggles of geese, in some instances domestic geese (*Anser*

³⁰¹ Newberry 1893, pl. 30; Kanawati and Evans 2014, pls. 51, 125

anser domesticus), are the only birds seemingly worthy of being recorded. It is most realistically illustrated on a fragment from the Theban tomb of *Nb-Imn* (Figure 30).³⁰²

O. Mahmoud surmises that the decline in the variety of species represented on tomb walls during the Old Kingdom is accompanied by the appearance of poultry-yard scenes in the funerary iconography.³⁰³ It is possible that this iconographic trend is a reflection of the development of poultry farming: the types of birds represented as flocks from the Middle Kingdom onwards may be the species which had shown a greater ability to survive, strive, even possibly reproduce, in captivity. While the goslings represented in several tombs and labeled as *wn(wn)*, may be young birds captured in the wild, one should also consider that they may be proof of the successful captive breeding of geese, which ultimately leads to the domestication of the greylag goose (*Anser anser domesticus*). The maintenance and care of these birds in captivity will be discussed in Part 2 dedicated to ancient Egyptian aviculture.

c. Analysis of the Evidence

In his examination of animals and animal-based food in the iconographic repertoire of Old Kingdom tombs of the Memphite necropolis, M. Fitzenreiter observed that “the normative power of theological concepts is quite often confined to its monumental proclamation (e.g. in

³⁰² British Museum EA37978: Parkinson 2008, pp. 95-101; Bailleul-LeSuer 2012, pp. 155-156. For other examples of flocks of geese being inspected during the New Kingdom, see the Theban tombs of *Mn-Hpr* (TT 79: Wreszinski I, pl. 255), *Wnsw* (TT A4: Le Louvre N 3318E), and *Nfr-htp* (TT A5: Manniche 1988, pl. 1.2). To the extent of my knowledge, the tomb of *Pwy-m-Rc* (TT 39: Davies 1922 part I, pls. 12, 14) is the only instance in which the “procession of birds” motif, as described for Old Kingdom mastabas, is incorporated into the iconographic repertoire of a New Kingdom offering chapel.

³⁰³ Mahmoud 1991, p. 38

texts and pictures) whereas religious practice is much richer and more variable than these monumental records suggest,”³⁰⁴ an hypothesis confirmed by the analysis of faunal remains recovered in funerary settings. Extremely rarely, if ever, are soft shelled turtles depicted in the ritual space of the offering chapel. Yet, they have been recovered among the offerings deposited in Old Kingdom tombs at the site of Dayr al-Barshā.³⁰⁵ In other words, one should not be surprised if one were to notice discrepancies between the depictions of avian exploitation in elite tomb chapels and the evidence recovered from the archaeological record. Indeed, offering processions give prominence to cranes, various types of geese and ducks, a few smaller birds being brought forth in crates and baskets, as described *supra*. The offering lists and formulae limit their choice, for most of Egyptian history, to five types of birds: the greylag and white-fronted geese, the pintail and possibly Eurasian teal, as well as the turtle dove. All these avian species have been recovered among the victual mummies deposited in Theban tombs for a few hundred years in the mid-2nd millennium BC, thus confirming the ritual significance of these species. On the other hand, cranes, shown towering above their guardians when presented to the tomb owner, have only rarely been attested in faunal samples, the best and also most recent example being from the tomb of *Dḥwty-Nḥt* at Dayr al-Barshā.³⁰⁶ Whereas waterfowl were commonly depicted as being trapped in wetlands by means of a clap-net, cranes and *Columbidae* are shown captured with the same apparatus on rare occasions. In fact, to the

³⁰⁴ Fitzenreiter 2009, p. 334

³⁰⁵ De Meyer *et al.* 2005-06

³⁰⁶ De Meyer *et al.* 2014, pp. 77-82

extent of my knowledge, the *mnw.t*, i.e. turtle doves, desired by the deceased in his afterlife, are never shown as being a quarry for fowlers. Were these birds bred in captivity as early as the Old Kingdom? Or was their capture an inappropriate motif, lacking in prestige and symbolism, to be incorporated into the iconographic repertoire of the tomb? The question of the maintenance of dove and pigeons in captivity will be discussed in Part 2.

Religious iconography for the most part solely reveals which species of birds were captured and destined to become offerings, either for their culinary properties and their exquisite taste, or for their symbolic and ritual significance, such as the destruction of potential enemies and chaotic forces. While wild ducks and geese, originally presented to divine altars and funerary offering tables, may have ended their journey in a priest's poultry-yard or on a worker's table, these representations should be considered idealized ritual offerings and not necessarily an indication of the birds ancient Egyptians consumed on a regular, albeit rare, basis. A glimpse at poultry consumption can be gleaned from the avian remains recovered at settlement sites. Regional trends emerge and reflect the ability of local fowlers to adapt their skills to the bird populations present on their hunting grounds or crossing their skies during migration. Flamingoes, pelicans, and cormorants are at times incorporated into the marshlands, in which the tomb owner is busy hitting birds with throwsticks. Yet, they never feature as potential game, despite the fact they were consumed, as revealed by the discovery of their remains in kitchen middens (See **Tables 10-11**).

Interestingly, ancient Egyptian artists never focused their attention on the white and black storks (respectively *Ciconia ciconia* and *C. nigra*),³⁰⁷ which, avoiding Lower Egypt, join the Nile Valley in the region of the Qena Bend during their fall migration. Was the stork deemed unworthy of being depicted on the tomb chapel walls of nomarchs, governors and mayors of Upper Egypt? If such was the case, this exclusion from the funerary iconographic repertoire may be evidence of it being reserved for the more humble classes of society. The absence of storks from the iconographic record of Upper Egypt, where these birds could have been observed by artists, may also be testimony of the influence of the Memphite canon of Egyptian art throughout the country, with its standardized motifs and type-scenes. At times of strong central government, the provincial elite deliberately chose to follow the artistic style designed in the royal workshops, thus visually revealing their ties with the Court.

Only a few provincial tombs feature less common avian table fare. In addition to the unusual series of vignettes from the tombs of the *B3kt* and *Hty* at Beni Hassan, the rock cut offering chapel of *Dhty-htp* at Dayr al-Barshā also includes the unexpected presence of large “bouquets” of live pied avocets (*Recurvirostra avosetta*), tied by their legs and hanging from a pole in a fowler’s shack (**Figure 22**).³⁰⁸ Depicted near the clap-netting of massive numbers of waterfowl, other ducks and geese are sharing a similar fate and may be waiting to be crated. Whether destined to be transported to a poultry-yard belonging to the tomb owner, or about

³⁰⁷ The bird identified as *mrwryt* in the tomb of *B3kt* III at Beni Hassan may be the sole depiction of a black stork in Egyptian art. See Houlihan 1986, p. 22; Hannig and Vomberg 1999, p. 213; Bailleul-LeSuer and Wyatt 2013, pp. 29-30.

³⁰⁸ Newberry 1893-94, pls. 17, 20, 23

to be dispatched at the fowling site, this representation of captured pied avocets is a rare indication of the inclusion of wading birds into the diet of some ancient Egyptians, a practice still attested in modern Egypt.³⁰⁹

As already demonstrated by iconographic and material evidence of the late Predynastic period, fowling and the trapping, at times opportunistic and seasonal, of a wide variety of wild birds complemented the ancient Egyptian diet, dominated by fish, cereal, and vegetables. The Egyptian scribes reflected the wide range of birds surrounding them and falling prey to fowlers by devising as wide a range of names for this feathered game, many of which continue to elude and yet captivate Egyptologists and Ornithologists.⁷⁷ Even if these birds did not frequently enter the diet of Egyptians, their capture was of paramount importance to supply the offering tables of the multitude of shrines scattered throughout the country, as suggested by the massive numbers delivered by fowlers on a yearly basis. In the following paragraphs, I will describe the various methods devised to trap wild fowl, each technique being adapted to a specific type of game. I will also examine the textual record to identify which locations the ancient Egyptians favored to organize their fowling expeditions. Finally, I will focus my attention on the class of workers who were in charge of trapping this wide array of birds.

3. Fowling Practices

As presented above, the ancient Egyptians filled their game bags with a variety of avian species encountered in different habitats and displaying distinct behaviors. Each category of

³⁰⁹ Meininger and Atta 1994, pp. 279-280

birds – xeric species, adapted to a dry environment, such as the ostrich; waterfowl; passerines; galliformes – required a specific fowling technique and equipment. Egyptologists have endeavored to understand these various mechanisms, at first basing their research for the most part on the numerous fowling representations, which were key scenes in the funerary repertoire of private tomb chapels as early as the 4th Dynasty (ca. 2500 BC).³¹⁰ More recently, scholars have incorporated ethnographic studies to complement the original models proposed in the course of the 20th century.³¹¹ In a few instances, the hazards of preservation granted us access to actual traps and weapons, which had been deposited in tombs, perhaps with the wish to both fight enemies on the way to the afterlife and, thereafter, to continue enjoying the pleasures of fowling in the marshes of the netherworld.

Two distinct styles of bird trapping methods can be identified in ancient Egypt, which I qualify as “active” and “passive” depending on the degree to which the hunters are involved at the time of capture.³¹² Each tradition will be reviewed in turn, with special emphasis on the location, people involved, seasonality of the activity, and whether any expertise was needed to successfully manage the hunt.

³¹⁰ See in particular the seminal works of Montet 1925, Vandier 1969, and more recently Mahmoud 1991.

³¹¹ Henein 2001; *Ibid.* 2002; *Ibid.* 2010

³¹² For this presentation of fowling practices, I follow the terminology proposed by P. Seddon *et al.* (1999, p. 172). They define active methods, such as the use of nets, falconry, or the practice of chasing animals, as being those that “involved the pursuit and/or driving of birds into the trap.” On the other hand, passive methods, such as the use of cage traps and snares, “involved awaiting the arrival and capture of the birds with no effort beyond trap placement and baiting.”

a. “Active” Fowling Practices

These hunting practices actively involve fowlers at the time when the birds are captured, either by handling the devices trapping birds, most especially nets, or by throwing projectiles with the intention to stun or kill the target.

i. Clap-netting

The analysis of faunal remains dated from the prehistoric period demonstrates that ancient Egyptians had already been targeting the flocks of birds, which would stop in the Egyptian wetlands during their migration and/or spent the winter in the Delta and the other permanent marshes along the Nile Valley. No information on the methods employed to capture them has yet been recovered for this era, leading Egyptologists and Zooarchaeologists to surmise that a combination of nets,³¹³ traps, and bows and arrows were used by hunters.³¹⁴ Actual representations of fowling activities are first attested in the Early Dynastic period: clap-nets are shown trapping waterfowl and long-legged birds. The scene depicting a team of fowlers engaged in clap-netting becomes a regular *topos* in the funerary iconography of elite tomb chapels, in particular in the Memphite necropolis of the Old Kingdom, but also in the

³¹³ Van Neer 2002, pp. 538-539: Fishing implements, such as hooks and harpoons, have been recovered at Adaima for the Predynastic period. Moreover, “l’utilisation du filet est indiquée par deux aiguilles à chas.” One may suggest that these fishing nets were also used for fowling, as is attested for later periods.

³¹⁴ Gautier 1987, p. 431

provinces until the end of the 18th dynasty. The so-called “daily life” representations lose popularity after the reign of Akhenaten and are attested only sporadically afterwards.³¹⁵

The use of clap-nets was devised primarily to capture **live** birds, which were then transported to be further exploited at farms and poultry-yards.³¹⁶ Two artifacts from the 1st Dynasty attest to this method. The aforementioned fragmentary wood year-label unearthed in the royal cemetery of Umm el-Qa’ab at Abydos shows king Den wearing the red crown of Lower Egypt pulling the rope of a net from which the heads of four birds emerge (**Figure 1**).⁴⁹ The activity is summarily represented on this small label; yet, it is clear that an oblong-shaped net is attached to the ground with a stake on one end and is closed by the pulling action performed by the king. Similarly, a steatite gaming disk, from the Saqqara tomb of the Chancellor *Hm3-k3*, is adorned with a representation of two large birds caught in a hexagonal clap-net (**Figure 9**).³¹⁷ The lack of details and the simplified rendering of the birds do not allow for a specific identification. They are possibly wading birds such as herons (*Ardea* sp.), or cranes (*Gruidae*).³¹⁸ The popularity of the clap-netting motif in the iconographic record after the 4th dynasty and thus the large set of examples available for study motivated several scholars to propose a

³¹⁵ Bastin 1984, p.11 n. 16: “Nous possédons près de cent quarante exemples de scènes de chasse au filet, de l’Ancien Empire à la Basse Époque.” These scenes are listed in the following publications: Vandier 1969; Harpur 1987; Mahmoud 1991, pp. 126-153; Decker and Herb 1994 Vol. I, pp. 456-532, section K 2: Vogelfang mit dem Klappnetz (review of 165 scenes); Van Walsem 2008; OEE 2011.

³¹⁶ Montet 1914, p. 145

³¹⁷ Emery 1938, pl. 12. This characteristic hexagonal shape becomes standard in depictions of fowling taking place in the marshes from this period onward.

³¹⁸ Altenmüller 1974; Henein 2001; *Ibid.*, 2002

description and to reproduce the devices represented in these scenes. Already in 1809, M. Costaz devoted a section of his chapter on agriculture in the 1st volume of the *Description de l'Égypte* to the hunting of wild geese in the marshes as represented in the “grotte Soultâny,” most likely the 18th Dynasty tomb of *P3-hri* at El Kab.³¹⁹ He described the mechanism as follows:

“Le piège est tendu dans le Nil près du rivage; les eaux du fleuve sont représentées par des lignes ondulées recouverte d’une teinte bleue; les chasseurs, de peur d’effrayer leur proie, se tiennent cachés derrière une touffe de plantes aquatiques figurées par des lotos. Après avoir attiré les oiseaux dans le piège, on fait tomber sur eux deux nappes de filet: le mouvement de ces nappes est semblables à celui de deux volets fermés ensemble et brusquement; les chasseurs l’opèrent en tirant avec vivacité une corde arrangée pour produire cet effet. Un homme caché derrière les lotos, mais qui se tient près du piège afin d’épier le moment favorable, leur donne le signal avec les mains; ils se sont hâtés d’obéir; leurs attitudes animées prouvent qu’ils viennent de faire un mouvement subit et brusque; le piège est fermé: quelques oies seulement ont échappé, prennent le vol et s’enfuient. Celles qu’on a surprises sont livrées à un homme chargé de les plumer; celui-ci les transmet à un autre homme, qui leur ouvre le ventre probablement pour en tirer les intestins; après cela, elles passent entre les mains d’un troisième homme qui les dépèce et en met les quartiers dans des pots.”³²⁰

Fowling in ancient Egypt is later described in the reports of I. Rosellini and J.-F. Champollion after their exploration of Egypt during the Franco-Tuscan expedition of 1828-1829;³²¹ in J. G. Wilkinson’s *Manners and Customs of the Ancient Egyptians*;³²² and in the works of G. Bénédict, P. Montet, K. Appelt, D. Dunham, J. Vandier, W. Guglielmi, and O. Mahmoud during the course of the 20th century.³²³ As G. Bénédict himself acknowledged as he attempted to better

³¹⁹ Costaz 1809, p. 64

³²⁰ *Ibid.*, pp. 127-128

³²¹ Rosellini 1834 Part I, pp. 143-171; Champollion 1845 part II, pl. 185; *Ibid.* part III, pl. 287; *Ibid.* part IV, pl. 377 and 394.

³²² Wilkinson 1837, Part. II, p. 109.

³²³ Respectively: Bénédict 1910; Montet 1914; *Ibid.* 1925, pp. 42-66; Appelt 1934; Dunham 1937; Vandier 1969, pp. 320-398; Guglielmi 1973, pp. 146-7; Mahmoud 1991, pp. 122-188.

understand the “opération de tenderie,” a multitude of representations of netting fowl are well preserved and, according to him, “il en existe assez pour se faire une opinion qui ait une chance d’approcher de très près la vérité.”³²⁴ Yet, the scenes displayed on the walls of elite tombs are governed by artistic conventions: they failed to describe every single element needed to set up the netting apparatus or to show every step of the process.³²⁵ By positing that the tradition of capturing wildfowl using a clap-net had been maintained virtually unchanged until the present day, both in Europe and in Egypt, it became possible to reach a better understanding of both the device and the technique,³²⁶ as demonstrated in the outstanding work of N. Henein.³²⁷ N. Henein spent several years studying the traditional life of fishermen and fowling on the shores of Lake Manzala, in the Eastern Delta. He observed that waterfowl continued to be captured using tools similar to those depicted in Egyptian art. He thus identified that two types of nets were employed, depending on the kinds and behaviors of the targeted birds. Both of

³²⁴ Bénédict 1910, p. 3

³²⁵ As E. Fischer rightfully noted, the clap-net shows the same hexagonal form whether it is closed or open; its state can only be inferred from the behavior of the hauling team (if they are standing, the net is open; if they are lying with their back to the ground, the net is now closed), as well as the birds on the pond (if they are calmly swimming and feeding, the net is open; if they are flying in a chaotic manner, the net is now closed and the birds are attempting to escape). What is represented is an aerial view of the net after it has been closed. In Old Kingdom scenes, which are for the most part carved in the limestone walls of the Memphite necropolis, the details of the netting would have been added by the painters as a final touch. Thus, the distinction between the open and closed net might have been visible. In later periods, when the motif has come to us as wall paintings (Beni Hassan and Theban tombs for example), only the final stage of the hunt is depicted. The netting is painted over the frightened birds and the trap is now closed (Fischer 2011, pp. 192-196)

³²⁶ As D. Dunham (1937, pp. 50, 52) writes, “to those who have had the good fortune to see something of the life of the modern peasant in Egypt, many of the scenes [from daily life on the walls of Egyptian tombs and chapels] are understandable because they represent activities which are carried on today much as they were four or five thousand years ago.”

³²⁷ Henein 2010

them, once installed, are shaped as elongated and symmetrical hexagons. One net is dedicated to the capture of dabbling (*Anser*, *Tadorna*, and *Anas* sp.) and diving (*Aythya* and *Mergus* sp.) waterfowl (**Figure 31A**). To prevent the birds from escaping even after the closure of the net above the surface of the water, this trap is made of a single net, or *filet avec fond*, which encloses the birds as in a bag after the hunters pull the hauling cable.³²⁸ The second type of net, the *filet sans fond*, includes two rectangular panels folded on both sides of a shallow pond where large wading birds such as greater flamingoes (*Phoenicopterus roseus*) gather and walk through the water in search of food (**Figure 31B**).³²⁹ When the fowlers pull on the cable, the two panels are deployed and prevent the large birds from running and flying away. The sizes of these two types of nets can vary greatly. They range from 30 to 70 m long. The height of large nets usually averages 4 m, while that of small nets can be as high as 2 m. Needless to say, whether small or large nets are employed, these traps have the potential to capture massive numbers of birds at one time during the height of migration.³³⁰ Many components are common to these two fowling nets:³³¹

³²⁸ *Ibid.*, pp. 273-275

³²⁹ *Ibid.*, pp. 276, 278-279

³³⁰ A company of fowlers could be called upon to supply 300 birds at a time using this type of device (McPherson 1897, pp. 271-272).

³³¹ The following numbers indicated between parentheses refer to the numbers in Figure 131 in Henein 2010, reproduced in **Figure 32** of this dissertation.

- Two large mooring poles, often depicted in ancient Egyptian scenes, one in the back and one closer to the fowlers – (1) and (2).³³²
- Four poles (3), which are the mobile elements of the device. Each pole can swivel by means of a rope tied to a stake (4).³³³ They need to be light and offer little resistance to the water, in order to allow the net to rapidly close and ensnare the birds before they manage to escape. The far ends of these poles are shaped so as to fit into a notch carved into the exterior holding stakes (5). These four stakes (5) represent the four angles of the hexagon when the net is open. When the fowlers pull the traction cable, the poles are released from the notch, rotate around the stakes (4) and rise out of the water.
- A rope (6), or *ralingue*, reinforces the edges of the net and slides through its meshes. When the net is open, the *ralingue* gives the device its hexagonal shape. It is fastened to each mooring post in the front and back by a short guy-rope, (8) and (9).
- A hauling cable (12), held by the fowlers. N. Henein believes that it was not part of the ancient mechanism since it is not represented in reliefs and wall paintings.³³⁴
- Two rings, (7) and (10), which can be adjusted to modify the size of the net.

Such a fowling technique requires that the net be placed in or near shallow waters (about 30 to 60 cm deep) since the stakes must be secured into the ground. When an

³³² This pole measures between 1 m and 1.5 m. It is fastened to the ground under water first by hand and then using the foot. The head of this stake emerges 15 to 30 cm above water. When the soil is not very compact, sometimes two stakes are needed to hold the trap in place (Henein 2010, p. 283).

³³³ These four identical stakes are about 40 cm long and are planted into the ground.

³³⁴ Henein 2010, p. 293 n. 24

appropriate body of water is not available on the birds' migratory path, hunters are also known to dig artificial shallow ponds (20 to 30 cm deep) to attract dabbling ducks and wading birds. Once filled with water, the surface of the water is covered with grains to entice the passing birds; a few decoy birds can also be placed nearby to further attract weary migratory birds, reassured by the presence of a congener.³³⁵

The team of fowlers remains hidden behind a screen of vegetation, either manufactured beforehand with reeds and brought alongside the equipment,³³⁶ or consisting of the plants naturally growing on the edge of the water. The fowlers N. Henein observed in the Eastern Delta often waited for their quarry either in a boat or from the shores. Once enough birds have gathered above the nets, the fowlers pull on the hauling cable, which in turn pulls the *ralingue* forward. Since they are directly attached to the *ralingue*, the poles rise quickly in the air, causing the net to spread and to close "like the wings of a butterfly."³³⁷ Two scenarios are possible depending on the type of net used by the hunters:

³³⁵ Baha el-Din and Salama 1991, p. 35 fig. 12: in modern times, fowlers at Lake Bardawil used dead little egrets (*Egretta garzetta*) fixed on vertical poles as decoys.

³³⁶ The manufactured screen or shelter, which fowlers need to remain out of sight of the wildfowl, is known as *k3p* (Wb V p. 104 §5). See Jéquier 1922, pp. 58-60; Caminos 1956, pp. 10 and 13. The term *k3p* becomes a metonymy for fowler during the New Kingdom (see *infra*).

³³⁷ Henein 2010, p. 277

- In the case of a net *avec fond*, the tips of the four poles meet two by two above the longitudinal axis of the apparatus, forming a large meshed bag closed at the top, in which the birds are held captive.³³⁸
- When raised, the two panels of a net *sans fond* do not completely cover the space above the birds, yet hinder the movements of the birds. They are unable to gather speed and fly away. If they attempt to escape, they are likely to get their wings entangled in the meshes of the net.³³⁹

Whereas N. Henein was able to confirm that this fowling technique used in modern Egypt had essentially remained the same since Pharaonic times, credit should also be given to J. Vandier and O. Mahmoud, who systematically and carefully compared clap-netting scenes from the Old³⁴⁰ to the New Kingdoms³⁴¹ (ca. 2543-1077 BC). They identified the clear succession of events taking place during these large fowling expeditions. Although no tomb includes every single step of the process, the review of more than a hundred representations has enabled Egyptologists to reconstruct the whole procedure.³⁴²

1. *Selecting the location where the net is going to be spread (see infra)*

³³⁸ *Ibid.*, pp. 274-275, fig. 132

³³⁹ *Ibid.*, pp. 278-279, fig. 133

³⁴⁰ Vandier 1969, pp. 320-361; Mahmoud 1991, pp. 120-188

³⁴¹ Vandier 1969: Middle Kingdom, pp. 361-381; New Kingdom, pp. 381-398

³⁴² Mahmoud 1991, pp. 155-162

2. *Installing the net.*³⁴³

- *grg*³⁴⁴ *i3d.t*:³⁴⁵ to install the net
- *m3^c*³⁴⁶ *nwh*:³⁴⁷ to pull the rope


This step is rarely represented. The tomb of *Ty* at Saqqara is instrumental to the understanding of this activity (**Figure 33A**).³⁴⁸ The top register in this series dedicated to activities in the marshes shows a group of ten men carrying and bringing forward the various elements composing the net (poles,³⁴⁹ rope, and net itself). The large mooring pole is planted at the far end, while the rope, small stakes, and poles are set in place by four men. The *ralingue* is then passed along the edges of the net and through a screen of vegetation. In addition to the various components of the net, fowlers could also bring with

³⁴³ For a detailed description of the various stages taking place in the proper set up of the net with multiple illustrations and explanatory drawings, see Henein 2010, pp. 308-322. Two nets have survived from ancient Egypt. They are BM EA36886 and UC 27885ii, the latter coming from the New Kingdom site of Ghurob. It is not possible to precisely identify their exact function in daily life. Yet, it is not unreasonable to suggest that they had been used for fishing and/or fowling.

³⁴⁴ Caminos 1956, p. 70; Parkinson 2004, p. 100. The term *grg* is also used to mean “to snare” (Wb V p. 185 §6)

³⁴⁵ R. Parkinson proposes another possible additional term to designate a bird-net, namely *rwi*, solely attested in the Middle Kingdom tale of *The Eloquent Peasant* (B1 143) (Parkinson 2012, pp. 121-122).

³⁴⁶ Wb II p. 23 §7

³⁴⁷ Parkinson 2004, p. 107: these ropes are used both for fishing and fowling. Another term for such cable is *nw.t*  (Wb II p. 217 §5). An additional term, *w3r.t*, is introduced in *The Pleasures of Fishing and Fowling* as being the draw-rope used by fowlers (Caminos 1956, pp. 14-15, pl.3; Quirke 2004b, p. 213).

³⁴⁸ Wild 1953 Part I, pl. 120-122

³⁴⁹ The poles used by fowlers may have been called *sfs.w*, “supports,” as suggested by R. Caminos (1956, p. 15).

them live decoys.³⁵⁰ Large wading birds such as members of the *Ardeidae* family (grey herons (*Ardea cinerea*), egrets (*Ardea alba* or *Egretta garzetta*), and Eurasian bitterns (*Botaurus stellaris*)³⁵¹) are frequently represented accompanying the trappers, perched on crates filled with birds already captured.³⁵² Several scenes also show them being tethered near the pond, with one leg tied to a stake (**Figures 34A-B**).³⁵³ P. Houlihan suggested that “wild herons are generally cautious and wary of the ways of man; they tend to be quite selective of the areas they chose to frequent, and it is probably for this reason that other birds seeking a place of refuge are attracted in their immediate environment.”³⁵⁴ Whereas modern Egyptian fowlers make use of live ducks as *appelants*³⁵⁵ or “calling birds,” which are

³⁵⁰ Wooden wildfowl decoys have now become a form of folk art in North America. Prior to becoming a collector’s item, hunters utilized them to lure wild birds and to encourage them to land within reach of their weapon (bow and arrow, firearm, etc.). No such wooden implement has been identified among ancient Egyptian artifacts at this time.

³⁵¹ As noted by L. Evans (2010, p. 69), the choice of the bittern as a potential decoy is puzzling. “Bittern are extremely shy and secretive creatures that prefer to stay in dense cover. [...] They are rarely seen out in the open and are difficult to locate from a distance. It is unlikely then, that bitterns would make effective decoys [...]. I propose, therefore, that their depiction is an artistic convention intended to inject some variety into their clapnet scenes.”

³⁵² *Ibid.*, p. 68: These wading birds used as live decoys were not intended to attract members of their own species. “These birds were clearly intended to lure ducks and geese to the location of the net. [...] Hunters in North America often place a full-sized model of a Great Blue Heron (*Ardea herodias*) near their spread of duck decoys as it is believed that the sight of this bird increases the chance that the waterfowl will approach.” See also Baha el-Din and Salama 1991, p. 35 fig. 12. In demotic texts pLouvre 3452, 5/1 and oStras. 174, 1/1, the term *grg bmnw* has been interpreted as possibly meaning a “live fowling decoy” (CDD, letter *b*, pp. 51-52).

³⁵³ Jéquier 1922, pp. 167-169; Montet 1925, p. 58; Vandier 1969, p. 330, 348n1; Houlihan 1986, pp. 13-18, 20-22; Mahmoud 1991, pp. 106-114

³⁵⁴ Houlihan 1986, p. 15. Vandier 1969, pp. 330, 348 n. 1: It has been proposed by S. Schott that herons could not be captured using nets because of their connections with the dead. According to CT 273, the deceased could be transformed into a *nwr*-heron (de Buck 1951 part IV, p.12).

³⁵⁵ They are also known as “chanterelles.” G. Jéquier (1922, p. 169) remarked that there is no evidence that fowlers trapping birds with a clap-net imitated bird songs to lure wildfowl.

known to attract wild birds by their call or their mere presence on the body of water, it is difficult to securely assert that this practice already existed in ancient Egypt.³⁵⁶ No waterfowl can be clearly identified as such in the midst of the flocks represented swimming under the keen eye of the trappers, and no term has yet been assigned to such bird.³⁵⁷

3. *Waiting for birds to settle on the pond.* This step is frequently represented. It can be identified by the calm behavior of the birds, alighting, swimming, and feeding, unaware of what is about to take place (**Figure 33B**). It is crucial that the fowlers be far enough away from the birds so as not to be noticed.³⁵⁸ In some instances, when the net is placed on a large body of water, it is necessary for fowlers to lead the birds towards the net. The presence of a decoy bird tied in the vicinity of the area where the net was laid down can thus be helpful. One of the fowlers, called the signalman because of the cloth he uses to let the haulers know when the right time to pull the rope has come, is standing right behind the screen of vegetation.³⁵⁹ He is waiting for the moment when a significant number of

³⁵⁶ Henein 2010, p. 280

³⁵⁷ In the Middle Kingdom tale entitled *The Pleasures of Fishing and Fowling*, R. Caminos (1956, pp. 10-11 and 18) and S. Quirke (2004b, p. 212) propose to understand the term *ḥ3rw* as being a designation of a decoy bird, a word not otherwise listed in the *Wb, An. Lex.*, and Hannig 2006. In the tale, the *ḥ3rw* is said to be fastened. R. Caminos also identifies such decoys, one of which is presumably a species of gallinule, in the tomb of *Dꜣw*, at Deir el Gebrawi (Davies 1902, pls. 4-5). During the New Kingdom, a passage in pAnastasi IV may also refer to the use of a goose as decoy, which was tied with a rope in a marsh: *t3 sri.t sꜥd=st p3 nwh ḥfd=st*: “As for the *sri.t*-goose, it cuts the rope and flies away” (pAnastasi IV 2,2; Gardiner 1937, pp. 35-36; Caminos 1954, pp. 126-127).

³⁵⁸ Henein 2010, p. 305: Men can be hidden as far as 275 m away from the net so as not frighten birds by their presence and movements. Furthermore, “les chasseurs croient que l’odorat est développé chez certains oiseaux, comme le canard pilet, et plus faible chez d’autres, comme la sarcelle d’été (*ārās**, *Anas querquedula*). C’est la raison pour laquelle il est préférable que le filet soit posé en travers du vent, lequel éloigne l’odeur des hommes cachés dans la hutte.”

³⁵⁹ A piece of cloth is not always represented being held in the signalman’s hand. According to Y. Harpur, “the signalman is portrayed with a cloth over his chest in his outstretched hand from Dynasties IV.1 to V.6. After the

birds have gathered between the holding stakes of the net: he then shakes the cloth (*wm.t*,³⁶⁰ *mnh.t*³⁶¹), giving the signal to his subordinates to pull the rope. This member of the team is considered to be the key figure of the expedition, as it is his diligence and expertise that guaranties a successful outcome.³⁶²

4. *Closing the net.*

- *rdi.t sh*³⁶³: To cause the capture (of birds)

This episode of the hunt is most often represented in tomb chapels since it is this positive outcome that will guarantee the proper supply of waterfowl for the deceased in the afterlife.³⁶⁴ The signal has thus been given to pull the rope. The effort undertaken by the fowlers is visible in their position, as they are exerting themselves and are almost lying

latter period, an alternative figure type appears. The signalman is depicted in a more alert posture, usually without a cloth, and his hand is raised to give the order and/or to grasp the clap-net rope. Both figure types are used from Dynast V.6 onwards, but the earlier form continues to be more common" (1987, p. 142). It should also be noted that the position of the signalman changes in some Middle and New Kingdom tombs. Rather than being shown behind a screen of vegetation, the signalman is then depicted as being inside a thicket of papyri, only showing himself to the haulers to let them know that it is time for them to pull the rope and close the net. See for instance the Middle Kingdom tomb of *Imn-m-h3.t* in Beni Hassan labeled BH 2 (Newberry 1893a, pl. 12; Shedid 1994, p. 81, fig. 133); for the New Kingdom, see the Theban tombs of *Pwy-m-Rc* (TT 39; Davies 1922 part I, pl. 13) and *Ipwy* (TT 217; Davies 1930, pl. 30).

³⁶⁰ Wb I p. 307 §§3-4; Caminos 1956, p. 15

³⁶¹ Wb II p. 88 § 1; Alliot 1946, p. 111 n. 7

³⁶² Harpur 1987, p. 144: While the signalman is consistently represented in these fowling scenes, the overseer of fowlers is frequently omitted. When the latter is present (they are attested from Dynasty IV.6 onwards), he is usually shown standing to the side as if to control the proceedings from a distance.

³⁶³ Wb IV p. 262 §7

³⁶⁴ Birds aplenty gathered in the marshes also demonstrate that the deceased was an efficient administrator in his province: everything flourishes under his control.

down on the ground (**Figure 33C**).³⁶⁵ It is this motion forward on the part of the fowlers that releases the tab holding the perches under water and raises them in the air. The birds, surprised by the speed of the event, rarely have the chance to take flight and become entangled in the meshes of the net as they are panicking and attempting to escape. Some of the birds are represented lying on their back in the chaos that follows the closing of the net. While most of the examples attested in funerary iconography depict the trapping of water birds, especially ducks and geese, a single register in the 6th Dynasty tomb of *Mhw* at Saqqara represents the capture of both Eurasian (*Grus grus*) and Demoiselle (*Anthropoides virgo*) cranes, which are depicted struggling to escape from a net *sans fond* consisting of six poles, as convincingly demonstrated by N. Henein (**Figure 16C**).³⁶⁶

5. *Gathering the birds and transferring them into cages.*

- *wd.t 3pd.w m tb*:³⁶⁷ To place the birds in a crate.
- *it.t wšn.w*:³⁶⁸ To seize the sacrificial birds.

Once it becomes clear that it is safe to release their grip, fowlers drop the hauling rope and run towards the folded net.³⁶⁹ In the case of a net *avec fond*, a fowler approaches the net

³⁶⁵ For a description of the various postures taken by the haulers in scenes dated from the Old Kingdom, see Harpur 1987, pp. 143-4. To emphasize how strenuous a task pulling on the cable is, some captions record the call for help of the haulers or the encouragements given to one another (Erman 1919, pp. 36-39; Guglielmi 1973, p. 148).

³⁶⁶ Henein 2002

³⁶⁷ Davies 1901, pls. 4-5

³⁶⁸ *Ibid.*


³⁶⁹ Harpur 1987, p. 144

and carefully removes the birds one by one through the two sides of the *ralingue* joined at the top. He folds the bird's wings behind their back so as to incapacitate it and hands it to a nearby colleague, who places it in a crate.³⁷⁰ When capturing large wading birds with a net *sand fond*, a fowler crawls underneath the net so as to reach the birds. After capturing them and folding their wings, he carefully hands them to a colleague by lifting them above the net.³⁷¹ Birds are then also gathered in wooden crates. It is crucial for fowlers at this stage of the hunt to be extremely cautious, so as to prevent birds from escaping or from being seriously injured since the fowlers' main goal is to capture **live** birds.

6. *Taking the net apart.* This stage of the expedition is only extant in the tomb chapels at Giza of *Nb-m-3h.t* and *Shm-k3-Rc*.³⁷² While some of the fowlers are busy taking the net apart, others continue to place the captured birds into crates.


7. *Repairing the net.*

- *dsf*³⁷³ *isd.t*: to repair the net.
- *hsf*³⁷⁴ *nwh*: to weave a rope

³⁷⁰ At this stage, the birds are immobilized ( *shni*: to immobilize the birds to the ground, to prevent them from flying away (Wb. IV p. 253 §7)). Montet 1925, pp. 62-64; Alliot 1946, p. 72 n. 3; Guglielmi 1973, p. 149; Wresz. III, pl. 15. In the Saqqara tomb of *Pth-htp* [II], one of the men in charge of gathering the birds tells his colleague: *mk w(i) hr shn.t n tb*: "see, I am immobilizing (the bird) for the crate" (Harpur and Scremin 2008, p. 313, details 203-204).

³⁷¹ Henein 2010, pp. 325, 327, fig. 158.

³⁷² Mahmoud 1991, p. 161. These two scenes are recorded respectively in LD II, pls. 12(a), 42(a).

³⁷³ *Ibid.*, p. 137. According to Wb V p. 609 §7,  *dsf* is also translated in funerary literature as hunting birds with a net. See Meeks 1994, pp. 208-209 for a review of this term in the Coffin Texts.

The tomb of *Ty* provides a detailed visual account of this activity.³⁷⁵ A worker is shown seated on the ground, weaving and/or repairing the net that has previously successfully trapped a large number of birds, getting it ready for the next expedition.

Nets were not used solely to capture water birds in the marshes. As will be presented *infra*, they could also be adapted to facilitate the trapping of various birds in fields and in trees.

ii. Capture of Common Quails (*Coturnix coturnix*) Using a Ground Net

Common quails continue to be a dish much enjoyed in modern Egypt,³⁷⁶ just as they were in Pharaonic times, as indeed attested in the letter *Špsi* wrote to his dead mother:

tnw-r(3) nw nw dd=t n s3=t im in.t=k n(=i) p3c.wt wnm(=i) s(t)
m in n=t m s3=t im p3c.wt 7 m wnm=t st.

“This is a reminder namely, that you said to your son there, “May you bring to me some quails that I may eat them,” and your son there brought you seven quails and you ate them.”³⁷⁷

This bird is a common autumn migrant in Egypt from late August to early October and in spring from early March to mid-April.³⁷⁸ It is during their northerly migratory journey to their

³⁷⁴ Wb III p. 335 §5. D. Meeks, personal communication: the verb *hsf* may also be understood as meaning “to rewind.”

³⁷⁵ Wild 1953, pls. 120-122

³⁷⁶ Moreau 1927-1928, p. 6: “There can be few wild birds which are more eagerly sought after than the Quail, and few which provide such a harvest in the countries they visit.” See also Baha el-Din 2005, p. 4 for more recent estimates on the number of quails captured in Egypt.

³⁷⁷ Exterior of Kaw Bowl, Late Old Kingdom (Petrie Museum UC16163). See Sethe and Gardiner 1928, p. 4, pls. 3-3a for a transcription of the text and Wentz 1990, p. 212; Vernus 2005g, p. 357; Donnat 2009, p. 84 for translations of this inscription. May we assume that the bowl had been used also to bring these seven quails to the tomb of Shepsi’s mother?

³⁷⁸ Goodman and Meininger 1989, p. 214

breeding ground in Europe in early spring that the ancient Egyptians chose to depict these birds in their agricultural scenes.³⁷⁹ In a few tombs, these small and plump birds are depicted taking advantage of the bounty which a recently harvested wheat field represents. They hide among the stalks and feed on the grains that have fallen to the ground (**Figure 18B**). The passage of surveyors and other field workers flushes some of the birds out, which escape by flying away.³⁸⁰ Only two scenes are known to have survived, which inform us about the contrivance ancient Egyptians had devised to trap quails. Since the conventions of Egyptian art render a straight forward identification of the hunting process challenging, scholars have turned to the ethnographical writings of early travelers to better understand the modes of capture depicted.

The earliest surviving representation of quail netting comes from the 6th Dynasty tomb chapel of *Mrrw-k3.i* at Saqqara (**Figure 18C**).³⁸¹ Four trappers are represented dragging a net in a section of the harvested field where a small flock of quails had settled in search of grains. The artist captured the succession of events in one tableau: a quail is alighting besides another one, which is already taking its fill of grain. The trappers, who had observed this behavior, are seemingly walking toward the birds and drag a net behind them. Alerted by the disturbance,

³⁷⁹ Moreau 1927-8, p. 8: "The return journey (sic.) to the breeding-grounds is much more leisurely and there seems to be no part of Egypt where quails are not seen at that season [...] They come down the Nile Valley in great numbers." Quails are sometimes depicted as harvest offerings, their legs being tied to cereal sheaves (**Figure 26**). In a few instances, they are also brought by offering bearers.

³⁸⁰ See for example for the Old Kingdom, the tomb of *Sḥm-k3=i* in Giza (G1029, Simpson 1980, fig. 4); for the New Kingdom the tomb of *H^c-m-h3.i* in Thebes (TT 57; Wresz. I, pl. 189 (top register)).

³⁸¹ Duell 1938, pl. 168; Kanawati *et al.* 2011, pls. 82, 84. The scene depicting quail trapping in the tomb of *Hzi* presents a multitude of similarities and may have been designed by the same team of artists (Kanawati and Abder-Raziq 1999, pl. 52).

some of the birds are able to fly away, while a few unlucky quails are caught in the fine meshes of the net.³⁸² P. Houlihan³⁸³ identifies the scene as representing a hunting process the 18th century Swedish naturalist F. Hasselquist described as follows: “An amazing number of these birds [common quails] come to Egypt at this time [March]; for in this month the wheat ripens. They conceal themselves amongst the corn, but the Egyptians know extremely well that there are thieves in their grounds; and when they imagine the field to be full of them, they spread a net over the corn, and surround the field, at the same time making a noise, by which the birds are frightened, and endeavouring to rise, are caught in the net in great numbers and make the most delicate and agreeable dish.”³⁸⁴

Another fragmentary representation of quail netting dates from the New Kingdom (18th Dynasty, ca. 1400 BC) and originally adorning the wall of the now lost Theban tomb of *Nb-Imn* (**Figure 18C**).³⁸⁵ The original larger fragment reproduced in the work of the Marquis of Northampton³⁸⁶ once again displays hunting during harvest time in the spring. A group of four trappers are holding the rope reinforcing the edges of a net of fine mesh, which is spread over a

³⁸² A fine nest held in the Berlin Museum (ÄM 6934) has been identified as possibly being used in ancient Egypt to capture quails (Wresz. I, pl. 33 (2); Schäfer 1919, p. 171).

³⁸³ Houlihan 1986, p. 76

³⁸⁴ Hasselquist 1766, p. 209; O. Mahmoud does not share this opinion. He quotes W. Wrezsinski, who believed that a long and narrow net is placed vertically (Mahmoud 1991, p. 190). At both ends, men remain quiet, as quails are making their way towards the net. When they notice that their path is obstructed, they attempt to escape by the sides; instead, they are caught quite easily by the trappers standing nearby. See also Vandier 1969, pp. 318-320 for this same description.

³⁸⁵ Berlin ÄM 18529. See Parkinson 2008, p. 118, figs. 37 and 123.

³⁸⁶ Northampton *et al.* 1908, p.5 fig. 2

recently cut wheat field. The birds, having been flushed from their cover, are being seized by two men rushing towards them.

Despite the differences in the two modes of representations (hunters holding the rope tied to the corner of the net vs. along the edges of the net), which has compelled scholars to identify two different hunting methods (net held vertically in *Mrrw-k.3.i*'s tomb and horizontally on *Nb-Imn*'s wall), it is probable that the ancient Egyptian hunters proceeded in a similar fashion in both cases, a practice which is still attested today and takes place at night, when the birds are hiding and resting. "A fine-mesh fishing net is held nearly horizontally over the ground by four men, each gripping one of the corners, and drawn during a dark night over a growing crop where birds are suspected to be resting. The birds rise in alarm and become entangled in the net."³⁸⁷ A comparable method has been observed in fields of lentils, and the trappers involved are usually considered to be poachers, because of the damages inflicted to the crop.³⁸⁸

In Egypt, quail hunting is currently mostly prolific during the birds' fall migration, as the birds reach the Nile Delta, drained of energy after crossing the Mediterranean sea.³⁸⁹ In

³⁸⁷ Goodman and Meininger 1989, p. 91. J. Hornell (1937, pp. 72-73) also documented the illegal netting of quails during his visit in the Luxor area, during which "the quail net is held nearly horizontal, the forward side only slightly higher than the hinder one. Four men, each gripping one of the four corners of a fine-meshed fishing net, draw it during night over a growing crop of corn where quails are known or suspected to be resting. Other men follow armed with sticks. As the net rustles over the corn, the quails lying among it rise in alarm only to strike against the net and become entangled in its meshes. As the birds flutter excitedly, trying to escape, the helpers rush forward and bundle the net around them or strike them down with their sticks."

³⁸⁸ Schäfer 1919, p.167

³⁸⁹ Moreau 1927-28; Baha el-Din and Salama 1991, pp. 6-16; Franzen 2013: "...impressive were the mist nets used for catching quail: ultrafine nylon netting, all but invisible to birds, that is strung on poles and reaches from ground level to 11 or more feet off the ground. The mist nets ... are a recent innovation, having been introduced in Sinai about 15 years ago and spread westward until they now cover the entire Egyptian Mediterranean coast. In Sinai

addition to the innumerable vertical mist nets spread along the coast,³⁹⁰ Egyptians also make use of trammel nets, consisting of three layers of nets: two exterior layers, with mesh large enough for the birds to fit through (17x17 cm) and one interior net, with small mesh (3x3 cm), disposed into a loose fashion, so that, when the bird flies into it, it immediately becomes entangled as if caught into a bag. Such nets are attested in Antiquity and are mentioned by the 1st century BC Greek historian Diodorus Siculus as being used along the coast of northern Sinai by the inhabitants of Rhinocolura, modern al-‘Arīš.³⁹¹ It may have been this type of trapping mechanism which was already used by the inhabitants of the fortress town founded by Ramesses II at Zawiyet Umm el-Rakham in the Western Delta, along the Mediterranean coast.³⁹² Recent work on the faunal remains recovered at this site demonstrates that the capture of wild bird, including common quails, was common practice.³⁹³ The settlers clearly adapted their subsistence strategies by exploiting the local resources of migratory birds that landed along the coast in massive numbers in the fall, exhausted from their flight over the

alone, mist nets stretch for 50 miles. Along the coastal highway west of Sinai, the nets run to the horizon and pass straight through tourist towns, in front of hotels and condominiums. [...] The owners of the nets go out before dawn and wait for quail, arriving from across the sea, to come zinging over the beach and enmesh themselves. On a good day, a third of a mile of nets can yield 50 quail or more. My very low estimate, based on figures from a bad year, is that 100,000 quail are taken annually in Egypt’s coastal mist nets alone.”

³⁹⁰ See Moreau 1927-8, p. 9 for the numbers of quails yearly exported from Egypt between 1900 and 1926. The largest number of birds collected and sent abroad in one year was 1.8 million quails in 1913.

³⁹¹ *Bibliotheca Historica* I, 60: “... Notwithstanding their exile in a wasted land devoid of nearly every useful resource, they (i.e. the colonists) devised a way of life well attuned to the scarcity around them, because nature perforce constrained them to enlist all means available against their poverty. For they cut reeds in the neighboring countryside, and split them to fabricate long nets; and setting them along the shore for many stades, they lay in wait for the vast droves of quails which were driven in from the open sea. By trapping these birds, they could collect a quantity sufficiently large for their subsistence” (Translation from Murphy 1990, pp. 76-77).

³⁹² Habachi 1980, pp. 13-19; Snape 2004, pp. 149-160; *Ibid.* 2010.

³⁹³ Bertini and Ikram 2015

Mediterranean Sea. It is unlikely, however, that the exploitation of common quails for local consumption and exportation was of any major economic significance, as it is today, prior to the large movement of settlers closer to the Mediterranean coast from the Ptolemaic period onwards.

iii. Netting of Perching Birds

While small perching birds are rarely attested in settlements' faunal assemblages, some of their remains have survived in other contexts such as funerary offerings and foundation deposits.³⁹⁴ During the Old and Middle Kingdoms, activities in orchards and vineyards represented in tomb chapels include in particular the capture of passerines. Two different netting methods are represented: tree nets, for the trapping of entire flocks, and spring traps, which ensnare one bird at a time (see *infra*).

Tree nets can still be observed in Egyptian coastal towns. During fall migration, large nets are spread over the trees and smaller bushes growing in the midst of olive trees. During the hot days of the end of summer and early autumn, passage migrants seeking shade and shelter get entangled in the fine meshes of these nets.³⁹⁵ Hunters gather them one by one, pulling out the birds' flight feathers and dropping their live catch in a bag. Ancient Egyptian representations of tree netting seemingly illustrate a similar activity (**Figure 19**). A group of

³⁹⁴ See Appendix 4, **Table 33**, for the list of passerines and near-passerines in faunal assemblages; Appendix 5, **Tables 36-38**, for the lists of these same birds as offerings.

³⁹⁵ Franzen 2013

fowlers is shown standing beside sycamore trees.³⁹⁶ Fall migrants have gathered in orchards, most likely to take advantage of the fruits ripening in the autumn sun. To protect their crops, gardeners use large nets,³⁹⁷ which are thrown over the crown of a tree and tied to the ground with a stake. The other side is left open to allow birds to settle on the tree's branches. The gardeners, by making excessive noises (as indicated by their hand-to-mouth gestures) and/or by shaking a small piece of cloth in the air, endeavor to scare them towards the netted tree, where the birds, hoping to escape from one danger, fall prey to another in the form of the fine net. The gardeners can then readily gather the entangled birds and put them into crates. These cages filled with various kinds of live birds often figure in the arms of offering bearers bringing towards the tomb owner the fruits of his servants' labor. Only the tomb chapel of *Ny-ṣnh-ḥnm* and *Ḥnm-ḥtp* shows the birds' feathers being plucked from a dead bird (*ztz*³⁹⁸ *gnw*: to pluck (?)) the orioles), so as to possibly consume them straightaway.³⁹⁹ The extant scenes rarely offer enough details to fully appreciate the variety of birds which were targeted. Yet, hoopoes (*Upupa epops*), with their curved bill and erect crest, can easily be recognized.⁴⁰⁰ They are

³⁹⁶ Several tombs display trees with no fruits and with no leaves visible, such as in mastabas of *Ḥtp-ḥr-ḥty*, now in Leiden, and *Ny-ṣnh-ḥnm* and *Ḥnm-ḥtp* (respectively Mohr 1943, p. 50, fig. 20.; Moussa and Altenmüller 1977, pl. 9; Harpur and Scremin 2010, pp. 129-132); the outlines of the foliage and crown may have originally been painted and is no longer extant.

³⁹⁷ Only the rope which would have reinforced the edges of the net is now visible. The details of the net meshes, which were painted, have not survived.

³⁹⁸ As noted by A. Moussa and H. Altenmüller (1977, p. 78), the meaning "to pluck" assigned to *ztz* is tentative. The more common word to describe the removal of birds' feathers is *ḥ3d* (Wb III p. 236 §11), as shown in the tomb of *Ty* (Wild 1953, pl. 121).

³⁹⁹ Moussa and Altenmüller 1977, pp. 77-78, fig. 9; Harpur and Scremin 2010, p. 141, detail 140.

⁴⁰⁰ It is unclear if hoopoes were consumed in the past, as they are today. They do not figure in textual evidence as being used for food or offering. The scarce faunal remains could also be intrusive, since this bird is commonly seen

shown roosting in trees or searching for insects on the ground in the company of other birds labeled *gnw*. Several birds in the Saqqara tomb of *3ht-htp*, now in Le Louvre, still display some red outlines and faint yellow tint.⁴⁰¹ In the tomb of *Nfr-hr-n-Pth*, also in Saqqara and locally known as the “tomb of the birds,” many birds caught in the orchard have retained black markings around their eyes, on their wings and tails, all characteristic fieldmarks of the male golden orioles (*Oriolus oriolus*) (**Figure 20A**). This pictorial evidence has thus led to the unanimous conclusion that the *gnw*-birds are probably golden orioles, more specifically males (**Figure 20B**), more easily seen in the wild than their drab green female companions.⁴⁰²

The various stages of the hunt are labeled as:

- *swḥ gnw*: gathering orioles.
- *wḏi(.t) gnw m ḏb*: placing the orioles in a crate.

The netting of birds in trees is no longer attested in the iconographic repertoire after the Old Kingdom. A few scenes dating from the New Kingdom, however, show people gathered, making noise, and shaking arms and cloth in an effort to scare birds away from trees and piles

near garbage disposal areas, looking for insects and grubs. The depictions of young children holding them by the wings have led Egyptologists to propose that they were in fact a favorite pet (Keimer 1930; Houlihan 1986, p. 120). A. Marshall (2015), on the other hand, suggests that a deeper, more symbolic meaning should be attributed to the bird held in boys’ hands. According to her, the birds is held almost exclusively by the eldest son of the tomb owner, the heir to his position, a status emphasized by the presence of the “crowned” bird in the child’s grasp, acting like the staff of office held by his father.

⁴⁰¹ Ziegler 1993, p. 39

⁴⁰² See Bailleul-LeSuer and Wyatt 2013 on the representations of these birds in the tomb of *B3kt* III in Beni Hassan.

of grain.⁴⁰³ Some bird species indeed continued to be considered a pest for farmers and attempts were made to get rid of them.⁴⁰⁴ Based on these few representations drawn from the funerary repertoire of the New Kingdom, however, capturing the birds no longer seemed to have been a favored topic to include on the walls of the tomb chapels. Whether the practice was commonplace is impossible to ascertain based on the paucity of perching bird remains recovered in faunal assemblages.

iv. Use of Projectiles

The different types of fowling implements previously described seemingly aimed at capturing live birds. The next series of weapons undoubtedly caused physical harm to the target and most likely killed them.

1. Wooden Throwstick

Representations of the tomb owner⁴⁰⁵ hunting wild fowl in the marshes, standing on a skiff and throwing wooden sticks towards the birds flying from the papyrus thickets, are

⁴⁰³ Cooney 1965, pp. 78-79, cat. 49; Romano 2002: talatat (Brooklyn Museum 60.197.3, 18th Dynasty (ca. 1353-1336 BC)) with the motif of a bird being chased from a tree. For general references to scenes of boys scaring away birds, see PM I¹, p. 467, 15 (f); see more specifically Davies 1939, pl. 19 and El-Shahawy 2010, pp. 101-102, fig. 50 for the depiction of such boys scaring away the birds that had alighted near large piles of grain during some harvest rites (TT 284, tomb of *P3-ḥm-ntr*); Davies 1927, for the depiction of a boy ready to throw a stone at some birds gathered near a pile of grain (TT 51, tomb of *Wsr-ḥ3.t*).

⁴⁰⁴ For the house sparrow (*Passer domesticus*) being considered as being the archetypal “bad” bird in ancient Egypt, see Houlihan 1986, pp. 136-137; David 2000.

⁴⁰⁵ In a few instances, the tomb owner was accompanied in this pursuit by his son, also represented about to hurl a throwstick forward (Feucht 1992).

commonplace from the 4th dynasty⁴⁰⁶ to the New Kingdom (**Figure 35**), with a few attestations during the Late Period.⁴⁰⁷ Numerous studies have been dedicated to identifying the symbolic and ritual motivations hidden behind this seemingly mundane recreational activity.⁴⁰⁸ In addition to models in blue glazed faience,⁴⁰⁹ several throwsticks have also been discovered in tombs, usually with some other weapons such as bows and arrows (**Figure 36**).⁴¹⁰ It is possible

⁴⁰⁶ The oldest extant representation of fowling in the marshes is found in the tomb of *Nb-m-3ht* (Feucht 1992, p. 160 Fig. 1)

⁴⁰⁷ Montet 1925, pp. 18-20; Vandier 1964, pp. 717-786; Mantegno-Leahy 1988, pp. 556-560, cat. 39; Herb 1991, Decker and Herb 1994, cat. K 2: Vogeljagd mit dem Wurfholz und Fischjagd mit dem Speer.

⁴⁰⁸ Alliot 1946; Westerman 1988; Herb 1991; Feucht 1992, pp. 168-169; Binder 2000; Hartwig 2004, pp. 103-106; Altenmüller 2005; Meeks 2006, pp. 204-205, 231-232. E. De Keyser (1947, pp. 48-49) proposed: “Le décor semble indiquer qu’il s’agit d’un rite appartenant aux peuples du Nord [...]. La chasse au boomerang semble être restée en usage fort longtemps. Un grand nombre de ces armes (i.e. throwsticks) furent découvertes dans les tombes royales du Nouvel Empire [...]. Des boomerangs furent également trouvés dans le lac sacré de Deir el Bahari. Cette dernière indication est précieuse, car elle nous montre qu’on chassait au boomerang dans le *temenos*. Une telle chasse est évidemment rituelle, pratiquée peut-être seulement par le roi ou son substitut, le prêtre.” E. Feucht, following de Keyser’s suggestion, concludes that the king may have been involved in the performance of ritual ceremonies involving fowling, and also possibly fishing, on the sacred lakes. More commonly, this activity of throwing the wooden stick at wild ducks is interpreted as alluding to the tomb owner’s hope for rebirth in the afterlife, since the term *km3* (Wb V p. 33) employed to describe the activity both means ‘to hurl a throwstick’ (§12) and ‘to beget, create’ (§11). The ducks targeted in this hunting expedition are also considered to be symbols of fertility. Ph. Germond considers this activity, and especially its representation in a funerary setting, as being a purely ritual action depicted so that the “deceased neutralizes all manifestation hostile to his afterlife” (2002-03, pp. 92-93).

⁴⁰⁹ Such hunting implements have been discovered at Serabit el-Khadim, thus possibly connecting the find with the cult of the goddess Hathor (Petrie 1906, pp. 144-145 and 150). See also Carter and Newberry 1904, pp. 110-113, pl. 25 (N^{os} 46001-46018, from the tomb of Thutmose IV); Werbrouck 1949, p. 37 (“... dans la vase [d’un des bassins, proches du portique] on a trouvé des bâtons de jet en faïence bleue, répliques des boumerangs en bois utilisés pour la chasse également pratiquée par le roi”); Loeben 1987 (throwstick of princess *Nfrw-Rc*). According to M. Gabolde (2008, p. 156), the faience throwstick was used to determine, by hurling the object, the “pure” area stretching at the entrance of a tomb.

⁴¹⁰ Hayes 1959, pp. 211-212, fig. 125; Carter 1963b, pl. 76B and 77A-C (from the tomb of Tutankhamun). Examples of throwsticks held at the Metropolitan Museum of Art: from the Middle Kingdom, MMA 12.182.67, MMA 15.3.1117; from the New Kingdom, MMA 16.10.253 and 254, MMA 19.3.136, MMA 36.3.204. According to P. Montet (1925, pp. 19-20), the word for throwstick, *m3t* (Wb I p. 186 §2), is of foreign origin, and thus the object itself is of foreign manufacture, especially since the throwstick is used as a determinative for Asiatics and Libyans. “Entre les mains de ces pillards, le boumerang était une vraie arme de guerre. [...] C’est donc par l’intermédiaire des voyageurs que les riches Égyptiens de Memphis s’étaient procurés les boumerangs inoffensifs qu’ils

that wooden throwsticks were used on an *ad hoc* basis to hunt, whenever the occasion to fell birds presented itself, perhaps so as to provide an additional source of protein to a meal. However, no significant economic impact should be attached to this hunting practice. “It is not the most effective method of capturing birds, since a successful hit requires great skill and a thorough knowledge of the prey’s behavior to anticipate its movement.”⁴¹¹ Furthermore, just like spring traps, only a bird at a time can at best be hit with this type of weapon. While throwsticks may have been used by members of military professions to practice their skills and dexterity,⁴¹² they also belong to the arsenal of specialized hunters, adept at using them to target large game by stunning or crippling the animals and stopping them in their escape. As early the Naqada III period and during the entire Dynastic era, these men can be represented grasping a throwstick in their hand and wearing (an) ostrich feather(s) as headdress (**Figure**


s’amusaient à lancer sur les oiseaux aquatiques. La difficulté qu’ils avaient à se les procurer explique sans doute qu’ils tenaient à les lancer eux-mêmes.” This same conclusion is repeated by J. Vandier (1964, p. 746). An origin in the prehistoric hunting practices of the cultural groups inhabiting the Eastern Sahara prior to settling along the Nile Valley appears more tangible, especially since this weapon is attested in royal and private iconography very early in Egyptian history (see Ritner 2011, pp. 242-3). A chemical analysis of the wood is needed to identify the exact signature of this organic compound and thus the origin of the throwstick itself.

⁴¹¹ Bailleul-LeSuer 2012, pp. 150-151. Both W. Guglielmi (1973, p. 144) and P. Vernus (2009-10, pp. 80-1) describe this activity as being exclusively a leisurely occupation of the wealthy elite (described as being *šḥmḥ ib*, “to distract the heart, take enjoyment,” or *sd3y hr*, “to take recreation,” in tombs of the New Kingdom). P. Vernus further claims that the common Egyptian (“gens du peuple”) never engaged in fowling with a throwstick. “Ces chasses au baton de jet s’opposent [...] à la chasse aux oiseaux au filet hexagonal, pris en charge par les dépendants du patricien, lesquelles s’excriment et suent sang et eau à la tâche. Ce sont là des tâches à finalité économique.” S. Binder (2001, p. 111) also remarks that in this scene, along with the fishing scene almost consistently accompanying the fowling motif, the tomb owner is the main figure, setting himself further apart from most of the other marsh scenes where the characters involved remain anonymous.

⁴¹² Scenes from the Middle Kingdom tombs of *B3kt* III and *Hty* at Beni Hassan, as well as from the 18th Dynasty tomb of the vizier *Rḥ-mi-R^c* in Thebes (TT 100) suggest that throwsticks were at times used as weapons in battle (Newberry 1893, pls. 5 and 15 for the Beni Hassan tombs; Davies 1943b, pl. 22 for the tomb of *Rḥ-mi-R^c*).

37).⁴¹³ Such a headdress is a traditional attribute of Libyans and Nubians, as is clearly shown in the procession of tribute bearers in several Theban tombs from the New Kingdom.⁴¹⁴ Passages from religious texts, such as the Mut ritual (pBerlin 3014 + 3053 XVI 6-XVII 1),⁴¹⁵ record the prowess of Libyan hunters felling ostriches with a throwstick:

iw=s m ḥ3s.t

t3i=n n=s mhy.w(t) n.t psd niw.w ()⁴¹⁶
shy n=t tmhy.w m k3mm.w=sn
isy=sn iry m ḥn.wt


“When she [the goddess Hathor] is in the desert, let us take for her feathers of the back(s) of ostriches, which the *tmhyw*-Libyans slay for you with their throwsticks, their clothing having been made with animal skins.”⁴¹⁷

Just like the Bushmen of Southern Africa, known to be expert ostrich hunters,⁴¹⁸ the Libyan nomads have been said to use a disguise to draw close to their prey. Eager to improve their chance to hurl the throwstick at the birds’ legs, they hoped to cripple them and slow them down in their attempt to escape. The use of such a “stalking horse” may have been first

⁴¹³ This motif is frequent in the Rock art of the entire Sahara region. See Huard 1965, fig. 5 for a selection of examples. The Middle Kingdom tomb of *Hty*, whose fragmentary reliefs are now held in the Metropolitan Museum of Art, New York, also exhibits the representation of hunters holding throwsticks, bows, and arrows in their hands, and wearing a feather in their curled wigs. Several men have darker skin and may be of Nubian origin (MMA 26.3.354-3). See also the motif in the 1st Intermediate Period tomb of *It(=i)-it(=i)-ikr* in Asyut (El-Khadragy 2007, p. 125, fig. 5).

⁴¹⁴ See PM I¹, p. 464 for a list of Theban tombs where Nubians and Libyans are depicted, each ethnic bearing a characteristic feathered headdress.

⁴¹⁵ Verhoeven and Derchain 1985

⁴¹⁶ See Wb II p. 202 §§8-11 for the unusual writing of the word  *niw*, “ostrich.”

⁴¹⁷ Verhoeven and Derchain 1985, sections L3-M2, pp. 22-23, 46-47; Darnell 1995, pp. 70-71; Meeks 2006, p. 293; Quack 2009, p. 352

⁴¹⁸ Thackeray 1983

recorded on a palette dated from the Naqada I period, on which a hunter, seemingly wearing a bird mask, is depicted pursuing three ostriches (**Figure 38**).⁴¹⁹

One passage from the Middle Kingdom tale *The Pleasures of Fishing and Fowling* is further testimony to the use of throwsticks to hunt birds. In the Western Delta, the protagonist of this tale witnesses the children of the village of *Hw.t-ihy.t* hurling throwsticks at *wi3yt*-birds, which had been flushed by women from the village said to help the children by acting as beaters.⁴²⁰ These *wi3yt*-birds have yet to be identified. According to this passage, they favored hiding in thick vegetation and only opted to fly away when danger was very close to them. Members of the *Rallidae* family, such as the water rail (*Rallus aquaticus*) and species of crakes (*Porzana* sp.), all favoring wetland areas with thick vegetation, are known to be secretive birds, more frequently heard than seen.⁴²¹ While these birds are able to migrate long distances, they usually adopt short flights when flushed from the vegetation. One might therefore consider that the *wi3yt*-birds hunted by the children of the Delta belonged to this category of water birds.

⁴¹⁹ Manchester Inv. Nr. 5476. See Crompton 1957.

⁴²⁰ Caminos 1956, pl. 2A and p. 10; Decker 1975, p. 34; Quirke 2004b, p. 212: ... *r3 sh.t m33=i ms.wt Hw.t ihy.t hr k3m wi3yt s.t nb.t hr snhy 3pd.w=s r-hr n hn.t=f...*, "...at the entrance of the *sh.t*-land, so that I may watch the children of *Hw.t ihy.t* hurl throwsticks at the *wi3yt*-birds, whilst every woman prompts her birds upward without it (i.e. the bird) alighting..."

⁴²¹ Etchécopar and Hüe 1964, pp. 183-198.

2. Bow and Arrows

Just as hunters are shown in rock art using a throwstick to hunt, they are also represented in a few instances shooting arrows at ostriches.⁴²² The desert hunt of these huge land birds continues to be attested during Dynastic times in funerary iconography.⁴²³ Some depictions act as snap shots of the action, with the arrow drawn in mid-air and aimed at a bird;⁴²⁴ in other instances, arrows have hit their targets and transpierced them.⁴²⁵ With the introduction of the chariot and horse in the ancient Egyptian arsenal after the Second Intermediate Period (ca. 1540 BC), royalty could take advantage of this fast means of transport to improve their chance of successfully hunting ostriches. On one side of a gilded fan base discovered in his tomb (KV 62), Tutankhamun is represented single handedly leading his chariot while shooting arrows at two ostriches (**Figure 39**).⁴²⁶ Having successfully hit his targets, the two dead birds are shown on the opposite side of the fan being carried back to the residence on the shoulders of two of the king's attendants. In the text accompanying this depiction, the

⁴²² Houlihan 1986, p. 3; Hendrickx 2000, p. 24 n. 7

⁴²³ Decker and Herb 1994b, pls. 130-179. On ostrich hunting, see Camps-Farber 1995, pp. 444-447; Manlius 2001 p. 950.

⁴²⁴ See for instance the 12th Dynasty tomb of *B3kt* III in Beni Hassan (Newberry 1894, pl. 4)

⁴²⁵ See the desert hunting scene in the 18th Dynasty tomb of *Rl-mi-Rc* in Thebes (Davies 1943b, pl. 17)

⁴²⁶ Ostrich feather fan: Cairo Museum JE 62001. See Edwards 1972, Cat. 23 for color illustrations and line drawings. D. Osborn (1985, pp. 159-161) believes that, rather than ostriches, the birds depicted on this fan as being hunted by the king are bustards. Two members of the Otididae family, the little bustard (*Tetrax tetrax*) and the houbara (*Chlamydotis undulata*) have been sighted, albeit rarely, in Egypt, most especially in the eastern Delta and Sinai regions (Goodman and Meininger 1989, pp. 227-230). Houbara bustards are currently a favored quarry in Saudi Arabia, where they are hunted with falcons. Whether the Egyptians also favored these birds is impossible to say, as no remains of this avian family have been recorded in Egypt during the Dynastic Period.

king states that the ostrich feathers used to adorn this fan had been taken from the birds he had killed in the Eastern desert west of the city of Heliopolis.⁴²⁷

Two additional representations from artifacts discovered in the tomb of Tutankhamun include depictions of bows and arrows used to hunt waterfowl in the marshes.⁴²⁸ In a vignette adorning the golden shrine (Cairo JE 61481), the king, seated with the queen at his feet on a pillow, is shown shooting arrows towards a papyrus thicket, from which a frightened flock of ducks and geese is flying (**Figure 40**).⁴²⁹ Similarly, an elaborately ornamented wooden chest (Cairo JE 61477) is adorned with the representation of Tutankhamun and Ankhesenamun enjoying themselves besides a pond filled with fish. Rather than being idle, the king is represented as about to shoot an arrow at some of the wildlife surrounding him. A bird and a fish have already been hit by these sharp arrows and are gathered by an attendant (**Figure 41**).⁴³⁰

Another type of arrow heads, readily distinguishable by their blunt tip made of either wood or bronze, has also been considered as being used to hunt birds.⁴³¹ These stunning bolts have been recovered in the archaeological repertoire as early as the Predynastic period and

⁴²⁷ Decker 1975, pp. 71-73.

⁴²⁸ Cairo Museum JE 61481 and JE 61477. See Decker and Herb 1994b, cat. K2.181-182, pls. 267-268.

⁴²⁹ Edwards 1972, Cat. 25; Eaton-Krauss and Graefe 1985

⁴³⁰ Edwards 1972, Cat. 21

⁴³¹ Hayes 1959, p. 211-212, fig. 125; Staley *et al.* 1974, pp. 355-356; McLeod 1982, pp. 17-18, pl. 5; Pulak 1988, p. 24, fig 25a; Western and McLeod 1995, pp. 79, 81, 84-85; Genz 2007

most of them come from funerary assemblages.⁴³² Their presence in an elite context has led archaeologists to classify them in the same category of weapons as the throwstick, which members of the military would use to leisurely improve their fighting skills. It is therefore difficult to assess the frequency of their use in ancient Egyptian society. Wooden bows and arrows may indeed have been present in many households of all social classes. However, these organic materials only rarely survive the millennia. Their presence in settlements along the Nile Valley and in the Delta cannot be ascertained, since these artifacts are greatly affected by the moisture in the ground and naturally decay. Even in the drier and more favorable conditions encountered in the cemeteries located at the desert margins, thieves and insects have frequently contributed to their destruction.

3. Sling

To my knowledge, only three slings have been recovered from ancient Egypt.⁴³³ As H. Carter writes when presenting such an item discovered among Tutankhamun's funerary goods, "slings of hide for hurling stones, either for hunting or as a weapon of offence, were probably the earliest device known to mankind, by which an increase of force and range was given to the thrower of such missiles [...]. Here, ... (the sling) is no longer of hide, but of plaited linen thread, neatly made with a pouch, and a loop at the end of one of its cords, to hold it firmly on the little finger, while the second cord is left quite plain for loosing between the thumb and first finger,

⁴³² Genz 2007, p. 50

⁴³³ Carter 1963b, pl. 72; Wernick 2014, p. 98, figs. 1 and 3

when dispatching the missile.”⁴³⁴ In addition to being used in battle,⁴³⁵ such a rudimentary device may have been used to hunt small animals such as hares and birds, or to scare birds away from ripening or harvested grain.⁴³⁶

v. Capture of Birds by Hand

Just like the scene of the tomb owner being actively involved in fowling expeditions, the representation of nimble naked young women swimming in the marshes and seizing a duck by its neck or grabbing its whole body with her two hands is interpreted as being imbued with rich symbolism and deep religious significance (**Figures 42A-B**).⁴³⁷ Yet one should not disregard the possibility that these motifs may have been inspired from actual hunting practices of the time. Such a hunting technique is indeed recorded in the late 19th and early 20th century Egypt.⁴³⁸

⁴³⁴ Carter 1963b, pp. 122-123

⁴³⁵ Wernick 2014: slings have been utilized in the Near East since the Neolithic period (ca. 10,000 BC). The Middle Kingdom tombs of *B3kt* III and *Hty* at Beni Hassan show them being used as auxiliaries to men armed with throwsticks in the context of a military siege (Newberry 1894, pls. 5, 15).

⁴³⁶ It is interesting to note that, according to J. G. Wilkinson (1837 part III, p. 38), slings were not adopted to hunt in ancient Egypt, and using a bow and arrow to shoot birds was unusual. A funerary painting from the Persian era in Sardis, Western Turkey, attests to the use of slings to hunt birds in Antiquity in the Mediterranean region (Hanfmann and Erhart 1981, p. 83, fig. 2).

⁴³⁷ According to A. Kozloff (1992, pp. 331-333), the cosmetic spoons depicting swimming young maidens holding a waterfowl should be read as rebuses. The bird, identified at times as being a goose, should therefore be seen as an avian representation of the earth god Geb, whom the goddess Nut, often depicted as a young women stretching over the horizon, is lifting up. If, on the other hand, the bird bears the characteristics of a duck, the deity held by Nut is no longer her husband, but rather her son, Osiris, and the bird should be interpreted as being the *z3*-hieroglyph. This interpretation would therefore justify the presence of these objects in funerary contexts, each deceased Egyptian hoping to join and become Osiris in the Underworld. “Where the bird’s identity as either goose or duck is vague, the ambiguity was conceivably intended to refer simultaneously to both Geb and the son Osiris” (*Ibid.*, p. 333). For a catalogue of scenes and artifacts with swimming young women, see Decker and Herb 1994b, cat. T 2, pls. 937-940.

⁴³⁸ Meininger and Mullié 1981, pp. 83-84

Using a breathing apparatus that allowed them to swim silently and hide under water, fellaheen used to capture ducks at night, approaching them quietly, dragging them underwater, so as not alarm the other birds, and breaking their necks.

b. “Passive” Fowling Practices³¹²

In some instances, birds are trapped without a fowler needing to be present at the moment of capture. In its stead, bait is used to lure the targeted birds to a strategic location where traps, once placed and activated by the fowler, are expected to impede their movements or kill them straightaway. Fowlers can then gather the captured preys at a later time. Whereas most of these traps only capture one bird at a time, fowlers maximize their catch by activating a series of traps and snares at the same time, which are then regularly visited so as to collect the trapped birds.

i. Spring Trap

To rid gardens and orchards of clouds of starving birds arriving from Eurasia in the autumn, ancient Egyptians made use of small traps, labeled *ibt*,⁴³⁹ designed to capture one bird at a time, as observed in a few representations from the Old and Middle Kingdoms. For instance, in chamber A13 of *Mrrw-k3.i*'s tomb,⁴⁴⁰ this trapping of passerines is depicted

⁴³⁹ Called *Bügel Falle* in German and *piège à ressort* in French. See Mahmoud 1991, pp. 210-212 for an etymological study of this term.

⁴⁴⁰ Duell 1938, pl. 162; Harpur 1985; Kanawati *et al.* 2010-11, pl. 76

alongside activities involving boys, all naked and wearing the side lock of youth.⁴⁴¹ This section of wall reliefs is badly damaged and only the lower portion of the scene has survived (**Figure 43**). Two registers are dedicated to trapping some of the gluttonous birds present in an orchard. In the lower register, to the left of a worker gathering figs in a basket is a spring trap already filled with a bird extending its wings in a desperate and vain attempt to fly away. The trap had been placed at the foot of one of the sycamore trees growing in this garden. Another trap is being set open by a man, whose lower leg is all that remains visible. In the second register, more birds can be seen fluttering in trees. One man wearing a loin cloth is grabbing the wings of a bird that had previously been caught in a trap, while a fourth trap is set open to lure another feathered victim.⁴⁴² This same style of trapping device is known from the early Middle Kingdom tombs of *B3kt* III and *Hty* at Beni Hassan.⁴⁴³ In both these tombs, the snaring of birds is one of the many mundane activities these high officials of the 16th Upper Egyptian province chose for their offering chapels as illustrations of their successful career. In *B3kt*'s tomb, the wall paintings' surviving colors allow us to readily recognize the *gnw* (golden oriole) and light and dark blue *swrwt* (European roller, *Coracias garrulus*) represented flying near a tree at whose base snares have been set in place (**Figure 23**). An open trap with the bait (perhaps an

⁴⁴¹ Because of the depiction in the tomb of *Mrrw-k3.i* of youth holding the song birds and seemingly departing from the bird trapping scene, it has been proposed that this activity was mostly undertaken by boys (Mahmoud 1991, p. 213). In Egypt today, it is indeed common for children to go hunting with their fathers. In the Old Kingdom scene, however, one of the fowlers collecting a bird from a trap is clearly wearing a short kilt and is most likely an adult man. The boys' involvement in the hunt might have been limited to carrying the birds away after their capture. More evidence is needed to draw a firm conclusion on the category of people using this type of hunting device.

⁴⁴² It is possible that the artist has depicted in these two vignettes two successive events: first the setting up of a trap at the foot of a tree filled with perching birds; second, the successful capture.

⁴⁴³ Newberry 1893, pls. 6, 14; Kanawati and Woods 2010, photos 197-203.

insect or a piece of fruit) placed on a small peg in the center has already attracted the attention of two birds. A man is sitting nearby, perhaps waiting for the birds to be lured and caught.⁴⁴⁴ Several more traps are also represented on the North and South walls of the tomb of *Hty*. On the North wall, to the left of three processions of animals, two of which are geese and cranes walking forward under the guidance of their guardians, a small tree appears full of life, filled with colorful songbirds. One of them is diving towards an open spring trap (**Figure 44A**). The closed trap with a bird lying on its back, with legs in the air and wings spread open, painted to its right may represent the outcome of the first vignette: the bird shown previously flying downwards has succumbed to its appetite and is now held prisoner in a meshes of the net. A variant of this mechanism is represented further to the left, behind *Hty* and his wife (see *infra*). Finally, on the South wall, a man is keeping an eye on an open spring trap. Two black and white birds, with striped wings, are represented in flight, about to eat the bait positioned in the middle of this trap (**Figure 44B**).

Egyptologists, to this day, rely on the work of B. Grdseloff to understand how this ancient fowling device functioned.⁴⁴⁵ It is the discovery of the central wooden axis of such a trap⁴⁴⁶ in the magazines of J. E. Quibell in Saqqara, along with his knowledge of the Beni Hassan

⁴⁴⁴ One must assume that the artist chose to simplify the scene and not represent the vegetation behind which the hunter was probably hiding. If he had remained in full sight of the bird so close to the trap, fewer birds would have dared to approach the bait.

⁴⁴⁵ Grdseloff 1938, pp. 52-55, 136-139

⁴⁴⁶ Cairo Museum JE 64937, possibly of the Roman period.

scenes previously mentioned, that inspired B. Grdseloff to build a model of such a self-release trap (**Figure 45**). It is composed of the following elements:

- Two semi-circular wooden flaps, onto which a loose net is carefully tied. Notches are carved at one end through which ropes run so as to maintain the flaps tied to the wooden piece.
- A complex wooden piece kept horizontal on the ground, which forms the central axis of the trap.⁴⁴⁷ Various holes have been drilled into it. A horizontal crossbar is inserted through a groove carved in the wide section of the piece, so as to form a cross. At each end of this crossbar, two small pegs are set in place.
- The netted semi-circular flaps are then attached to this wooden “cross” by means of twisted ropes, which provide the tension needed for the trap to close. To keep the trap open, two pegs on the crossbar are inserted into holes drilled into the flaps.
- Finally, a vertical stick is inserted into the wooden axis, to which two short ropes are attached and on which the bait is placed (fruit or insect, depending on the species of bird targeted). When the bird pecks at this bait, it releases the two short ropes holding the stick in place. The flaps snap closed and imprison the bird into the net.

Another type of self-release bird trap is attested in the iconography of the Middle Kingdom and the archeology of the New Kingdom and was thoroughly described by H.

⁴⁴⁷ A model spring trap in ivory, in the Metropolitan Museum of Art, New York (MMA 30.8.221), is said to be dated from the 18th Dynasty. The piece forming the central axis of the trap is carefully carved in the shape of a bird’s head (**Figure 45A**). N. Scott reconstructed and proposed a similar system to that of Grdseloff using this ancient artifact (**Figure 45B**) (Scott 1940). See also Harpur and Scremin 2006, p. 150, detail 238 for an exquisitely carved example of the trap hieroglyph T26 used as a determinative for the verb *sh*t, “to trap with a net.” I thank D. Meeks for bringing this detail to my attention

Schäfer.⁴⁴⁸ So as to better understand the ancient Egyptian artifact and iconography, H. Schäfer had inquired into the various kinds of passive fowling practiced at the time of his visit in Egypt. With such ethnographic knowledge in hand, he described a wooden artifact from the Berlin Museum, ÄM 17573, purchased in 1905 in Thebes. Even though this object had no clear provenance, H. Schäfer was able to link it to an artifact excavated by H. Carter in Thebes from a tomb securely dated from the 18th dynasty.⁴⁴⁹ This trap is composed of the following elements **(Figure 47)**:

- Two semi-circular flat wood panels, connected to a central bar by means of three thin pieces of wood fastened underneath.
- A net securely attached to one of the semi-circular piece by means of a rope woven through a series of holes drilled all along the edge of the curved panel. The other half of the net was attached to a semi-circular bow of the same size as the panel.

The extremities of the bow were inserted into the two notches visible in the central bar. It was maintained in place by means of twisted ropes, tied around four pegs – two for each end of the bow. These twisted ropes allowed the bow to rotate from an open position to a closed one. The trap was held open by means of a stick attached to the edge of the netted board with a short cord on one side, and to a thorn or dowel, in the middle of the central bar (onto which the bait was laid out), on the other side. When the bird pecked at the bait, this short rod would spring

⁴⁴⁸ Schäfer 1919

⁴⁴⁹ *Ibid.*, p. 178, with reference to Carnavon and Carter 1912, pp. 77-8, pl. 64.2.

out and release the netted bow, thus keeping the bird prisoner between the boards and the net.

H. Schäfer suggested that it might be this second device which is represented on the North wall in the tomb of *Hty*, behind the tomb owner and his wife.⁴⁵⁰ Instead of the two semi-circular flaps, two isosceles triangular pieces of wood were joined together, thus giving it a square shape.

A wide variety of small migratory⁴⁵¹ songbirds continues to be trapped, despite the regulations restricting and/or forbidding the capture of migratory species and, more pragmatically, despite the minimal amount of meat each of these victims provide. Thus turtledoves, wagtails, flycatchers, shrikes, warblers, hoopoes, and especially golden orioles⁴⁵² are caught every year in massive numbers, in particular by Bedouins at several of the Western Oases, where passerines are often considered to be a pest pilfering on the fruit crops.⁴⁵³ Once captured, they can be sold at markets in the Nile Valley, certain species being especially considered a delicacy.

⁴⁵⁰ Newberry 1893, pl. 14

⁴⁵¹ Many cultures in the Mediterranean regions cultivate the belief that *any* species of migratory birds can be hunted. "They are not **our** birds" (Franzen 2013).

⁴⁵² These colorful black and gold birds are still popular in the Middle East and have the reputation to enhance male potency (*Ibid.*).

⁴⁵³ Goodman and Meininger 1989, p. 93; Baha el-Din 2005; Franzen 2013.

ii. Desert Game Traps

As stated above, the human occupation and exploitation of the Eastern Sahara during the Holocene period has been the focus of extensive field study during the past several decades.⁵⁰ An elaborate system of ancient stone-built game traps has thus been discovered in the Western desert along a 400 km stretch of the Nile in Upper Egypt and Lower Nubia.⁴⁵⁴ The traps consist of lines built with local sandstone blocks piled up to a height of two to three courses, broken up at regular intervals by funnel-shaped openings called chutes.⁴⁵⁵ These traps are located a few kilometers away from the Nile River and were most likely intended to channel and control the path of animals travelling from the Nile Valley, where they may have been drinking and/or grazing, to the gravel plains located further west. P. Storemyr surmises that the hunters, well acquainted with the movements and paths of desert game between the Valley and the desert, built these stone lines to direct these animals along *wadis* and hillsides towards strategically located chutes, where some form of snaring could have taken place.⁴⁵⁶ While dating these structures is difficult, the analysis of other datable archeological features associated with these traps has led to the hypothesis that they were built by Nubian groups

⁴⁵⁴ Storemyr 2011

⁴⁵⁵ P. Storemyr (2011, p. 16) differentiates these game traps from the better known “desert kites” attested in the Sinai and the Negev desert. Desert kites make use of stone lines to control the paths of animals and funnel them towards enclosed areas where, unable to escape, they become easy targets for hunters awaiting for their arrival. No such corrals are visible in the traps discussed in this section. On the contrary, these stone lines feature openings, through which desert game could theoretically walk unhindered. Some trapping device must therefore have been placed at these chutes to prevent the animals from escaping.

⁴⁵⁶ *Ibid.*, pp. 15-17

prior to the New Kingdom, in particular the A and C groups (ca. 2400-1550 BC).⁴⁵⁷ Although Dorcas gazelles (*Gazella dorcas*) were the most common desert animals attested in faunal assemblages and may have been caught in these traps,⁴⁵⁸ P. Hobler and J. Hester believed that ostriches were also a main target.⁴⁵⁹ H. Riemer further proposes that the gaps in these lines would have been equipped with mobile foot traps, buried in the ground, intended to capture single animals walking through.⁴⁶⁰

Ethnographic studies of modern Bedouins living in the Eastern desert and hunter-gatherer societies in other parts of Africa, combined with an in-depth analysis of the desert hunting scenes attested in ancient Egyptian iconography, reveal that spiked wheel traps were also used by ancient desert hunters.⁴⁶¹ A ring made of palm fiber or grass studded with inward pointing acacia spines, sharpened wooden sticks, or palm leaf-ends would be placed in a shallow depression in the ground. A rope tied into a noose on one end would be placed over

⁴⁵⁷ Hobler and Hester 1969, pp. 124-125; Storemyr 2011, pp. 23-25

⁴⁵⁸ Linseele and Van Neer 2009. Dorcas gazelles are known to follow fences, whereas other desert ungulates, such as ibexes, tend to leap over stone structures (Storemyr 2011, p. 25).

⁴⁵⁹ "Oasis C-Group people (both in the desert and along the Nile) built complex stone-walled game traps across *wadis* and between *gebels* for capturing ostriches and possibly gazelles" (Hobler and Hester 1969, p. 169).

⁴⁶⁰ Riemer 2009, pp. 179-180, fig. 6

⁴⁶¹ Hornell 1937; Riemer 2009, pp. 182-185. H. McPherson (1897, p. 496), quoting the work of Von Heuglin (1856, *Systematische Übersicht der Vögel Nord-Ost-Africas*, vol. II, p. 929), described a similar practice: "The Arabs of the desert employ snared to capture the Ostrich by its feet. The engine employed is similar to a device by which the same hunters procure gazelles. It consists of a ring of tough wood, which is set inside with smooth pokes or teeth of wood, all radiating towards an opening in the center. It thus resembles a wheel from which the center has been removed. The trapper searches out the places to which the ostriches resort and arranges a series of these traps in the runs of these birds. The trap is often set over a small hollow into which the ostrich treads, thus inserting its foot well into the center of the trap. A running noose is placed upon the surface of the trap, which is drawn round the foot of the bird when it treads upon the snare. The trap is secured to a strong stalk or to the roots of some firmly rooted bush."

this ring, with its other end being attached to an anchor, either a notched stone block or large wooden stick. An ostrich walking through the gap in the stone line had a great chance of stepping into the wheel trap. The more agitated the bird became, the tighter the slip knot of the noose would be. In its attempts to escape and run away, the ostrich would drag the anchor, thus leaving a track in the ground for the hunter to follow (**Figure 48**). After the anchor was blocked by the rocks covering the ground, the trapped animal could then be caught.⁴⁶² Such hunting practice did not require constant monitoring of the traps. Regular visits to the trapping areas by small groups of hunters and trackers would be sufficient to capture and gather their quarry so as to bring it back to camp. This hunting strategy would allow hunters to gather live ostriches, a practice which may have been employed to capture the birds being paraded and presented among other desert game before the tomb owner, as showcased in the offering chapels of the 18th Dynasty Theban tombs of *Wsr* (TT 21) and *Nfr-ḥtp* (TT A5).⁴⁶³

iii. Birdlime

The practice of spreading a viscous and adhesive substance called birdlime on sticks and branches with the intention of trapping any bird alighting on them is widespread today in many Mediterranean countries.⁴⁶⁴ It was already described in Antiquity by classical authors such as

⁴⁶² Riemer 2009, p. 183

⁴⁶³ Tomb of *Wsr*, TT 21: Davies 1913, pl. 23; tomb of *Nfr-ḥtp*, TT A5: Manniche 1988, pl. 3.6.

⁴⁶⁴ Falzon 2008; Franzen 2010; *Ibid.* 2013

Pliny the Elder, who claimed that it was produced from the berries of mistletoe.⁴⁶⁵ Roman settlers may have brought this tradition with them to Egypt since fowlers using birdlime called ἰξευτήρις figure in a tax receipt from Kom Ombo dated from the 1st century AD.⁴⁶⁶ However, I am not aware of earlier attestations of its use in ancient Egypt.

4. Fowlers and their Hunting Grounds

In addition to informing us on the various kinds of wildfowl ancient Egyptians captured to fulfill their needs in poultry, the wall scenes decorating the offering chapels of elite tombs are ultimately one of the main bodies of evidence providing insight into the personnel in charge of trapping birds, as well as the locations these men selected for their expeditions. These two aspects are closely connected and consequently should be studied simultaneously, since only a thorough knowledge of the hunting regions and the avifauna encountered within would have enabled fowlers to successfully carry out their tasks. The data gathered from the funerary iconography will be complemented with the evidence available from literary and administrative sources.

a. Fowling Locations

The review of both the zooarchaeological material and iconography from the Dynastic period leads to similar conclusions, namely that waterfowl were the favorite targets of ancient

⁴⁶⁵ Gk: ἰξός, Lat. *viscum*: mistletoe (LSJ p. 381). See Pliny the Elder, *Natural History*, 16, XCIV. Birdlime is made from dried mistletoe berries, ground with water and kneaded with oil. It is used for entangling birds' wings by contact with it when one wants to snare them (Rackham 1945, pp. 548-549).

⁴⁶⁶ Ostrakon Inv. 1920/21, in Wagner 1995, p. 125.

Egyptian fowling, being the birds most frequently encountered in faunal assemblages and shown as the targets of hunters on wall scenes. The long-lasting popularity of scenes depicting fowling in the marshes in funerary iconography has frequently motivated scholars tackling this topic to propose that hunting expeditions took place almost exclusively in the Nile Delta.⁴⁶⁷ The inscriptions accompanying the clap-netting scene of some tombs corroborate this claim. In the 5th Dynasty tomb of *Iy-mry* in Giza, the tomb owner is shown standing to the left, overlooking the standard activities known as taking place in the marshes, i.e. fowling, seining, and fording cattle.⁴⁶⁸ The caption solely focuses on the top register, in which a team of fowling is busy catching and subsequently gathering the netted waterfowl: *m33 sht 3pd.w m mh.t*,⁴⁶⁹ “inspecting the capture of birds in the Delta marshes.” O. Mahmoud further comments that the choice of the offering chapel’s North wall as canvas for this scene reinforces this conclusion, according to him, this wall was frequently dedicated to the representations of Lower Egyptian activities.⁴⁷⁰

Similar captions describe the scenes of the tomb owner fishing and fowling with a throwstick, or simply traveling on board a papyrus skiff. For example, in the 6th dynasty tomb of

⁴⁶⁷ For example De Keyser 1947, p. 44; Werbrouck 1949, p. 37; Mahmoud 1991, p. 157; Binder 2000, pp. 113, 116; M. Herb (2007, p. 96) claims that “especially the huge marshes in northern Lower Egypt separating the whole country from the Mediterranean Sea were of high importance to the production-situation of the culture.”

⁴⁶⁸ LD *Erg.*, pl. 6. A similar caption is attested in the tombs of *Mrs-ḥnḥ* [III] (Dunham and Simpson 1974, fig. 4) in Giza and *3ht-htp* (Davies 1901, pl. 13) in Saqqara.

⁴⁶⁹ *mḥ.t*: Wb II p. 125 §4; Herb 2007, p. 96: “In the Old Kingdom these ‘northern marshes’ (*mḥyt*) were important centres of fishing, bird-catching, cattle-keeping, and different kinds of plant-materials utilization. [...] Most of the pictures in the tombs of Giza and Saqqara, the necropolis residence of the Old Kingdom, dealing with these activities might be located in the ‘northern marshes’.”

⁴⁷⁰ Mahmoud 1991, p. 122

Mḥw at Saqqara, the deceased is said to *ḥns pḥ.w š3.w zš.w mḥ.t*, that is “traverse the swamp waters, the flooded lands, and the bird pools of the Delta.”⁴⁷¹ Furthermore, during the New Kingdom, the Theban nobles are depicted as enjoying their journey northwards to the marshes of Lower Egypt, where they could take part in various leisurely activities. The tomb of *Nḥt* (TT 52) shows the deceased and his wife *ḥms.t m zḥ r šmḥ ib m33 bw nfr n T3 mḥw*,⁴⁷² “sitting in a booth in order to enjoy themselves looking at the good things of Lower Egypt,” while the produce of the marshes (birds and fish), of their orchards and vineyards are being presented to them.⁴⁷³ In the register above, to the left of the scene depicting *Nḥt* hurling throwsticks at birds and harpooning fish, he is once again shown sitting in the company of his wife and *šmḥ ib m33 bw nfr m inw n šḥ.t n mḥ.t*,⁴⁷⁴ “enjoying seeing the good things (being brought) as tributes of the *šḥ.t* of the Delta.”

As summarized in Appendix 2, the wetlands of the Nile Delta, and in particular the shallow lakes along the coast, continue to welcome large flocks of waterfowl during their autumn migration, among which many species remain for the winter months. In ancient times, just as is the case today, the largest concentrations of waterfowl were likely to have been encountered in this region of the Delta. Consequently, leading fowling expeditions to this area would have drastically increased the hunters’ chances to trap a multitude of birds. While the

⁴⁷¹ Altenmüller 1998, pl. 9

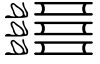
⁴⁷² *Urk.* IV, 1606:12-13

⁴⁷³ Davies 1917, pl. 22


⁴⁷⁴ *Urk.* IV, 1606:8-9

decision to capture birds in the Nile Delta would undoubtedly have been judicious on the part of ancient Egyptian fowlers, some tomb inscriptions allude to the possibility of exploiting the resources of other parts of the country. In the 6th Dynasty tomb of *Ppy-ꜥnh: Hny Km* at Meir, in Upper Egypt, the deceased is depicted inspecting the traditional marsh activities listed previously and the preparation of the fields in the agricultural plain.⁴⁷⁵ These various pursuits are labeled as being the *k3.t nfr.t ir.t m sh.wt nt Šmꜥw T3 mhy*, i.e. the “good work which was conducted in the *sh.wt* of **Upper and Lower Egypt**,” implying that the capture of wild fowl was not necessarily restricted to the northern regions of the country.



Based on the various inscriptions cited above, several topographical terms are mentioned in connection with the activities taking place in or near bodies of water. In addition to *mḥ.t*, “the Northern marshes,”⁴⁷⁶ three terms are traditionally used in the inscriptions describing the motif of the tomb owner actively hurling throwsticks towards the birds flying off from a papyrus thicket and harpooning a *lates* and a tilapia. These activities are said to take place in:

-  *ph.w*:⁴⁷⁷ swamp waters; marshlands; canals


⁴⁷⁵ Blackman and Apted 1953 part V, p. 37, pl. 30

⁴⁷⁶ The term  *idhw*, attested from the Middle Kingdom onwards, is also frequently associated with the marshlands of the Delta (Wb I p. 155 §5).

⁴⁷⁷ Wb II p. 538 §8: Kleines Gewässer, Sumpf (sing.); Sumpfgewässer. At Edfu, Horus is given the epithet of *Nb phw*, the lord of the marshlands (of the Delta) (Alliot 1946, p. 112 n.4). P. Montet (1925, p. 5) translates this term as “canal.” He also proposes: “Il s’agirait des canaux qui réunissent à la lisière du pays cultivé le chapelet d’étangs et de marais que laisse après elle l’inundation” (*Ibid.*, p. 11). J. C. Moreno Garcia (2010, p. 56) highlights the importance of the flood’s residual waters encountered at the edge of the desert, which created seasonal wetlands.




-  zš, *iwn*:⁴⁷⁸ bird pools; marsh; nest
-  §3:⁴⁷⁹ flooded land; swamp, wetland; meadow⁴⁸⁰

Another word describing the location of fowling and clap-netting scenes in iconography


is the term  *sh.t*.⁴⁸¹ When referring to the divine, the goddess *Sh.t* is a form of Hathor, who oversees and protects marshlands and fields.⁴⁸² She can be depicted on temple walls alongside the Nile god *Hꜥpy* and other agriculture deities bearing the produce of the marshes, in particular waterfowl, fish, and papyrus plants. During the Middle and New Kingdoms, in the scenes of fishing and fowling in the marshes, the tomb owner often bears the epithet of *mri/mrr* or *ḥsi Sh.t, nb.t ḥb (3pd.w rm.w)*, “beloved/praised one of Sekhet, the Lady of the Catch

“Les textes rituels révèlent, en effet, que chaque province égyptienne comprenait, en plus des terrains de labour, des *phw*, c’est-à-dire des marais, utilisés pour le pasturage des troupeaux.”

⁴⁷⁸ Wb IV p. 483 §12 and p. 484 §1-14. According to the *Wörterbuch* (Wb I p. 53 §2), after the Ptolemaic period, this hieroglyph could be read *iwn*, meaning “body of water,” the primary meaning of *iwn* being “nest” (§1). P.

Montet (1925, pp. 5 and 10), however, transliterates the sign G49  exclusively as *iwn* based on some parallels from the Pyramid Texts, and translates it as “étang, mare à canards.” He also suggests that the hieroglyph G49 represents a small body of water designed or at least modified as to accommodate fowling (Montet 1931, pp. 174-178). Following P. Montet’s argument, P. Vernus (2005c, p. 68) translates zš as “nest, aviary,” it being written with the nest and hatchling sign G48 . On the other hand, he considers that sign  should be read *iwn* and translated “marsh, pond.”


⁴⁷⁹ Wb IV p. 399 §7: als überschwemmtes Land, Sumpfland das bei Fisch- und Vogeljagd durchfahren wird; §8: Gern neben zš und *ph*, Sumpf. P. Montet (1925, p. 9) translates this term as “étang.”

⁴⁸⁰ In pBM EA10274, known as *The Discourse of the Fowler*, R. Parkinson (2004, pp. 92, 98) translates the term §3 ( |) encountered cols. 18, 27, and 33 as “meadow.”

⁴⁸¹ Wb IV p. 229: das Feld, Gefilde; §8: neben Wörtern ähnlicher Bedeutung wie §3, *sh.t* und ähn.


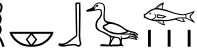
⁴⁸² Leibovitch 1953, fig. 27; Guglielmi 1974, pp. 221-222

(of birds and fish),⁴⁸³ the name of the goddess being written with the hieroglyph of a woman

holding a bird in her right hand  ⁴⁸⁴ and, in some instances, a fish in her left hand, clearly

indicating that it was under her benevolence that a successful capture of birds and/or fish was possible.⁴⁸⁵ Fowling with a clap-net thus figures among the many activities encompassed under the label *k3.t sh.t*,⁴⁸⁶ “the work/activities of the *sh.t*,” as inscribed in many tomb chapels from the Old to the New Kingdom.⁴⁸⁷ According to tomb chapel representations, these *sh.wt*-lands were fully exploited by the local populations. Herdsmen brought the animals under their charge to graze; fowlers captured the birds that had found refuge in the reeds or gathered to feed on the water or in the mudflats; and fishermen laid their nets to catch the fish present in these

⁴⁸³ For the Middle Kingdom, see for example the tomb of *Hnm-htp* II at Beni Hassan (BH 3) (Newberry 1893a, pl.

34): *iry-p.t h3ty-c wr rmw c33 3pd.w mry Sh.t nb.t hb* () *Hnm-htp*, ‘nomarch and member of the elite, great of fish and wildfowl, beloved of Sekhet, the Mistress of the Catch, *Hnm-htp*. For the New Kingdom, see the Theban tomb of *Nht* (TT52): *shmh ib m33 bw nfr ir sm m k3.t Sh.t in sm3y n nb.t hb* () ..., ‘enjoying oneself, looking at beauty and keeping oneself busy with the work of Sekhet, by the companion of the Mistress of the Catch...’ (*Urk. IV*, 1605:18-20)

⁴⁸⁴ Sign C229. See Davies 1902, pl. 5.

⁴⁸⁵ Montet 1925, pp. 6-7; Caminos 1956, p. 11, pl. 2A; Guglielmi 1974, p. 211.


⁴⁸⁶ Wb IV p. 229 §12. See Montet 1925, pp. 4-6 for a discussion of this expression.

⁴⁸⁷ During the Old Kingdom, this expression is attested both in the Memphite necropolis (for example in the tombs of *3ht-htp* (Davies 1901, pl. 13-14) and *Ssm-nfr:Twfi* (Harpur 1987, fig. 61) at Saqqara) and in the provinces (for example at Deir el Gebrawi, in the tomb of *Ibi* (Kanawati 2007, pl. 47-48)). For the Middle Kingdom, see the tomb of *B3kt* III (BH 15) in Beni-Hassan (Newberry 1893b, pl. 17: *m33 k3.t sh.t*, “inspecting the activities of the *sh.t*”). For the New Kingdom, see the Theban tomb of *Mnn3* (*Urk. IV*, 1607:16: *sd3y-hr m k3.t sh.t*, “enjoying oneself with the activities of the *sh.t*”).

ponds.⁴⁸⁸ When water had sufficiently receded, farmers could also utilize the land for cultivation.

It is unlikely that the term *sh.t* refers to the fields and the agricultural plain located in the Nile Valley and Delta, but it rather applies in part to the areas located at the edge of the flood plain, near the low desert, which retained some moisture for most of the year, thus allowing swamp vegetation such as reeds and papyrus to grow and flourish.⁴⁸⁹ Furthermore, as indicated by S. Quirke,⁴⁹⁰ the marginal lands located at the edge of the Delta – the Wadi Tumilat to the east and the Wadi Natrun to the west – were also named *sh.wt* by ancient Egyptians. The latter region, called *Sh.t-hm3.t* in Egyptian, has made its mark in the literary history of ancient Egypt by means of one of its inhabitants, the *sh.ty* named *Hwi-n-Inpw*, main protagonist of the Middle Kingdom tale of *The Eloquent Peasant*. Ornithological studies conducted in the area of the Wadi Natrun⁴⁹¹ indicate that the region is frequented by a large variety of water birds for a large portion of the year, making it deserving of the aforementioned *sh.t* appellation. Similarly, the presence of waterfowl and other types of water birds (*Rallidae*, wading birds) in the faunal

⁴⁸⁸ Alliot 1946, p. 74 n. 6; Montet 1925, p. 6.


⁴⁸⁹ P. Montet (1925, p. 5) translates this term as ‘prairie.’ He further explains (1925, p. 6): “Il (i.e. the area *sh.t*) se compose, ainsi que M. Loret l’enseignait, d’une étendue  couverte ou bordée de roseaux. Dans le langage, *sh.t* désigne un terrain boueux ou marécageux. [...] Lorsque l’inundation se retire, après avoir imbibé toutes les terres cultivables, l’Égypte entière n’est plus qu’une *sh.t*. [...] Quand le sol avait repris sa consistance, on réservait naturellement le mot *sh.t* pour les terrains bas qui le long du désert conservent de l’eau jusqu’en été et pouvaient être considérés comme le paradis du chasseur et du pêcheur.”

⁴⁹⁰ Quirke 2004b, pp. 183-184

⁴⁹¹ Meininger and Atta 1994, pp. 48-50, 381

assemblages recovered at the site of Tell Maskhuta,⁴⁹² located in the Wadi Tumulat, further strengthens the notion that the term *sh.t* applied to this location by ancient Egyptians was used to designate marshy landscapes, favored by herons and egrets, cormorants and grebes, ducks and geese.

As demonstrated by J. C. Moreno Garcia,⁴⁹³ who thoroughly reviewed the hydraulic studies of K. Butzer and G. Alleaume, wetlands, marshes, canals, and areas where low water levels were maintained for most of the year were not only encountered in the regions of the Nile Delta and the Fayum Oasis, as expected, but also seasonally in Upper Egypt⁴⁹⁴ and in the Western desert oases. The presence of these providential wetlands scattered along the flood plain following the rise of the Nile waters in the autumn is especially celebrated in *The Hymn to*

the Flood:⁴⁹⁵ they welcome migratory birds ( *kbh.w*) in need of rest and food during their journey. In turn, farmers, unable to work in their fields, resorted to fowling, in order to take advantage of the bounty falling from the sky in the form of wildfowl.

Furthermore, the possibility to capture birds in the oases of the Western desert is alluded to in

⁴⁹² Boessneck 1986, pp. 331-333, tab. 2. See Appendix 4 for a detailed list of all the bird species recovered at this site.

⁴⁹³ Moreno Garcia 2010, pp. 50-54

⁴⁹⁴ M. Herb (2001, pp. 385-388; *ibid.* 2007, p. 96) proposes the existence of extensive swamps all along the Bahr Yusef, and, on the West bank of the Nile, between Beni Suef and Qusae.

⁴⁹⁵ O. DeM 1675, vo. 6-9 (Posener 1951, pl. 83; Fischer-Elfert 1986, pp. 50-52): *kbh.w hnw gm=f hnty-t3 š shn=f r i3.w(t) Šm^c.w 3h-bi.t hpr.w zš.w=sn r3.w psd m mrh.t sh.tyw sh.t swnw (hr) šsp h(3)b 3pd.w rm.w {bw} nfr*, “Migratory birds come down when they (lit. it) find the southern land (as) a lake. On the hills of Upper Egypt they alight (lit. it), whereas Chemnis becomes their bird pools. R3-geese shine with oil and the *sh.tyw* trap (them). Arrows receive a good catch of birds and fish.”

a passage from the aforementioned tale of *The Eloquent Peasant*. The *sh.ty Hwi-n-Inpw* is said to go down to the Nile Valley from *Sh.t-hm3t*, the Wadi Natrun, having loaded his donkeys not only with plants and seeds, stones and animal hides, but also with birds, namely *mnw*, probably standing for *mnw.t*, “turtle doves,” and *n^cr.w*, which he was likely to have captured near his village.⁴⁹⁶ In addition to these, he also brought forth some “gutted” birds (*wgs*),⁴⁹⁷ possibly dried and/or salted beforehand to prevent them from spoiling during the journey.


In addition to being a common motif in funerary iconography, the theme of catching birds and fish also features as the main theme of several Middle Kingdom literary compositions. Thus, in Middle Kingdom tale *The Pleasures of Fishing and Fowling*, the protagonist is describing his jaunts, at first in the *33*,⁴⁹⁸ most likely located in the Fayum, and later in the *sh.t* of the Western Delta. In this *sh.t*, he witnesses young children targeting *wi3yt*-birds with a throwstick, birds which had been flushed from the reeds by women of the village.⁴²⁰ He especially recalls the pleasure he took at spending the night in these marshes, so as to be ready at first light to

⁴⁹⁶ These items are listed in the version of the tale preserved on pBerlin P10499, more specifically in the passage labeled as R 4, 6-5, 1. The term *n^cr.w*, written in this text with a bird sign determinative G38, has yet to be identified. According to R. Parkinson (2012, p. 35), who edited this text, “it is possible that here the word [*n^cr.w*] should be read *njr^w* for *njw* ‘ostriches’.” However, R. Parkinson agrees that transporting these large birds on donkeys from the Wadi Natrun to the entrance of the Faiyum would be most challenging.

⁴⁹⁷ See Parkinson 2012, p. 35 on the word *wgs* used to designate the gutting and dressing of fish and other animals. As suggested by D. Meeks (personal communication), the word *n^cr.w* may also refer, like *wgs*, to a specific way of butchering and processing poultry. Both terms could then apply to the first word of this list, the turtle doves *mnw*.

⁴⁹⁸ Caminos 1956, pl. 1A, Section A, page 2; Quirke 2004b, p. 215: *hrw nfr iw=n h3.t r 33 grg=n hnn.t...* “a happy day (it is) when we go down to the marsh, that we may snare the alighting birds...” According to R. Caminos (1956, p. 8), “the insistence on ‘*Sbk*, lord of She,’ point to the Fayyum as the scene of the events set forth in this part of the narrative.”


capture birds with a clap-net.⁴⁹⁹ Another literary composition, *The Discourse of the Fowler*,⁵⁰⁰

recounts the lamentations of a fowler, *whꜥ* , who sees his hunting grounds, the *š3.w*, vanishing and being replaced by agricultural land, where cattle are noisily grazing and grain is growing.⁵⁰¹

Administrative documents, such as receipts and accounts, and autobiographical inscriptions listing the various titles of their owner further reveal that the potentials of the *ph.w*, *š3.w*, and *sh.wt* marginal lands were not neglected, but rather were fully exploited by the local populations, known as *mḥ.tyw* in the Delta and more generally as *sh.tyw*.⁵⁰² These lands were integrated into the ancient Egyptian economic system as early as the Old Kingdom and were used to complement the revenues obtained from agricultural production and animal husbandry. As convincingly demonstrated first by S. Aufrère⁵⁰³ and recently elaborated upon by

⁴⁹⁹ See Caminos 1956, pl. 2A and p. 11: ... *sḏr=n ḥr ḥꜥm ʒpd.w rm.w...*, “...we spend the night catching fowl and fish...”

⁵⁰⁰ This composition is recorded on Papyrus Butler verso, held at the British Museum, London (pBM EA10274; Quirke 2004b, pp. 197-198; Parkinson 2004).

⁵⁰¹ A more obscure topographical term possibly associated with trapping birds is  *bw3.t*. According to the Wörterbuch (I p. 454 §17), *bw3.t* is to be translated as ‘Hill.’ In pLansing, however, A. Blackman (1930, p. 70) noticed that it occurred in association with fowling with a throwstick. He proposed that a *bw3.t* was “a swampy piece of ground overgrown with bushes, haunted by wildfowl, and frequented by sportsmen out fowling.” In *The Dispute between a Man and his B3* (pBerlin ÄM 3024), an area known as *bw3.t*, where reeds would grow, is said to be full of *msy.t* waterfowl (Faulkner 1956, p. 24, 28, 37 n. 78-49). It is also featured in the tale of *The Pleasures of Fishing and Fowling*, where the protagonist and his companions are said to: *grg m i3d.t bw3.wt*, “snare with the net of the *bw3.wt*,” the latter term being translated by S. Quirke (2004 b, p. 213) as “hiding place.” See Jasnow 1992, p. 98 n. G, who considers it as being “an enjoyable place.”


⁵⁰² See Herb 2001, pp. 315-420 for a complete study in the economic potentials of the marshes, or *Marschenwirtschaft*, as depicted in the funerary iconography of the Old Kingdom.

⁵⁰³ Aufrère 2003, pp. 9-44

J.-C. Moreno Garcia,⁵⁰⁴ the *ph.w* were indeed of special economic significance since they were listed along with the *w.w*, ‘cultivated lands,’ for every nome of both Upper and Lower Egypt. During the 5th Dynasty, for example, *Ny-K3-Rc*⁵⁰⁵ probably supervised the activities taking places in the *ph.w*-marshlands, as some of his titles imply: *imy-r3 ph.w nb* “overseer of all the marshlands” and possibly also *imy-r3 3pd.w* (?) “overseer of birds,” these birds most likely being those caught in the *ph.w* under his jurisdiction. These marginal lands were of special interest to the *mni.w*, or herdsmen, who led the animals they cared for (herds of cattle and flocks of geese in particular) to these locations. Sety I’s Nauri decree in favor of the temple of Osiris at Abydos in particular refers to land being assigned to *mni.w*, specifically the *smw m r3 imyw 3pd.w*, “the meadows in the areas where birds are,”⁵⁰⁶ and the *š3.w*, “water-logged fields.”⁵⁰⁷

Other areas such as the *grg.t* are also mentioned in texts in connection with fowlers.⁵⁰⁸

In the autobiographical inscription of *Hnkꜣw*, inscribed on the East wall of his tomb at Deir el

Gebrawi, the tomb owner claims: *gm.n(=i) s(y) m grg.wt* () *nt whc.w 3pd.w*, “I found it

⁵⁰⁴ Moreno Garcia 1996; *Ibid.* 2006; *Ibid.* 2010


⁵⁰⁵ Andreu 1997; Berman 1999, pp. 130-132: False door of *Ny-K3-Rc*, Cleveland Museum of Art 1964.91.

⁵⁰⁶ To illustrate the areas where birds were to be expected, *The Book of the Faiyum* includes as a vignette a representation of the entrance to the Faiyum: water birds are represented in the transitional zone between the water, realm of the fish, and the edge of the vegetation (Beinlich *et al.* 2013, p. 38).

⁵⁰⁷ *KRI* I, 49, 11; Griffith 1927, p. 199, pl. 50; Moreno Garcia 2010, p.54.

⁵⁰⁸ Moreno-Garcia 2010, pp. 49-50

(the province) like the **flooded/floodable land** of the fowlers.”⁵⁰⁹ The *grg.t* areas, possibly derived from the verb *grg*,⁵¹⁰ not only meaning “to set up a clap-net,” but also “to hunt” with this type of implement, were most likely land which, following the Nile flood and the rise of the ground water, came to be engorged with water, thus becoming an ideal feeding ground for many birds finding food aplenty – both insects, frogs and invertebrates, as well as plants. Wading birds, ducks, and geese would have gathered in such flooded fields, transforming these areas into ideal trapping locations for fowlers, who could set up their net on the ground, since no deep water is needed for it to successfully function. After spreading the net adequately, they would cover it with some light vegetation and wait, hidden in a *k3p*, or hut, for their prey to alight and gather before closing the wings of the net.⁵¹¹

An additional geographical term, *hn.t*, written with the hieroglyph of a hand holding an egg, ⁵¹² and whose most frequent attestations are connected with the region of Faiyum,⁵¹³ is also encountered in association with birds on Block 255 from Niuserra’s Sun temple at Abu

⁵⁰⁹ The tomb dates from the end of the 5th dynasty or the beginning of the 6th dynasty. The inscription can be found in Davies 1902b, p. 30, pl. 25, as well as *Urk.* I, 78:16. See also Mathieu 2015, pp. 267-268 for a recent discussion of this passage, with emphasis on the use of the marginal land of the *grg.wt* by herders and trappers of fish and birds.

⁵¹⁰ *Wb* V p. 185 §13: Netze, Falle aufstellen; *Ibid.* p. 186 §1 im Fallen, im Netz fangen.

⁵¹¹ J. C. Moreno Garcia’s excellent study of this territorial term demonstrates that the *grg.t* were “un terrain récemment défriché, situé au bord du Nil, mais qui n’était pas encore protégé des effets de la crue par des aménagements hydrauliques” (Moreno-Garcia 1996, p. 123). Fishermen, and probably fowlers (*wh^c.w*), in particular exploited these areas and were placed under the supervision of the ^c(*n*)*d-mr grg.t* (*Ibid.*, p. 134).

⁵¹² Sign D267

⁵¹³ Gardiner and Bell 1943; Cruz-Urbe 1992; Vandorpe 2004; Yoyotte and Guerneur 2013, pp. 135-148, 449. I thank D. Meeks for referring me to the latter publications.

Ghurob⁵¹⁴ and may have been a location where fowlers would have been sent to capture wildfowl. The term has been precisely interpreted by J. Yoyotte as designating both natural drainage channels and the surrounding land, which became filled with water as the level of the Nile River rose during the its annual inundation.⁵¹⁵ As the Nile returned to its bed, water in these natural depressions remained and created short-term shallow ponds, ideal feeding grounds for migrating waterbirds. The abbreviated inscription on Block 255 reads: *pr(.t) (m) ḥn(.t) (in) sbḥ(.w)*, “coming forth (from) the *ḥn.t* (or sim.) by the *sbḥ*-birds.”⁵¹⁶ The *sbḥ*-bird, “the shrieker,” named probably because of its wailing cry, has been identified as being a species of *Rallidae*, such as a coot (*Fulica atra*),⁵¹⁷ a moorhen (*Gallinula chloropus*),⁵¹⁸ a purple gallinule (*Porphyrio porphyrio*),⁵¹⁹ or the less common Allen’s gallinule (*Porphyrio alleni*).⁵²⁰ These birds all require dense vegetation, in which they can easily find refuge. Coots and moorhens are more readily seen on open water when feeding, sometimes in large numbers during migration, while the gallinules prefer remaining in the reeds and rushes growing at the edge of the water.⁵²¹ In ancient Egyptian iconography, both the coot and Allen’s gallinule are known from the list of

⁵¹⁴ Von Bissing 1955, pl. 13

⁵¹⁵ Yoyotte and Guermeur 2013, pp. 146, 449

⁵¹⁶ Reconstruction proposed by S. Vinson (2002, pp. 96-97).

⁵¹⁷ Wassell 1991, p. 115

⁵¹⁸ *ibid.*

⁵¹⁹ Mahmoud 1991, pp. 93-96

⁵²⁰ Edel 1961, pp. 94, 104; Hannig and Vomberg 1999, p. 214

⁵²¹ Etchécopar and Hüe 1964, pp. 189-196; Goodman and Meininger 1989, pp. 220-224.

birds in the tomb of *B3kt* III at Beni Hassan and are respectively named *wh^c.t* and *shh.t*.⁵²²

Considering the secretive behavior of the purple gallinule,⁵²³ it is therefore more probable that the migratory *sbh*-bird, recorded on the Chamber of Season wall as stopping at a *hn.t* of the Delta,⁵²⁴ is the migratory moorhen, known for being a loud bird, frequently emitting characteristic “crroo” calls.

The capture of wildfowl was not limited to the wetlands encountered near the Nile Delta and River. Recent ornithological studies have demonstrated that many species of water birds and songbirds cross the wide expanses of the Western desert, avoiding the Nile Valley all together, and prefer to choose the scattered oases as stopovers during their journey.⁵²⁵ The discoveries of both bird remains in camps located near these oases and of a clap-netting scene etched on a cliff surface near the Dakhla Oasis are further proof that members of the local populations did not neglect the feathered resources stopping in their midst during the fall and spring migrations.⁵²⁶ Additional written accounts and receipts confirm the presence of birds and

⁵²² Davies 1949; Bailleul-LeSuer and Wyatt 2013, p. 28

⁵²³ It should be noted that, based on recent data, the purple gallinule is not a migratory bird, but rather a resident species of Egypt. It is not to say that some Palearctic populations of this species did not visit Egypt in ancient times. Nevertheless, at this stage, evidence is more in favor of the *sbh*-bird being the moorhen.

⁵²⁴ See Yoyotte 1962, p. 88 n.4; Björkman 1974, p. 51 for a discussion of the term *hn.t* employed specifically in relation to the Nile Delta.

⁵²⁵ Moreau 1927; *ibid.* 1928; *ibid.* 1934. Ornithologists, such as R. E. Moreau, had anticipated that some migratory birds avoided the Nile Valley and rather chose to fly over the desolate expanses of the Western desert, taking advantage of the oases to rest, feed and drink. Such assumptions have been confirmed by recent ornithological field work (Goodman and Meininger 1986).

⁵²⁶ For remains of birds encountered in the Western desert, see Appendices 3-4. For the clap-netting scene near Balat, see Kuhlmann 2002, pp. 132-133, fig. 1 (**Figure 9**).

fowling opportunities in the Dakhla and Kharga Oases. Dated from the 6th Dynasty, tablets and labels from the site of Balat contain references to birds being exploited at the site.⁵²⁷ While one might surmise that these birds had been brought from the Valley, it is more plausible that some of them were captured nearby,⁵²⁸ considering that the journey between the Valley and Dakhla Oasis used to take many days, even weeks.

Moreover, two Persian period ostraca from the site of Ayn Manawir, in the Kharga Oasis, specifically refer to the presence of fowling areas, named *gmgm* and *ggm*, in the oasis.⁵²⁹ In ostrakon O. Man. 4164, the *ggm*, where a man named *Hr* bought from a certain *Hr-hb* the right to hunt birds, is precisely demarcated: it went from the water of *H3=w-s* to the water of the reed thicket (*p3 mw (n) H3=w-s š3c p3 mw (n) p3 3kr*).⁵³⁰ The scarcity of water sources in the Kharga Oasis had indeed motivated the inhabitants of Ayn Manawir to strictly control the access and right to capture the birds present in these wetlands.⁵³¹ The creation of artificial

⁵²⁷ Pantalacci 2005; Pantalacci and Lesur 2009. The documents of interest for this study are tablets 4438 and 7233, as well as label 4493. The birds mentioned therein are: *zt* (pintail duck), *sr* (*sr*-goose), *trp* (white-fronted goose), *mnwt* (turtle dove).

⁵²⁸ Flocks of pintails are known to migrate to and winter in the Dakhla Oasis. As for the turtle dove, one subspecies of this dainty bird, the *Streptopelia turtur rufescens*, currently breeds in the Western desert oases. No record, however, is known as to geese migrating through this region. It may have been necessary to bring geese to the oasis from the Valley.

⁵²⁹ Agut-Labordère and Chauveau 2015. The texts are labeled as O. Man. 4162 (Summer of 407 BC) and 4164 (Winter of 437-436 BC). See Chauveau 1996, p. 32-47 for more information about the discovery of this collection of texts. See Moreno Garcia 2010, p. 49, who proposes to connect the term *gmgm* with the older word *grg.t* previously discussed. A *gmgm* could thus be a small laguna or some flooded land.

⁵³⁰ Agut-Labordère and Chauveau 2015, pp. 5-6

⁵³¹ One specific type of birds is mentioned in these texts: the *kmy*, whose identity remains to be established. As stated by D. Agut-Labordère and M. Chauveau (2015, pp. 10-11), “les données dont nous disposons interdisent toute conclusion définitive. Et, dans la mesure où il est impensable qu’une seule espèce d’oiseaux se soit retrouvée prise dans les filets tendus par les petits oasiens, il est finalement très probable que le mot *kémi* désigne, dans ce

ponds may have been a common practice in the oases where natural bodies of water are rare.⁵³² Drawing some water from a nearby qanat, these additional ponds would have been especially attractive to birds flying over the desolate expanses of the Western desert.⁵³³ It would have enabled oasians to maximize their chances of capturing wild fowl during the short period of bird migration.



b. Fowlers

As mentioned previously, marshes and other marginal lands were inhabited and exploited by a specific category of workers, the *mḥ.tyw* and *šḥ.tyw*, familiar with its resources and its challenges. Better known under the term of *wḥꜥ*, literally “user of nets,”⁵³⁴ some of the inhabitants of these regions specialized in the capture of fish (*wḥꜥ rm.w*) or birds (*wḥꜥ ʒpd.w*),

contexte, tous les types de migrateurs d’un certain calibre susceptibles d’être capturés dans les concessions de chasse.”

⁵³² Henein 2010, p. 280: clap-netting is also practiced in dry areas, where migratory birds are known to fly by and stop during their journey. The author describes the artificial basins, called *maḥṣal*, excavated by local hunters, as follows: “les chasseurs creusent des bassins rectangulaires aux angles arrondis d’une profondeur variant entre 20 et 30 cm, entourés d’un bourrelet d’argile, qu’ils remplissent d’eau.” The presence of a source of water in an otherwise dry landscape is certain to attract local and migratory birds. Nevertheless, to further draw them in, seeds and vegetation are scattered on the water surface and decoy birds are tied to the basin’s floor.

⁵³³ Wuttmann *et al.* 2000; Agut-Labordère and Chauveau 2015, pp. 11-12

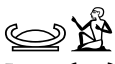
⁵³⁴ Parkinson 2004, p. 99. P. Montet (1925, pp. 11 and 14) translates the term *wḥꜥ* as ‘marinier,’ with the boat sign P4  incorporating the net of the fowler and the fisherman, piled as a heap in the middle of the skiff. The close connection of these two professions with water and navigation is further emphasized by the presence of these two occupations listed in onomastica alongside nautical activities (Bickel 1998, p. 168; Moreno-Garcia 2010, p. 54). A less frequent term, which can be translated as both a catcher of fowl and fish is *ḥ3mw* . For a discussion of this term, especially as it appears in the 12th Dynasty document, pMoscow 1695 vo, see Posener 1969, pp. 105-106; Parkinson 2004, pp. 88-89.



adapting the nets at their disposal for each kind of quarry.⁵³⁵ The representations of these *wh^c.w*-trappers are common features of funerary iconography, figuring in most tomb chapels from the 4th to the 18th Dynasty, thereafter with less frequency during the end of the New Kingdom and the Late Period.⁵³⁶ During the Old Kingdom, both fowlers and fishermen are similarly depicted in the registers showcasing the bounty provided by the marshes and the activities taking place therein, which are labeled as *k3.t sh.t*, “the work of the *sh.t*.” They are shown for the most part naked or simply wearing a belt around their waist.⁵³⁷ The caption describing the two groups of workers simply indicates that they are all *wh^c.w*,⁵³⁸ under the supervision of a *imy-r3 wh^c(.w)*, “overseer of trappers.” While the overseer may be known by


⁵³⁵ Szpakowska 2008, p. 98. A few fishing/fowling nets have been recovered from Egypt: British Museum EA36886; Petrie Museum UC27885 ii.


⁵³⁶ See the extensive catalog of scenes gathered in Decker and Herb 1994, section K.3, “Vogelfang mit dem Klappnetz.”

⁵³⁷ The importance and position of the various members of the fowlers’ team are indicated by the type of garment worn or the absence thereof. Thus, in addition to the overseer (*imy-r3 wh^c.w*), another member of the team was granted an elevated status, namely the signal man. He is frequently shown wearing a kilt, while his colleagues in charge of pulling the hauling cable, have exposed genitalia (for example in the tomb of *Ppy-^cnh*: *Hni Km* in Meir: Blackman and Apted 1953 part V, pl. 30). It is indeed the accurate timing of his signal, which guaranteed for the net to be filled with wild fowl. Additional expertise and experience was thus seemingly necessary to obtain this position.

⁵³⁸ Bénédite 1910, p.1. During the Old Kingdom, no phonetic complement is included and the term is merely written with the boat sign, followed by a man used as a determinative: . From the Middle Kingdom

onwards, additional signs are added to this basic notation,  and  being common written plural forms of the term. See Wb I p. 350 §1-3; Montet 1925, p. 14. The term is fully spelled out in the Middle

Kingdom tomb of *h3-nht* at Dayr al-Bayrshā:  (Griffith and Newberry 1894-95, pl. 16). When no determinative is present, only the context informs the viewer or reader as to the specific meaning intended, either fishermen, fowlers, or both. It is not unusual when both categories of workers are mentioned in text for the word to simply be written once, with both a bird and a fish determinative included at the end of the word. See for

example in pAnast. IV 1b,7 (Gardiner 1937, p. 35):  *wh^c.w*, translated as “fowl and fish catchers” in Caminos 1954, p. 127.

name,⁵³⁹ the fowlers and fishermen often remain anonymous.⁵⁴⁰ Yet, the conversations recorded in their midst are filled with life, humor, even sarcasm.⁵⁴¹ Their lack of clothing, in some cases the infirmities and baldness they display, clearly make them stand apart from the officials involved in the many activities represented on the walls, all distinctly dressed with a kilt and holding a staff upon which they could lean, and especially from the tomb owner, elaborately clothed and adorned with various accessories pertaining to his status and function in society. In addition to taking place in similar environments, fishing and fowling are placed under the patronage of the same deities, both the goddess Sekhet discussed *supra*, and the Nile god Hapy. The latter god is indeed known as being *nb rmw ꜥꜣ3 3pdw*, “the lord of fish, plentiful with birds.”⁵⁴² As for Sekhet, it is said that *[s]hpr.n=s 3pd.w n mr.w*, “she created the birds of the canals.”⁵⁴³ Their benevolence allows for the nets of the *whꜥ.w* to become filled with fish and birds. Yet, while not denying the possibility that some ancient Egyptians were adept at capturing both fish and wildfowl, possibly fulfilling each occupation seasonally,⁵⁴⁴ professional

⁵³⁹ For example, in the 6th Dynasty tomb *Mhw*, he is named *B3-s3bw* (Altenmüller 1998, pl. 7)


⁵⁴⁰ The anonymity of the *whꜥ.w* is especially true in the scenes dated from the Old Kingdom. During the Middle Kingdom, however, some *whꜥ.w* are known by name, especially if they feature in processions of offerings, as recorded in the tomb of *Hnm-htp* II in Beni Hassan (Kanawati and Evans 2014, pp. 20, 22).

⁵⁴¹ Erman 1919; Guglielmi 1973, pp.144-156

⁵⁴² Van der Plas 1986, pp. 79-80. An alternative version of *The Hymn to the Nile Flood*, preserved in part on pChester Beatty V, claims that the god Hapy is “he who allows south *kbh.w*-birds, without a bird falling from heat” (*shnty kbh.w nn 3pd.w h3y hr hn.wy*). See Helck 1972, pp. 12-17; Quirke 2004b, p. 199 for transliteration and translation of this passage.

⁵⁴³ Passage from Section E of the fragmentary tale entitled “The Sporting King” (Caminos 1956, pp. 22-39; Quirke 2004b, p. 210).

⁵⁴⁴ R. Luff (2001, p. 361) strongly believes in the symbiotic relationship of fishing and fowling in ancient Egypt. Using the faunal remains recovered in Workmen’s Village of Amarna to illustrate her hypothesis, she noticed that

fishermen and fowlers were however more likely to specialize in one specific type of trapping – either fish or birds – in order to acquire the expertise needed to guarantee successful missions.⁵⁴⁵ This distinction is visible in the written record. Each category of workers is indeed clearly identified by the simple addition of a bird or fish sign to the word *wh^c*, fowlers being labeled as *wh^c.w 3pd(.w)* .


The more specific title *wh^c gšy.wt*, or “fowler of migratory birds,” attested in pStrassburg 25 from the 21st Dynasty,⁵⁴⁶ can be interpreted in two ways: it may describe a seasonal fowler, i.e. a person hunting birds only during migration and sharing his time with other activities during the rest of the year. It may also indicate that the *wh^c gšy.wt* was a professional fowler specifically skilled in trapping passage migrants, being well acquainted with their behaviors, the location of their stopovers during their journey, and the timing of their arrival in each location. Such a highly specialized training would have made them greatly sought after and may justify why, in pStrassburg 25, the divine adoratress of Amun dispatched *Hr-iy-t3.wy*, one of these fowlers downstream. She was eager for him to organize a fowling expedition, using

the bones of cormorants and mullets were found together, leading her to propose that both the cormorant, a well-known fish eating bird, and the mullets were captured at the same time. The cormorant being a winter visitor to Egypt, it thus appears that “fowling was primarily a winter activity and hence would be a natural accompaniment to fishing at that time” (*Ibid.*, p. 362).

⁵⁴⁵ N. Henein’s ethnographic work in the region of Lake Manzala revealed that the local inhabitants exploiting the resources of the region usually specialize either in fowling or in fishing. The fishing and hunting techniques are passed down from generation to generation within each family. While fishing is a yearlong activity, which peaked during the summer, bird trapping can also be practiced throughout the year by professional fowlers, who target resident species in addition to the passage migrants and winter visitors. However, fishermen can also join these professional hunters during the migration periods, so as to obtain an additional source of revenue for their family (Henein 2010, p. 16).

⁵⁴⁶ pStrassburg 25: Spiegelberg 1917, pp. 11-13; Wente 1990, p. 208 for translation.

reliable men he had worked with previously. *Hr-iy-t3.wy* was then to rapidly return south to her with his catch. While the term *g(3)š.t* has frequently been translated as migratory birds in general,⁵⁴⁷ it may also refer to a specific genus or family of migrants, which eludes us due to the lack of more explicit textual material. It would hardly be surprising that some people favored or specialized in the capture of a limited variety of wildfowl, simply due to the wide range of idiosyncratic behaviors of the various avian species encountered in Egypt. Such a specialized knowledge would greatly improve the chances of successfully filling these fowlers' game bags.

Thus, as suggested by D. Meeks, the *z3w ḥw*  listed in the Ramesside Turin Tax list⁵⁴⁸ may have been in charge of observing the gathering of the *ḥw*-birds and of informing the other fowlers of the best time to capture these wild fowl.⁵⁴⁹

Another term for fowler is attested during the Ramesside period, namely *k3p.w*



, probably by association with the shelter in which bird hunters hid while waiting for their quarries to gather.⁵⁵⁰ Both in the early 19th dynasty pBibliothèque Nationale 203⁵⁵¹ and


⁵⁴⁷ Wb V p. 208 §2; Goelet 1983, pp. 50-52; Roquet 1985; Egberts 1991, pp. 62-67; Vernus and Yoyotte 2005, p. 713 n. 196

⁵⁴⁸ *KRI* II, 818: 8

⁵⁴⁹ Meeks 2012, p. 531 n. 124.

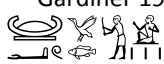
⁵⁵⁰ Wb V p. 105 §3. This same word also designs a species of bird well known for being especially secretive. It is represented in the tomb of *B3kt* III, and has been identified as being the Eurasian Bittern (*Botaurus stellaris*) (Newberry 1893b, pl. 4; Carter *et al.* 1900, pl. 13; Davies 1949, p. 18, pl. 2; Houlihan 1986, p. 21).

⁵⁵¹ *KRI* I, 243:13-14; Spiegelberg 1896, pp. 33-35, pl. 1.

in the 20th Dynasty pHarris I,⁵⁵² *k3p.w*-fowlers are mentioned as making deliveries of a portion of their catch. In the former text, these *k3p.w* are delivering birds by boat to Seti I's palace poultry-yard (*mḥwn*). In pHarris I, *k(3)p.w*, along with *wḥ^c.w* ,⁵⁵³ are required to provide a yearly contribution (*ḥtr rnp.t*) in the form of water birds (*3pd.w n mw*) to the temple of Amun in Thebes (289,530 birds) and in Heliopolis (37,465 birds), taken as a tax (*b3kw*) from their annual production. Whereas the recent editor of pHarris I, P. Grandet, translates *k3p.w* as "oiseleurs" and *wḥ^c.w* as "pêcheurs,"⁵⁵⁴ I rather believe that these two terms refer to two specific categories of bird hunters. The distinction might be geographic, the fowling zones of each group being located in different parts of the country. These fowlers may also specialize in different environments, making use of different weapons and techniques. To the extent of my knowledge, no extant text provides additional information on the hunting practices of the *k3p.w*, preventing us from giving a more precise translation of the term.

As S. Bickel remarks, very few people worked in a fully independent capacity in Dynastic Egypt.⁵⁵⁵ Rather, almost everyone was employed to a lesser or greater degree by an institution, such as the central administration and major temples, or belonged to the staff working on the

⁵⁵² pHarris I, 12b,6; 32b,9; 69, 8 in Grandet 1994 Part I, pp. 238, 267, 325.


⁵⁵³ Gardiner 1952, p. 52: In his reflections on the Nauri Decree, A. Gardiner remarked that the writing of *wḥ^c.w*  with both bird and fish determinatives is a frequent Late Egyptian writing of the term, which does not necessarily imply that the person in question is both a fisherman and a fowler. Additional terms, *3pd.w* or *rm.w* written afterwards, are often added to indicate the specialization.

⁵⁵⁴ Grandet 1994 Part II, p. 69 n. 249. In this entry, the author also provides a list of attestations of the word *k3p*.

⁵⁵⁵ Bickel 1998, p. 164

estates of high officials. Such a statement readily applies to the various groups of bird hunters attested in the textual record. For instance, many of the fowlers represented in a funerary setting during the Old Kingdom are said to be *wh^c.w (3pd.w) n pr-d.t*, “fowlers of the funerary estate,” in charge of gathering the wild fowl needed to provide for the funerary cult of the tomb owner. It remains unclear, however, whether these workers were employed full time for the benefit of the tomb owner, both during his life to provide for his table, and after his death to fill his offering tables with poultry, or whether only a portion of the fowlers’ catch was awarded to the tomb owner, the remaining birds belonging to the king for his own needs. One can indeed imagine that, during most periods of Egyptian history, multiple teams of fowlers were specifically employed to fulfill the needs in poultry of the Royal Residence⁵⁵⁶ and were placed under direct control of the central administration.⁵⁵⁷ J. C. Moreno Garcia, in his study of titles and offices in the administration of the Old Kingdom, has come to the conclusion that the State was well aware of the wealth of resources, which could be exploited in the marginal lands located throughout the country, most especially the *ph.w*, *sh.t*, and *grg.t* discussed in the

⁵⁵⁶ In the Decree of Horemheb (*Urk. IV*, 2155:7), for instance, the Harem (*Pr-hnr.t*) is said to have received fowl and fish, delivered to the palace by fowlers and fishermen. There is no clear indication, however, that the men providing these goods from the wetlands were directly employed by the Harem. These produce may have been delivered as part of the tax the fishermen and fowlers were due to pay in kind and which benefited the Harem. See Kruchten 1981, pp. 143-146 for a commentary of this passage.

⁵⁵⁷ For the administration of resources, two units of the central administration need to be taken in consideration. As discussed by H. Papazian (2013, pp. 57-58), the *pr-ny-sw.t* and the *hnw* were in charge of managing the State’s resources, most especially during the later parts of the Old Kingdom. Relying on J. Nolan’s study of the 4th Dynasty mud sealings recovered at the site of Giza, H. Papazian remarked that “the *hnw*’s associations rested principally on civil matters, while the *pr-ny-sw.t* dealt nearly exclusively with cultic and offering contexts” (Nolan 2010, p. 81; Papazian 2013, p. 58). To the extent of my knowledge, there is not extant inscription tying the work of fowlers with these departments. On the other hand, the title , *wh^c rmw n hnw*, “fishermen of the *hnw*,” is attested in the Hammamat inscription N° 12, line 16. This team was part of a military expedition into the Eastern desert (Couyat and Montet 1912, p. 38; Christophe 1949, pp. 20-21; Meeks 1979, p. 239).

previous section. As early as the Old Kingdom, officials reporting directly to the capital were put in charge of these localities. They specifically organized the management of the resources, in particular the flocks of wild fowl needed by the Residence and captured by fowlers.⁵⁵⁸ Of special interest are the following titles belonging to the State administration during the various periods of Egyptian history under discussion in this dissertation.

Table 12. List of administrative titles involved with the supervision of fowling activities

<i>Title</i>	<i>Translation^a</i>	<i>Period(s) of attestation^b</i>	<i>Comments and references</i>
<i>imy-r3 pḥw</i>	Overseer of the <i>pḥw</i> -marshlands	OK, MK, NK	Fischer 1996, p. 22 n. 4; Moreno-Garcia 2010, pp. 59-60
<i>imy-r3 ḥn.t</i>	Overseer of the <i>ḥn.t</i> -channel	NK	Björkman 1974
<i>imy-r3 zš</i>	Overseer of the fowling pond, marshlands	OK, MK, NK	A more specific title, <i>imy-r3 zš.wy n šḥmḥ-ib</i> , “overseer of the double bird pools of pleasure,” is attested for both the Middle and New Kingdoms (Ward 1982, p. 45 (# 351); Al-Ayedi 2006, p. 118 (# 388)).
<i>imy-r3 whꜥ nw n sp3t</i>	Overseer of the trappers and hunters of the nome		Fischer 1968
<i>imy-r3 whꜥ.w š3.w zš.w</i>	Overseer of the trappers of the swamps and bird pools		Kanawati and Evans 2014, p. 15
<i>imy-r3 šḥ.tyw</i>	Overseer of marshland dwellers		Grajetzki 2003; <i>Ibid</i> 2013, pp. 221-222; Shirley 2013, pp. 532, 534.

⁵⁵⁸ The birds received by the central administration, or *pr-ny-swt*, could then be redistributed to temples as royal donations, such as, for example, the endowment in part consisting of fowl established by Amenemhet II for the temple of Ptah in Memphis (Altenmüller and Moussa 1991, pp. 23-24). They could also be given to high officials to reward them for their services. In his 6th Dynasty tomb in Aswan, *S3bni* thus claims that he received the gold of


honor, in addition to rations, meat, and fowl ( *3pd.w*) (Line 16 of the inscription: *Urk.* I, 139:16; Strudwick 2005, p. 337 for translation). According to L. Pantalacci (2005, p. 89), the animals captured in the region of Balat, in the Dakhla Oasis, depended from the administration of the *šnwt*-granary. For the importance of the Granary in the central administration of the Old Kingdom, see Papazian 2005.

Table 12, continued.

Title	Translation ^a	Period(s) of attestation ^b	Comments and references
ⲉ(n)ḏ-ṃr wḥⲥ ʒpdw	Administrator of fowlers		CG 95 (Borchardt 1911, p. 75); CG 1380 (Borchardt 1937, pp. 37-41, pl. 9), both false-door and statue belonging to <i>Ty</i> , buried at Saqqara in mastaba C15 (Mariette 1889, pp. 137-142). For a detailed discussion of this title, see Moreno-Garcia 1996.
zʒ n wḥⲥ.w	Secretary of trappers		UC 32102Ai (Collier and Quirke 2006, pp. 142-143)

^a See Franke 1984, pp. 108-112 for a discussion of the challenges Egyptologists face when translating titles and evaluating what the specific and at times obscure terminology referred to.

^b For general references on Old Kingdom titles, see Jones 2000; for Middle Kingdom titles, see Ward 1982; Quirke 2004a; Grajetzki 2009; for New Kingdom titles, see Al-Ayedi 2006. Additional references not included in these compilations will be provided when possible.

The constant need for fowl for the offering tables of the gods implies that fowlers were also included in the personnel of many temples. Exemption decrees, such as the Nauri and Elephantine decrees, reveal that fowlers were specifically employed by the sanctuary of Osiris at Abydos and the temple of Khnum at Elephantine and benefited from the protection granted by these royal decrees.⁵⁵⁹ Some of the birds reaching the altars of the gods were provided by fowlers as part of the dues, usually consisting of a portion of their production that the members of this profession were obliged to pay. During the early 20th Dynasty, as stated in pHarris I, the *kʒp.w*-and *wḥⲥ.w*-fowlers provided the offering tables of Medinet Habu in Thebes and the temple of Amun in Heliopolis with massive flocks of birds, which were deducted as *bʒk.w*,

⁵⁵⁹ For the Nauri Decree, see Griffith 1927, p. 201, l. 36-37; *KRI* I, ; for the Elephantine Decree, probably from the reign of Ramesses III, see Breasted 1906b, p. 86 §148; *KRI* V, 343-345. The text written on oGardiner 86 specifically refers to fishermen and fowlers belonging to the Estate of Amun in the Delta (Warburton 1996, pp. 143-145). The unusually large numbers listed in this text, i.e. 61,517 dependents working for this Estate in the Delta alone, might suggest that this text was a scholarly exercise devised for or by a scribal student. Nevertheless, it is quite certain that the Temple of Amun at Karnak owned property in the Delta and employed fowlers in Lower Egypt for its own benefits. "If this is a list of all the temple dependents in the Delta, it would support the contention that the majority of the dependents were in the Delta. The idea is appealing, but the evidence slim" (*Ibid.*, p. 145 n. 409).

“imposts,” from their annual production.⁵⁶⁰ Already during the Middle Kingdom, *wh^c.w* based at Lahun were also expected to pay *b3k.w*⁵⁶¹ and *ipw*, “dues,” which the *zš n wh^c(.w)*, “the secretary of trappers,” would collect, possibly for the benefit of the Residence.⁵⁶²

The teams of fowlers mentioned thus far were hired in an official capacity, working for the service of the State, or under the aegis of a temple. Yet, it is highly probable that ancient Egyptians also captured birds for their own domestic use in order to provide meat to their table and/or to bring additional revenue to the household.⁵⁶³ Women and children in particular may have been involved in small scale bird-trapping, possibly using projectiles, spring traps, and small nets.⁵⁶⁴ Such a practice is described in the Middle Kingdom tale, *The Pleasures of Fishing and Fowling*; children are said to hunt *wi3yt*-birds flushed by the women of the village.⁴²⁰

While evidence is scarce and inconclusive, the active participation of children and women in the trapping of wild birds may have been incorporated into the funerary iconographic repertoire of offering chapels. In the Old Kingdom tomb of *Mrrw-k3.i*, for instance, a group of young boys is depicted holding perching birds with a variegated plumage

⁵⁶⁰ pHarris I, 12b,6; 32b,9 in Grandet 1994 part I, pp. 238, 267.


⁵⁶¹ UC32104vs (Collier and Quirke 2006, pp. 170-171)

⁵⁶² UC32102A (Quirke 2007, p. 281). No details are provided in this short text to give insight as to the purpose of this tax collection.

⁵⁶³ Ikram 1995, p. 209

⁵⁶⁴ D. Serjeantson (2009, p. 231) suggests that trapping small animals, including birds, would have been a means for children and women to have regular access to proteins during Prehistoric times.



( *s3b*), whose trapping by means of spring traps may have taken place in the orchard scene carved near-by.⁵⁶⁵ Whether these youths shown in this tomb conducted the trapping themselves, however, remains the domain of conjecture. Another badly preserved scene from the Middle Kingdom tomb of *W3h-k3* in Kaw el-Qebir may also have been dedicated to the capture of songbirds in an orchard. Women can be seen making wide gestures with their arms, scaring a flock of birds, which had settled in the fruit bearing trees.⁵⁶⁶ The seasonal capture of small birds in the flood plain and near the river, mostly during migration when the country was visited by myriads of passage migrants, would have provided a welcome and cheap source of food, especially at times when other resources may have been scarce.

To conclude this section dedicated to the position of fowlers in ancient Egyptian society, it is fitting to mention a few clap-netting representations which stand out in the ancient Egyptian iconographic repertoire because of the status of the characters involved in the fowling expedition. Whereas, in most cases, bird trappers are said to belong to the lower classes of society,⁵⁶⁷ in a few surviving representations, the king himself is featured pulling the hauling cable of a fowling net and consequently closing it over a pool of water filled with the frantic flight of waterfowl attempting to escape the trap. As aforementioned, the earliest attestation

⁵⁶⁵ Duell 1938, pl. 162; Harpur 1985, fig. 5; Kanawati *et al.* 2011, pl. 76. Among the birds held by the boys, one can readily identify a hoopoe (*Upupa epops*). According to the text written above one of the boys, these birds were for the benefit of the tomb owner, perhaps for the enjoyment of the eye: [*iw 3pd*] *nfr s3b n=k rk*: the beautiful and variegated [birds are] for you ...

⁵⁶⁶ Petrie 1930, pl. 25

⁵⁶⁷ The hardships of the fowler's profession are listed amongst the many occupations considered to be of lesser value than that of scribe in *The Satire on the Trades: The Instructions of Dw3-Hty* (Helck 1970, pp. 112-114: Abschnitt 20; translation in Simpson 2003b, p. 435).

of this motif dates to the 1st Dynasty: on a wood label, king Den acts as the fowler in charge of a clap-net (**Figure 1**). The theme is later incorporated into the iconographic repertoire of several royal funerary complexes from the Old Kingdom, all of which have survived in a fragmentary state.⁵⁶⁸ The relief fragments from the causeway of the 5th dynasty king Sahura, recently excavated at Abusir, have best survived the passage of time and showcase the unusual involvement on the part of the king in marsh activities. In addition to incorporating most features commonly observed in the clap-netting scenes of this period (haulers; signalman; men crating birds and carrying them as offerings), the large scale representation in this causeway also shows king Sahura seated on his throne, holding in his hands a hauling cable. Sitting at his feet, his wife seemingly acts as signal-woman, in this instance letting the king know that time has come to pull the rope and close the net. The king, however, is not simply in charge of maneuvering one net. The inscription accompanying the scene indeed reads: *Ny-swt ds(=f) sht(=f) i3d.t IO (m) ʿh wʿ*: The king himself closes **ten** nets with one rope.⁵⁶⁹ As frequently attested in royal self-presentations, king Sahura appears as a human being with supernatural

⁵⁶⁸ El Awady 2009, p. 65. “Fragments of the scene were found in the mortuary temples of Sneferu, Userkaf, Sahura (both in the mortuary temple and causeway), Niuserre, Unas (causeway), and Pepi II.”

⁵⁶⁹ El Awadi 2009, pp. 217-218; Altenmüller 2015, pp. 109-111. The uniqueness of the scene is also highlighted in the text describing the event: “(1) The king himself: His Majesty caused that one summoned for him (2) the district administrator of the king, Ty, the overseer of fowling pool, Ty (3), together with the overseer of the fowlers.’ (4) Then his majesty said to them: ‘make for (me) 10 nets! (5) Tie them together with one rope!’ (6) Then they said to His Majesty [that] never had they seen the like of this occasion on any other occasion. (8) It is indeed an occasion! All the men said this (9) individually for they had never seen the like (10) in this land since the First Time! His majesty said: (11) As my nose is blessed with life and as I exist, cause for (my) Majesty (12) the making of numerous nets in order that (my) majesty can close them (13) (with) a single rope. This was a mystery within their hearts (14) ... his...”

powers, thus justifying his special connection with the divine.⁵⁷⁰ He is indeed benefiting from the help of the goddess Sekhet. She is recorded saying the following, as she is shown bringing forth birds towards the king:

dd mdw di.n(=i) n=k hdd nb imy kbh: "Saying of words – I have given you all the *hdd*-birds⁵⁷¹ that are in the cool waters."⁵⁷²

While a portion of the catch is destined to become offerings (*wšn.w*), carried away by a multitude of offering bearers, other birds have been set aside, are cooked, and offered to the members of the Court, who accompanied the king and witnessed this unusual feat. Some servants are shown bringing several dishes filled with poultry towards six seated men, identified by their title and, for the most part, by their name. The caption reads:

... 3pd.w n msw ny-sw.t smr.w in.t 3pd.w r snm.t n is.wt šps.wt Pr ʕ3 ʕpr.wy hrp nfrw:
"...(Bringing) the birds to the King's children and the courtiers. Bringing the birds to eat (them) to the august seats of the Great House, the two crews of the boat, and the director of recruits."⁵⁷³

This motif of the king as fowler is reinterpreted during the Ramesside period. No longer part of the funerary iconography, it is then represented on temple walls. Rather than being








⁵⁷⁰ During the Middle Kingdom, King Amenemhat II claimed to have performed a similar feat (Altenmüller and Moussa 1991 pp. 17-18, 36-37; Vernus 2009-10, p. 82; Altenmüller 2015, pp. 101-108)

⁵⁷¹ The *hdd*-bird is not listed in the Wörterbuch, Hannig and Vomberg 1999, and in Hannig 2003. A deity named *Hdd*, however, is said to be a fowling god, known from the 22nd Dynasty and the Ptolemaic period (Wb III p. 355 §15). It is likely that the name of this god is derived from the name of the *hdd*, a wildfowl possibly present in Egypt during migration. Attested during the Old Kingdom, as evidenced by the inscription in the mortuary complex of Sahura, it seemingly gained popularity again in the later periods of Egyptian history. See also *An. Lex.* 78.3173: *Hddw*, fishing god, as attested in CT VII, 207d.

⁵⁷² El Awady 2009, p. 220.

⁵⁷³ *Ibid.*, p. 228

shown seated, the military men that are the pharaohs Seti I and Ramesses II are depicted in an active stance as they pull the hauling cable.⁵⁷⁴ Contrary to the Old kingdom kings, the Ramesside rulers are no longer acting alone. They benefit from divine help in the form of several gods assisting them in closing the net. The motif is later attested on the walls of Ptolemaic Temples, such as at Edfu and Esna. While the exact significance of these religious scenes is beyond the scope of this paper,⁵⁷⁵ the inscription accompanying the representation from Abydos featuring Ramesses II fowling with four gods is of special interest, since it specifically mentions the acquisition of bird offerings, which the king intends to offer to the god Amun-Ra:

(2) *s3b.n(=i) n=k zš.w* () (3) *m š3.w* () *m šh.wt* () *nw T3-mri* (4) *šht(=i) n=k*
šnw m idh(.w) () *ith(=i)* (5) *n=k kbh.w* () *in =i n=k hfn.w m* (6) *s.wt* () *hh*
m w3d-h3.t (),⁵⁷⁶

“I have traversed for you the bird pools in the marshes and in the meadows of Egypt. I set up a net for you in the Delta marshlands. I drag forth for you the migratory marsh birds. I bring for you hundreds of thousands of *s.t*-birds and millions of *w3d-h3t*-birds.”⁵⁷⁷

⁵⁷⁴ Alliot 1946, p. 109: “Il existe dans les temples un motif traditionnel, connu de nous seulement depuis le Nouvel Empire: c’est l’offrande des oiseaux d’eau par le roi au dieu principal du temple. Le roi est alors considéré comme un chasseur au filet qui revient de l’affût au marais; il y a passé la nuit pour piéger les oiseaux à la pointe du jour. Il est ‘le chasseur au filet qui sort la nuit’.” See also Meeks 2006, pp. 233-235 for a recent discussion of this theme.

⁵⁷⁵ See Alliot 1946 and Altenmüller 2008 for an in-depth analysis of these depictions and the role of the king as *wh^c nbty*, “Fisherman and Fowler of the Two Ladies.”

⁵⁷⁶ *KRI* II, 509:14-16

⁵⁷⁷ David 1981, p. 113; Westerman 1988, p. 84; Kitchen 1996, p. 326 for translations of this passage.

The two types of birds the king is capturing, the *s.t*- and the *w3d-h3.t*-birds, are here identified as being migratory birds (*kbh.w*) which could be found in the wetlands of the Delta. The *s.t*-duck, most frequently written *z.t*, is the well-documented pintail duck.⁵⁷⁸ It features alongside the *w3d-h3.t*, or green-fronted bird, in a few other passages. In a section of Spell 62 of the Coffin Texts, *w3d-h3.t*-birds are said to be hunted with a throwstick, along with the (*s*)*rw*- and *trp*-geese, as well as the *k3.w nw z.t*, “male pintail ducks”.⁵⁷⁹ Moreover, in pChester Beatty V, this same waterfowl is listed as a commodity needed by the Treasury of Amun.⁵⁸⁰ It was not solely destined to be offered to the god Amun: nomarchs also received these migratory birds. On the South wall of his offering chapel, *B3kt* III is depicted overseeing the marsh activities (*k3.t sh.t*).⁵⁸¹ Some of the birds caught in the clap-net, shown in one of the registers, are brought and sacrificed before him, their dead bodies piled up so as to benefit his *k3*. The names of the sacrificial offerings are indicated above each “bouquet” of waterfowl in the procession. In particular, some live ducks are hanging on either side of a yoke, which an offering bearer is rushing to deposit before *B3kt*: they are said to be *z.t* and *w3d-h3.t*, the same two species of birds from the Ramesside inscription. As proposed by H. Grapow and B. Wassell,⁵⁸² it is reasonable to surmise that the green-fronted ducks depicted in the tomb of *B3kt* and listed as

⁵⁷⁸ See Wb. III p. 407 §17 for variant spellings of the word *z.t*, pintail duck.

⁵⁷⁹ CT I, 269j-270b. This passage is also discussed in Grapow 1910, p.133; Altenmüller 2005, p. 50

⁵⁸⁰ pChester Beatty V, r^o 8, 9: Gardiner 1935a, p. 49. The other birds mentioned in this list of offerings destined to be delivered before the god Amun are the *r3*- and *trp*-geese, the *sr*-duck, and *3pdw n mw*, waterfowl.

⁵⁸¹ Newberry 1893a, pl. 7

⁵⁸² Grapow 1910, p. 133; Wassell 1991, p. 114. The *w3d-h3.t* bird is also mentioned in Wolterman 1991-92, p. 120, with no specific identification being proposed.

offerings for the god Amun are the mallard (*Anas platyrhynchos*). Both the pintail and the mallard are currently fairly common passage and winter visitors to Egypt.⁵⁸³ Flocks of several hundred birds have been observed in the Delta lakes, on the Nile, and also in the Oases, making them desirable targets for fowlers.

⁵⁸³ Goodman and Meininger 1989, pp. 160-162

PART 2:
THE MAINTENANCE AND CARE OF BIRDS IN CAPTIVITY
IN DYNASTIC EGYPT

1. From the Marshes to the Farmyard: Transportation of Live Birds

As recorded in pHarris I, massive numbers of waterfowl, frequently listed as *3pd.w n mw*, were expected to be delivered to temples on a yearly basis. During the reign of Ramesses III, 426,995 such birds were destined to be presented before Amun and other major gods in their sanctuaries scattered throughout Egypt.¹ An elaborate and well-managed system of distribution undoubtedly needed to be in place to ensure the proper provisioning of these wild birds to institutions located in both Lower and Upper Egypt. Information on the logistics of gathering birds at fowling places and thereafter insuring their transport rarely surfaces in the written record.² Limited evidence regarding this management system can be gleaned from a selection of texts and from elite tomb chapels, whose iconographic repertoire includes in many instances the transport of marsh goods destined to be offered to the funerary cult of the tomb owner.

Wall reliefs from multiple Old Kingdom tombs of the Memphite necropolis reveal that the birds captured in the marshes and gathered into crates were first transported on the shoulders of workers who made use of a yoke to balance the load (**Figures 49A-C**).³ The crates

¹ Section 69,8 of pHarris I in Grandet 1994 part I, p. 325.

² Documentary evidence is significantly richer with regards to the transport of grain from the agricultural plain to the granaries of large institutions, especially following the harvest, as recorded in pAmiens and pBaldwin (British Museum EA10061) (Gardiner 1940, pp. 1-13; Castle 1992; Janssen 2004). For a general study on the transportation of meat products, see Ikram 1995, pp. 191-197.

³ See examples from Saqqara of men transporting waterfowl in Duell 1938, pl. 20: Tomb of *Mrrw-k3.i*; Moussa and Altenmüller 1977, pl. 12: tomb of *Ny-ḥh-Ḥnm* and *Ḥnm-ḥtp*; Lashien 2013, pl. 16: tomb of *K3-ḥ3.i*. Birds were not

were thereafter loaded onto the papyrus skiffs the fowlers utilized to navigate the wetlands they exploited. Cages of waterfowl figure in the midst of the many products gathered in the wetlands, such as papyrus stems and lotus blooms.⁴ In the Giza mastaba of *Mrs-ḥnḥ* [III], the register depicting the transport of marsh goods is labeled as *pr.t m š3 ḥnḥ nḥb.t in mh.tyw=s in=s n n=s ḥ.t nb.t nfr.t inn.t n šps.t m k3.t sh.t*, “coming forth from the wetlands with lotus blossoms by her marsh-men, that they may bring to her every good thing, which is brought to a noble woman as the work of the *sh.t*.”⁵ While the destination of these boats is not specifically stated in the captions accompanying the scenes, it is probable that the fowlers first brought their catch to their village where the birds could be sorted and possibly inventoried. Some of the birds were seemingly destined to be sent to the poulterer’s shop in order to be slaughtered and butchered for immediate consumption, as depicted in the Saqqara tomb of *Nfr-ḥr-ny-Pth* (**Figure 49**).⁶ In the offering chapel of this official, underneath a shelter whose roof was supported by wooden poles, a fowler is shown fixing his net (*stt (i)3d.t in whḥ*, “knotting the net by the trapper”) and a cook is roasting birds on a fire (*3š(r) 3pd in wb3w*, “roasting a bird by the cook”). Alongside other pieces of meat, both live and butchered birds are left hanging from the

necessarily placed into crates. In some instances, such as in the tomb of *K3-ḥ3.i*, the legs of the birds were tied together with ropes, which were then attached to both ends of a yoke. Some of the birds, hanging upside down, are depicted raising their heads, perhaps in a vain attempt to disentangle themselves from the noose fastened around their feet (personal communication with S. Delvaux, Ph.D. Candidate in Egyptology at the Université Paul-Valéry Montpellier 3).

⁴ In many instances, these boatmen are depicted engaged in some naval competitions with one another. This theme is developed at length in Herb 2001. A complete list of Old and Middle Kingdom scenes depicting the return or workers from the marshes (*pr.t m mh.t*) is included in this publication as appendix A, pp. 434-444.

⁵ Dunham and Simpson 1974, p. 11, fig. 4.

⁶ http://www.osirisnet.net/mastabas/neferherenptah/e_neferherenptah_02.htm. Last accessed June 3rd, 2015.

ceiling, either by the wings or neck. As also depicted in Theban tombs of the early New Kingdom, poulters were also known to stuff jars with the processed birds, so as to preserve the meat, possibly with fat or salt, for later use.

For pragmatic reasons, however, the large majority of the trapped birds were intended to be maintained alive, since processed meat only had a brief shelf life.⁷ Whereas the extant written evidence is once again silent on this subject, one can surmise that fowlers delivered their catch to harbors located along the Nile River, where crates filled with waterfowl were collected and their number accounted for by local administrative personnel, such as the *zš 3pd.w*,⁸ “scribe of birds,” *zš n wh^c.w*,⁹ “scribe of trappers (fishermen and fowlers),” and the *imy-r3 wh^c.t*, “overseer of fowling.”¹⁰ Like most goods in ancient Egypt, birds continued their journey to their final destination on board freight boats, the most common vessel for the transport of goods being known as the *wsḥ*, or “broad ship.”¹¹ If the journey was expected to be short, birds

⁷ Ikram 1995, pp. 194-195; Fitzenreiter 2009, p. 333. As D. Meeks (2012, p. 525) reminds us, “à une époque et dans un pays où la conservation des denrées périssables posait problème, le meilleur moyen de disposer tout au long de l’année de viande fraîche était, bien sûr, de garder en confinement les animaux capturés à la chasse.” The practice of keeping animals alive in captivity until the need arises to use them is known as the “animal banking system” (Elmahi 1995, p. 64). It is noteworthy that Europeans traveling in Egypt during the first half of the 19th century were advised to purchase in Alexandria or Cairo a *cafass*, or coop, and to transport it with them. As they proceeded through the country, they could regularly purchase live poultry in local markets. The birds could be kept in the *cafass* and slaughtered only when fresh poultry meat was needed (Wilkinson 1843, pp. 87, 104, 107).

⁸ Jones 2000, p. 834 (# 3042)

⁹ UC 32102Ai (Collier and Quirke 2006, pp. 142-143)

¹⁰ Jones 2000, p. 105 (# 425). In the Saqqara tomb of *Ny-^cnh-Nfrtm*, birds are shown being transported on board a skiff. Some of them are being held by officials labeled as being an *imy-r3 wh^c.t*, “overseer of fowling.” See http://www.osirisnet.net/mastabas/nyankhnefertoum/e_nyankhnefertoum_03.htm. Last accessed June 3rd, 2015.

¹¹ Vinson 2001; *ibid.* 2013. See OEE Scene Detail ‘Animals on freight boats’ for a list of Old Kingdom tombs including this motif in their iconographic program. http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006. Last accessed July 30, 2015.

may have been kept confined in small crates, baskets, and “bags,” the latter being used to tightly and safely transport cranes, as finely depicted on the fragmentary wall reliefs of the Middle Kingdom tomb of *W3h-k3* (**Figure 51**).¹² For longer trips, enclosures were likely to be built with wood and netting on the wide deck of boats, thus giving the birds more air and more space for them to move, eat, and drink. It is possibly such an “aviary-boat,” which can be identified in a representation from the Amarna period (**Figure 52**).¹³ In this scene composed of eight talatats recovered at Karnak, the deck of a large freight ship is occupied by an aviary simply represented by vertical posts and a roof beam. A net was most likely further covering the simple structure. It is filled with waterfowl, one of which is grabbed by a man, possibly getting ready to unload the flock onto the riverbank. In addition to poultry, the ship is loaded with other commodities, most especially a large quantity of jars and vessels.

Further attestation of the long-distance fluvial transport of birds is provided by two scenes from the Old Kingdom cemetery of Saqqara. The west wall of the pillared hall of the tomb of *Ty* is in part dedicated to the arrival of a fleet of cargo ships, moored at a quay and unloading animals most likely previously collected from estates belonging to the tomb owner

¹² Louvre E 11247 A (Couton-Perche 2013, pp. 308-309). The top of the fragment is most likely occupied by waterfowl (ducks, geese and possibly mergansers (*Mergus* sp.), with thin and long bills) tied by their legs and hanging from a beam: only the heads of these birds is now visible. Underneath these birds, the body and legs of a Eurasian crane is tightly confined and wrapped in a mat, which prevent all movements and allow for the birds to be hanging from the same beam mentioned previously. To further ensure that the bird does not use its bill to release itself, the tip of the bill is tied to the base of the neck. The main element of the fragment is a large cage filled with a variety of live waterfowl, among which figure ruddy shelducks (*Tadorna ferruginea*) and a teal (*Anas crecca*), whose colorful and readily identifiable field marks are still visible. The back of one of the boatmen, along with the oar he was handling, can be seen beside the cage.

¹³ Vergniew 1999, p. 146, pl. 81.

(Figure 53).¹⁴ Represented above a register composed of four boats, in the midst of antelopes and gazelles tethered to the shore, are two flocks of birds recently arrived from Upper Egypt, as indicated by the caption written above one of the ships: *iw.t m Šmꜥw*, “coming from Upper Egypt.” A dense group of cranes, both Eurasian and Demoiselle cranes (*Grus grus* and *Anthropoides virgo*), along with a flock of *Columbidae*, are each gathered in separate enclosures and are waiting to be collected for the next stage of their journey.

A similar motif is encountered in the tomb chapel of *K3-gm-ni* (Figure 54).¹⁵ Three freight boats are depicted moored at a quay. The visible gesture of deference expressed by the officials in two of the boats is further evidence that the tomb owner was present to witness the arrival of the goods delivered from his estates. Whereas a calf and a group of three goats have remained on board the vessel depicted closest to the group of crew members and scribes busy reporting to *K3-gm-ni*, a flock of cranes, represented by five individuals, along with two crates of birds have already been unloaded. The severe damage suffered by this section of the wall does not allow for easy identification of the types of birds kept in the cages. The plump bodies and short legs of the three birds in the top crate may belong to doves or pigeons; the three birds in the crate below are possibly wild ducks.

The exact purpose of the birds delivered and inspected by *Ty* and *K3-gm-ni* is not clearly stated in these two mastabas. The presence of the scene in a funerary setting may indicate that

¹⁴ Épron and Daumas 1939, pl. 24

¹⁵ Harpur and Scremin 2006, pls. 49-62 and p. 492, fig. 4.

at least a portion of the cargo was destined to insure the proper functioning of the funerary cult of the deceased and to provide the offering tables with a fresh supply of bird offerings in the form of cranes and doves. It is also possible that, during their lifetime, the birds newly delivered from the provinces would have replenished the poultry-yards, from which the kitchen of these officials drew the fowl needed for their table.

As mentioned previously, scarce written documentation is available to gain insight into the movement of live birds from their place of capture. Where exactly were they collected and how far were they travelling?¹⁶ Were the freight boats expected to deliver some birds along the way, while collecting some others before reaching their final destination? Who owned the boats and who commissioned the transport of these live birds? Were processed birds also included in the cargo? The extant material only provides partial answer to these questions. The funerary representations from the tombs of *Ty* and *K3-gm-ni* lead us to assume that Old Kingdom high officials had access to cargo boats, which in turn delivered the goods produced in their many estates scattered in Upper and Lower Egypt. Whether this access was granted by royal favor or whether these individuals owned the boats is not explicitly stated.

During the New Kingdom, two Ramesside ship's logs identified on fragmentary papyri from Leiden and Turin attest to the presence of live birds on board freight vessels operated by

¹⁶ One scene from the now lost tomb of *Wnsw* in Thebes (TT A4) celebrates the arrival of goods from Nubia on the banks of the Nile in Thebes (Manniche 1988, pp. 64-67, pl. 7; Pino 2005, p. 101). Among the goods recorded by the local officials, the inspector and scribe of the Southern City *P3kdw* and the mayor *S3wsr*, feature moringa oil, myrrh, meat, and fish, along with birds (*3pd.w*). No birds are visible on the tracing and it is uncertain whether live birds were loaded onto the ship in Nubia, or whether they had already been processed. Notwithstanding, it is interesting that birds were among the special goods sent from Nubia. Could these birds have been ostriches or helmeted guinea fowl (*Numida meleagris*), more common in this region than in Egypt?

temples.¹⁷ Papyrus Leiden I 350 verso, precisely dated from the 52nd regnal year of Ramesses II, records the daily activities taking place on a boat,¹⁸ whose ownership may be assigned to the temple of Ptah in Memphis.¹⁹ During the period covered by the log, i.e. from the 2nd month of *Prt*, day 26 to the 3rd month of *Prt*, day 4, the ship solely travelled within Lower Egypt, mostly collecting and distributing goods in the city of *Pr-R^cmssw-Mry-Imn*, modern Quantir, but also travelling to Heliopolis and Memphis. Of special interest in this documents are the multiple mentions of water birds (*3pd.w n mw*), which are brought to the ship to be in part redistributed.²⁰ It is quite likely that the majority of the *3pd.w n mw* were composed of wild ducks and geese (*Anatidae*), to which were added wading birds, such as snipes, sandpipers, and avocets, captured by fowlers alongside the *Anatidae*.

- (Col. II, l.3–4): *inw n idnw Ssw n t-nt-ht* [...] *3pd.w n mw* 10
Delivery of the lieutenant commander of chariotry *Ssw*
10 water birds
- (Col. II, l. 9, 11): *inw n ktn R^cmssw Nht s3 p3 imy-r3 ms^c* [...] *3pd.w n mw n^h* 20
Delivery of the charioteer *R^cmssw Nht*, son of the general [...] *3pd.w n mw*
20 live water birds
- (Col. II, l. 23): *rdy.t m dr.t sdm Hss-it 3pd.w n mw* 10
Given in the hand of the servant *Hss-it*: 10 water birds

¹⁷ Janssen 1961

¹⁸ As noted by J. Janssen (1961, p. 22), “the word for ship is nowhere fully written out.” He proposed *imw* as a possible transliteration.

¹⁹ The ownership of this boat is based on several mentions of a certain *sm*, who was said to be the recipient of regular missives, and who employed some of the sailors on the ship. Considering that the term *sm* is known as being associated with the position of High Priest of Ptah in Memphis, J. Janssen (1961, pp. 5-6) suggested that the ship may have belonged to this high priest, and possibly more precisely Ramesses II’ son *H^c-m-W3s.t*, or more generally to the estate of the god Ptah.

²⁰ Janssen 1961, pp. 22, 24, 27


The various transactions, which took place during the month, are then recapitulated at the end of the document (*Ibid.*, p. 44):

(Col. VI, l. 2, 8): *shy n3 inw*
 3pd.w n mw ʕnh 40 [h3y ?]
 Summary of the deliveries:
 Living water birds, 40 [used ?]

Due to the fragmentary nature of the papyrus, the number listed in the summary does not agree with the various entries listed above. Yet, it transpires from this recapitulative section that 40 live *3pd.w n mw* were delivered to the boat, most likely in crates, and 10 of them, at least, were redistributed to a servant named *Hss-it*. It is impossible to say whether these birds were for *Hss-it*'s personal use, or whether they were to be delivered to another religious institution. As stated by J. Janssen, the exact purpose of the journey undertaken by this freight vessel is hard to ascertain, in part because of the concise nature of this administrative document.²¹ The crew, seemingly attached to the estate of Ptah in Memphis, collected and distributed small quantities of goods from and to various individuals, which were recorded respectively as *inw*- and *rdy.t*-entries. It is possible that the waterfowl collected were a form of tax owed to the temple by the individuals mentioned in the text,²² only to be partially redistributed along the way, whereas the remaining birds were probably meant to increase the size of the flock maintained to provide the offerings for the cult of the god.

²¹ Janssen 1961, pp. 104-105

²² Taxes paid in the form of birds is well-documented in pHarris I (Grandet 1994 part I: Sections 12b,9; 32b,11; 52a,1; 69,11: *r3 ʕnh n s3yt*, live goose of tax), and in the tax list recorded on pTurin 1874 (Warburton 1996, pp. 159-164).

The second ship log, pTurin 2008+2016, is written in a business hand of the 20th Dynasty and may be dated from the last year of Ramesses VIII's reign.²³ This document records in part the freight loaded onto a ship owned by the first prophet of Amun (pTurin 2008+2016 vs. I, 16-17). No live bird is mentioned in this text. On the other hand, in addition to oil, wine, and cereals, the cargo included 100 heads of gutted water birds ( *3pd.w n mw wgs*), along with 5,000 fish (vs. I, 16-17). Some of these perishable items were used (*h3w*) during the journey: 1,000 fish and 20 heads of *3pd.w n mw* were said to be consumed by the laborers (*rmṯw b3k.w*) working under the authority of the first prophet of Amun (vs. III, 9-11).²⁴ It thus transpires from this log that cargo boats could transport considerable amount of perishable material. These processed fish and birds were presumably stored in well-sealed amphorae, so as to prevent bacterial infestation.²⁵ Perhaps previously dried, and also preserved in salt, brine, or fat, it would be possible for these goods to sustain the two-month trip from Thebes to Memphis.²⁶ It is therefore not unreasonable to assume that these goods were issued by the magazines of the Temple of Amun at Karnak, with 20% being accounted for as an expense incurred during the journey to Memphis.

²³ Janssen 1961, pp. 55-56

²⁴ Janssen 1961, pp. 83, 89-90; Vinson 1998, pp. 60, 63

²⁵ Ikram 1995, pp. 183-188

²⁶ According to S. Ikram (1995, p. 194), "the 'shelf-life' of preserved and pickled goods, as long as they remain damp free, varies from three months to two years, depending on the mode of transportation." For estimates calculated on the time needed to travel by boat on the Nile in ancient Egypt, see Moreno Garcia 1999, pp. 243-244.

Finally, valuable information on the transport of live birds is perhaps best preserved on P. Bibliothèque Nationale (BN) 203, also from the Ramesside Period and first published by W. Spiegelberg in 1896. The text reads as follows:²⁷

(1) *hsb.t 3 3bd 3 3h.t sw 19 ny-sw.t bity Mn-M3^c.t-R^c .w.s s3 R^c Sty mry n Pth^c.w.s^c nh^c d.t nh^c (2) tpy n swd.t n n3 n 3pd.w r p3 mhwn n Sty mry n Pth^c.w.s m dr.t n zš ... P3y zš n t3 trt m dr.t w^cw Hwy n p3^c h^c 3pd.w ... Hri s3 Nfr-htp (3) 3bd 3 3h.t sw 19 šsp m hrw pn m dr.t w^cw Hwy n p3^c h^c hr ... br... hgrgr n ... r p3 mhwn hr... (4) 3bd 3 3h.t sw 20 (+x?) šsp m hrw pn m dr.t w^cw Hwy n ... in 3 k3p.w ... k3p Imn-htp (5) ... šsp m hrw pn m dr.t w^cw Hwy n p3^c h^c in n3 n k3p.w ... (6) ... šsp m hrw pn m dr.t...*

(1) Regnal year 3, 3rd month of Inundation, Day 19 of king of Upper and Lower Egypt *Mn-M3^c.t-R^c*, L.P.H., son of *R^c*, *Sty mry n Pth* L.P.H., who lives forever and ever. (2) Beginning of the transfer of the birds to the poultry farm (*mhwn*) of *Sty mry n Pth* L.P.H. by the scribe ... *P3y* of the *trt*-boat and by the crewmember *Hwy* of the birds' freight boat ... *Hri*, son of *Nfr-htp*. (3) 3rd month of Inundation, Day 19: receipt on this day by the crewmember *Hwy* of the freight boat ... to the poultry farm (*mhwn*) ... (4) 3rd month of Inundation, Day 20 (+x?): receipt on this day by the crewmember *Hwy* of ... by the head of the fowlers ... the fowler *Imn-htp* ... (5) ... receipt on this day by the crewmember *Hwy* of the freight boat for birds by the fowlers ... (6) ... receipt on this day by...

This palace account specifically records the transfer of fowl (*3pd.w*) by boat to a poultry farm (*mhwn*) belonging to king Seti I. The main person in charge of transporting the birds is *Hwy*, the *w^cw*, possibly translated as “crewmember”²⁸ of a *h^c*, a type of boat,²⁹ which appears here to be solely dedicated to the transport of fowl. According to this text, *Hwy* has been assigned the task of collecting the birds trapped by fowlers (*k3p.w*), in order to thereafter bring them on board his

²⁷ Spiegelberg 1896, pp. 9, 32-35, pl. 1; Kitchen 1993, pp. 207-208 for translations and commentary; *KRI* I, 243:5-15, for hieroglyphic transcription.

²⁸ Wb I p. 280 §5: “Oft mit genetivischem Zusatz der Dienststelle: *w^cw* eines Schiffes.”

²⁹ Wb I p. 222 §4: “Schiff zum Transport vom Lasten.” The term *h^c* applies to a variety of vessels. A *h^c*-vessel can be used to transport freight, but it can also describe a fishing boat (Vinson 1998, pp. 27, 68) or a warship (Darnell 1992, pp. 82-84). I thank D. Meeks for bringing these references to my attention.

freight boat to a poultry-yard serving the needs of a palace of king Seti I. The details of the transaction, however, remain unknown. The need for a freight boat may imply that a relatively large number of birds were expected to transit. It is also unclear whether the birds were obtained locally or required long-distance travel. Nevertheless, the participation of fowlers in this transaction indicates that the birds destined to fill the poultry farm (*mḥwn*) of Seti had been captured in the wild.

After being unloaded on the riverbank, wildfowl presumably ended their journey in the confines of a crate, being transported on the back of a donkey to the farmyard of the institutions, whether religious, such as the temples of Ptah and Amun (pLeiden 350 verso and pTurin 2008+2016),¹⁷ or palatial, such as the palace of king Seti I (pBN 203),²⁷ which had commissioned their capture. In the next paragraphs, I will specifically describe the available material providing insight into the various facilities, which ancient Egyptian aviculturists working on large estates had devised and built to house the birds they were responsible to care for. Representations of aviaries, their mentions in texts, along with their attestations in the archaeological record will be reviewed in turn to evaluate how ancient Egyptians managed the various species of game birds brought into captivity and whether these practices changed during the span of dynastic Egypt.

2. Large Scale Aviculture and Poultry Farming

In our modern industrialized societies, most of our needs in poultry are provided by birds bred and raised in captivity, the large majority of which have now been domesticated.

Feathered game, i.e. the meat of wild birds, is for us a delicacy rather than a necessity. In ancient times, however, until the advent of avian domestication, all the birds exploited by Egyptians had to be acquired in the wild; once captured, they were subsequently brought to farmyards. The management of such **wild** avian species in captivity is defined as **aviculture**.³⁰ **Poultry farming**, on the other hand, as a subset of animal husbandry, specifically refers to the controlled management and production of **domestic** birds, raised for the most part for utilitarian purposes, since they provide meat, eggs, and feathers.³¹ According to these definitions, ancient Egyptians practiced aviculture for most of their history, as they continually relied on the wild flocks of waterfowl visiting the country during migration. Alongside the care of wild species, after the successful domestication of the greylag goose, as will be discussed *infra*, poultry farming, especially goose keeping, came to be incorporated into the agricultural practices of the country.

In the course of this study, I will begin by paying special attention to large scale bird keeping, which I define as any type of bird husbandry, for which the care and tending of the flock (feeding birds and cleaning facilities) are not done by members of a household, but rather by a specialized main d'oeuvre, whose various roles will be reviewed in turn. Such bird keeping practices are especially encountered on the estates of the upper classes of Egyptian society, the

³⁰ Aviculture 2016. *Britannica Academic* (<http://academic.eb.com/EBchecked/topic/45777/aviculture>). Last accessed January 12th, 2016.

³¹ Poultry farming 2016. *Britannica Academic* (<http://academic.eb.com/EBchecked/topic/1357351/poultry-farming>). Last accessed January 12th, 2016. The most common poultry birds today are first and foremost the chicken, but also the turkey, duck, and goose.

royal palace being the prime example, as well as on the domains belonging to religious institutions.

a. Poultry-yards and Aviaries: Analysis of the Evidence

i. Iconography

As early as the late Predynastic period, Egyptians showed an interest in maintaining wild animals in a captive setting, as attested by the recent discovery at Hierakonpolis of animal remains bearing the signs of having been kept in confinement for a certain period of time prior to their death.³² Just as the earliest representation of fowling with a clap-net was recovered at Abydos, in the cemetery B of Umm el-Qaab, it is also on an artifact excavated at this site that an enclosure seemingly designed to keep birds in captivity is first attested in iconography.³³ A sealing, assigned to the 1st Dynasty by W.M.F. Petrie, includes the following motif: in a stylized fashion, four large birds, two on each side of what may represent a rectangular water basin, are seemingly held captive in a small enclosure surrounded by fences (**Figure 55**).³⁴ One smaller bird is also shown in their midst. These may be the birds, which had been recently captured during a hunting expedition, hinted at in the vignette directly to its left, depicting a dog surrounded by small birds, along with what could be construed as a throwstick.

³² Linseele *et al.* 2009

³³ Mahmoud 1991, pp. 218-219

³⁴ Petrie 1903, p. 31, pl. 16.12

The richest and most informative representations of fowl-yards were produced several centuries later in the capital's necropolis of Saqqara. While not as frequent as the representation of their capture, the maintenance of birds in captivity was nevertheless deemed significant enough to be included in the iconographic repertoire of several tomb chapels dated from the 5th and 6th Dynasties.

1. Old Kingdom

The representation of bird pens and their accompanying facilities is attested in 15 offering chapels of this period.³⁵ While merely surviving as fragments in some locations, other scenes are filled with a multitude of details, both in the depiction of the structures and the workers in charge of interacting with the birds, but also in the postures and behaviors of the birds themselves.³⁶ The most complete and exquisitely carved examples from this period are preserved in the tombs of *Ty* and *K3-gm-ni* (**Figures 56-61**). The quality of the reliefs and the wealth of details in these two tombs in particular had incited P. Montet³⁷ and J. Vandier,³⁸ eager to gain insight into the daily lives of ancient Egyptians, to closely examine these scenes

³⁵ This number takes into consideration the data gathered in the OEE database of scene details (http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006/; last accessed August 11th, 2015), to which is added the scene from the tomb of *Rmni* (Kanawati 2009, pl. 45).

³⁶ See Evans 2010, pp. 77-82, 98-101, 108-109, 132-133 for a detailed description of the various avian behaviors depicted in poultry-yard scenes.

³⁷ Montet 1925, pp. 116-125

³⁸ Vandier 1969, pp. 398-439

and attempt to reconstruct the structures and activities displayed therein. These depictions were revisited in detail by O. Mahmoud.³⁹

The fowl-yards incorporated into Old Kingdom funerary iconography generally consist of two separate bird facilities, along with more elaborate structures adorned with elegant columns topped with lotus bloom capitals, where the administrative staff could keep track and record the number of birds present in the enclosures and the amount of grain delivered on a regular basis.⁴⁰ The distinct features of each type of enclosure are not only rendered in the iconography. It is also explicitly stated in the text carved in the tombs of *Ty* and *K3-gm-ni*, where each tomb owner is proudly depicted as towering above the activity taking place in the farmyard stated to belong to his funerary estate, or *pr-d.t*. *Ty* and *K3-gm-ni* are thus:

[*m33 s^cr md3.t*] *3pd mdt nt iw3 mdt nt ^cwt h3s.t štb.w hrt-mw nt pr-d.t*: “[Viewing the rendering of account of] the birds, the cattle stalls, the desert animal stalls, the *štb*- and *hrt-mw*-enclosures of the funerary estate.”⁴¹

m33 ... 3pd.w hrt-mw nt pr d.t: Viewing the ... of the birds of the *hrt-mw*-enclosure of the funerary estate.”⁴²

m33 3pd.w n štb.w nw pr-d.t: Viewing the birds of the *štb*-enclosures of the funerary estate.”⁴³



³⁹ Mahmoud 1991, pp. 217-255

⁴⁰ One can assume that grain storing facilities were part of bird farms, as large quantities of barley was presumably needed to provide for the daily needs of the captive fowl. While such granaries are not specifically depicted as being included in these farms, the close proximity of registers dedicated to grain collecting and accounting may be an indirect allusion that granaries and fowl-yards were located nearby in the agricultural estates of officials, as evidenced in the tombs of *Spd-htp* (Harpur 1986, p. 63, fig. 6) and *Rmni* (Kanawati 2009, pl. 45).

⁴¹ Tomb of *K3-gm-ni*: Harpur and Scremin 2006, p. 496, context drawing #13.

⁴² Tomb of *Ty*: Épron and Dumas 1939, pl. 19

⁴³ *Ibid.*, pl. 6

In these captions, the determinatives accompanying the terms *štb* and *ḥr.t-mw* shed some additional light on the characteristic and function of each facility. These determinatives appear as miniaturized and simplified depictions of each structure and its most important features. In the tomb of *Ty*, for instance, the determinative of the *ḥr.t mw*-facility, , draws emphasis on the presence of a body of water at the center of the enclosure, here simply stylized as a rectangle.⁴⁴ Birds were thus expected to be granted a certain freedom of movement to access and take advantage of the pond. On the other hand, the *štb*-enclosure is identified by the latticed cage-determinative, carefully depicted in both the tombs of *Ty* and *K3-gm-ni*: ⁴⁵. In such a facility, one can readily conclude that birds were intended to be kept in confined spaces, where the possibility of movement was greatly limited.

Craftsmen commissioned to decorate these two tomb chapels applied this same attention to details to the multiple registers dedicated to the management of the fowl-yards from which bird offerings, fattened during their stay in the farm, were to be drawn and presented to the tomb owner for his afterlife. While these two chapels offer the most complete picture of each type of enclosure, the information gathered from these scenes will be complemented and compared with the depictions of bird pens encountered in other tombs of both the Memphite necropolis and provincial cemeteries.

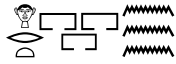
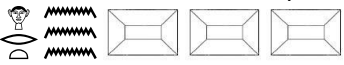
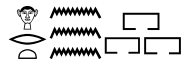
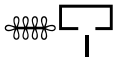
⁴⁴ Montet 1925, p. 121

⁴⁵ Montet 1925, p. 125; Épron and Daumas 1939, pl. 6; Harpur and Scremin 2006, p. 113, fig. 177

a. *The hr.t mw-facility*:⁴⁶

The *hr.t-mw* enclosure was seemingly designed to first and foremost maintain in a semi-captive state the various types of waterfowl trappers would bring back from their fowling expeditions.⁴⁷ The main element of the facility, as indicated by the name of the enclosure itself,⁴⁸ was the body of water depicted as a rectangular pool, in which birds had the freedom to swim and dabble.⁴⁹ The question whether or not aviculturists took advantage of an existing pond around which to build an enclosure can be further surmised by details craftsmen added to these depictions. In a few tomb chapels, fish are shown swimming in the midst of the geese and

⁴⁶ Montet 1925, pp. 92-96 and 116-122; Vandier 1969, pp. 418-428; Mahmoud 1991, pp. 230-234. Hannig 2003, p.

865. This term is written in a variety of ways:  in the tomb of *K3-gm-ni* (Harpur and Scremin 2006, p. 496);  in tomb of *Ty* (Épron and Daumas 1939, pl. 19); and  in the tomb of *Rmni* (Kanawati 2009, pl. 45). P. Montet (1925, p. 125) compares this section of the poultry farm with the *s3* , “prairie entourée d’une clôture,” where cattle and other ungulates would be kept. In *An. Lex.* 77.2805 and 78.2783, the term is read as simply *hrt* and translated as “volière, basse cour.” I opted to use the more complete reading of *hr.t-mw*, “that which is upon the water,” as it underscores the importance of the pool of water, essential for the survival of the birds kept inside this pen.

⁴⁷ According to P. Montet (1925, pp. 92-93), the provisioning of the *hr.t-mw* with wild resources is implied by the juxtaposition of clap-netting and poultry farm scenes in some tombs, such as *Nfr-sšm-Pth* (Lloyd *et al.* 2008, pl. 15) and *K3-gm-ni* (Scremin and Harpur 2006, p. 497). P. Montet further justifies his claim by quoting *Hnkꜣw*, buried at Deir el-Gebrawi: *3h(=i) n=s m s3.w nw k3.w grg.t nt whꜣ.w 3pd(.w)*, “I was beneficial to it (the nome) with the fenced prairies (*s3.w*) of cattle and the snares of the fowlers” (Davies 1902b, p. 30, pl. 25). Thanks to his proper management of his nome, *Hnkꜣw* thus ensured that cattle were plentiful and poultry-yards were constantly filled with the birds captured by skillful fowlers.

⁴⁸ According to Wb III p. 134 §14, the term was originally understood as solely designating “der Vogelteich im Geflügelhof.” As originally demonstrated by P. Montet (1925, pp. 121-122), *hr.t-mw* is also a name for the enclosure as a whole by metonymy.

⁴⁹ The importance of water in this type of enclosure is further emphasized in the Saqqara tomb of *Rmni* (Kanawati 2009, pl. 18a). Seemingly Intent on drawing attention on the presence of water in the aviary, the artist at work in this tomb fully painted with a shade of blue the ground on which a variety of ducks (male and female pintail ducks (*Anas acuta*), ruddy shelducks (*Tadorna ferruginea*)) are seen walking. The pond itself is otherwise traditionally drawn as a rectangle in the center of the aviary.

ducks gathered on the pond, which suggests that the scene may be set in a natural setting, with flowing and well oxygenated water to allow the fish to survive.⁵⁰ In the tomb of *Nfr-sšm-Pth*, for instance, men are seen taking advantage not only of the supply of captive birds, but also of the fish present in the pond and the papyri growing on its banks (**Figure 62**).⁵¹ Similarly, *K3-gm-ni*'s sons come before their father, their arms laden with fish, waterfowl, and aquatic plants they possibly gathered in the *hr.t-mw* depicted directly behind them (**Figure 61**).⁵²

In most cases, however, a man-made pond was put to the disposal of these birds. A regular inflow of fresh running water would have been required to compensate for natural evaporation and the birds' consumption, and also to prevent diseases to develop in a stagnant pool of water fouled by the birds' droppings. As convincingly proposed by P. Montet,⁵³ Old Kingdom artists alluded to the artificial nature of the body of water in their depictions of *hr.t-mw* enclosures by drawing diagonal lines which joined the four corners of the enclosure with the corners of the pond (**Figure 59**). It is not unreasonable to surmise that these features symbolize channels dug in the ground, possibly connected to canals and other water channels located nearby, thus insuring a constant supply of fresh water needed to ensure the well-being of the waterfowl. These oblique lines may also imply that the pond was bordered by sloping

⁵⁰ See for instance of the poultry-yard scene in the tomb of *Miri* (Davies *et al.* 1984, pl. 6)

⁵¹ Lloyd *et al.* 2008, pl. 15

⁵² Harpur and Scremin 2006, p. 136, fig. 212

⁵³ Montet 1925, pp. 119-120

banks, which would have facilitated the flow of water down into it. A gradual slope would also make it easier for the birds to access the water.⁵⁴

These enclosures were surrounded by fences built with forked wooden posts, beams, and ropes. To prevent the birds from flying away, netting was most likely spread over the roof and held in position with a rope fixed into the forked poles. Such a detail, however, possibly originally painted on the wall, is not attested in any of the tombs in this study. The aviary's sides would have required sturdier fencing in order to prevent predators from penetrating into the enclosure and feast on the captive birds. Thick juxtaposition of wooden posts and palm leaves, possibly covered with plaster or loam, would have ensured greater protection than simple netting.⁵⁵ While it is impossible to ascertain the height of the walls forming the enclosure's sides, the forked wooden poles are frequently represented as towering above the men pouring grain for the birds. Feeding the birds would thus have required access into the yard through a door, a detail not deemed worthy by the artists to include. Another detail hard to verify based on these depictions is whether a section of the enclosure was roofed: such a protected area

⁵⁴ A similar advice is given by the 1st century AD Roman author Columella, famous for his writings on agricultural matters. He recommended that "the sides (of the pond in the duck enclosure) should slope gradually so that the birds can enter the water as from a shelving beach" (Ghigi 1939, pp. 93-94).

⁵⁵ Such a fence may be represented on a sandstone block recovered at Karnak (Bickel 2008, pp. 24-25; Gräzer Ohara 2012, p. 199). Originally part of the palace built on the west bank at the occasion of the first *sed*-festival of Amenhotep III, the block includes the depiction of a corral, in which several heads of cattle were kept. A herder is seemingly attempting to gather the herd, while a young calf is feeding and being cleaned by its mother. The enclosure is surrounded by a fence built with branches and/or palm ribs planted in the ground at close and regular intervals. A similar fence is also visible in the fowl-yard represented in the Ramesside tomb of *Iy-mi-sb3*, as will be discussed *infra*.

would have allowed the birds to take refuge from the elements and to find shade during the summer months and warmth during the winter.⁵⁶

In addition to feeding on the vegetation which may have grown near the pond,⁵⁷ the birds kept in a *hr.t-mw* were given massive amounts of grain, an additional source of food many of the birds are shown to fully take advantage of. Farm workers are represented carrying baskets filled with grain and pouring their contents on the ground of the aviary: *stt it n 3pd (w)*: “scattering barley for the birds.”⁵⁸ In most tombs, officials assigned to the fowl-yard carefully record the amount of grain delivered to the poultry yard and given to the birds (see *infra*). So much grain is poured in the enclosures that it fully covers the ground, allowing all the birds gathered within to eat their fill (**Figures 56-57**). The staff in charge of these birds was clearly intending for them to gain weight rapidly under their care. Eager to check on the status of his flock, the tomb owner did not neglect to view the feeding time of the birds, as shown in the tomb of *Ny-k3w-Izzi: m33 wnm it in d3.t...*: “Viewing the eating of grain by cranes...” (**Figure 63**).⁵⁹ While emphasis was set on the feeding of cranes in this particular tomb,⁶⁰ geese were

⁵⁶ According to O. Mahmoud (1991, p. 232), the *hr.t-mw* enclosure was frequently fully covered by a light roof made with loam, a suggestion based on the presence of forked poles in the fence. While such a suggestion is plausible, I believe that the forked poles were not so much supporting a roof as maintaining a net stretched out over the whole, or most of, the enclosure. The presence of a roofed section of the aviary is perhaps best exemplified in the fragmentary relief Florence Inv. Nr. 5412, dated from the New Kingdom. As will be discussed *infra*, the bird enclosure depicted on this block is surrounded by a roofed colonnade.

⁵⁷ The presence of a grassy edge all around the basin can be identified in the *hrt-mw* from the tomb of *Ty*. Artists simply represented it as a border formed by short vertical lines densely drawn together (Épron and Daumas 1939, pl. 6). Several geese are taking advantage of this greenery and are shown grazing it (**Figure 57**).

⁵⁸ Tomb of *Mry-Tti*: Kanawati and Abder Raziq 2004, pl. 48

⁵⁹ Kanawati and Abder Raziq 2000, pl. 49


also included in the flock and given their share of barley. Five geese, both greylag (*r3*) and white-fronted (*trp*), are shown walking around the yard, pecking at the seeds littering the ground around them. Their feasting is simply stated as *wnm it in r3 trp*, “eating barley by the greylag and white-fronted geese.”

As exemplified in the tomb of *Ny-k3w-Izzi*, waterfowl were not the only birds kept in such enclosures; several depictions of fowl-yards also included aviaries housing cranes.⁶¹ While the fence surrounded their enclosure could be supported by forked beams, as shown in some tombs,⁶² no additional body of water was incorporated into this design. Even though the artists did not consider that such a detail should be included in the scene, one can imagine that water was provided to the birds in troughs or ceramic vessels. As described previously, the clear emphasis on the presence of water in a *hr.t-mw* enclosure renders such a denomination doubtful for the aviaries reserved for the cranes. Yet, these structures, similar to those housing waterfowl in other respects, are often depicted on the same register as the enclosures equipped with a source of fresh water, suggesting that a sector of the *hr.t-mw*, away from the water, was set aside to accommodate the cranes.

⁶⁰ Of the four captions dedicated to the feeding of poultry birds on this wall, three are dedicated to the cranes. In particular, a worker is depicted in the midst of the cranes and scatters grain on the ground for them: *ttf it n d3.(w)t hr=sn*, “throwing down some barley for the cranes, beneath them.”

⁶¹ See OEE Scene Detail 7.2.10. ‘Poultry house filled with cranes’ for a list of the tombs including this detail. http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006. Last accessed July 30, 2015.

⁶² See in particular the poultry-yard scene carved in tomb of *Ibi* at Deir el-Gebrawi (Davies 1902a, pl. 16)

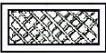
The proximity of the crane enclosure to the area where these birds were force fed – at times depicted on two different registers, yet one on top of the other;⁶³ in other tombs, depicted on the same register and next to one another⁶⁴ – may suggest that the aviaries housing the cranes were located at close proximity, and perhaps adjoined, the closed structures, the *štb.w*, where force feeding of birds was taking place. Not all flocks of feeding cranes, however, are shown as being kept within a fenced and netted area. In the tomb of *Ty* and *Mrrw-k3.i*, no palisades are present around the cranes, in clear contrast with the enclosures where waterfowl are penned.⁶⁵ Furthermore, these flocks are placed under the careful eye of a guardian, labeled as , *mnw*, in the tomb of *Ty*. He is equipped with a staff to maintain the birds under control, while a farm worker is pouring grain on the ground. If the cranes in the estates of these noblemen were indeed given the freedom to roam the poultry yard, one must assume that their wings had been pinioned, i.e. the tip of their wings had been cut, or the flight feathers had been removed or simply shaved off (**Figure 64**). Such modifications of the birds' anatomy or plumage would not be readily visible in the representations, as these birds are always depicted with their wings folded against their flanks.

⁶³ At Saqqara, tombs of *Ty* (Épron and Daumas 1939, pl. 6) and *Ny-k3w-Izzi* (Kanawati and Abder Raziq 2000, pl. 49); at Deir el-Gebrawi, *Ibi* (Davies 1902a, pl. 16. In the latter tomb, the abbreviated version of the poultry yard motif attested at Saqqara appears out of place on a wall for the most part dedicated to crafts, from sculpture to ship building.



⁶⁴ Tombs of *Mrrw-k3.i* (Duell 1938 part I, pl. 52); *Mry-Tti* (Kanawati and Abder Raziq 2004, pl. 48).

⁶⁵ Épron and Daumas 1939, pl. 6; Duell 1938, pl. 52

b. The *štb*-facility:⁶⁶

In the *hr.t-mw* enclosures, birds were seemingly granted enough space to possibly fly short distances within the compound (**Figure 65**).⁶⁷ No such basic avian activity was possible in the second type of facility depicted in Old Kingdom tombs. The *štb*-facility was composed of multiple roofed enclosures, separated by walls, in which small flocks of birds were penned by species.⁶⁸ As aforementioned, this confinement is further alluded to in the choice of determinative for this term, namely a crate with a wooden frame, covered with lattice or netting: .⁴⁵ The birds brought into this facility were subjected to frequent individual force-feeding sessions, most likely over a short period of time prior to their slaughter. The artists depicted them as docile creatures, which underwent the forced ingestion of dough pellets without seemingly offering too much resistance (**Figures 56-57, 60-61**). Between these

⁶⁶ Montet 1925, pp. 122-125; Vandier 1969, pp. 410-418; Mahmoud 1991, pp. 230-231 and 234-236. *An. Lex.* I-II: “Cage où l’on enfermait la volaille” (Entries 77.4322 and 78.4211); Hannig 2003, p. 1321. The basic meaning of *štb*

 is “cage pour poultry,” according to Wb IV p. 557 §7. P. Montet (1925, p. 125) associates the *štb.w* facilities to the *md.t* , stables where cattle and other wild mammals were kept in confinement and force fed. These animals are frequently shown lying down, with a rope around their neck, receiving food directly in their mouth. See for example the tomb of *Mrrr* where force feeding of cattle is depicted in the register above the force feeding of waterfowl (Davies *et al.* 1984, pl. 6).

⁶⁷ Lloyd *et al.* 2008, pl. 16


⁶⁸ Montet 1925, p. 125; Vandier 1969, p. 418; Mahmoud 1991, p. 234. This isolation of these birds from the rest of the flock in indoor pens is perhaps best exemplified on the fragmentary reliefs from the tomb of *Spd-htp*. The left section of a fragment held in Berlin (Inv. Nr. 14642), a session of bird force feeding is taking place in a room whose roof is supported by elegant columns topped by lotus-bud capitals (Harpur 1986, pp. 62-63, fig. 5). At least three men were involved in feeding the birds: two were in charge of the ducks and geese, while another stood with a group of three cranes. Moreover, artists used diverse approaches to indicate the separation of the different types of birds. In the tomb of *Mrrw-k3.i*, for instance, the artist represented the force feeding of each avian kind, in this case doves, ducks, geese, and cranes, in separate registers – either a full or half register depending on the size of the bird (Duell 1938, pl. 52). In the tomb of *Ty*, the different rooms of the facility are simply delineated by vertical lines (Épron and Daumas 1939, pl. 19).

feeding sessions, as stated in captions,⁶⁹ birds were granted access to a small yard, where they could walk around, preen, flap their wings, and drink from jars filled with water placed for this effect in the enclosure (**Figure 61**).⁷⁰ Such a frequent input of food and lack of exercise would have guaranteed a rapid increase in the birds' weight and proportion of body fat.⁷¹

The various steps which the specialists in charge of force feeding the birds followed are developed at length on the walls, a clear indication of the importance granted to this process by ancient Egyptians. Each activity is worthy of a hieroglyphic caption and is represented with great details (**Figures 56, 60**).⁷² It transpires from these depictions that aviculturists selected a wide variety of birds to undergo the force feeding process. Ducks and geese were the most

⁶⁹ Tombs of *Ty* (Épron and Daumas 1939, pl. 19); *K3-gm-ni* (Harpur and Scremin 2006, p. 496): *phr m-ht snm.t*: “going around after the force feeding.” The names of the specific types of birds walking around these yards are also mentioned: *z, mnt, d3.t* in the tomb of *Ty*; *r3, trp, hd* in the tomb of *K3-gm-ni*.

⁷⁰ The large number of birds kept in the force-feeding facilities is especially emphasized in the tombs of *Mrrw-k3.i* and *Mry-Tti* (respectively Duell 1938, pl. 52; Kanawati and Abder Raziq 2004, pl. 48). Such crowded depictions may not be an actual reflection of the conditions in ancient Egyptian poultry-yards. The motif may simply be an allusion to the wealth and hence high social position of these individuals.

⁷¹ Vandier 1969, p. 418. A rapid increase in weight may explain why the cranes are depicted lying down on their forelegs in the fragment from the tomb of *Spd-htp* (Harpur 1986, p. 63, fig. 6). This same pose  is used as the determinative for the crane in the force feeding scene from the tomb of *Ty* (Épron and Daumas 1939, pl. 6). It may be this very behavior which is described in the bird procession scene in the tomb of *R^c-špss* (LD II, pl. 61b). Some of the geese presented for inspection before the deceased are labeled *hry-ht=f n r3/trp*, “he which is upon its belly” of the *r3*-goose/*trp*-goose.” Scholars have proposed to understand this expression as describing the birds which have become so fat that they cannot walk, or whose belly touches the ground as they walk (Montet 1925, p. 143; Boessneck 1991, p. 109).

⁷² See Montet 1925, pp. 122-125; Vandier 1969, pp. 410-418; and Mahmoud 1991, pp. 234-239 for an in-depth analysis of the various actions observed in the scenes of poultry force feeding.

common and most numerous birds depicted in the *štb.w*-enclosures.⁷³ A few tombs and fragmentary reliefs specify which species were favored: greylag and white-fronted geese (resp. *r3* and *trp*), the white *hd*-goose, the Egyptian goose (*smn*), the pintail duck (*z.t*), and the unidentified types of waterfowl, the *ht^{c3}*- and *bd3*-birds. Cranes, for the most part the Eurasian crane (*d3.t*),⁷⁴ frequently suffered the same treatment. Finally, some aviculturists attempted this process with smaller birds, such as the turtle dove (*mnw.t*). The types of the birds identified in each of the force-feeding scenes are gathered in **Table 13**:

Table 13. Birds identified in scenes of force feeding in Old Kingdom tombs

	Cranes, esp. <i>d3.t</i>	<i>r3</i> - goose	<i>trp</i> - goose	<i>hd</i> - goose	<i>smn</i> - goose	<i>z.t</i> - duck	<i>s/z</i> - duck	<i>bd3</i> - duck	Unknown species of waterfowl	<i>mnw.t</i> - dove	Other small bird
<i>Pth-špss</i>											
<i>Ty</i>	✓		✓			✓	✓	✓		✓	
<i>Spd-htp</i>	✓	✓	✓		✓			✓			
<i>Nfr-sšm-Pth</i>	✓		✓						✓		✓?
<i>Mrrr</i>									✓		
<i>K3-gm-ni</i>		✓	✓	✓		✓					✓
<i>Mrrw-k3.i</i>	✓								✓	✓	
<i>Mry-tti</i>	✓								✓		✓
<i>K3irr^a</i>	✓								✓		
<i>Mtti</i>									✓		
<i>Ppy-^cnh: Hny-Km</i>									✓		

^a This scene is unpublished. I rely on the OEE database for this data, not having been able to see it myself.

To facilitate a rapid increase in body fat, and consequently in value, of the *štb*'s residents, aviculturist prepared bread pellets, which would be forced down the birds' throats.

⁷³ Tombs of *Ty*, *Spd-htp*, *Nfr-sšm-Pth*, *Mrrr*, *K3-gm-ni*, *Mrrw-k3.i*, *Mry-Tti*, *K3irr*, *Mtti* in Saqqara; tomb of *Ppy-^cnh:
Hny-Km* in Meir (OEE Scene detail 7.3.2: Force-feeding geese and/or ducks:
http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006. Last accessed July 30, 2015)

⁷⁴ The force feeding scene in the tomb of *Mrrw-k3.i* reveals that a few Demoiselle cranes could also be part of the flock actively being forced. They are readily recognizable by the presence of the tuft on their head (Duell 1938, pl. 52).

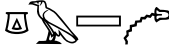
Ovens and cooking implements were thus essential components of this force feeding complex. In a few instances, the people involved in the preparation of these pellets are identified by their title. They are *šd.w 3pd(w)*, “bird feeders.”⁷⁵ These workers were specifically responsible for the following activity: *pst zwf*⁷⁶ *t*, “to cook and roll the bread (into pellets).” Once the food is ready for the birds, the men in charge of handling them each kneel down on the ground and grab with one hand a waterfowl or a smaller bird, take some pellets with their other hand and force it down the throat of the bird prisoner of their grip. To facilitate the process, pellets could be moistened in a bowl of water lying nearby. Force feeding cranes required that workers remain standing to better control the bird (**Figure 57**).⁷⁷

Several verbs are used in captions to describe the actions of the workers shown force feeding the birds.⁷⁸ The most common, *snm(.t)*,⁷⁹ incorporate the forceful notion of causing (initial *s*-causative), or more appropriately in this case obliging, the bird to eat (*wnm*). *Ty* himself and other administrative officials showed their interest in the practice. They are said to *m33*

⁷⁵ Jones 2000, p. 994 (# 3681)

⁷⁶ The tomb of *K3-gm-ni* uses the word *swš* to describe the fabrication of the rolls of bread. See Mahmoud 1991, p. 235 for an analysis of the choice of this word, which implies a twisting movement, instead of the more traditional verb *zwf*.

⁷⁷ For information on the challenges met when handling cranes, see Swengel and Carpenter 1996, pp. 36-39.

⁷⁸ See Mahmoud 1991, pp. 237-239 for a discussion of the possible meaning of the terms *snm*, *šdi*, and *wš3* in the force feeding scenes. During the Ptolemaic period, the verb  *g3š* specifically describes the action of forcing food down the bill of a bird (Wb V p. 156 §6).

⁷⁹ Wb IV p. 164 §5

*snm.t z.t ht*³, “view the force feeding of the pintail duck (*z.t*) and the *ht*³-geese.”⁸⁰ Encountered in the tombs of *Ty* and *Mrrw-k3.i*, the verb *wš3*, “to fatten,”⁸¹ clearly states the intent ancient Egyptian aviculturists had for force feeding the birds, namely to fatten them for the table and ultimately improve the quality of their flesh. Finally, one force feeding vignette in the tomb of *Ty* stands out, as the three verbs *snm* (to cause to eat), *šdi* (to feed), and *wš3* (to fatten) are used to describe the same action, namely to oblige two cranes to ingurgitate bread pellets (**Figure 60**).⁸² One may entertain the possibility that the scribe in charge of composing the text for this tomb might have been eager to avoid monotony and therefore employed a variety of possible synonyms to describe each force feeding motif. Yet, one may also wonder if the text carved above the worker at the right hand side of the scene, rather than being read as two separate captions, as has been interpreted,⁸³ should be understood as *šd.t d3.t (r) wš3*, “feeding the crane in order to fatten (it).”

The artists who designed these tableaux clearly intended to underscore how labor intensive this activity was. Force feeding birds required the participation of many workers,⁸⁴ from the men in charge of preparing the bread noodles and pellets with which to feed the

⁸⁰ Épron and Daumas 1939, pl. 19

⁸¹ Wb I p. 369 §4

⁸² Épron and Daumas 1939, pl. 34

⁸³ Mahmoud 1991, p. 227

⁸⁴ O. Mahmoud (1991, p. 236) explains the larger number of staff involved in the force-feeding of birds as revealing the importance of the activity for the tomb owner. One may wonder if the ownership of or access to such force feeding facilities was a status symbol, just as the consumption of foie gras was in France until recently. If such was the case, including it in the funerary repertoire of the tomb would have been a clear statement of the successful career of its owner. *Ty* went even further as to include it on two different walls of his offering chapel.

birds, to the specialized staff in charge of catching the birds, holding tightly against them, and force feeding the food down the birds' throat on a frequent basis.⁸⁵

c. Administrative Buildings:

In many tomb chapels, the bird farm also included roofed structures intended to house the administrative staff in charge of managing the various facilities. These buildings or simple porches are frequently depicted at close proximity to the *hr.t-mw*, where groups of workers of busy pouring grain to the birds (**Figures 56, 58**). The roof is supported by wooden columns topped with lotiform (either buds or fully open blooms) capitals. A wide range of employees are shown frequenting these buildings. Scribes, at times with specific affiliations (*zš 3pd(.w)*, “scribe of the birds”; *zš ʕ-ny-sw.t*, “scribe of the royal document”; *iry md3.t*, “archivist”)⁸⁶ are the most numerous members of the staff, busy tallying not only the birds present in the enclosures, but especially the grain delivered by workmen and given to the fowl as feed. In the tomb of *Hzi*, these men are said to:

zš m 3pd.w n pr iry-md3.t: record the (number of) birds for the bureau of records/archives;
zš m htʕ3 nt(y) m hr.t-mw: record the (number of) *htʕ3*-birds that are in the *hr.t-mw* enclosure;
zš m 3pd.w n wd3: record the (number of) birds for the remainder (?) (**Figure 66**).⁸⁷

⁸⁵ In the foie gras industry, for instance, birds (from 9 to 25 weeks of age) are handled and fed at least five times a day for a period of 14 to 20 days. During this period, the weight of their liver will increase from an initial 80g to a final weight ranging from 600g to 1kg (Buckland and Guy 2002, pp. 59-62).

⁸⁶ *zš 3pd*: tomb of *Rmni* (Kanawati 2009, pl. 17); *zš 3pd*, *zš ʕ-ny-sw.t*, *iry md3.t*: tomb of *Ty* (Épron and Dumas 1939, pl. 19).

⁸⁷ Kanawati and Abder-Raziq 1999, pl. 56

The *nht-hrw*, “tallier,”⁸⁸ would have then ensured that the men under his charge delivered and scattered the correct amount of grain allotted to the birds. In the tomb of *Ty*, the *nht.w-hrw* are depicted directly behind the men carrying the baskets of grain, thus presumably within their earshot.⁸⁹ In the tomb of *K3-gm-ni*, the title of *imy-r3 šd(.w) 3pd*, “overseer of bird feeders,” is all that remains of the section of the wall dedicated to the administrative building. Just like the *nht-hrw*, this official would have verified that the birds under his care received the right amount and quality of grain to insure their good health and also their weight gain.⁹⁰

The presence of high level officials connected with the granary administration (*hry-tp šnw.t*, “assistant director of the granary”; *šd zš n šnw.t*, “inspector of the granary scribes”)⁹¹ in the administrative buildings attached to poultry farm highlights the desire of the state during the late 5th and 6th Dynasties to oversee the distribution of grain throughout the country, whether this grain is distributed as rations to its workers, or whether it is given as food to the birds on the estates of its high officials, as is the case in the representation from the tomb of *Nfr-sšm-Pth* (**Figure 65**). *Nfr-sšm-Pth* is indeed proud to record on the walls of his offering chapel that these top members of the state administration are granting him the right to deliver large quantities of barley to the fowl-yards. The *hry-tp šnw.t*, “assistant director of the granary,” claims the following: *iw(=i) r di.t it r wr*, “I shall give barley in abundance.” As for the *šd zš n*

⁸⁸ Papazian 2013, p. 67: Literally meaning “powerful of voice,” this title can also be translated as foreman.

⁸⁹ Épron and Daumas 1939, pl. 19

⁹⁰ Harpur and Scremin 2006, p. 497

⁹¹ Tomb of *Nfr-sšm-Pth*: Lloyd *et al.* 2008, pl. 16. See Papazian 2013, pp. 59-70 for an excellent discussion of the role of the granary department and its personnel in the administration of the Old Kingdom.


šnw.t, “inspector of the granary scribes,” he records that *it 10 r sh3=f*, “10 bags of barley (are) for him (possibly the farm worker, or more indirectly the tomb owner) to scatter.”⁹²

During the Old Kingdom, the interest of the *pr-ny-sw.t*, or national government, as translated by H. Papazian,⁹¹ in keeping track of the resources in fowl of large estates is further emphasized in the tomb of *Ty*. The nobleman, who came to inspect the state of the *hr.t-mw* of his *pr-d.t*, is shown being received by a group of officials, all holding papyrus rolls (**Figure 58**). In addition to two archivists (*iry md3.t*), two stewards (*imy-r3 pr*), and the senior steward and inspector of scribes (*s3b*⁹³ *imy-r3 pr shd zš*) advancing towards *Ty*, a man bearing the titles of *shd zš.w ʿ-ny-sw.t ʿpr.w*, “the inspector of the scribes of royal documents relating to the crew,” and *imy-r3 hm-k3*, “overseer of *k3*-priests,” is standing before the tomb owner, holding an open papyrus roll in his hand, most likely providing a complete report of the poultry-yard’s content.⁹⁴

2. Middle Kingdom

While the depiction of fowl-yards was never widespread during the Old Kingdom, even within the Memphite necropolis alone,⁹⁵ it disappears almost entirely from the “daily life”

⁹² Lloyd *et al.* 2008, p. 17

⁹³ The placement of the *s3b* hieroglyph  to the left of the title *imy-r3 pr* and above the title *shd zš* may imply that this epithet *s3b* applied to both, hence my considering this man a senior official for both functions. An official bearing a similar senior title (*s3b imy-r3 zš*, “senior overseer of scribes”) is likewise depicted reporting to *K3-gm-ni* on the status of his farms (Harpur and Scremin 2006, p. 496).

⁹⁴ Épron and Daumas 1939, pl. 27

⁹⁵ During the Old Kingdom already, most of the tombs displaying the fowl-yard scenes were located in the Teti cemetery within Saqqara. It has yet to be identified in the Giza cemetery (Harpur and Scremin 2006, p. 409). Moreover, only two simplified scenes have survived from provincial cemeteries: in the tomb of *Tbi* at Deir el-Gebrawi, which exhibits similarities with some of the Saqqara tombs (Davies 1902a, pl. 16; Kanawati 2007, p. 51);

themes incorporated into the funerary iconographic repertoire from the First Intermediate Period onwards.⁹⁶ This loss may simply be due to the absence in this theme of the rebirth and chaos destruction symbolism so richly embedded in the fowling motif, which remains a common feature until the end of the New Kingdom, albeit shifting during the Ramesside period from the funerary realm to the sacred space of temples (see *supra*). Furthermore, the choice on the part of the tomb owner to neglect this motif may be evidence that ownership of captive fowl and the facilities attached to their care did not exhibit the same prestige as the possession of livestock and the annual census of the herd, which is attested in several Middle and New Kingdom tombs.⁹⁷

Only two Middle Kingdom tombs, located in the Middle Egyptian cemeteries of Beni Hassan and Dayr al-Barshā, included poultry-yard activities in the repertoires of painted scenes covering the walls of the offering chapels, meager evidence that aviculture was practiced in the region. In the tomb of *Hnm-htp* II, in Beni Hassan, the poultry-yard motif is reduced to its essential elements (**Figure 67A**).⁹⁸ It is depicted to the left of a clap-netting scene. Some of the waterfowl trapped in the meshes of the net are callously grabbed by the neck and handed to a

and in the tomb of *Ppy-ꜥnh: Hny Km* at Meir, greatly abridged and with its own unique features (Blackman and Apted 1953 part V, pl. 22).

⁹⁶ According to J. Vandier (1969, p. 428), “l'élevage des oiseaux, si on en juge d'après les scènes conservées dans les tombes, a joué, au moins au Moyen Empire et au Nouvel Empire, un rôle moins important qu'à l'Ancien Empire. Relativement peu nombreuses, surtout au Nouvel Empire, ces scènes sont, en outre, beaucoup moins développées.”

⁹⁷ See for instance the scenes of presentation of the herds before the tomb owner in the Middle Kingdom tomb of *Dhwtj-htp* at Dayr al-Barshā (Newberry 1893-94, pl. 12) and on the wall paintings originally adorning the now lost tomb of the Theban official *Nb-Imn* (British Museum EA37976; Parkinson 2008, p. 102-109).

⁹⁸ Newberry 1893a, pl. 30; Shedid 1994, p. 92; Kanawati and Evans 2014, pls. 51-52, 125

worker who ties all the birds' legs together with a rope, as if tying the stems of flowers to make a bouquet (**Figure 67B**). Having suspended two "bunches" of birds on either side of a yoke, this man is shown proceeding towards a farmyard, where a variety of wildfowl⁹⁹ could be released from their bonds and be free to walk around under the careful eye of a guardian (**Figure 67C**). Anatids were not the only birds maintained in captivity for the benefits of *Hnm-htp*. The next vignette, which covers four small registers, is dedicated to the presentation of the flocks possibly destined to provide the nomarch's kitchen with fresh poultry and his funerary cult with offerings of fowl. In the register above the fowling and fowl-yard motifs, a herder, holding a smaller crane¹⁰⁰ in his arms and with the staff characteristic of his function tightly held to his side, is shown following the flock of twelve Eurasian cranes for which he is responsible (**Figure 68**). Underneath, turtle doves, pintails, and geese are also assembled and are proceeding to be presented to the tomb owner (**Figures 29 and 69**). The guardian previously mentioned as

⁹⁹ Thanks to the well preserved state of the wall paintings in this tomb, it is possible to securely identify most of the birds composing this flock of wildfowl: several types of ducks (pintails (*Anas acuta*), ruddy shelducks (*Tadorna ferruginea*), Eurasian teals (*Anas crecca*), widgeons (*Anas penelope*)), five geese, one of which is a white-fronted goose (*Anser albifrons*) identified by the presence of the white patch on its forehead. One bird, with a predominantly white plumage, apart from black markings on its wings and behind its eye, does not resemble any specific species of waterfowl. It has been tentatively proposed that it may be a barnacle goose (*Branta leucopsis*) (Kanawati and Evans 2014, p. 49). Just like the red-breasted goose (*Branta ruficollis*), this bird is an accidental visitor to Egypt, only one specimen having been recorded in Egypt during the 20th century (Goodman and Meininger 1989, p. 155).

¹⁰⁰ Identifying with confidence the bird tightly held in the herder's arms represents a challenge. Indeed, the bird displays the same coloring as the recognizable Eurasian cranes (*Grus grus*) standing as a flock before it: red spot on its head, blue-grey overall plumage, bushy secondary feathers gathered over the tail. The presence of the elongated feather on the head, however, is problematic, as it is traditionally a characteristic feature of the grey heron (*Ardea cinerea*). While some herons were probably tamed and maintained in captivity to act as fowling decoys (see *supra*), the presence of such a bird in a flock of captive cranes would be most surprising and is unattested otherwise in Egyptian art. Could the bird held by the herder be in fact a representation of the smaller Demoiselle crane (*Anthropoides virgo*), with its characteristic ear tufts stylized as a thin crest by the artist at work in this tomb?

keeping an eye on the birds pecking at the ground and grazing in a yard, seems to also be in charge of the three flocks. He is shown with his hand grasping his opposite shoulder, a clear indication that he is presenting himself in a respectful pose before his master. While no caption sheds some light as to his identity and position in *Hnm-htp*'s workforce, one may surmise that he is the overseer in charge of the fowl-yard, and thus the person responsible for reporting on the status of the flock before *Hnm-htp*.

The register painted below the clap-netting scene is likewise dedicated to animal husbandry. Small select groups of animals are represented being force fed: birds, possibly geese, oryx, goats, and cattle. The small vignette showcasing the force feeding of a few birds is simply labeled as *wš3 3pd(w)*, "fattening bird(s)," thus revealing that the practice of fattening poultry, well documented during the Old Kingdom, is maintained in elite circles of the early Middle Kingdom (**Figure 70**). Just as was the case in the representations of *štb*-enclosures described previously, the man in charge of force feeding the birds is depicted squatting on the ground. He is holding one bird close to his side, grabbing its neck in one hand and placing bread pellets in its beak with the other.

A similar series of poultry-yard vignettes can be observed in the tomb of *Dhwtj-htp* at Dayr al-Barshā (**Figure 71A-B**).¹⁰¹ On the right hand wall of the inner chamber, to the right of the clap-net which the nomarch and his team of fowlers are controlling, some of the birds already captured are waiting to be transported to their next destination. The previous clap-

¹⁰¹ Newberry 1893-94, pls. 12, 17

netting expedition had seemingly been especially fruitful. Two registers are dedicated to showcasing the captive fowl. The top register is filled with large bouquets of wading birds tied by their wings, in particular pied avocets (*Recurvirostra avosetta*), readily identifiable with their bills curving upwards (**Figure 22**), and also possibly egrets, with their straight and long bills. The second register is reserved for waterfowl, both geese and smaller sized ducks. Some of these waterfowl have been placed inside large rectangular crates and in cages rudimentarily built with branches and ropes, tied together at each end to give it an oblong shape. Many more birds, however, have had their legs or wings tied together to form bundles. The rope, holding them together, was then looped over a beam. A few hanging birds raised their heads in a vain effort to release their bonds.

Below the team of fowlers committed to helping *Dḥwty-ḥtp* in his endeavor, a large flock of well-behaved geese is depicted over two short registers. The damage at the center of this vignette prevents us from ascertaining the purpose of this representation. Being placed at the junction between the clap-netting scene taking place in a wetland, and the procession of cattle being presented before *Dḥwty-ḥtp*, P. Newberry suggested that “the artist seemed to connect the scene of capturing wild-fowl with the cattle scene by the introduction of domestic geese, without drawing any line of demarcation. [...] One may consider that some of the birds captured were deprived of their power of flight and driven into the farmyard.”¹⁰² It seems indeed likely that the birds shown gathered as a flock and under the guidance of a herder originate from a farmyard, possibly alluded to in the damaged section of the wall. It is

¹⁰² *Ibid.*, p. 26

impossible to be certain whether they originate from the wild or were bred in captivity, as suggested by P. Newberry. The question of the domestication of the goose in ancient Egypt will be discussed *infra*.

Further reference to aviculture practices is included on the inner wall of *Dhwtj-ḥtp*'s tomb chapel. Below a second clap-netting scene, a register is fully dedicated to the force feeding of a variety of birds, each gathered in its dedicated walled enclosure (**Figure 71B**).¹⁰³ Birds seemed to have been organized by size, from left to right: the tall and gray Eurasian crane (*d3.t*) first, followed by the greylag (*r3*), another type of goose, possibly the white-fronted (*trp*), and finally the pintail (*z.t*). These scenes lack the vividness of the Old Kingdom representations, in which birds were depicted in a multitude of positions and exhibited a wide array of behaviors.³⁶ In the tomb of *Dhwtj-ḥtp*, the birds appear very stiff, all shown in the same straight pose, the monotony being broken by the addition of a bird looking in the direction opposite to the rest of its cohort. To accommodate for the larger size of the cranes, the waterfowl selected to be force fed is spread over two short registers. Whereas Old Kingdom workers were shown squatting on the ground, men in this tomb benefit from square stools, similarly grabbing the birds by the neck and placing bread pellets taken from a vessel lying nearby in the birds' beak.

3. New Kingdom

The representations of poultry-yards are also rarely attested during the New Kingdom. Four fragmentary scenes have survived, most of which are attributed to the 18th dynasty and

¹⁰³ *Ibid.*, pl. 22

the Amarna period. The religious reforms of Akhenaten, with its drastic impact on Egyptian art, precluded the traditional representations of the king interacting with a multitude of gods on temple walls. In its stead, in addition to scenes showcasing Akhenaten and his family receiving life from the rays of the sun disk, representations of temples and palaces, their architecture and the various activities taking place within carved with a plethora of lively details, became a standard motif on the walls of buildings, which the new king rapidly built with talatats.¹⁰⁴ After the death of Akhenaten, just as quickly as they were built, monuments connected with the reign of this pharaoh were dismantled and talatats came to be incorporated into the building projects of late 18th Dynasty and especially Ramesside kings. At the temple of Amun at Karnak, in particular, more than 100,000 talatats were discovered, having been reused as foundation fill in pylons. For several decades, multiple projects have endeavored to record every single block and reconstruct wall scenes from the monuments dedicated to the Aten, which Akhenaten had built at the site.¹⁰⁵ Two such wall reconstructions are of special interest to this project since they include the depiction of fowl-yard facilities, most likely part of the religious complex of Karnak at the time of Akhenaten and serving the needs of the newly built Aten temple.¹⁰⁶

Now reconstituted and on display in the Luxor museum, a large wall originally incorporated into the structure of the Aten temple of Karnak provides insight into the storage

¹⁰⁴ Freed 1999; Vergnieux 1999, p. 142: “Les thèmes traditionnellement profanes sont maintenant introduits dans l’iconographie religieuse du temple. Le naturalisme gagnant les modes de représentation, les scènes comprennent des animaux représentés dans leur quotidien.”

¹⁰⁵ See in particular The Akhenaten Temple Project directed by R. Redford (Penn State University) and the work of R. Vergnieux on digitally re-assembling talatats discovered at the Temple of Karnak to reconstruct wall scenes.

¹⁰⁶ Klug 2006, p. 83

facilities, workshops, granaries, and stables of the temple, from which offerings were drawn for the many altars of the sun god (**Figure 72**).¹⁰⁷ In particular, right below a register depicting the force feeding of large oxen, a set of three talatats is dedicated to the representation of a small fowl-yard. Eleven ducks and/or geese, spread over three short registers, are kept in a small enclosure, possibly accessible by a door represented at the top right hand corner.¹⁰⁸ At the birds' disposal is a large vessel specifically designed as a feeding or drinking station. It is equipped with holes of a diameter slightly larger than the bird's head and interspaced at regular intervals all around the periphery of the jar. When filled with grain, such a system allowed for several birds to feed at the same time, a principle still employed in modern farmyards to feed chicks or to provide grit. To illustrate the purpose of this vessel in the aviary, the artist represented two birds with their head inserted in these opening and taking advantage of the food or water previously poured in the vessel. Another waterfowl is behind them, flapping its wings, perhaps eager to take its fill of food.

The specific placement of this vignette near the cattle force feeding station, along with the visible confinement in which the birds are kept, allow us to surmise that these birds may have been themselves candidates for force feeding. It is also possible that this small aviary temporarily housed the birds destined to be soon sacrificed to the god. A few additional birds are depicted on this wall. Held in oval shaped cages, similar to those observed in the tomb of

¹⁰⁷ Luxor Inv. Nr. J. 223. Daniel 1971; Klug 2006, pp. 80-82 (I thank H. Papazian for giving me the reference to this article).

¹⁰⁸ See Klug 2006, p. 80 for the possible interpretation of the structure depicted in front of the fowl yard, which she believed may be a stela.

Dḥwty-ḥtp at Dayr al-Barshā (see *supra*), several more birds are brought forth by attendants.

The absence of inscription accompanying these depictions prevents us from knowing the fate of these crated birds. They may be on their way to the altar of the Aten in order to be sacrificed.

They may also be a set of new residents for the poultry-yard previously described.

A more elaborate poultry facility was also included on a talatat wall similarly showcasing rows of magazines and storage rooms, filled to the brim with vessels and other goods, along with stables housing many heads of fattened cattle.¹⁰⁹ The bird facility was seemingly accessible via a colonnade, which opened on a large fowl-yard. A section of the yard is shown surrounded by slender poles, a possible indication that this enclosure was netted to prevent the waterfowl from flying away, a design similar to the *ḥr.t-mw* attested during the Old Kingdom (**Figure 73A**). The birds within this aviary were given access to water, represented as a rectangular basin, which occupies a large section of the enclosure. Birds are shown walking on its bank, swimming in its water, or flying over, perhaps in a vain attempt to escape. Other ducks and geese are closer to the fence, eager to receive the food an attendant standing nearby is bringing. Another flock of waterfowl is shown walking freely in the yard, under the watchful eye of their guardian, who is ready to lead them in the right direction with the long staff he is holding in his left hand. This flock is driven towards the entrance to the farm yard, presumably to proceed towards a field and be allowed to graze during the day.

¹⁰⁹ The wall was “virtually” reconstructed by R. Vergnieux (1999, pp. 142-143, pl. 57) with talatats also recovered at Karnak.

Similar to an Old Kingdom poultry facility equipped with a free range enclosure and a force feeding station, this fowl-yard also included rooms in which birds were force fed (**Figure 73B**). At the right hand corner of the reconstructed wall, two two-story buildings are dedicated to aviculture practices. R. Vergnieux describes the scene as follows: “Dans le bas de ces édifices, des personnages attrapent les oiseaux, alors qu’aux étages, d’autres les gavent.”¹¹⁰ Despite the fragmentary state of the scene, it remains possible to see that two men, sitting on a low stool, are each holding a waterfowl by the neck, probably forcing some bread down their throat. Other geese and/or ducks are standing nearby, waiting for their turn.

Artists of the Amarna period took special care at representing nature, and animals in particular, as realistically as the strict artistic rules of the Egyptian canon would allow. The bird motifs painted on the walls of the so-called Green Room in the North Palace at Amarna are especially striking and should be considered masterpieces of avian art. The kingfishers, doves, and passerines inhabiting the lush swamp vegetation covering the upper section of the walls came to life under the brush of the artists, who captured their movement, as well as the vibrancy and complex hues of their plumage.¹¹¹ Wild birds, however, are not the only avian models incorporated into the iconographic repertoire of this sector of the palace. Known as the North East court, this area is characterized by rows of cubicles on three sides, which are accessible from a colonnade surrounding a central garden.¹¹² When the North Palace was first

¹¹⁰ Vergnieux 1999, p. 143

¹¹¹ Davies and Gardiner 1936 part II, pls. 75-76; Weatherhead 2007, pp. 161-165.

¹¹² Frankfort 1929, pl. 14

excavated in 1923-1925, archaeologists F. G. Newton and T. Whittemore had the good surprise to discover that the walls of this court were especially well preserved and reached up to 2 m in some parts.¹¹³ In addition to the theme of the marshlands which recurs throughout the palace, the plastered walls of the North East court displayed fowl-feeding scenes, which are attested both within the rooms and also under the colonnade.¹¹⁴ These representations had led N de G. Davies to identify this section of the palace as being a fowl-yard housing waterfowl, cranes, and pigeons.¹¹⁵ This hypothesis has since been refuted. The quality of the paintings, the absence of unavoidable damage which the birds would have caused to the representations within the cubicles, and the impractical setting of these rooms for the care of birds have led F. Weatherhead to propose that this part of the palace was used for ritual and/or recreational purposes by the king and his family.¹¹⁶ Despite the overall remarkable state of preservation of the wall paintings in this section of the palace, the scenes of bird feeding have survived only as fragments (**Figure 74A**). Only one complete bird has survived: a greylag goose can be seen ready to grab some of the seeds off the floor (**Figure 74B**).¹¹⁷ It is but one of the members of a flock comprised of at least a long-legged bird, possibly a crane, and a duck. Despite the fowl-

¹¹³ Davies 1929; Weatherhead 2007, p. 146

¹¹⁴ Weatherhead 2007, pp. 143-187: remains of fowl-feeding scenes were identified by F. G. Newton and his team in five rooms and at the entrance of two others.

¹¹⁵ Davies 1929, pp. 58, 66-7

¹¹⁶ Weatherhead 2007, pp. 146-147

¹¹⁷ It used to adorn the south wall of Room 7, as labeled by F. Weatherhead, located on the west side of the North-East court. A facsimile rendering of the fragmentary wall painting was originally published in Newton 1924, pl. 32.2 and also in Frankfort 1929, pl. 11.

feeding scenes having suffered from the elements, their presence in the iconographic repertoire of these rooms can be ascertained by the presence of several features common to the theme: a yellow ground, large red pots, possibly filled with water for the birds to drink, and red grain scattered on the ground.¹¹⁸

The role of this court with its unique decoration program remains open to question. While the marshland motif of the Green Room, a subject imbued with symbolism, had already been attested at the palace of Amenhotep III at Malqata,¹¹⁹ the fowl-feeding scenes are more intriguing and, to the extent of my knowledge, unparalleled in a palace setting. Only one room, room 14, combined both themes: the wild, chaotic, but also fertile environment of the marshes; and the controlled, domestic, and confined environment of the fowl-yard.¹²⁰ While birds were separated by types (waterfowl, cranes, and doves) in most representations of poultry farms discussed thus far, the aviaries depicted in the North Palace seemingly combined all three types within the same enclosure. At this stage of the research, due to the absence of parallels and comparative material, one can wonder whether these depictions are testimony, as N. de G. Davies had suggested, of the presence in the North Palace a large aviary housing a

¹¹⁸ Weatherhead 2007, pp. 152-156

¹¹⁹ On the painted walls, floors, and ceilings of the palace of Malqata, see for instance Hugonot 1989, p. 99, fig. 76; Smith and Simpson 1998, pp. 161-169.

¹²⁰ Weatherhead 2007, p. 147, fig. 72

wide range of birds, for the benefits and entertainment of the royal family in an area of the East bank which may have been otherwise devoid of birdlife.¹²¹

Two more fragmentary relief representations with aviculture scenes can be assigned to the post Amarna and Ramesside periods. The loss of popularity of scenes of agricultural and pastoral ventures in funerary iconography in favor of depictions of personal piety during this time in part justifies the challenges in discovering representations of poultry-yards on offering chapel walls. Nevertheless, I was able to locate a few surviving fragments, which contribute towards a better understanding of the importance of fowl-yards attached to temples.

A limestone relief fragment, now in the National Archaeological Museum of Florence, has been already been the subject of many discussions, in part due to the mystery of its origin, and also because of the unusual character of the depiction (**Figure 75A**).¹²² Discovered in 1881 near Mantua, in Northern Italy, as building material in a country house, the block was eventually acquired by the Archaeological Museum in Florence at the demand of Egyptologist E. Schiaparelli, who recognized in these motifs the remains of a scene from an ancient Egyptian tomb.¹²³ At its top, the twelve columns of texts of a funerary nature are complemented by representations sharing many similarities with the themes chosen for the walls of talatats described previously. The left half of the block is occupied by four magazines completely filled

¹²¹ For a discussion on “zoological gardens,” see Houlihan 2001c, pp. 531-533.

¹²² Florence Inv. Nr. 5412. Schiaparelli 1887, pp. 314-315; Wresz. I, pl. 395; Klebs 1934, p. 70, fig. 51; Badawy 1948, pp. 126-127; Vandier 1969, fig. 190; Roccati and Vittozzi 2002, pp. 137-138; Klug 2006, pp. 75-76 (I thank H. Papazian for bringing this publication to my attention); Guidotti 2008, p. 268.

¹²³ Schiaparelli 1887, p. 314; Guidotti 2008, p. 268

with rows after rows of vessels and amphorae. They open onto a courtyard accessible via a large gate. The inclusion in this setting of large statues of the snake goddess Renenutet, erected on both sides of a stela, possibly indicates that the storage area was placed under the protection of the fertility and agricultural goddess. One may readily imagine that offerings were presented before the statues, as new goods were brought into the courtyard and weighed on the scale depicted near the stela. Just as was observed on the talatats recovered in the Karnak temple, the storage rooms were located near a large aviary, which only partially survived. The enclosure housing a variety of birds, for the most part waterfowl but also a few large wading birds, seemingly ibises, is surrounded by a large colonnade, under which the birds are free to roam. An attendant is present among the birds, possibly pouring some grains from a basket, which the birds around him are eager to eat: most of them are represented in a feeding position, with their head extended forward and looking down. While the majority of the flock is busy foraging for food on the ground, some waterfowl can be seen swimming and flying over a large rectangular pond, which may have originally been depicted as occupying the middle of the enclosure. The depth of the basin is emphasized by five concentric rectangles symbolizing the steps leading down towards the water. More birds are shown swimming in the pond on an additional fragment originally belonging to this monument (**Figure 75B**).¹²⁴ The relief fragment is dominated by the representation of an official wearing the tunic, long kilt with heavy frontal sash, and wig characteristic of the late 18th Dynasty and early Ramesside period.¹²⁵ He is holding

¹²⁴ Museum of the University of Strasbourg Inv. N° 2540A. Roccati and Vittozzi 2002, pp. 137-138.

¹²⁵ Personal communication with W. R. Johnson, who is in favor of the fragment having been removed from a Memphite tomb of the post Amarna –early 19th Dynasty, possibly from the tomb of *Pth-ms* (Berlandini 1982).

a scribal palette underneath his left arm, while his right one is raised, as if addressing someone: he may be the person in charge of the aviary reporting to his superior, possibly the tomb owner, on the number of birds present under his charge.

The presence of oblique lines originating from the top of the aviary motif has frequently led scholars to date this fragment from the Amarna period, identifying the lines as the rays of the Aten reaching down towards the earth.¹²⁶ One important detail is missing, however, to confirm such an attribution. None of the lines display the hands which are consistently depicted at the extremity of the rays shining from the Aten. Furthermore, the lines solely cover a portion of the fowl yard. The pool, accessed in the center by means of four steps, seems to be blocking these incised lines.¹²⁷ These discrepancies prevent the block from being assigned to the Amarna period. As suggested by A. Klug, it might rather originate from a Lower Egyptian tomb, possibly from Saqqara, dated from the end of the 18th or early 19th Dynasty.¹²⁸

Despite the predominance of religious and funerary themes on the walls of tombs chapels dated from the Ramesside period, one official from the Thinite nome nevertheless chose to include agricultural and marsh pursuits in the iconographic repertoire of his tomb.¹²⁹

¹²⁶ Already in his article discussing the poultry-yard scene from the site of Naga el-Mashayikh, H. Kees (1939, p. 86 n. 1) questioned the accuracy of the dating proposed for the Florence fragment.

¹²⁷ Such a motif has parallels in the representations of ships with elaborate rigging system fanning down from the top of the central mast. See for instance Martin 1987, pl. 11 fragment # 29 (Berlin 12694, dated from the end of the 18th Dynasty). Are the lines alluding to a net covering the yard?

¹²⁸ Klug 2006, p. 76

¹²⁹ For a detailed discussion of this tomb and its iconography, see Kees 1939; Ockinga 1990.

Ty-mi-sb3, buried in the cliffs behind Naga el-Mashayikh,¹³⁰ was *hry s3w zš.w*, “senior head of scribes,” and *imy-r3 pr wr m pr Hnsw*, “chief steward in the domain of the Khonsu.” The west wall of the tomb’s main room showcases activities possibly associated with his position as administrator for the domain of Khonsu. Of particular interest is the representation of the poultry farm (**Figure 76**). The poor quality of both the stone and the carving itself only allows for a tentative description and interpretation of the scenes. Yet, it remains possible to identify some features unique to this tomb, which provide some additional insight into the management of live birds in a temple setting.

Underneath a top register dedicated to fishing and netting birds in the midst of papyrus thickets, two registers depict a range of activities taking place in fowl-yards. The first vignette is characterized by the presence of a circular enclosure surrounded by a wooden fence indicated by crisscross lines, symbolizing branches tightly juxtaposed in a lattice pattern to form a strong defense against predators and to prevent the birds within from escaping. It is filled with waterfowl, organized into smaller compartments separated by internal walls. Water and food is placed at their disposal in troughs and vessels placed in their midst. An official, wearing a long kilt and tunic, is standing guard before the door of this bird pen and may be in charge of the bird farm. He is interacting with two men carrying live birds with them. The man to the left respectfully salutes the official by raising one hand to his forehead, while carrying a duck by its

¹³⁰ Ockinga 1988, p. 1: This ancient cemetery, located at the opening of a wadi and near a temple dedicated to the lion goddess Mehit, is a continuation of the cemetery of Naga ed-Deir. The site was known in ancient Egyptian under the name *Bhd.t i3bt.t*, “the eastern Edfu,” later called Lepidontopolis by the Greeks, in reference to the lepidontus, fish sacred to the local goddess Mehit and the chief god of the nome, Onuris.

wings. His companion uses a yoke to transport two bouquets of birds, all tied by their legs. He already has grabbed one of these bouquets from the end of the yoke and seems to be handing it to the official. In the absence of explanatory texts, it is impossible to ascertain whether these birds had recently been captured in the wild, possibly during the fowling expedition represented right above, and were being delivered to the enclosure by fowlers to replenish the farm stock. It is also possible that these men are poulterers coming to pick up birds, which needed to be slaughtered.¹³¹

The third register depicts a second type of bird enclosure, rectangular in shape in contrast to the previous pen, and including internal walls equipped with doorways to separate the different kinds of birds kept within. Five long-legged birds, two of which are shown crouching, are kept in the top room, while the other seems to be reserved for smaller birds, possibly pigeons as suggested by H. Kees.¹³² The representation of a third room is almost fully destroyed. A faint curved line has led B. Ockinga to propose the presence of a water basin in this section of the enclosure, thus suggesting that this pen would have housed waterfowl, in constant need of a source of fresh water.¹³³ A man is standing in their midst, possibly scattering grain. Standing in front of this enclosure is a scribe actively writing down and recording the arrival or departure of the bird, which a man is holding by its neck. Behind him, more birds are

¹³¹ Ockinga 1990, p. 45

¹³² Kees 1939, p. 88






¹³³ Ockinga 1990, p. 44

shown being brought to the farm, possibly transported in cages. They are placed on the ground before a second scribe, who likewise takes note of this receipt.

Why did each structure exhibit a unique design? What was the purpose of each one? Should we identify one as being a fattening station, while the other, most likely the one depicted at the bottom register with the pool, was a free range enclosure, thus following a similar lay out as the poultry farms of the Old Kingdom? A preliminary analysis of the extant material indicates that the same types of birds were kept in this Ramesside farm: long-legged birds tentatively identified as cranes, waterfowl, possibly doves and pigeons. The unique nature of the scene, the damage state of the relief, along with the absence of captions describing the activities do not allow us to conclusively state who the characters involved in these bird husbandry activities were. As aforementioned, the position of the tomb owner as chief steward in the domain of Khonsu may have implied that he oversaw the management of the bird resources of the god's estate, in order to ensure the proper supply of bird offerings to the local shrines of the moon god.

ii. Textual Evidence

As stated in the Introduction, birds feature in ancient Egypt as being of foremost importance as funerary and religious offerings. Texts not only records the various types of birds desired to be presented to altars and offering tables, but in some cases, they also mention from which source the birds were expected to originate. During the 12th Dynasty, for instance, king Amenemhat II promises to endow the temple of Ptah in Memphis with regular deliveries of

birds as divine offerings.¹³⁴ In particular, 20 *hr*^{c3}-geese were to come from a *hr.t-mw* and 80 ^{c3}-birds from a *zš*. Both these locations are, in each case, simply referred to in the text by a logogram: first, the otherwise unattested hieroglyph , identified by the editors of the text, H. Altenmüller and A.M. Moussa, and by R. Hannig¹³⁵ as being a designation of the *hr.t-mw* facility discussed *supra*; then the sign , *zš*.¹³⁶ Were these two facilities part of the temple of Ptah complex in Memphis? Or are the birds expected to be personal gifts from the king and thus drawn from the palace's poultry farm? The text remains silent on this issue. Moreover, the reading of  as *hr.t-mw* remains hypothetical, as it would constitute the only attestation of the word after the Old Kingdom.¹³⁷ According to H. Altenmüller, the sign represents the floorplan of a structure composed of two large rectangular rooms located near a pool and connected to it via a stream.¹³⁸ Another term for bird enclosure, *h3.t(-r)-mw*, , var. , literally “going down to the water,” is first attested on hieratic papyri

¹³⁴ Farag 1980, p. 77; Posener 1982; Malek and Quirke 1992; Altenmüller and Moussa 1991, p. 7; Altenmüller 2015, p. 22


¹³⁵ Hannig 2006, pp. 173-174

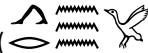
¹³⁶ Gardiner sign G49

¹³⁷ During the Old Kingdom, this term is only attested in the tomb chapels of *Ty*, *K3-gm-ni*, and *Hzi*, at Saqqara (see *supra*). It is possible that the representation of *hr*^{c3}-geese enclosed in a *hr.t-mw* in the tomb of *Ty* (Épron and Daumas 1939, pl. 7) acted as a source of inspiration for the reading of the sign encountered in this fragmentary text.

¹³⁸ Altenmüller 2015, p. 23







dated from the 12th Dynasty and recovered at Illahun¹³⁹ and may be a more suitable transcription for the sign recorded in Amenemhat II's annals.¹⁴⁰ Just like the *hr.t-mw*, the *h3(t)-r-mw* fowl-yard is characterized by the presence of a body of water, towards which the birds could go down to drink and swim. As suggested by D. Meeks, it seems probable that such an aviary was reserved for waterfowl, for which access to water is necessary for their well being and survival in captivity.¹⁴¹ It is therefore likely that the *ht^c3*-geese, raised in captivity and pledged by king Amenemhat II as offerings, were kept in such a facility.

The second provider of birds listed in these annals, the *zš* , is more rarely used in connection with the management of captive flocks.¹⁴² The exact function and design of the *zš*-

¹³⁹ UC32104 vs; UC32145A vs; Collier and Quirke 2006, pp.170-171, 182-183; pBerlin 10221, 6: Scharff 1924, p. 45 and pl. 9. It should also be noted that this type of fowl yard () is also attested in the title *zš n h.3t-r-mw* held by an official residing in Elephantine (Franke 2001, pp. 25-30). The bureaucracy of the Middle Kingdom was thus intent on keeping track of the size of flocks of poultry not only in the Residence, but also in the provinces, even as far south as the entrance to the first cataract.


¹⁴⁰ Müller 1996, p. 27 n. 82

¹⁴¹ Meeks 1976, p. 95

¹⁴² As mentioned *supra*, the  hieroglyph most frequently identifies a type of wetland where wildfowl congregated, thus making this location an ideal destination for fowling expeditions (Wb III p. 483 §12). The potential importance of these areas led to the development in the Old Kingdom of the following titles: ,  : *imy-r3 zš*, "overseer of the fowling pond or overseer of the department of fowling pools" (Jones 2000, pp. 205-206; Al-Ayedi 2006, p. 116), attested during the Old and New Kingdoms;  : *imy-r3 zš.wy*, "overseer of the two marshes" and also  : *imy-r3 zš.wy n šmḥ ib*, "overseer of the double marsh pf pleasure," more common during the Middle Kingdom (Ward 1982, p. 45; Al-Ayedi 2006, p. 118). The reading of the  hieroglyph in this context as *zš*, however, has been questioned by several scholars. P. Montet (1925, pp. 5 and 10; 1931, pp. 174-178), G. Fischer (1985, p. 48), and P. Vernus (2005, p. 68) propose to transliterate it as *iwḥ*, reserving the reading *zš* to another meaning of this sign, namely nest (Wb. III p. 484 §15).

bird facility can only remain conjectural at best at this stage. The term appears in a variety of contexts. On the 15th dynasty Rhind mathematical papyrus, for instance, the *r3*-geese of the *zš* are compared to those kept in confinement. The exercise reads as follows:¹⁴³

ir ʕk.w n r3 4
n htmy.t it mhy 5/16 hnw pw
hrt wʕ n r3 1/64 r3 3

ir ʕkw n r3 ʕk=f r zš ()
it mhy 1/16 1/32 2 r3 hnw 1 pw n r3 1

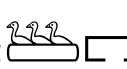
As to the food of 4 *r3*-geese among those cooped up (lit. sealed), it is 5/16 hin measures of Lower Egyptian barley;

Requirements for one *r3*-goose: 1/64 and 3 *r3*-measures.

As to the food for a *r3*-goose which enters into the *zš(.t)*, It is 1/16, 1/32 and 2 *r3*-measures of Lower Egyptian barley, or 1 hin for 1 bird.

While the reason for the possible confinement of some of these birds is not stated, it is clearly not to hasten the geese's weight gain, since they are only given approximately a quarter of the food distributed to the geese said to access a *zš*.¹⁴⁴ Another scribal exercise dated from the

Ramesseid period, pLansing 12,4, further records the different types of bird facilities said to be part of the mansion a scribe named *Rʕi3* built for himself.¹⁴⁵ This large estate included, among

others structures, a *zš sms.w*¹⁴⁶ *hr zri.t*, a "*zš* () of nestlings filled with *zri.t*-

geese." Finally, the use of a *zš* as a provider of birds for temple cults continues to be attested


during the Saite period. On the statue he intended to dedicate to the temple at Elephantine,

Ns-Hr, also known as *Psmṯk-mnh* or *Psmṯk-mnh-ib*, recorded the many favors he performed for


¹⁴³ Problem 83 in Peet 1923, pp. 124-125 and plate 10; See also Gunn 1926, p. 136 for his comments on T. E. Peet's interpretation of the exercise.

¹⁴⁴ Robins and Shute 1987, p. 53

¹⁴⁵ Blackman and Peet 1925, pp. 293-285; Gardiner 1937, p. 110-111; Caminos 1954, pp. 412-419

¹⁴⁶  in Wb. IV p. 142 §7: Die junge Brut des Geflügels.

the cult of the local triad, Khnum, Satis, and Anoukis.¹⁴⁷ He provided bird offerings in the form of *zri.t*- geese and numerous birds (*ipt.w ʕš3.w(t)*). He also states: *kd.n=i zš.t=sn m niw.t tn*, “It is in this city that I built their *zš(.t)*.”¹⁴⁸

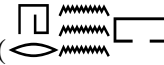
It is undeniable that caution should be taken when comparing these four passages, written over a period extending more than a thousand years. Nuances in the meaning and understanding of the term  *zš* are likely to have occurred during this time span. Nevertheless, it is interesting to notice that these texts share some common features in their usage of the word *zš*. In all instances, the birds kept in the *zš*, in most cases geese, are placed under human control. In the annals of Amenemhat II and on the statue of *Ns-Hr*, the sole purpose of these birds is to be incorporated among the bird offerings destined to be presented before the gods. Furthermore, as indicated in *Ns-Hr*'s inscription, the *zš* is said to be a built structure, most likely with access to water, whether from a natural or artificial source, meant to provide shelter to the flocks of geese he donated to the temple. While it is impossible to evaluate the extent to which the term's meaning changed over time, it seems reasonable to propose that a *zš* was from the start designed as a bird facility in which birds were granted a certain amount of freedom, as suggested by problem 83 in pRhind.¹⁴³ At least from the New Kingdom onwards, this facility may have been reserved for the breeding of *zri.t*-geese, becoming filled with nestlings (*sms.w*) at the end of the breeding season, as alluded to in

¹⁴⁷ Statue Louvre A 90: PM VIII, pp. 408-409; Clère 1951, pp. 149-150; Ziegler 1994, p. 52; Perdu 2004, pp. 260-261

¹⁴⁸ Various translations proposed for the word *zš* in this inscription: Pierret 1874, p. 23 (“oisellerie”); Breasted 1906 part IV, p. 508 (“shelters”); Clère 1951, pp. 149-150 (“basse-cour”); Otto 1954, p. 163 (“Nisthaus”); Spencer 2010, p. 458 (“nesting-house”).

pLansing 12,4. The structure would thus have been specifically designed to keep predators at bay so as to first protect the nesting females, and thereafter their goslings.¹⁴⁹


Bird facilities feature more prominently in the textual record of the New Kingdom, where they are frequently included in religious inscriptions listing the many favors bestowed upon temples by the reigning kings. During the 18th Dynasty, Thutmose III claims in his annals that he filled the god Amun’s aviary, *hrmw*,¹⁵⁰ with flocks of *r3*-geese, so as to provide him with daily bird offerings.

iw shpr.n n=f hm=i idr m r3.w r mh hrmw () *r htp.w ntr n r3 nb*
ist rdi.n n=f hm=i r3 šd 2 m hrt hrw nt r3 nb m htr mn n nhh n it=i Imn (Urk. IV, 745:2-5)

My majesty formed for him flocks consisting of *r3*-geese to fill the *hrmw*-enclosure for them to be daily divine offerings.

Behold, my majesty gave to him 2 fattened *r3*-geese daily as a fixed due for eternity, for my father Amun.

Similarly, during the reign of Amenhotep II, the temple of Khonsu in Karnak benefited from *ht3*-geese drawn from the aviaries attached to the palace.


ht3 I hr n3 n h3mw () *n pr Pr 3 3.w.s.* (Urk. IV, 1342:7)


¹⁴⁹ In Wb III p. 484 §12 a possible translation of the term *zš* as *Geflügelhof* is already proposed. In the first edition of the fragmentary annals of Amenemhat II, *zš* had therefore already been translated as “Freigehege,” i.e. an open air enclosure (Altenmüller and Moussa 1991, p. 7). In the most recent work conducted on this text, H. Altenmüller (2015, p. 23) refined his translation and describes *zš* as being “eine Art von Vogelhaus, in dem die Vogel bestimmte Nester in Beschlag nehmen, die sie anfliegen.” He does not provide, however, the line of reasoning he followed, which led him to this conclusion.

¹⁵⁰ Meeks 1976, pp. 92-95; Vernus 2003, p. 274: *hrmw* is an abbreviated variant of the term previously written as *h3(.t)-r-mw*. In its abbreviated form, the word is written in a variety of ways such as *hrmw*, *h3mw*, *hmy*, *h(y)m.t*. See Meeks 1976, p. 94 for a chronological list of the various writings of the term.

1 *ḥtꜣ*-goose from those of the *h3mw*-enclosure of the palace, L.P.H.


Ramesseid kings were just as eager to provide the altars of the gods with regular bird offerings. At the temple of Ramesses II at Abydos, some of *r3*- and *zr*-geese presented before

the god are specifically said to be drawn from the *mḥwn*-enclosure () of divine offerings.¹⁵¹ At Medinet Habu, on the doorway leading from his palace into his mortuary

temple, Ramesses III recounts how he ensured that poultry-yards (, *hmy.w*) provided bird offerings every day.¹⁵² The two types of enclosures, *h3mw* and *mḥwn*, are also

encountered in pHarris I.¹⁵³ In the estate of Amun located in the Delta, near Pi-Ramessu (modern Quantir), in a locality funded by the king and named *Pr Rꜥ-ms-sw Ḥkꜣ Twnw ꜥ.w.s ꜣ-*

nḥtw,¹⁵⁴ Ramesses III equipped the local temple of Amun with the resources needed for the proper functioning of the sanctuary: workforce, granaries filled to the brim, herds of cattle, and flocks of birds. More specifically:

šnꜥ.w n wꜣꜣ 3pd.w ḥr r3.w ḥpn.w h3mw () *ḥr iry.w-pt,*

“(Its) workshops for the fattening of birds are filled with fat *r3*-geese and (its) *h3mw*-enclosures are filled with denizens of the sky.”¹⁵⁵

¹⁵¹ Mariette 1869-1880 part II, pl. 9; *KRI* II, 534:16. See Haring 1997, pp. 114-115, 119 for a description of the scenes and discussion of the captions accompanying the representations.

¹⁵² The Epigraphic Survey 1932, pl. 115: [...] *hmy.w ḥr mꜣꜥ m mnt*, “The poultry-yards provide sacrifice daily” (Edgerton and Wilson 1936, p. 443).

¹⁵³ Grandet 1999, pp. 77, 112

¹⁵⁴ See Grandet 1994 part II, pp. 43-45 for a detailed discussion of the location in the Eastern Delta of Egypt of this newly founded locality during the reign of Ramesses III.

¹⁵⁵ pHarris I, Section 8,11 (Grandet 1994 part I, p. 232; part II, p. 49)

In addition to also providing the temple of Ptah in Memphis with *šn^c.w n wš3 3pd.w*,¹⁵⁶ facilities specifically dedicated to the force feeding of poultry,¹⁵⁷ he ensured that both this temple and the domain of Ra in Heliopolis¹⁵⁸ have *mḥwn.w* facilities at their disposal, filled with *iry.w p.t*, “denizens of the skies, i.e. birds,” from which offerings would be drawn daily for the *k3* of these deities. While there is a scholarly consensus on the types of birds kept captive in the *h3mw*-enclosure, namely waterfowl,¹⁵⁰ the precise function of the *mḥwn* remains to be determined. The word *mḥwn*, first attested during the Ramesside Period, is mentioned in several instances alongside the *h3mw*-enclosure, suggesting that the two facilities presumably served different purposes. Gathered in the following table are the passages, organized chronologically, which grant us insight into the types of birds maintained in captivity in each facility:

Table 14. List of the passages mentioning the *h3t-r-mw/h3mw/hmy* and *mḥwn* bird facilities

<i>Date</i>	<i>Sources</i>	<i>Facility</i>	<i>Types of Birds</i>
Middle Kingdom	Illahun papyri: ^a <ul style="list-style-type: none"> • pBerlin 10021,6; • UC32104 vs.; • UC32145A 	<i>h3t-(r)-mw</i>	Not mentioned
	Royal annals of Amenemhat II from Memphis ^b	<i>h3t-(r)-mw (?)</i>	<i>ht^c3</i>
2 nd Intermediate Period	pBM EA10057-8: Rhind mathematical papyrus, problem #82 ^c	<i>hmy</i>	<i>r3 šd</i>

¹⁵⁶ pHarris I, Section 48,1 (*Ibid.* part I, p. 288)

¹⁵⁷ These facilities correspond to and most likely replaced at a larger scale the *štb.w* enclosures known to be part of the estates of Old Kingdom high officials (see *supra*). The Old Kingdom facilities depicted on the offering chapel walls of the Memphite necropolis are no longer attested in the written record after this period. As M. Megally (1977, pp. 235-237) observed in his study of pLouvre E. 3326, dated from the 18th Dynasty, *šbt/štb.w* came to designate crates and baskets used for the transport of fruits, in particular dates.

¹⁵⁸ pHarris I, Section 28,2 (Grandet 1994 part I, p. 261)

Table 14, continued.

Date	Sources	Facility	Types of Birds
18 th Dynasty	Annals of Thutmose III (<i>Urk. IV</i> , 745:3)	<i>hrmw</i>	<i>r3.w</i>
	Amenhotep II's offering list from the Temple of Khonsu (<i>Urk. IV</i> , 1341:15; 1342:7)	<i>h3mw</i>	<i>htꜥ3</i>
	Inscription from the tomb of <i>Mri</i> , TT 95 (reign of Amenhotep II; <i>Urk. IV</i> , 1570: 6)	<i>hmw</i>	<i>htꜥ3</i>
19 th Dynasty	pBN 203, reign of Seti I (<i>KRI I</i> , 243:6)	<i>mḥwn</i>	<i>3pd.w</i>
	Temple of Ramesses II at Abydos (<i>KRI II</i> , 534:16)	<i>mḥwn</i>	<i>r3.w</i> <i>zr.w</i>
20 th Dynasty	MH II pl. 115, col. 7 ^d	<i>hmy</i>	Not mentioned
	MH IV pl. 231, col. 37 (<i>KRI V</i> , 218:4-5)	<i>h3mw</i>	<i>kbḥ.w</i>
	pHarris I, section 8,11 ^e	<i>h3mw</i>	<i>iry.w-pt</i>
	pHarris I, sections 28,2 and 48,1 ^f	<i>mḥwn</i>	<i>iry.w-pt</i>
	pLansing 12,4 ^g	<i>mḥwn</i> <i>hmw</i>	<i>r3.w</i>
22 nd Dynasty	Chronicle of Prince Osorkon B ^h	<i>hmw</i>	Possibly <i>r3.w</i> , mentioned in the preceding lines, and <i>sms</i> , mentioned in the same sentence.

^a UC32104 vs; UC32145A vs; Collier and Quirke 2006, pp.170-171, 182-183; pBerlin 10221, 6; Scharff 1924, p. 45 and pl. 9

^b Altenmüller and Moussa 1991, p. 7; Altenmüller 2015, pp. 22-23

^c Peet 1923, pp. 124-125

^d The Epigraphic Survey 1932, pl. 115

^e Grandet 1994 part I, p. 232

^f Respectively *ibid.*, pp. 261, 288

^g Blackman and Peet 1925, pp. 293-285; Gardiner 1937, p. 110-111; Caminos 1954, pp. 412-419

^h Caminos 1958, pp. 66-68; Ritner 2009, p. 357

Based on the extant evidence gathered in this table, it becomes clear that most of the birds mentioned as being kept in a *hmy*, namely *r3.w*-geese and the more generic *iry.w-pt*, “birds,” could also be found in a *mḥwn*. On the other hand, according to the stela of *Mḥ-ḥy* which describes the *mḥwn* Seti II built anew for Amun-Ra at Karnak during the 19th Dynasty, the facility was filled with a wider range of birds: water birds (*r3*, *3pd.w n mw*), Eurasian cranes (*d3.t*), *Columbidae* (*gr-(n)-pt*, *mnw.t*, and possibly *ꜥ33*), and other birds, whose identification has

yet to be verified (*dndn*,¹⁵⁹ *wrd.w*¹⁶⁰). It is unlikely that all these birds were kept in a single aviary for an extended period of time. The representations described previously consistently depict birds as being separated by type, thus preventing potential predation, aggressive behaviors, and conflicts from developing in a heterogeneously crowded fowl-yard.


As mentioned previously, the *h(3)mw* enclosures appeared to be reserved for waterfowl, such as the *r3*- and *ht3*-geese. On the other hand, no such restriction can be assigned to the *mḥwn*-facility, said to house birds favoring different habitats and food sources. I therefore suggest that, during the Ramesside period, *mḥwn* was the designation of a bird farm where all the various wild species of birds brought forth by fowlers were gathered and registered, as recorded in pBN 203.²⁷ Waterfowl would then be sent to a distinct subset of the *mḥwn*, the *h3mw*, where geese and ducks could continue to enjoy access to a source of fresh water. Cranes, doves, and pigeons would be gathered in separate pens serving their distinct needs. With this new interpretation of the two terms in mind, the passage from pLansing 12, 4, *mḥwn*

¹⁵⁹ The bird known as *dndn* has tentatively been identified as a swan (*Cygnus* sp.). See Störk 1976, pp. 57-58; Hannig and Vomberg 1999, p. 216 (“Schwan; Storch”); Vernus 2005j, p. 368. See Houlihan 1986, pp. 50-54 for a discussion of the swan motif in iconography and in the minor arts.

¹⁶⁰ Wb I p. 336 §§ 17-18. ; Hannig and Vomberg 1999, p. 212 (“Ente oder Gans; Sumpfgeflügel”). This bird, most likely a type of waterfowl, was captured by fowlers (pAnast. IV, 3, 9). Some of them had a bill with a golden color (*wrd fnd n nbw*: pHarris I 53b,8). It may have been present in Egypt in large flocks, as pHarris I (53b,9) lists 41,890 of them being offered by the king as a *inw n nb* to the temple of Ptah in Memphis (Grandet 1994 part II, p. 296). According to pTurin CG 54031, 3, 7, *wrd.w* were solely offered as offerings to the god Ptah (*Ibid.* Part II, p. 182 n. 743). In a fragmentary onomasticon dated from the 2nd century AD and originally part of the archive of the Sokneptunis temple in Tebtunis, the *wrd*-bird is mentioned alongside other well-known species of geese, such as the *r3* (greylag) and *trp* (white-fronted goose). It may therefore belong to this avian family (HPTebt. I, Fragment O 2,19: Osing 1998, p. 125 n. 564).

$hmw.w hry r3.w$¹⁴⁵ should thus be understood as referring to a *mḥwn*-bird farm, specifically (or consisting of) its *hmw*-bird pens, being filled with *r3.w*-geese.¹⁶¹


To conclude this study on the terminology employed by ancient Egyptians during the dynastic period to describe poultry farms and aviaries, a few additional terms, albeit rarely attested in the written record, should be mentioned as possibly referring to facilities used to house captive birds.



-  *md.t*: although this term is more commonly, but not solely, associated with cattle,¹⁶² a 6th Dynasty document from the archives of Balat in the Dakhla oasis refers to

¹⁶¹ Both D. Meeks (1976, p. 95) and P. Grandet (1994 part I, pp. 268, 281) have proposed to identify the *mḥwn* as being a dovecote, thus linking this term with the Demotic *mḥwl* and later Coptic *mahoual*, “nest, dovecote,” as suggested by W.E. Crum (1939, p. 208), W. Westendorf (1965, p. 110), and J. Černý (1976, p. 98). While it is possible that the term acquired a more specific meaning as poultry farming came to focus on the more profitable breeding of doves and pigeons, as attested by the identification of dovecotes in settlement layers dated from the Ptolemaic and Roman periods, I do not believe that such was already the case during the Ramesside Period. Temple aviculturists of the New Kingdom continued to maintain in captivity a wide range of birds to satisfy the demands for varied avian offerings, as indicated by the items listed and the bird processions carved on temple walls. Moreover, it should be noted that, to my knowledge, the demotic word *mḥwr3* (on limestone tablet now in the Bibliothèque Nationale de Strasbourg and edited in Spiegelberg 1912b, pp. 32-33), var. *mḥwl* (CDD M, p. 193) does not specifically refer on its own to a dovecote either. On the limestone tablet translated by W. Spiegelberg (1912b, p. 32), the word *mḥwr3* is part of a list of buildings, which includes a *šš3*, possibly a shelter for birds, and *s.t mnt*, “lit. a place for doves, i.e. a dovecote” (Meeks 1991, p. 238 n. 36). The *mḥwr3* thus clearly constitute a type of bird facility distinct from the dovecote. In addition to the expression *s.t mnt*, the compound *mḥwl grmpy*, “bird farm of doves,” is also a demotic appellation of a dovecote (EG p. 585).

¹⁶² Wb II p. 185 §§1, 3: Viehhof, Stall für Rinder; auch für Geflügel. *An. Lex.* 77.159: étable; *Ibid.* 78.1936: entrave (pour bétail).

this term in association with a variety of birds.¹⁶³ On tablet 7233, the birds kept in this

md.t fowl yard were placed under the care of a  *mniw*, “guardian.”¹⁶⁴


-  *šš(š)*: this word, identified on stela Berlin ÄM 8439,¹⁶⁵ dated year 34 of king Amasis, 26th Dynasty, has been proposed as possibly designating some type of fowl-yard or bird shelter, which was offered to Bastet of Bubastis.¹⁶⁶ The person managing the *šš(š)* is possibly called a *fš i špd.w*, “carrier of birds.”¹⁶⁷
-  *ihy*:¹⁶⁸ this term is attested in the 19th Dynasty tomb of *Dḥwty-m-ḥšb* in Thebes (TT 194).¹⁶⁹ On the northern wall of the passage leading to the offering chapel, the tomb owner, represented holding a bouquet of live waterfowl, proclaims his devotion to the god Amun-Ra, promising that birds aplenty – *pšw ḥnnw n rš-š=sn*, “all that flies and that alights

¹⁶³ Pantalacci 2005, p. 90. In a fragmentary passage from HPTebt. I, the term *md.t* is mentioned in connection with the bird *wš.t*: O 2,18, *wš.t n md.t*, “the *wš.t*-bird of the stall” (Osing 1998, pp. 125, 127 n. (g)).

¹⁶⁴ For more information on the use of birds at the site of Balat at the end of the Old Kingdom, see Pantalacci and Lesur-Gebremariam 2009, pp. 252-253; *ibid.* 2012, pp. 296-297. Two more tablets in the archive, n^o 4438 and 4493, further document the exploitation of the wild birds in the region.

¹⁶⁵ Römer 2014, pp. 365-373. The word *šš* features on line 2 of the stela (*ibid.*, p. 368).

¹⁶⁶ This word is not listed in the Wb. D. Meeks (1979, p. 680) proposes to identify this facility as being a dovecote (“pigeonnier”). This term *šš* is also listed in the demotic document dated from the Ptolemaic period and written on a limestone flake alongside a *mḥwrš*, and a *s.t-mnt* (Spiegelberg 1912b, pp. 32-33; see also Meeks 1991, p. 238). See CDD § p. 23 for more attestation of this term, also spelled *šyš*, in the Demotic written record.

¹⁶⁷ The title is written . See Meeks 1979a, p. 650 n. 201 for his interpretation of these signs.

¹⁶⁸ Wb I p. 118 §9: Art Gebäude.

¹⁶⁹ Seyfried 1995, pp. 66-67, pl. 33

- in endless numbers”¹⁷⁰ – would be made available for the god’s *k3. Thy*-structures, which K. Seyfried translates as cages (“Käfige”),¹⁷¹ are said to be filled with these birds for the benefit of the god. This word is later attested on a 26th Dynasty stela commissioned by *P3-drp-sw*, son of *P3-di-sm3-t3wy*, during the reign of Psamtek I.¹⁷² The author of this donation stela claims to have built and offered a building, namely



, *pr n kd-nds*,¹⁷³ to the temple of Hor-Merty in *R3-mḥty*. This building was said to be located *mḥty t3 ihy n B3stt hr rmt ḥw.t-nṯr Hr-mrty Hr*, “to the north of the *ihy* of Bastet, placed under the responsibility of *Hr*, the servant of the temple of Hor-Merty.” The term *ihy* has been translated in turn as being a *repositorium*,¹⁷⁴ a magazine,¹⁷⁵ or an enclosure.¹⁷⁶ Due to the paucity of textual attestations for this term, it is unclear whether a *ihy* was specifically reserved for the storage of birds, as stated in the tomb of *Dḥwty-m-ḥ3b*. Nevertheless, this structure appears to be connected with

¹⁷⁰ D. Meeks (2012, p. 530) proposes to see in this expression a possible allusion to migratory birds, which fly to and fro between their breeding grounds and their winter quarters every year, and alight along the way to rest and gather the energy needed to pursue their journey.

¹⁷¹ Seyfried 1995, p. 67

¹⁷² Stela Berlin 8438: Revillout 1882, pp. 32-33; Brugsch 1884, p. 797; Piehl 1893, pp. 84-86; Chassinat 1917, pp. 180-182; Meeks 1979a, p. 681; Römer 2014, pp. 357-364.


¹⁷³ D. Meeks (1979a, p. 681) reads this phrase “*maison de potier*.”

¹⁷⁴ Revillout 1882, p.33: “*le repositorium de l’embaumeur (?)*”



¹⁷⁵ Piehl 1893, p. 85: “*le magasin de la déesse Bastet*”

¹⁷⁶ Chassinat 1917, p. 180: “*enclos*”

cultic practices, being placed under the responsibility of a member of temple personnel (*rmt ḥw.t-ntr*), and possibly used as a storage facility for divine offerings.

-  *kbh.w*: This term, depending on the context, may designate not only the watery and cool lands located at the edges of the known world,¹⁷⁷ but also the massive flocks of birds, in particular waterfowl, which the ancient Egyptians envisioned living and breeding in these marshlands.¹⁷⁸ During migration, the *kbh.w*-birds visited Egypt during their journey and alighted in the wetlands of the country,¹⁷⁹ thus becoming a desired target for ancient Egyptian fowlers. A third meaning for the term was proposed by F. Ll. Griffith, in his translation of the Nauri decree, in which king Seti I in part listed the favors and exemptions he granted to the temple of Osiris at Abydos.¹⁸⁰

The passage relevant to this discussion reads as follows:

...*hrp.n=f n=f kbh.w* () *m š3.w=f tn.wt=sn mi šc nw wdb m3.tw ḥw.t=f*
mi š3.w n Mh bit hr sg3 bw m wrs (?) hr msi.t 3pd nb nw kbh.w () *shpr.n=f*
*h.t m pr=f*¹⁸¹

... He (i.e. Seti) dedicated for him (i.e. Osiris) the *kbh.w* in his marshes, their numbers being like the sands of the shores. His temple is looked upon like the marshes of Chemnis,

¹⁷⁷ Wb V p. 29 §5-6: the term *kbh.w* is said to be exclusively connected with the cataract regions.

¹⁷⁸ Wb V p. 29 §7 and p. 30 §8. The themes of the *kbh.w*-places and migratory birds have been discussed repeatedly, starting with Edel 1963, pp. 105-115. See also Hornung and Staehelin 1976, pp. 135-137; Goelet 1983, pp. 52-60; Roquet 1985; van der Plas 1986, pp. 80-81, 149-150; Meeks 1990, pp. 38-43; Egberts 1991, pp. 62-67; Grandet 1994 part II, p. 120 n. 503; Vernus and Yoyotte 2005, pp. 15, 348.

¹⁷⁹ In pCarlsberg I (G. IV, 13-34), the *kbh.w*-birds are said to be *n3 3pd.w nty iy r Km.t*, “the birds that come to Egypt” (Lange and Neugebauer 1940, pp. 39-41; Egberts 1991, p. 64 n. 48).

¹⁸⁰ Griffith 1927, pp. 198-199


¹⁸¹ KRI I, 49:1-3

resounding with fattening (?) fowl, with *msi.t*-birds, and with all the birds of the *kbh.w*. He raised *ḥ.t*-birds in his estate.

According to F. Ll. Griffith, the word *kbh.w* is to be understood in this section of the decree as designating the poultry farms built by the king and dedicated to the god Osiris, from which bird offerings could be withdrawn to place on the altar of the Abydene god.¹⁸² O. Goelet, on the other hand, revisited this passage and proposed to assign two distinct meanings to the two occurrences of *kbh.w*, translating the passage thus: "... He has handed over to him the **migratory birds** in his marshes, **their** numbers being like the sands of the shore. He sees his estate like the marshes of Chemnis, crying out with ... and every breeding (?) birds, every bird of the ***kbh.w*-places...**"¹⁸³ O. Goelet's revised understanding of the text is attractive as the suffix pronoun *sn* in *tn.wt=sn* (line 18) can then refer to these *kbh.w*-migratory birds previously mentioned, that fly over and/or land in the Nile Delta in what may have appeared to the ancient Egyptians as countless numbers. In line 19, the *kbh.w*-places described as being the land of origin of birds later seen in the marshes of Chemnis most likely refer to the breeding grounds of migratory birds rather than bird farms, as understood by F. Ll. Griffith, O. Goelet, and K. Kitchen. It is well attested that the *kbh.w* migratory birds were considered to be an

¹⁸² K. Kitchen (1993, p. 47 §14) offers a slightly different translation of this passage, whereas maintaining the meaning of "bird farm" for the word *kbh.w*: "... He has organized for him a **bird farm** in his marshes, their numbers being like the sands of the (sea) shore. His temple is looked upon like the marshes of Chemnis, resounding with fattening (?) fowl and chicks, every bird of the **bird farm**, and roasting (?) fowl are raised for him in his estate."

¹⁸³ Goelet 1983, p. 59

appropriate offering to be presented on the altars of the god.¹⁸⁴ After being captured by fowlers, they were transported to *h3mw*-facilities, as stated in an inscription carved at the temple Medinet Habu:¹⁸⁵ *h3mw ʕpr.w hr htp.w ntr=k kbh.w twt m hnw=sn*, “the *h3mw*-enclosures are provided with your divine offerings and the migratory birds () are assembled inside them.” Yet, I do not believe that this written record clearly proves that the facilities in which the *kbh.w*-birds were raised in captivity were also called “*kbh.w*-places,” as surmised by the scholars mentioned *supra*. Therefore, the suggestion that the word *kbh.w* should be included in the list of terms designating facilities for the care and maintenance of captive birds need to be considered with caution.

iii. Archaeology

The areas and structures where birds were kept in captivity in dynastic Egypt have for the most part left no record in the archaeological repertoire.¹⁸⁶ Such a discovery should come as no surprise as captive fowl were presumably kept in free range pens, surrounded by fencing built with organic material: mudbrick foundation and tree branches, possibly daubed with

¹⁸⁴ *ibid.*, pp. 58-60

¹⁸⁵ Piehl 1886, pl. 149; *KRI* V, 218:5; Goelet 1983, p. 58.

¹⁸⁶ Animal pens have been identified in settlements, in particular at the site of Amarna. Located at the margins of the Walled Village, several sets of animal pens and feeding courts are thought to have been used to raise pigs (Hulin 1986; Boman 1986; *ibid.* 1987; Heidorn 1987). Moreover, among the exquisite wooden models recovered in the tomb of *Mkt-Rc* (TT 280) in the southern Asasif, a remarkably well-preserved model of a cattle stable provides us with insight into the type of facilities designed for the force feeding of oxen (MMA 20.3.9; Winlock 1955; Gilbert 1988). Whether birds were kept at night alongside cattle in stables must remain the domain of speculation at this stage.

plaster, mud, and chaff to consolidate the wall. In all likelihood, netting was also spread over the structure to prevent the birds inside from escaping and to deter predators (mammals and birds of prey) from entering the fowl-yard. These materials were unlikely to survive, even in the favorably dry conditions of Egypt.

New Kingdom iconography, especially the scene depicted on the fragmentary relief Florence Inv. Nr. 5412 described *supra*, suggests that sturdier and more permanent structures were also designed to serve as dwellings for water birds, such as geese and ducks, and also possibly wading birds, in particular ibises. Steps were built to facilitate access to a pond located at the center of the enclosure. While no descriptive text or caption accompanies the scene on this fragment, it is likely that this depiction is a representative depiction of a *h3(t)-r-mw*, literally a “going-down-to-the-water,”¹⁴¹ a befitting name since the birds inside the aviary indeed had to hop down or fly over the stairs to reach the water of the pond.

As aforementioned, the annals of Thutmose III¹⁸⁷ and the stela dedicated by *Mh-hy* during the reign of Seti II¹⁸⁸ attest to the presence of a poultry farm (*mhw*), and in particular an enclosure equipped with a pond (*h3mw*), located inside or in the vicinity of the temple of Amun at Karnak and fully dedicated to providing bird offerings to the altars of the god. According to *Mh-hy*'s commemoration of Seti's II renovation of the farm, the *mhw* was intended to be filled

¹⁸⁷ *Urk.* IV, 745:2-5

¹⁸⁸ Ricke 1937. See www.cfeetk.cnrs.fr/Karnak/?iu=35 for recent photography, transcription, and transliteration of this stela, registered as Inscription KIU 35 in the “projet d'index global des inscriptions des temples de Karnak,” under the aegis of the Team ENiM and the CNRS of Université Paul-Valéry Montpellier III.

with a wide range of birds, with a possible predilection for *r3*-geese, a fowl already promised to the god by king Thutmose III during the previous dynasty. Archaeologists have proposed to locate this poultry farm in the temple precinct of Karnak, specifically within a mudbrick structure excavated on the southern bank of the sacred lake of Amun. Built on a platform overlooking the lake, the extant building is dated from the 29th Dynasty, more specifically to the reign of Psammouthis (393 BC). According to C. Traunecker, the dual function of the edifice identified as a *šn^c ʿ3 w^cb*¹⁸⁹ is reflected in its structure (**Figure 77**).¹⁹⁰ It acted on the one hand as a storage facility, as attested by the presence of a series of eight small rooms located in the southern portion of the building. As a *šn^c w^cb*, it was also dedicated to the preparation of the daily divine offerings needed for the cult.¹⁹¹ C. Traunecker also believes that some of the offerings in fact never reached the altars of the main temple of Amun.¹⁹² Instead, these goods were simply consecrated in the three chapels located at the end of the hallways giving access to storage rooms and were thereafter distributed directly to the temple personnel. Prior to being presented to the statues housed in the sandstone naoi standing in each chapel,¹⁹³ however, the

¹⁸⁹ Most of this structure was built with mudbrick. Stone was used sparingly for the doorjambs and the portico columns located in the northern section of the building (Chevrier 1936, p. 83). The function of the edifice is specifically stated in the inscriptions recovered from doorjambs originally leading into one of the storerooms: *šn^c ʿ3 w^cb r hrp hrp.w-ntr im=f r^c nb*, “the *šn^c ʿ3 w^cb* in which divine offerings are consecrated every day” (Traunecker 1987, p. 149 n. 17).

¹⁹⁰ *ibid.*, pp. 149-150

¹⁹¹ For a discussion on the changing function of the *pr šn^c*, the *šn^c*, and later the *šn^c w^cb* in the management of resources within the temple precincts, see Papazian 2005, pp. 119-189.

¹⁹² Traunecker 1987, p. 158

¹⁹³ Ricke 1937, p. 130: the chapels are dedicated to Amun-Min, Amun, as well as Mut and Khonsu.

divine offerings were prepared in the northern section of the building. This area was itself divided into three sectors:

- The northeast corner of the building was occupied by a slaughterhouse,¹⁹⁴ which was granted direct access to a nearby well.
- A large room located at the northwest corner may have been used to store the consecrated offerings prior to their being sent first to the nearby chapel of Thoth, who in this setting acted as the deity “who satisfies the gods” (*sh̄tp n̄tr.w*), and thereafter to the temple of Amun via a ramp leading to the courtyard of the 9th pylon.¹⁹⁵
- Of special interest is the central courtyard located between these two rooms. Except for a portico held by eight columns on its southern edge, the yard was left open to the elements and was said to house the geese destined to be offered to Amun.¹⁹⁶ This section of the building measured approximately 16.7 m in width and 27.75 m in length, thus leading to an area of 463.5 m². According to modern farming practices, “stocking densities are 1.4 birds per m² of floor area in the goose house and 0.7 bird per m² in the

¹⁹⁴ Alongside cattle, birds were likely slaughtered and processed in this room, as suggested by the presence of a waterfowl in the remarkably well preserved and skillfully crafted tomb model of a slaughterhouse from the tomb of *Mkt-R^c* in Thebes (TT 280), now in the Metropolitan Museum of Art, New York (MMA 20.3.10; Winlock 1955; <http://www.metmuseum.org/collection/the-collection-online/search/>. Last accessed January 14th, 2016).

¹⁹⁵ As suggested by J.-C. Goyon and C. Traunecker (1982, p. 362), “la fonction de cette chapelle (i.e. Thoth’s) placée sur le trajet de descente des offrandes vers le temple était peut-être en relation avec une comptabilité divine de sortie des offrandes, compte tenu du rôle à attribuer à Thoth *sh̄tp n̄tr.w* en tant que dieu qui préside aux offrandes divines surtout à leur entrée vers la salle des offrandes.”

¹⁹⁶ Ricke 1937, p. 128; Barguet 1962, p. 18

yard, in particular if the birds are intended to reproduce.”¹⁹⁷ On the other hand, if the geese are confined in order to be fattened, the number of bird per surface area can be increased from 1.5 to 2 birds. If we assume that only geese were kept inside this aviary and if we takes these estimates into consideration, i.e. 0.7 bird per m² of open space for breeding birds, and 1.75 birds per m² for fattened birds, it appears that the goose pen of the temple of Karnak could have held a flock oscillating between 320 and 800 birds.

This open-air courtyard further exhibits a singular architectural feature first identified by H. Chevrier, when he excavated this area during the 1935-1936 season at Karnak.¹⁹⁸ The French archaeologist noticed that a covered passage built of stone, measuring 85 cm in height and 55 cm in width, linked the northern wall of the courtyard to the southern retaining wall of the sacred lake. This passage has since been identified as being a sloping pathway used by the birds kept in the central courtyard of the *šnꜥ ʿ3 wꜥb* in order to reach the sacred lake.¹⁹⁹ It is tempting to see in this avian causeway, going down from the birds’ coop towards the lake, an architectural illustration of the term *hrmw*,¹⁵⁰ “going down to the water,” used to designate the facility Thutmose III had built for the god Amun at the same time as he was inaugurating the

¹⁹⁷ Rosinski 1999, p. 132

¹⁹⁸ Chevrier 1936, p. 83; *Ibid.*, p. 140: “À 60 mètres environ de l’angle Sud-Ouest [du lac], nous avons mis à jour une sorte de canalisation couverte en pente, partant du niveau des édifices de Psamout et descendant jusqu’au lac.” During the next season, Chevrier continued the excavation of the southern retaining wall of the lake. “Dans ce mur venait se terminer la curieuse canalisation que nous avons découverte l’an dernier. Je la fis continuer et la complétoi jusqu’au nu extérieur du mur, suivant les dimensions de la partie supérieure. À quoi aboutissait-elle et à quoi servait-elle? Le problème reste entier” (*Ibid.* 1937, p. 181).

¹⁹⁹ Ricke 1937, pp. 130-131

digging of the god's sacred lake.²⁰⁰ While too narrow to accommodate the passage of temple workers and too large to be used as a canalization draining the slaughterhouse waste into the waters of the sacred lake, this passage with a slope varying between 10° and 25° was of appropriate dimensions to accommodate the journey of waterfowl to and fro the aviary in the *šn^c* and the sacred lake.²⁰¹ In the evening, a door would close the entrance to the passage and keep the birds safe from predators inside the central courtyard of the *šn^c*. Whereas C. Traunecker has proposed to identify similar Late Period *šn^c w^cb*-structures near the temples of Khonsu and Mut in Karnak, in Medamud and at the Hibis temple in the Kharga Oasis, the covered causeway connecting the *šn^c ʿ3 w^cb* of the temple of Amun to the sacred lake is, to the extent of my knowledge, unique in its kind.

If this reconstruction is correct, one additional aspect to consider is how the care takers of the flock of Amun managed to prevent the birds under their charge from flying away after they had reached the sacred lake. Did they intentionally render the birds flightless, either temporarily or permanently?²⁰² Or were the birds too heavy to be able to take flight? It is also

²⁰⁰ Meeks 1976, p. 93; Goyon and Traunecker 1982, p. 363

²⁰¹ According to H. Ricke (1937, p. 131), the difference in slope is proof that the facility underwent at least two distinct building phases. The original structure, dated from the New Kingdom, incorporated a passageway with a 10° slope going down towards the lake. When the edifice was built anew during the 29th Dynasty, possibly directly on top of the New Kingdom building, the ancient Egyptian architects modified the passage's slope to accommodate the higher elevation of the renovated structure, thus joining the older portion of the covered causeway leading to the lake with a steeper section (25° gradient) starting from the aviary.

²⁰² The common practices still in used today consist of wing-clipping (cutting, removing or trimming the primary flight feathers) and pinioning (permanent amputation of the terminal segment of a wing, consisting of the carpus, metacarpus, and phalanges).

possible that the “safe” environment of their enclosure and the food provided to them on a regular basis motivated these birds to remain voluntarily at the temple.²⁰³

iv. Conclusion

While the management of captive birds is not as richly documented as that of cattle, undoubtedly considered a more prestigious and desired commodity not only for the living but also the gods and deceased Egyptians, it is nevertheless possible to identify various types of structures, which were built for game birds and poultry. They were for the most part made with organic material and, consequently, are no longer visible in the archaeological record. These bird enclosures were incorporated into the iconography of the Old Kingdom, evidence which sheds some light on the methods employed by Egyptian aviculturists to at first maintain wild birds in a captive setting, and eventually develop breeding programs to grow the size of their flock without a complete reliance on wild resources.

- A wide range of waterfowl were kept in aviaries built around a pool, a necessary feature for the survival of this avian category. These facilities were named *ḥr.t-mw* during the Old Kingdom, and *ḥ3(.t)-r-mw* during the Middle and New Kingdoms. It is quite likely such a facility, whose mudbrick wall remains have been excavated near the sacred lake of Karnak. In contrast to its peaceful appearance today, this lake was presumably filled with swimming ducks and geese raised specifically to be offered to the god Amun, adding bird life to a temple complex already crowded with personnel and worshippers.

²⁰³ Evans 2010, p. 81 n. 34

- Selected fowl – cranes, geese, ducks, and doves – were sent to specialized areas of the farm (*štb.w, šn^c n wš3 3pd.w*) to be force fed, in order to hasten the fattening process and render these birds more desirable. Such practices are attested for all the major periods of Dynastic history, both on the large estates of high officials and also on the domains of the country's major gods.

According to the gathered evidence, bird farms were a feature not only of the large estates of royalty and high officials, but also temples, in particular from the New Kingdom onwards. Both representations and texts underscore the large variety of birds kept in the fowl-yards built for the privilege of the elite and the gods. In order to insure the proper functioning of these facilities, a large main d'oeuvre was thus specifically dedicated to tending these flocks. The next two sections will thus present the different types of birds attested in captive flocks, along with the different categories of workers assigned to their care.

b. Composition of the Flocks Kept in Captivity

As previously described, both iconographic and textual evidence clearly attests to the presence of captive flocks of birds in the urban and rural landscapes of Dynastic Egypt. Representations give us a glimpse at the possible structures in which they were kept and consistently show them being provided with abundant food, even if it is given to them at times against their will. Hints as to the variety of birds presumably comprising these flocks can be gathered from the representations of bird processions popular in the iconography of the Memphite necropolis of the Old Kingdom (see *supra*). The names of the birds are carefully

carved beside each category. In a few instances, the symbolic number 1,000 ($\overline{\text{d}}\text{3.t}$, $\overline{\text{h}}\text{3}$) is further written beside each name, revealing that the deceased hoped to be well provided with these different kinds of fowl in his afterlife. The more specific numbers assigned to the birds encountered on the walls of several Saqqara mastabas and in the tomb of *Hm-R^c:Tsi* at Deir el-Gebrawi could theoretically provide some additional information on the composition and size of these captive flocks. This numerical data is gathered in the following table:

Table 15. List of Old Kingdom tombs providing numerical data on the size of the flocks presented before the deceased






Tomb owner	Information provided	Translation and Commentary	Reference
 <i>S3bw</i>	<i>d3.t</i> 1,010 <i>d3.t</i> 1,100 <i>d3.t</i> 1,100 The other birds, <i>z.t</i> , <i>pht</i> , <i>sr</i> , <i>bd3</i> , <i>mnwt</i> , are followed by the number 1,000	Three flocks of Eurasian cranes are said to include between 1,010 and 1,100 birds each.	Mariette 1889, pp. 142-144
 <i>K3-pw-R^c</i>	<i>d3.t</i> 2,000 <i>r3</i> 2,200 <i>trp</i> 2,000	2,000 Eurasian cranes 2,200 <i>r3</i> -geese (Greylag) 2,000 white-fronted geese	Mariette 1889, pp. 178-181
 <i>3ht-htp</i>	Fragmentary drawing of a Demoiselle (?) crane, with the number 1,200	The flock of cranes presented to the deceased included at least 1,200 of them.	Petrie and Murray 1952, pp. 7-8, pl. 7

Table 15, continued.

Tomb owner	Information provided	Translation and Commentary	Reference
 <i>Pth-htp</i> [II]	<p>Led by <i>Klhp</i>, who is the <i>imy-r3 snwt, sn (pr) d.t imy-r3 pr</i>, “overseer of the granary, brother of the funerary estate and steward” are 3 flocks of geese with the following numbers:</p> <ul style="list-style-type: none"> • 121,200 • 121,200 • 11,110; <p>Also one flock of swans with 1,225 individuals; one flock of pintail ducks with 100,002 birds; one flock of smaller ducks with 121,022 birds; and one flock of doves with 111,200 birds.</p>	<p>No bird names are provided. These birds are presented to the deceased as part of the following activity: <i>m33 nd.t-hr 3pd.w inw n hw.wt niw.wt hw.wt k3 nt T3 -Mhi Šm^c n pr d.t</i>, “the viewing of gifts (consisting of) birds, (being) the <i>inw</i> of the <i>hw.t</i>, towns, and <i>hw.t-k3</i> of Lower and Upper Egypt, of the funerary estate.”</p>	<p>Harpur and Scremin 2008, pp. 196-203, 328, 361</p>
 <i>Hm-Rc:Isi</i>	<p>On the badly preserved south wall of the tomb, three birds can still be identified: an Eurasian crane, accompanied by the number 21,342 (?), a <i>r3</i>-goose and a <i>z</i>-duck</p>	<p>The wall paintings being so damaged, N. de G. Davies only provided in his publication the partial line drawing of the crane. The numbers painted above it resemble a graffito, an afterthought, rather than a label intended all along.</p>	<p>Davies 1902b, p. 27, pl. 15</p>

The set of numbers recorded in the tomb of *Pth-htp* [II], have first been interpreted by scholars as being a demonstration of the wealth accumulated by the Memphite high officials at the end of the Old Kingdom.²⁰⁴ According to these massive numbers, *Pth-htp* [II] had owned 589,962 birds on his estates. Even if this count was taking into consideration all the birds owned by this noble during his entire lifetime,²⁰⁵ these effectives would simply be impossible to

²⁰⁴ Mahmoud 1991, pp. 247-248

²⁰⁵ If we assume, for the sake of argument, that *Pth-htp* [II] lived 50 years, he would have owned an average of 11,800 birds a year on his estates, said to be located in both Upper and Lower Egypt. Based on these numbers, *Pth-*

manage in captivity at any given time. The amount of food and the staff needed to take care of the birds would be prohibitive. As proposed by J. C. Moreno Garcia in his review of numbers indicated in Old Kingdom tombs, one should consider these numbers as purely symbolic, especially when the flocks comprised multiples of a thousand.²⁰⁶ The tomb owner, rather than showcasing the exact size of the livestock in his farms, wished to put the emphasis on the incredible wealth he had accumulated during a lifetime spent in the upper echelons of Egyptian society.²⁰⁷ With such massive flocks of birds in his possession, vizier *Pth-htp* [II] undoubtedly wished to be remembered as having successfully reached the height of success.²⁰⁸ The inclusion of numbers labeling the flocks of birds presented to tomb owners, intended to present an idealized view of bird management in elite estates of the Old Kingdom, is an exception, however, rather than the norm.

During the New Kingdom onwards, institutional flocks, specifically organized under the terms *idr*²⁰⁹ and especially *mmn.t*, are listed in offering lists, at times with precise numbers. Unfortunately, the numerical data often fails to include the details that would allow us to gain insight into the size of the flocks being raised for the benefit of the gods. The specific occasion

htp [II] would have dedicated more birds to his funerary cult than Ramesses III offered to the god Amun during his reign, namely 426,995 birds.

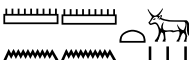
²⁰⁶ Moreno Garcia 1999, pp. 99-104

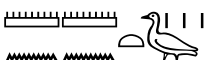
²⁰⁷ *ibid.*, pp. 102-103

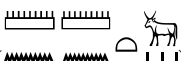
²⁰⁸ Y. Harpur and P. Scremin (2008, p. 328) suggest that “the numbers recorded in Ptahhotep’s scene are incredibly large and might be arbitrary figures supplied by the relief’s designer.”

²⁰⁹ Wb I p. 154 §13. From the annals of Thutmose III: *Urk.* IV, 745:2 (*idr.w m r3.w*; flocks of birds composed of *r3*-geese); 756:1 (*ht^{c3} idr 1,100*: *ht^{c3}*-birds, raised in a flock: 1,100 birds); 756:3 (*ḥ3 idr 5,237*: *ḥ3*-birds, raised in a flock, 5,237). For the translation of *idr* as “raised in a flock” in the last two passages, see Müller 1996, p. 28.

when the birds were offered is not always listed, nor does the inscription state whether the number represent a one-time offering, or rather the total of birds presented over an extended period of time. Nevertheless, these textual references may provide valuable insight into the location where animal husbandry was conducted and the personnel in charge of the animals.

Originally solely referring to herds of cattle, the term *mnmn.t*  came to also be associated with flocks of birds during the New Kingdom.²¹⁰ These institutional flocks known as

mnmn.t 3pd.w  were for the most part the property of the large temples of the country. The Nauri Decree of Seti made special provisions for the *mnmn.t 3pd.w* of the god Osiris.²¹¹ Likewise, during the 20th Dynasty, Ramesses III reminded the god Amun of all the animals he had provided for the divine cult in Thebes:

iry=i n=k mnmn.t  *m Šm^c.w Mhy hr k3.w 3pd.w i3.wt m hfn*²¹²

I assembled (lit. made) for you **herds and flocks** from Upper and Lower Egypt, composed of cattle, **birds**, and small cattle in the hundreds of thousands.

The choice of the term *mnmn.t* to name the flocks of birds in these contexts is of special interest. Well attested as referring to a nomadic group of animals placed under the care of a herdsman, the combination of words *mnmn.t* and *3pd.w* was used to designate flocks of birds

²¹⁰ See Grandet 1994 part II, p. 17 n. 73; Haring 1997, p. 85; Vernus 2005a, p. 18; Meeks 2012, p. 528. See also Bietak 2006 for a discussion of the presence of large institutional herds in the Delta and the men hired to take care of them during the New Kingdom. M. Bietak (2006, p. 132) in particular proposes that the Egyptians hired inhabitants of the Eastern and Western deserts to act as shepherds. Ostrakon Gardiner 86 is also used as evidence that the temple of Amun owned large estates in the Delta, where innumerable herders (in particular *mniw 3pd.w*) were taking care of the temple's livestock (KRI III, 138:5-140:9; Černý and Gardiner 1957, pls. 81-82; Warburton 1996, pp. 143-145).

²¹¹ KRI I, 54:12; Griffith 1927, p. 202

²¹² pHarris I, Section 7,9; Erichsen 1933, p. 9; Grandet 1994 part I, p. 230.

seemingly imparted with a certain freedom of movement.²¹³ Like, and perhaps in the company of, cattle, the birds in question went to find food on land assigned to this effect along the agricultural plain. The poultry management practices implied in the use of the term *mnmn.t* could only be possible if the birds placed under the responsibility of a herdsman were unwilling or unable to fly away. As will be discussed in details *infra* in the section dedicated to captive geese, it is therefore likely that *mnmn.t 3pd.w* were composed exclusively of domestic geese (*Anser anser domesticus*), well-adjusted to the presence of men and accustomed to following their keepers towards the fields where they would be able to freely wander as a flock during the day, only to return to the security of their enclosure in the evening.²¹⁴

During the Late Period, wealthy worshippers manifested their piety towards the major gods of the country by offerings flocks of birds to the cult centers of these deities. In addition to live birds, land was also provided, so as to ensure the sustenance of both the flock and the guardian(s) placed in charge of the birds. Such practice is described on a series of statues and stelae the 26th Dynasty official *Ns-Hr, rn nfr Psmꜥk mnḥ-ib*, deposited in various shrines throughout the country.²¹⁵ Thus, on the back of a basalt statue depicting this military official holding the divine triad of Elephantine, Khnum, Satet, and Anukis, *Ns-Hr* recapitulates the

²¹³ Meeks 2012, p. 528

²¹⁴ Buckland and Guy 2002, pp. 11-12: “[Domestic geese] have very strong flocking instincts and can easily be herded from one area to another (**Figure 78**). It is because of the combination of their memory and flocking instincts that geese will return home as a flock of their own accord in the evening, even after being permitted to range over distances of 5 km or more. This allows the birds to make long trips every day, if necessary, to find their food.”


²¹⁵ Monuments erected by *Ns-Hr* are known from Elephantine, Abydos, Mendes, Hermopolis Parva, and Sais (Spencer 2010, p. 456).

many favors he bestowed upon the temple of Elephantine, with the ultimate wish to not be forgotten.¹⁴⁷ In particular, he reminds the gods of the following:²¹⁶

shd.n(=i) r3.w-pr=tn m dbh.w nw hd k3.w zri.wt ipt ʕ33t

smn.n=i ʕk.w=sn m 3h hnʕ mni.w=sn r nhh hnʕ d.t

kd.n=i zš(.t)=sn m niw.t=tn

I illuminated your chapels with vessels of silver, with some cattle, *zri.t*-geese, and numerous birds. I established their subsistence with a field and their guardians forever and ever. I built their *zš(.t)*-enclosure () in this city.

Another fragmentary statue which *Ns-Hr* possibly deposited at Abydos and dedicated to the local triad also recounts the donation of 120 arouras of land for the maintenance of a flock of *zri.t*-geese and their guardians:²¹⁷

... *ʕk.w n mni.w 3pd.w wnm.t zri.wt st3.t 120*

... the provisions for the guardians of birds, the “feeding land” of the *zri.t*-geese: 120 arouras.

These two autobiographical texts describe the provisions *Ns-Hr* made to these temples to ensure that they would, in theory, be provided in perpetuity with flocks of *zri.t*-geese.²¹⁸ It is not specifically stated the exact purpose these geese served. It is likely that some were offered and sacrificed to the altars of these gods and possibly also before the statue of *Ns-Hr*; others may have been exchanged for goods needed by the temples; finally, they could have also been

²¹⁶ Jansen-Winkel 2014, pp. 408-410

²¹⁷ Vernus 1991, p. 244

²¹⁸ Donation Stela Ny Glyptotek ÆIN 1037, erected by this same *Ns-Hr* in Mendes, records the donation of 240 *zri.t*-geese and “their provisions in this town” (*ʕk.w=sn m dmi.[t] pn*), namely Mendes (Meeks 1979, p. 678 (Stele 26.4.4a); Christensen 1983, pp. 9-10). This number may shed some light of the size of the flocks also offered by *Ns-Hr* in Elephantine and Abydos.

distributed as salary to temple personnel via the reversion of offerings. These flocks, comparable to the *mnmn.t 3pd.w* attested during the New Kingdom, were assigned guardians, *mniw*, and land, probably on which the *mniw* led them to feed. The second fragmentary inscription refers to the land assigned to care for the geese as being a *wnm.t*. Originally referring to the food set aside to feed geese,²¹⁹ it came to be understood during the Late Period, by metonymy, as the “feeding land,” either providing the greens needed to feed the captive geese, or the land onto which the geese were laid to graze, or both.²²⁰

Contrary to the herds of cattle owned by large institutions and despite their similarities, as demonstrated by their sharing the term *mnmn.t*,²²¹ it is unclear whether flocks of birds regularly underwent an official count, an activity known as *ir.t irw*.²²² Such a practice conducted on the birds owned by these institutions and raised in captivity throughout the country is only attested in two instances, both dated from the 18th Dynasty. In his now lost Theban tomb (TT

²¹⁹ Wb I p. 321 §18: unpublished document in the Egyptian museum, Cairo, dated from the New Kingdom, pCaire

Wb. N^o κ, mentions some grain that is reserved as food for a flock of geese:



, *wnm.t=sn*

10(?) *btj h3r*: “their food, 10(?) sacks of emmer.” See Spalinger 1987, pp. 302-303 for a brief discussion of the grain counting system implemented in pCaire Wb. N^o κ.

²²⁰ Vernus 1991, p. 246 n. i


²²¹ As reviewed in S. Allam’s study of the legal status of animals in ancient Egypt, cattle counts, which can be traced back to the 2nd Dynasty on the Palermo Stone, were most likely originally organized for the benefit of the central administration and royal palace through the levy of taxes (Allam 1988, p. 52). Such taxes would only apply to the institutional herds. However, based on the evidence he gathered, S. Allam (*Ibid.*, p. 61) does not believe that taxes were applied on the private ownership of animals.

²²² The practice of counting heads of cattle known as *ir.t irw* is most frequently attested as captions in a funerary setting from the 4th Dynasty to the Ramesside period. It can be compared to similar expressions such as *ir.t tnw.t* and *h3sb tnw.t*, i.e. “to count” (*Ibid.*, pp. 53-54).

C8), *Nht*, bearing the title of *imy-r3 hmy*, “overseer of the fowl house,” claimed performing the following tasks:

Shmḥ ib ir.t bw nfr ir.t irw m 3pd.w n htp.w-nṯr n Imn šsp 3pd.w nw T3 Mḥy in imy-r3 hmy...
“Rejoicing at doing something pleasant, performing the *ir.t irw* in birds of/for the divine offerings of Amun, and receiving the birds of Lower Egypt by the overseer of the fowl house...”²²³

Also buried in the Theban necropolis (TT 93), *Kn-Imn* in his position of overseer of the cattle of

Amun ( *imy-r3 mnmn.t n Imn*)²²⁴ mentioned that he conducted the count of cattle and birds,²²⁵ most likely on all the properties comprising the Estate of the god Amun. While not providing details on the actual size of Amun’s flocks, these two inscriptions testify to the desire of the temple administration to keep track of these various flocks maintained on the god’s property.

A letter recorded on oGardiner 86 specifically lists the many employees of this same Estate of Amun in Thebes, who had been assigned to work on properties owned in the Northern district, i.e. the Delta.²²⁶ According to this document dated from the reign of Ramesses II, the temple of Karnak employed 22,530 *mnw 3pd.w* working in the Delta, each person caring for 34,230 birds.²²⁷ This unrealistically large number of birds to be maintained in

²²³ Champollion 1844, p. 532; Manniche 1988, p. 58

²²⁴ Davies 1930 part I, p. 11; *Ibid.* part II, pl. 8 (col. 33); See Al-Ayedi, pp. 14-16 (#47) for attestations of this title during the New Kingdom.

²²⁵ *Urk.* IV, 1394:3.... *ir.t irw m k3.w 3pd*, “performing the *ir.t irw* in cattle and birds.”

²²⁶ *KRI* III, 138-140, translated in Wente 1991, pp. 118-119 and Warburton 1996, pp. 143-145.

²²⁷ *KRI* III, 139:16-140:1

captivity under the care of one person has led scholars to propose that this document may have been a scribal exercise written on an ostrakon by a student.²²⁸ Regardless of the exact nature of this document – administrative correspondence or scribal exercise – it strengthens the notion that, during the New Kingdom, some of the poultry offered to the god Amun in Thebes was raised in the north of Egypt, the receipt of which in Thebes was placed under the responsibility of the overseer of the fowl house, as described above in the tomb of *Nht*. The temple of Amun at Karnak continued to gather birds throughout the country during the Late Period. Thus, during the early Saite period, a priest of Amun-Ra is said to have been sent to Oxyrhynchos in the Fayum, “for the pasturing of cattle and birds which came forth from the nome.”²²⁹ It is probable that this priest was in charge of collecting the animals (both cattle and birds), which were due as rent for the temple of Amun, and bring them back to Thebes.

Whether under the designations of *idr*, *mmn.t 3pd.w*, or simply labeled as *3pd.w*, flocks of birds were crucial to the functioning of temples, an importance underscored by their frequent presence in the iconography and extant written material. However, these passages remain elusive on the day-to-day running of these establishments and on the care given by ancient Egyptian aviculturists to the various birds under their charge. Complementing the ancient Egyptian data with information drawn from ornithology, aviculture, and poultry husbandry, I will examine in turn the main types of birds exploited and maintained in captivity



²²⁸ See Helck 1960, p. 307: if we were to take these numbers at face value, the temple of Karnak would keep 771,201,900 birds in captivity in the Delta alone!

²²⁹ pRylands 9, VIII 4-5: Griffith 1909, p. 82; Vittmann 1998 part I, pp. 32-33 (transcription) and pp. 138-139 (transliteration and translation).

by ancient Egyptians, from the tall and imposing cranes to the commonplace doves and pigeons. I will also evaluate the evidence provided by the ancient Egyptians themselves regarding the domestication of the greylag goose (*Anser anser*), the ancestor of all domestic geese in farmyards today.

i. Cranes



During the Old Kingdom, when presented to the tomb owner, the birds gathered from his estates are traditionally organized by size. The tall cranes, with their long neck and legs, and their pointy bills, thus always lead the flock (**Figure 28A**). They are often represented as being as large as or even sometimes larger than their keepers who are equipped with a staff to direct the birds forward and avoid stragglers.²³⁰ Two species of cranes are known to migrate through Egypt in the autumn and spring, both of which are well attested in the Egyptian record:

-  *d3.t*:²³¹ Eurasian crane (*Grus grus*; **Figure 16A**)
-  *wdr*:²³² Demoiselle crane (*Anthroipoides virgo*), readily differentiated from its relative by ear tufts and elongated breast feathers (**Figure 16B**).

²³⁰ For a complete list of Old Kingdom scenes depicting “cranes in a procession of birds,” see the OEE Scene Detail 7.1.6 (http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006/. Last accessed January 19th, 2016).

²³¹ Wb V p. 516 §9-13; Houlihan 1986, pp. 83-86; Goodman and Meininger 1989, pp. 224-226; Mahmoud 1991, pp. 39-44

²³² Wb I p. 407 §14: identified as the Eurasian crane (“der graue Kranich” (*Grus grus* L.)); Houlihan 1986, pp. 86-88; Mahmoud 1991, pp. 45-46

- Two additional names are attested for cranes:  *g3*²³³ and  *r-w*.²³⁴ Based on the representation of a flock composed of these four different types of cranes in the tomb of *Ty* (**Figure 79**),²³⁵ both the *g3*- and *r-w*-cranes appear similar in shape to the Eurasian cranes (*d3.t*) surrounding them. Since both the male and female Eurasian cranes do not exhibit sexual dimorphism and look identical, the two terms are unlikely to differentiate the two genders. It is therefore possible that *g3* and/or *r-w*²³⁶ designate juvenile Eurasian cranes that have yet to exhibit the typical field marks of their parents, i.e. the overall slate grey color, the bare red crown, the white markings starting from the corner of their eyes, and the black neck and forehead. In its stead, they lack the distinct patterns on their head, which is fully feathered. Their overall plumage also has a brown hue (**Figure 80**).²³⁷ These chromatic details may have originally been indicated on the relief from the tomb of *Ty* with paint, the pigments of which have now vanished.

The possibility that the *r-w*-bird was considered by the Egyptians to be a certain type of *d3.t*-crane is further illustrated in the Abusir tomb of *Pth-šps*. On the south wall

²³³ Wb V p. 149 §8: mistakenly identified as a type of heron (“Art Reiher”)

²³⁴ Wb I p. 170 §3

²³⁵ Wild 1966, pl. 169

²³⁶ According to O. Mahmoud (1991, pp. 42- 43), the three cranes *d3.t*, *r-w*, and *g3* are all types of Eurasian cranes. He suggests that the *r-w*-crane may be a designation of the male bird, while the *g3* may be the juvenile. As for R. Hannig and P. Vomberg (1999, p. 211), they propose to identify the *r-w*-crane as being the juvenile Eurasian crane: Graukranich-Jungvogel (*Grus grus* juv. mit anderer Färbung). They in turn identify the *g3*-bird as simply being a crane (Kranich) (*Ibid.*, p. 216).

²³⁷ Juvenile cranes molt for the first time at the beginning of their second year (Boessneck 1956, p. 224).

of room 4 of this mastaba, a herd of cranes is advancing in order to be presented to the tomb owner (**Figure 81**).²³⁸ Leading the group is a *d3.t*, Eurasian crane, which, according to M. Verner, “has red legs and beak, the feathers are light blue.”²³⁹ It is followed by a crane depicted with similar features and labeled *d3.t ʿiw*, the ʿiw Eurasian crane. It too has red legs and beak. It differs from the previous crane by having a yellow-grey plumage.²⁴⁰ Eurasian cranes, whether juveniles or adults, do not have red, but rather black legs. Such a bright color choice is most likely a figment of the artist’s imagination. On the other hand, juveniles’ feathers are characterized by a pale yellowish brown tint on the edge.²⁴¹ While being creative with the color of some of the birds’ anatomical features, the painter working on the birds may have attempted to convey the presence of first-year Eurasian cranes, flying and resting with adults of their kinds, by attempting to represent the distinct tint of their plumage.²⁴²

The relative abundance of the Eurasian and Demoiselle cranes in modern Egypt is reflected in ancient Egyptian representations. Eurasian cranes are by far the most frequently

²³⁸ Verner 1977, p. 266, fig. 66, pl. 39

²³⁹ *ibid.*, p. 77

²⁴⁰ P. Montet (1925, p. 142) provides different colors for the *d3.t ʿiw* in this tomb. According to him, the bird’s plumage was light blue, and its legs were dark blue. If P. Montet indeed had had a chance to observe the colors in the tomb of *Pth-šps*, the different descriptions given by the two scholars is further evidence of the changes experienced by the paint pigments during the fifty years separating the two publications.

²⁴¹ Johnsgard 1983, p. 229

²⁴² See Wassell 1991, pp. 121-122 for a discussion on the various colors used by Egyptian artists to render the plumage and other features of the cranes. She too concludes that the ʿw and g3 are probably subsets of the Eurasian cranes.

represented cranes, just as they visit Egypt in larger numbers than the Demoiselle cranes during migration.²⁴³ While a few tufted demoiselle cranes can be identified in the flocks of cranes maintained in enclosures and being force fed, the Eurasian crane is the species of *Gruidae* best attested in captive setting in ancient Egypt.

At the beginning of his career, Zooarchaeologist J. Boessneck had investigated the possibility of captive breeding programs of cranes in ancient Egypt.²⁴⁴ He especially pondered on the suggestion made by R. Meinertzhagen,²⁴⁵ namely that the 18th Dynasty tomb of *Pwy-m-Rc* (TT 39) included the depiction of not only adult cranes but also of their young (**Figure 82**).²⁴⁶ Close examination of the scene indeed reveals that, behind two Eurasian cranes, four smaller versions of the tall birds are depicted over two registers preceding a variety of ducks. These seemingly small cranes are represented with the same long and straight bill, along with the bushy tail characteristic of ancient Egyptian depictions of *Gruidae*. While it is impossible to validate or refute Meinertzhagen's suggestion, J. Boessneck remained a proponent of the idea that cranes were held in ancient Egypt as semi-domesticates, i.e. as wild animals living in a captive state under human control.²⁴⁷ Breeding most likely did not take place in such a setting. Captive flocks would be replenished during the bi-annual migration of the birds. Young birds

²⁴³ Goodman and Meininger 1989, pp. 224-227

²⁴⁴ Boessneck 1956

²⁴⁵ Meinertzhagen 1930 part I, pp. 67-68

²⁴⁶ Davies 1922 part I, pls. 12, 16

²⁴⁷ Boessneck 1956, pp. 223-224

born during the year and undertaking their first migration south could have been easier targets in the autumn. Less experienced than their parents and unaware of all the dangers to avoid, they could have fallen prey to the traps set up by ancient Egyptian fowlers. Their brownish plumage and eyes, distinct from the general grey appearance and red eyes of the adults, could have been reason enough for ancient Egyptians to grant them their own name. It should be noted, however, that by the time they begin their migration, the juvenile cranes are full grown, albeit with a plumage different from that of their elders.

The recent efforts undertaken by aviculturists to protect endangered species of cranes and restore wild populations have contributed to a better understanding of the behavior of these birds in captivity and the optimal conditions needed for a successful breeding program.²⁴⁸ Whereas cranes can readily adjust to a captive setting, especially if their needs for food, water, and shelter are met, they frequently display aggressive behaviors, both against other birds in a flock, but also against their human keepers.²⁴⁹ Cranes are for the most part monogamous and will pair with the same mate for many years. "Until the birds have mated, they are potentially dangerous to each other; once paired, they are inseparable."²⁵⁰ Breeding enclosures therefore need to be designed for pairs only and be separated from the rest of the flock to prevent

²⁴⁸ For more information on the global efforts conducted to protect cranes, see <https://www.savingcranes.org/species-field-guide/> (last visited on November 3rd, 2015).

²⁴⁹ Swengel and Carpenter 1996, p. 36; Holland 2007, p. 461

²⁵⁰ Archibald 1974, p. 148

fighting from taking place between males protecting the nest and brooding females.²⁵¹ Wild cranes usually lay one to two eggs annually, a number which can be increased if eggs are removed from the nest and incubated artificially.²⁵² Even the two chicks, after hatching, display aggression against each other during the first few days. To avoid siblicide, each parent initially cares for one chick, remaining a few meters distant from each other. This sibling rivalry lessens after a few days.²⁵³

The noisy flocks of cranes during migration have attracted human populations around the world for millennia. Some wished to capture the birds to keep them as pets, while others targeted them for their flesh. Despite this long history of human interactions, cranes have never been fully domesticated.²⁵⁴ The various organizations dedicated to saving threatened species of wild cranes from extinction focus exclusively on captive management and breeding; yet they face constant challenges in order to successfully raise in captivity new generations of birds. No efforts are spared to provide the adults with as little disturbance as possible during the breeding season, so as to promote pairing, nest building, and egg laying. One can therefore imagine that establishing a successful breeding program to lessen reliance on wild resources would have required significant experimentation time on the part of ancient Egyptian

²⁵¹ Personal communication with Bryant Tarr, Curator of Birds at the International Crane Foundation, Baraboo, WI (USA). For more details on the various measures to take to stimulate breeding, see Swengel and Carpenter 1996, p. 34.

²⁵² Archibald 1974, p. 152

²⁵³ Holland 2007, p. 463

²⁵⁴ Swengel and Carpenter 1996, p. 34; Cocker and Tipling 2013, pp. 183-193

aviculturists. The need for large enclosures for single breeding pairs would have significantly increased the size of the poultry farms designed in ancient times. Ancient Egyptians were also well aware of the aggressive behavior of these birds, as demonstrated by the cranes being frequently represented with their bill tied to their neck, or with their legs being folded against the abdomen, being wrapped in a netted bag to avoid scratching and pecking (**Figure 51**).²⁵⁵

While we cannot discount the possibility of opportunistic breeding taking place in ancient Egypt among the cranes held captive, it remains unlikely that ancient Egyptians developed breeding programs to supply temples and funerary establishments with the birds needed to satisfy their needs. Such programs would have required an abundant and specialized workforce, which has for the most part not been identified in the written record (see *infra*). Although cranes may have been a highly desired fare, they probably rarely featured as ritual offering or as food,²⁵⁶ a suggestion which could account for the meager skeletal remains of *Gruidae* recovered thus far in archaeological assemblages (see Appendices 4-5). Their ease at adjusting to captive life when trapped young, however, may indicate that they could have been an ideal feathered ornament

²⁵⁵ The representation of cranes tightly held in the arms of offering bearers or restrained in bags specifically designed for them is attested in the Memphite necropolis and in the provinces during the entire span of Dynastic Egypt, especially from the Old to the New Kingdom (Schüz 1966; Stupko 2010). For the Old Kingdom, see Dunham and Simpson 1974, fig. 4; Badawy 1978, fig. 48; Der Manuelian 2009, fig. 13.55. For the Middle Kingdom, see Newberry 1893a, pl. 17; Newberry 1893-94, pl. 34; Couton-Perche 2013, pp. 308-309. For the New Kingdom, see Davies 1923 part II, pl. 56; Houlihan 1986, p. 87, fig. 123. See also Swengel and Carpenter 1996, pp. 36-41 for the safety precautions to take when handling and transporting cranes.

²⁵⁶ While cranes feature in the representations of offering bearers delivering goods to the altars of the gods or the offering table of the deceased for most of Egyptian history, as mentioned above, they nevertheless cease to regularly feature in offering lists after the Old Kingdom. The elaborate and varied lists preserved on pHarris I represent an exception, since Ramesses III is said to have delivered 150 living Eurasian cranes (*d3.w(t) ʿnḥi*) at Medinet Habu at the occasion of various festivals (pHarris I (20b,4); Grandet 1994 part I, p. 250; *ibid.* part II, p. 97 n. 387). See Appendix 1 for lists of birds featuring as offerings in Dynastic Egypt. This is not to say, however, that ancient Egyptians ceased to attempt capturing them or to include them in their diet. I nevertheless believe that they became a delicacy rather than a common dish.

or pet in zoological gardens of the elite, as may have existed in the Northern Palace of Amarna (Figure 74).²⁵⁷

ii. Geese

Waterfowl are the most numerous migrants flying over Egypt, stopping, or overwintering in the wetlands of the country. It should therefore come as no surprise that they were the most frequent birds mentioned in the written record and represented in farmyards. Of all the palearctic geese known to migrate south in the fall, only the white-fronted goose (*Anser albifrons*) is currently known to winter in the country, albeit in very small numbers.²⁵⁸ Yet, several types of geese, most especially members of the *Anser* genus also known as ‘true’ geese,²⁵⁹ commonly figure behind the Eurasian and Demoiselle cranes described previously in bird procession scenes of the Old and Middle Kingdom, a probable testimony to larger numbers of migrating geese visiting Egypt in ancient times. True geese can be readily distinguished from the other types of waterfowl present in bird processions, even in the absence of names or colors. A true goose is typically represented as a plump bird, with a thick and long neck along with a large head and thick straight bill. More refined carvings, as is still visible in the tomb of


²⁵⁷ Frankfort 1929, pl. 10; Houlihan 2001c, pp. 531-533. Personal communication with Bryant Tarr Curator of Birds at the International Crane Foundation: “There is an ancient tradition in Pakistan of capturing live cranes, clipping their flight feathers, and keeping them in the courtyards of homes as sort of feral pets (Figure 64). Large groups of Demoiselles are commonly kept this way, as are some Eurasian (common) Cranes.”

²⁵⁸ Goodman and Meininger 1989, pp. 153

²⁵⁹ Four species of *Anser*-geese are of relevance to this research: the bean goose (*Anser fabalis*); the white-fronted goose (*A. albifrons*); the lesser white-fronted goose (*A. erythropus*); and the greylag (*A. anser*). Apart from the white-fronted goose, a winter visitor to Egypt, all the others are accidental visitors, scarcely seen in the country.

Ty,²⁶⁰ include details of the plumage in the form of striations on the neck and head to depict the black vertical stripes on the nape and neck of *Anser* geese (**Figure 83**). The birds' barred chest and sides are indicated by scalloped markings in the raised relief. However, in the absence of additional information, either pictorial or textual, it is impossible to readily say which *Anser* species is depicted, as they are all similarly, if not identically, carved.

Geese are known in ancient Egyptian under a variety of names, some of which continue to elude precise identification:

1.  ²⁰⁰ and  ²⁶¹

The geese bearing these names can be both associated with the greylag goose (*Anser anser*) (**Figure 84**).²⁶² The two names are found interchangeably to identify the goose desired as a funerary offering in the lists presented in a tabular format in tombs (See *supra*, Introduction). Similarly, the procession of geese presented to the deceased is led by either a *r3* or a *sr(w)*-goose.²⁶³ In extant poultry-yard scenes, however, only the *r3*-goose is featured. It is represented

²⁶⁰ Épron and Daumas 1939, pl. 25, bottom.

²⁶¹ Wb IV p. 191 §16-19; Mahmoud 1991, pp. 47-52.

²⁶² As aforementioned, the identification of both these names with the greylag goose was first proposed by J. Boessneck (1960). It has since been questioned by some scholars who associate the *r3*-geese with the bean goose (*Anser fabalis*) and the *sr*-goose with the greylag (Vernus 2005I, p. 398). R. Hannig and P. Vomberg (1999, pp. 213, 215), on the other hand, have associated these two names with two different subspecies of the greylag goose: they propose to identify *r3* with the Western greylag goose (*Anser anser anser*) and the *sr* with eastern greylag goose (*Anser anser rubrirostris*), readily recognized by the bright pink hue of its bill and feet. I have opted to follow J. Boessneck's suggestion; yet, because of the variance in opinion, I will most frequently refer to these birds by their Egyptian name.

²⁶³ For a complete list of "geese in a procession of birds" during the Old Kingdom, see the OEE Scene Detail 7.1.7 (http://archaeologydataservice.ac.uk/archives/view/oe_ahrc_2006/. Last accessed November 23rd, 2015). To the

in the *štb* being force fed,²⁶⁴ or in the *hr.t-mw*, feeding on grain²⁶⁵ and swimming in the central pond.²⁶⁶ It is therefore likely that the term *sr(w)* was imbedded with a deeper religious meaning, and may have thus been favored by some scribes in funerary and ritual inscriptions.²⁶⁷


Further evidence that greylag geese were kept in captivity is provided by the frequent mention of *r3 šd*, “(captive) fed, i.e. fattened *r3*-goose”²⁶⁸ or *r3 hpn*, “fattened *r3*-goose,”²⁶⁹ in offering lists. The value of the wild goose was thus increased by having spent time in captivity, where it benefited from rich and abundant food. As a dish, a fattened goose would thus have a tastier flesh and be a more prestigious offering to present to the gods and deceased relatives. As discussed above, the fat (*ꜥd r3*) was also a luxury and multifunctional commodity.

extent of my knowledge, only one tomb, that of *Ny-ꜥnh-Hnm* and *Hnm-htp*, includes both names *r3* and *sr* as captions of the geese presented to the tomb owner (**Figures 85A-C**; Harpur and Scremin 2010, pp. 495-497). Are we then dealing with two sets of artists? In most instances, only one of these designations is consistently used in all the texts carved on the walls of the offering chapel.

²⁶⁴ Harpur 1986, fig. 6; Harpur and Scremin 2006, p. 496; Newberry 1893-94, pl. 22


²⁶⁵ Kanawati and Abder-Raziq 2000, pl. 49

²⁶⁶ Harpur and Scremin 2006, p.496

²⁶⁷ In the 5th Dynasty scene recorded in LD II 105b, dead geese are taken from the fowling site to be presented as *wšn.w*, “sacrificial offerings,” to the deceased. One of them is specifically labeled as being a *sr*. It is also featured on multiple occasions in the Pyramid Texts, where it acts as a divine messenger *par excellence*. The *sr*-bird does not lose this special role during the New Kingdom: four *sr*-geese were released to the cardinal points to announce the arrival of a new king on the throne of Egypt (Graindorge 1996, p. 90). A vignette painted in the Book of the Dead papyrus belonging to the priest *Nb-hpt*, dated from the 20th Dynasty, showcases a *srw*-bird unrelated to the *Anseridae* discussed in this section (papyrus Turin inv. Cat. 1768; Aufrère 1995). In its stead, as suggested by S. Aufrère (1995, p. 117), the tall and long legged bird shown behind the deceased *Nb-hp.t* possibly belongs to the *Gruidae* family. Rather than being a name of the bird, it is possible that the caption  (?) should be understood as an epithet describing the bird, perhaps “the one that foretells (?)”

²⁶⁸ Wb IV p. 565 §14; Hannig 2003, p. 1325 entry # 33801. See *infra* for a discussion of the possible meanings of *šd*.

²⁶⁹ pHarris I 4,7; 8,11; 16b,1; 27,6; 38,4; 65c,3; 71b,11 (Grandet 1999, p. 135)

2.  *trp*²⁷⁰

The bird known under this name can unquestionably be identified as being the greater white-fronted goose (*Anser albifrons*) (**Figure 86**).²⁷¹ One of the best examples of this goose's depiction and accompanying name is encountered in the tomb of the 6th Dynasty high official *K3.i-m-ḥ* at Giza. Having remarkably survived for more than 4,000 years, a painted row of birds destined for the *k3* of *K3.i-m-ḥ* includes in particular two *trp*-geese, distinguished from the preceding *sr*-goose by the presence of the characteristic white patch at the base of the bill (**Figure 87**).²⁷² In poultry-yard scenes, it is typically represented in the same facilities as the *r3*-goose: it is featured both in the *štb*²⁶⁴ and *ḥr.t-mw*²⁶⁶ enclosures of poultry facilities attested in Memphite offering chapels during the Old Kingdom.

3.  *ht3*²⁷³

Despite featuring frequently in the historical record, it has remained impossible to precisely identify this waterfowl. Represented in the *ḥr.t-mw* enclosures of the poultry farms incorporated in the funerary iconographic repertoire of the tombs of *Ty* and *Hzi*, in Saqqara, the bird can readily be recognized as a true goose, displaying all the field marks of the species from the *Anser* genus: large head with stout bill; relatively long neck and thick body; markings

²⁷⁰ Wb V p. 387 §§6-9; Boessneck 1960, p. 195; Mahmoud 1991, pp. 52-56; Hannig and Vomberg 1999, p. 216

²⁷¹ Houlihan 1986, pp. 57-59


²⁷² Junker 1940, pl. 7

²⁷³ Wb III p. 342 §1: *ḥt-ḥ3*; Hannig and Vomberg 1999, p. 214: *ḥt-ḥ3* (*ḥtḥ3*). O. Mahmoud (1991, p. 114 n. 194) recommends that the word should be read as a quadriliteral noun, and not as *ḥt-ḥ3*, as it had been previously suggested.

on head, chest and abdomen (**Figure 83**).²⁷⁴ After being captured with a net in the wild, as depicted in the Chamber of Seasons of Niuserra's Sun temple,²⁷⁵ these geese were thereafter kept in poultry farms, enjoying some freedom in the *hr.t-mw/h3mw*,²⁷⁶ or being force fed in the *štb*.²⁷⁷ During both the Middle and New Kingdom, *ht^c3*-geese, along with the *š3*-bird, are in several instances the main bird offerings listed to be delivered to the altars of gods.²⁷⁸ In some lists, they are specifically described as being *šd*, "reared and/or fattened," and *idr*, "reared in a flock." Is the latter term referring to birds specifically born and raised in captivity rather than birds caught in the wild? Or should we rather understand that a *ht^c3 šd* was *individually* fattened and perhaps force fed, while the *ht^c3 idr* was kept and fed as a *flock*, possibly in a *h3mw*, the origin of the bird in the latter suggestion, whether from the wild or a captive breeding program, being irrelevant? The available evidence does not allow us, at this stage, to conclusively answer these questions.



²⁷⁴ Houlihan 1986, pp. 55-56

²⁷⁵ Berlin ÄM 20038: Von Bissing 1955, pl. 15, fragment 266 (line drawing); Edel 1961, pp. 236, 247 (fig. 11); *Ibid.* 1963, p. 176 ; Arnold and Ziegler 1999, pp. 354-355 (photograph).

²⁷⁶ They are represented in the *hr.t-mw* of the tomb of *Ty* (Épron and Daumas 1939, pl. 6); In the annals of Amenemhat II, 20 *ht^c3*-geese from a *h3mw* are said to be given as offering (Altenmüller 2015, p. 22). During the New Kingdom, some *ht^c3*-geese kept in a *h3mw* () are said to be among the offerings (*šb.w*) from Nubia (*T3-Siti*) (Inscription from the Theban Tomb (TT 95) of the high-priest of Amun, *Mri*: *Urk* IV, 1570:6).

²⁷⁷ Épron and Daumas 1939, pl. 19

²⁷⁸ For a list of the passages including both the *ht^c3*- and the *š3*-birds, see Müller 1996, pp.27-29.

4.  *dnw*²⁷⁹ and  *gb(b)*²⁸⁰

The representations of the *dnw*-goose, depicted with the characteristic features of true geese described above, have not survived with both their names and colored plumage. On the other hand, the *gb(b)*-goose is attested as a colored hieroglyph because of it sharing its name with the god Geb. One such hieroglyph was thus copied by N. Davies on an early Middle kingdom coffin from the Cairo Museum (**Figure 88**).²⁸¹ On this coffin, the bird sign is characterized by a light colored plumage with some striation on its head, chest, and belly. The mantle, rump, and wing feathers are painted dark brown accentuated by black stripes. Finally, the tail feathers are shown as black. Both the bill and legs are painted orange. To the extent of my knowledge, I am not aware that the geese frequenting the wetlands of Egypt during migration and/or during the winter feature this combination of fieldmarks. A comparative study of all the attestations of this painted goose-sign may shed some additional light as to which bird was used as a model.

Gathering additional information about these two geese from textual evidence is problematic as they usually simply feature in the lists of offerings presented to the deceased.²⁸²

²⁷⁹ Wb V, p. 575 §4; Mahmoud 1991, pp. 58-60; Hannig and Vomberg 1999, p. 216

²⁸⁰ Wb V p. 164 §5; Mahmoud 1991, pp. 60-61; Hannig and Vomberg 1999, p. 216

²⁸¹ Davies and Gardiner 1936 part I, pl. 6.

²⁸² It should be noted, however, that, according to HPTebt. I (R 2, 13), the *gb*-goose was a migratory bird arriving at the time of the flood (Osing 1998, pp. 130-131, 132 n. (I)). It is described as being white, black, and red, colors which could readily apply to the red-breasted goose (*Branta ruficollis*), a very attractive small goose well known for featuring on the panel known as the “Geese of Meidum” from the 4th Dynasty offering chapel of *Nfr-m3̃.t* and *Itt* (Cairo Museum JE 34571, CG 1742). The late date of the hieratic papyri from Tebtunis (2nd century AD) leads one to

One caption recorded by R. Lepsius in the 5th Dynasty tomb of *R^c-špss* in Saqqara, however, is of special interest (**Figure 89**).²⁸³ In a series of registers dedicated to the presentation of birds before the tomb owner, one gaggle of geese is kept under the cautious eyes of several keepers. The first bird of the group is labeled *šd gb(b)*. A similar caption accompanies the last bird in this row: *in.t šd n t(r)p*. The term *šd* when used to qualify birds has been translated in two ways. In this particular instance:

- šd (n) gb(b)*: 1. the young bird,²⁸⁴ or hatchling of the *gb(b)*-goose
 2. the fattened one of the *gb(b)*-goose

- in.t šd n t(r)p*: 1. bringing the young one of the *t(r)p*-goose
 2. bringing the fattened one of the *t(r)p*-goose

If, as suggested by version #1, *šd* is to be understood as describing a young bird, two possible situations arise: on the one hand, the *gb(b)*-goose is a breeding resident, and the young bird was captured in the wild; on the other hand, this caption could indicate that pairs of *gb(b)*-geese had successfully bred in captivity and increased the size of the flocks with a new brood. As it is quite unlikely that the other bird listed here, the *t(r)p*, or white-fronted goose, was at any time a resident breeder of Egypt, it preferring the far north of Europe as its breeding ground,²⁸⁵ the second scenario is therefore more plausible, suggesting that in this instance, the men in charge of poultry husbandry in the estates of *R^c-špss* had successfully managed to

wonder if the *gb*-goose mentioned in this document corresponds to the *gb*-bird of earlier times. More descriptive material of this bird from the Dynastic period is needed to resolve this issue.

²⁸³ LD II 61b

²⁸⁴ Wb IV p. 565 §23: mit folgenden Genetive des Vogelnamens: die junge Brut der... Vögel ; Hannig 2006 part II, p. 2499 entry 33808. B. Wassell (1991, p. 109) also interprets the term as meaning “reared.”

²⁸⁵ Cramp *et al.* 1982, pp. 404-406

create optimal conditions to entice the geese held in the farm to breed. It remains puzzling, however, that the artist opted to represent the young bird as a full grown adult goose.

The word *šd* meaning “fattened,” as translated in version #2, is more commonly found as a participle following the name of the bird it qualifies. It is most frequently used with the *r3*-goose, as cited above.²⁸⁶

5. Domesticated Goose (*Anser anser domesticus*)

Before beginning our investigation of the pathway which led to the domestication of the greylag goose (*Anser anser*) in ancient Egypt, it seems worthwhile to introduce a few relevant key words, which will be significant in differentiating the various stages of the process.

- Captive wild animals: the large majority of the birds discussed in this chapter belong to this category of animals. Gathered in the wild during fowling expeditions, waterfowl, cranes, and perching birds were subsequently kept in enclosures where food was provided to them. Breeding was unlikely to take place, either because the bird keepers did not promote mating behaviors, or because the birds were unsuccessful in creating breeding pairs. The captive flock could only be replenished by input from wild resources. As a consequence, these birds retained the characteristics of their wild relatives. Among these intrinsically wild birds, some of them may, over time, have lost their fear of

²⁸⁶ Coulon and Gabolde 2004, pp. 4-5 n. j. I thank D. Meeks for bringing this reference to my attention.

humans, become accustomed to their presence and handling, and subsequently become tame.²⁸⁷

- Semi-domesticated animals: The animals of this category are able to breed in captivity under human control. They have successfully adapted to the new environment into which they were brought and managed to successfully raise viable broods. Despite human intervention in the breeding process, these birds, as a group, are not significantly different in appearance or behavior from their wild counterparts. Animals kept in zoos best represent this faunal group.
- Domesticated animals:²⁸⁸ These animals, on the other hand, differ significantly from their wild progenitors, morphologically and especially genetically.²⁸⁹ Modified by anthropogenic influences over multiple generations through selective breeding, domesticated animals have often become fully dependent on humans as they have lost, during the process of this artificial selection, their ability to cope with natural conditions in the wild.²⁹⁰ For instance, many domesticated birds have lost their ability to fly due to

²⁸⁷ The terms “tame” and “domesticated” are at times used inappropriately in the scholarship dedicated to animal husbandry, one being equated for the other. While tameness is undoubtedly a desired quality observed in domesticated animals, it most frequently applies to individual animals that have grown accustomed to human presence. On the other hand, domesticates belong to a population of animals whose characteristics have been significantly modified via artificial selection. More simply said, a domesticated animal is often tame, but a tame animal is not necessarily domesticated.

²⁸⁸ For an excellent review of the process of animal domestication, see Zeder 2012. For an overview of domestication in birds, see Sossinka 1982, pp. 373-403; Crawford 1990, pp. 1-41; Brewer and Redford 1994, p. 120. A multitude of articles have recently been published, both in scientific and popular journals, on the domestication of the chicken, it being the best known and most exploited bird on the planet. See in particular Lawler 2014. This bird will be discussed more fully in the Epilogue.

²⁸⁹ Clutton-Brock 2001; Jensen 2006

²⁹⁰ Price 1999; Brewer 2001a, p. 89

increased weight. Contrary to their wild cousins with strict seasonal reproductive and molting cycles, certain domestic species can also reproduce at various times during the year; they may molt little or not at all.²⁹¹

It is now well established that Egypt was a major center of domestication of the greylag goose.²⁹² Domesticated geese were already an integral part of ancient Egyptian poultry-yards during the New Kingdom, as is well exemplified by the flock of geese presented to *Nb-Imn*, which survived on a fragmentary wall painting originally decorating this noble's Theban tomb **(Figure 30)**.²⁹³³⁰² The plumage of the geese depicted in this scene display the distinctive heterogeneous colorings of domesticated greylag geese. In addition to the gaggle of adult birds being reviewed for the benefit of *Nb-Imn*, a small number of goslings are also depicted following their parents at the edge of the middle register. What remains harder to ascertain, however, is when this domestication process can be first identified in the ancient Egyptian record. The answer to this question is not provided by the faunal remains uncovered thus far in Egypt. Osteological remains of domestic geese (*Anser anser domesticus*) have yet to be associated with assemblages prior to the Late Period.²⁹⁴

²⁹¹ Kear 1990, p. 24

²⁹² Crawford 1990, p. 37

²⁹³ British Museum EA37978: Parkinson 2008, pp. 95-101; Bailleul-LeSuer 2012, pp. 155-156

²⁹⁴ Boessneck 1991; see Appendix 5

“Certain behavioral characteristics make certain animal taxa, and certain individuals within taxa, better candidates for domestication than others.”²⁹⁵ The *Anser*-geese display several traits predisposing them to successfully undergo the domestication process: large gregarious social groups (except when nesting) with a hierarchical group structure, precocial young (goslings able to follow their parents from 2nd day onwards), herbivorous, low reactivity to humans, as they frequently feed in agricultural land.²⁹⁶ According to J. Delacour, true geese, both juvenile and adult birds, readily adjust to captive life.²⁹⁷ For the domestication process to begin, ancient Egyptians had to successfully manage for the wild birds kept under their control to start breeding in captivity.²⁹⁸ As discussed by J. Boessneck, whereas none of the *Anser*-geese visiting Egypt during migration are known in recent history to have bred in the country, one cannot reject the possibility that some groups of greylag geese opted to nest in the wetlands of the Delta in ancient times.²⁹⁹ Detecting in the ancient record the success of ancient Egyptian aviculturists in breeding birds in their attempt to gain control over the flocks of geese under their care remains a challenge. Young birds are not traditionally represented in scenes related



²⁹⁵ Zeder 2012, pp. 165-166, fig. 1

²⁹⁶ Cramp *et al.* 1982, pp. 417-419; Agnvall 2012, p. 1

²⁹⁷ Delacour 1956, p. 94. See also Brewer and Redford 1994, p. 121.

²⁹⁸ Sossinka 1982, p. 379

²⁹⁹ According to J. Boessneck (1988, p. 89; *ibid.* 1991, p. 105), the domestication of a bird can only be successful if the target bird naturally nest in the environment where the domestication process will take place. It might thus be the reason why the Egyptian goose (*Alopochen aegyptiacus*), a breeding resident of Egypt, was thought to have successfully been domesticated (Kear 1990, p. 22). This assertion has then been revised. The aggressive character of the Egyptian goose makes it an unlikely candidate for domestication. As for the greylag goose, while the bird prefers the wetlands of Europe as its breeding grounds, it should be remembered that a greylag colony was known to nest in the marshes of southern Iraq as late as the early 1980s (Hüe and Etchécopar 1970, pp. 96-97; Cramp *et al.* 1982, p. 415).

to poultry husbandry.³⁰⁰ In a few instances, small groups of unfledged waterfowl are included in the mixed flocks being presented to the deceased, as best illustrated in the tomb chapels of *Ty*, *Pth-htp* [II], *Htp-k3*, and *R^c-m-k3i* (Figures 28, 90A-C).³⁰¹ Labeled as  *wnwn* or  *wnn*,³⁰² these young birds still display fuzzy down on their rump and the tips of their wings, which have yet to fully develop. When the birds are too young to walk, they can also be brought to the deceased in a crate, carried forward by an offering bearer.³⁰³ Whether these birds hatched and were raised in captivity, however, is unknown.

The captions accompanying the birds presented to the deceased during the Old Kingdom do not solely describe the type of bird being represented. In some instances, it also indicates the bird's gender. Such distinction was deemed to be important specifically for the *r3*-


³⁰⁰ In the tomb of *Ty*, some birds depicted in the midst of birds being force fed could be possibly identified as young birds (Épron and Daumas 1939, pl. 8). They are shown in the bottom right hand corner of the enclosure, standing behind a worker busy force feeding a *s*-duck (Figure 57). The damaged state of the relief, however, does not allow me to confidently conclude as such.

³⁰¹ *Ty*: Wild 1966, pl. 169; *Pth-htp*[II]: Harpur and Scremin 2008, p. 361; *Htp-k3*: Martin 1979, pl. 17; *R^c-m-k3i*: MMA 08.201.1f (<http://www.metmuseum.org/collection/the-collection-online/search/577371>; last accessed November 4, 2015). For a complete list of "chicks in a procession of birds," see the OEE Scene Detail 7.1.9 (http://archaeologydataservice.ac.uk/archives/view/oea_ahrc_2006/. Last accessed November 23rd, 2015).


³⁰² *wn(n)*: Wb I p. 307 §10; *wnwn*: Wb I p. 317 §15: Ein kleiner Vogel. Both O. Mahmoud (1991, pp. 91-93) and R. Hannig and P. Vomberg (1999, p. 212) propose to identify these birds as coots (*Fulica atra*). While the round and stocky built along with the short tail of the *wnwn*-bird are also characteristic of a coot, the under-developed wings point towards the representation of a young bird, yet unable to fly. Even though it is not unreasonable to consider coots among food offerings, I suggest that the motif in fact represents a young *anatid*, probably a gosling or duckling. The *wnn*-bird depicted in the tomb of *Htp-k3*, in Saqqara, exhibits a bill similar in shape to the ducks surrounding him in the procession (Martin 1979, pl. 17).

³⁰³ Jorgensen 1996, pp. 58-59: Ny Glyptotek ÆIN 938.

goose. Female greylag geese are labeled as  *id.t*³⁰⁴ *n r3*, “female of the *r3*-goose,”

when depicted as the sole representative of the species,³⁰⁵ or simply as  *id.t*³⁰⁶ when

following another *r3*-goose, most likely a gander. The presence of these female birds in the flocks could be interpreted in various ways. On the one hand, emphasis on the female gender in a funerary setting is frequently interpreted as a desire of the part of the deceased to further guarantee his chances for rebirth. In the afterlife, the presence of both male and female birds would ensure that new life would be created, both symbolically and also pragmatically, in the form of a never ending supply of new fowl. On the other hand, such precision on the part of the artist may also be proof that ancient Egyptian aviculturists were paying close attention to the behavior of the geese in their flocks, eager to obtain breeding pairs and ultimately increase the size of their flocks through captive breeding. While sexual dimorphism in greylag geese is expressed in the male being generally larger than the female, they both share the same plumage and general morphology.³⁰⁷ It is therefore possible that ancient Egyptians had had a chance to witness firsthand the breeding of greylag geese under their care, a process which would have involved pair bonding, nest making, mating, laying of eggs and subsequent

³⁰⁴  is transliterated *hm.t* in Wb III p. 76 §13. However, V. Loret (1896) was already proposing a different reading. This combination of signs should thus be read *id.t*. See *An Lex.* 77.0527; Collombert 1995, pp. 205-207; Osing 1998, p. 169, n. m (I thank D. Meeks for bringing these references to my attention). This term usually refers to a cow, but can also be associated with the notion of a female animal able to give birth (Collombert 1995, p. 206 n. 15).

³⁰⁵ LD II 61b

³⁰⁶ Badawy 1976, fig. 20; Verner 1977, p. 229.

³⁰⁷ Cramp *et al.* 1982, p. 413

incubation. With the female goose sitting on her eggs,³⁰⁸ ancient aviculturists would have been able to readily differentiate the two genders.

The arguments introduced thus far – presence of young birds along with pairs of male and female *r3*-geese in the midst of the birds led before the deceased – remain insufficient to conclusively prove that experiments in poultry husbandry were under way during the Old Kingdom, the presence of a goose labeled *hd*,³⁰⁹ “white,” however, has often been considered the most convincing evidence that the domestication process of the goose had started as early as the 5th Dynasty. This theory was first proposed by J. Boessneck, who justified his assertion by mentioning the rarity and low survival rate in the wild of birds born with such a plumage aberration.³¹⁰ Two types of aberrations in plumage coloration are indeed known to cause the absence of pigments, in particular melanin, in a bird’s feathers: albinism and leucism.

- Albinistic birds are characterized by the complete absence of melanin in both plumage and skin. They consequently display white feathers, red eyes, and pale skin. The poor eyesight of birds suffering from this genetic mutation renders their chances to reach adulthood minimal.³¹¹ It is therefore unlikely that ancient Egyptians

³⁰⁸ While some species of birds share the duties of incubating the eggs, it is the female greylag which is responsible for this task, with the male protecting the nest from predators. After the chicks have hatched, however, both parents care for and protect their brood (*Ibid.*, p. 420).

³⁰⁹ Geese labeled with the simple caption *hd* are depicted in the following tombs: *Ty*: Wild 1966, pl. 169; *Htp-k3*: Martin 1979, pl. 17; *Spd-htp*: Harpur 1986, fig. 6; *Sndm-ib*: *Mhi*: Brovarski 2001, fig. 110; *R^c-m-k3i*: MMA 08.201.1f (<http://www.metmuseum.org/collection/the-collection-online/search/577371>; last accessed November 4, 2015).

³¹⁰ Boessneck 1988, p. 89

³¹¹ van Grouw 2006, p. 83; Guay *et al.* 2012, p. 24

would have been able to frequently witness such a phenomenon in their surroundings.

- Leucism is another mutation manifesting itself in the lack of melanin in all or part of the plumage; it does not, however, affect the eyes and skin. Such plumage aberration is not uncommon in the wild and can readily be observed in adult specimens.³¹² While present in wild communities, leucism is especially common in domestic birds, as chickens, ducks, pigeons, geese, and turkeys all have breeds exhibiting fully white plumage.³¹³

Based on these observations, the white birds depicted in Old Kingdom tomb chapels most likely suffered from leucism. They are represented following a *trp*-goose, suggesting that they are possibly smaller in size than the greater white-fronted goose (*Anser albifrons*). Not only do they figure in flock presentation scenes, they also are also shown in the company of the *trp*-geese in the *štb.w* depicted in the tombs of *Ty* and *K3-gm-ni*.³¹⁴ The frequent representation of these white specimens in the tomb chapels of the Memphite necropolis precludes the possibility that all these birds had solely been acquired in the wild. Such a high proportion of white birds could only occur if bred in captivity, especially when one considers that leucism is an inherited disorder, passed down from one parent to its brood.³¹⁵

³¹² van Grouw 2006, p. 84; Guay *et al.* 2012, p. 24

³¹³ Guay *et al.* 2012, p. 24

³¹⁴ Épron and Daumas 1939, pl. 7; Harpur and Scremin 2006, p. 496.

³¹⁵ van Grouw 2006, p. 84

While it may have occurred in flocks of white-fronted geese, as proposed by J. Boessneck,³¹⁶ it certainly occurred in flocks of greylag geese, as *r3 hd*, “white r3-geese,” are listed among the birds presented to *Shm-ꜥnh-Pth*, buried in Giza,³¹⁷ and to *Pth-špss*, whose tomb is located at Abusir.³¹⁸ In both instances, the birds are depicted in the company of female geese (*id.t*). One can therefore surmise that breeding programs were being developed in the poultry farms owned by these two officials. Flocks of greylag geese had been selected and isolated from the other birds. Mating pairs were formed and successfully raised their brood to adulthood, among which figured white birds.³¹⁹

In her recent discussion on the domestication of animals, M. Zeder remarks how important it is to acknowledge that “domestication is a fluid and non-linear process that may start, stop, reverse course, or go off on unexpected tangents, with no clear or universal threshold that separates the wild from the domestic.”³²⁰ While it can now be determined that the domestication of the goose was underway at the end of the Old Kingdom, it is difficult to ascertain the exact course this phenomenon followed until the full domestication of the bird, well established, as mentioned previously, during the New Kingdom. The presentation of flocks

³¹⁶ Boessneck 1960, p. 200

³¹⁷ Badawy 1976, fig. 20

³¹⁸ Verner 1977, p. 228

³¹⁹ A particularly realistic representation of a mixed flock of geese formed of five *Anser*-geese, most likely greylag geese, and two white birds sharing the same overall morphology, can be examined in the 6th Dynasty tomb of *Mr=f-nb=f* in Saqqara (Myśliwiec *et al.* 2004a, p. 151; *ibid.* 2004b, pls. 22 (line drawing), 67, 70 (photographs)). These birds are depicted slightly larger than the herdsman following them and controlling them with his long staff. The caption accompanying the scene simply states: *in.t nd.r-hr*, “bringing gifts.”

³²⁰ Zeder 2012, p. 265

of geese, in contrast to the rows of single birds representing individual taxa, is already observed during the Old³²¹ and Middle³²² Kingdom; yet it manifests itself more fully in the Theban funerary iconography of the 18th Dynasty.³²³ In these tombs, the deceased is presented with gaggles of domestic geese, recognizable by their variegated plumages. One can imagine that flocks walking under the supervision of herdsmen had become commonplace in the Theban countryside of the time, as the theme of the gooseherd driving his flock was adopted by artists of the Deir el-Medina community, who chose to caricature the guardian as a cat or a jackal, standing upright, holding a long staff to keep order among the geese under his charge.³²⁴

At the same time as the representations of gaggle of captive geese became more common in the funerary iconographic repertoire, mentions of breeding geese and their young feature in several texts. During the 18th Dynasty, a statue dedicated by *Imn-ḥtp:Ḥwy*, steward of Memphis during the reign of Amenhotep III, records the endowment *Imn-ḥtp* had bestowed upon a statue of the king deposited in the Memphite temple of *Nb-M3^c.t-R^c-United-with-Ptah*.³²⁵ Listed among the many goods donated to the statue are, according to the text's editor A. Gardiner, "1,000 egg-laying geese," a suggestion followed by R. Morkot. Unfortunately, this

³²¹ In Saqqara, tomb of *3ḥt-ḥtp*: Petrie and Murray 1952, pl. 7; tomb of *K3-ḥ3i*: Lashien 2013, pls. 38-39.


³²² In Beni Hassan, tomb of *Ḥnm-ḥtp* (BH 3): Newberry 1893a, pl. 30; Kanawati and Evans 2014, pl. 125; tomb of *Ḥty* (BH 17): Newberry 1893b, pl. 14. In Dayr al-Barshā, tomb *Dḥwty-ḥtp*: Newberry 1893-94, pls. 12, 17.

³²³ For a list of the Theban scenes depicting presentation of flocks of geese to the tomb owner, see PM I-1, p. 467, section 18a "geese and ducks," to which should be added the scenes in the tombs of: *Nb-Imn* cited above (BM EA37978); *Wnsw* (TT A4; Louvre N 3318); *Nfr-ḥtp* (TT A5; Manniche 1988, pl. 1.2).



³²⁴ Houlihan 2001d, figs. 81-82, 119

³²⁵ Gardiner 1913, pp. 33-36, pl. 80; Morkot 1990, p. 330-331

passage, inscribed at the beginning of column 24, is located at a break and has only partially


survived: .³²⁶ Since it is standard in offering lists to have each item followed by the specific

number expected to be delivered, A. Gardiner choose not to associate the number 10, with

the bird sign written to its left and facing it. Instead, he connects the bird with , for 

ms.t, written below. If A. Gardiner is indeed correct, the passage should thus be read: *zri.t ms.t*

h3, “*zri.t*-geese, who lay eggs (lit. who give birth): 1,000.” My choice of *zri.t* as a transliteration

of the -sign is prompted by the presence of the feminine *t* in the participle *ms.t* qualifying it.

Furthermore, the feminine term *zri.t*, var. *sr(i).t*,³²⁷ becomes commonplace from the New

Kingdom onwards as a designation of a type of goose.³²⁸

The notion of laying geese is further encountered at Abydos, in the dedicatory

inscription of the temple of Ramesses II. The text reads as follows:³²⁹

 ... *r3.w ʿnh.w hr šd.w sms.w*

... live *r3*-geese raise the nestlings (lit. those that were caused to be born).

This unique passage is ambiguous. It is unclear whether the *sms.w*-birds, translated as “brood”

by H. Gauthier,³³⁰ are to be considered as being nestlings born from the eggs laid by the *r3*-

³²⁶ Gardiner 1913, pl. 80


³²⁷ Wb IV p. 192 §5

³²⁸ According to J. Černý (1929, p. 250 n. 46), this term is a Late Egyptian spelling of the older *srw*-goose.

³²⁹ Gauthier 1912, p. 19, line 87

geese mentioned in this passage. We may also wonder if this sentence refers to artificial incubation: the chicks (*sms.w*), hatched from eggs kept warm in ovens designed by ancient Egyptian aviculturists, would then be in need of surrogate parents to take care of them (*šdi*). Chosen to fulfill this function were *r3*-geese, possibly captured in the wild as alluded to in the previous line of this inscription.

This term *sms* occurs in two additional bird related texts. In pLansing 12,4,¹⁴⁵ it is cited in relation with the *zš*-bird facility discussed *supra*. As aforementioned, the mansion the scribe

Rc3 built for himself included a *zš sms.w hr zri.t* [], “a

zš of nestlings filled with *zri.t*-geese.” Similarly, during the 22nd Dynasty, *The Chronicles of Prince*

Osorkon, recounts how the prince filled a *h(3)mw*-aviary with *r3*-geese destined to be given daily

to the Theban gods. As for the Estate of the first prophet of Amun, it was responsible for the

delivery of *t3y=sn wnm.t sms* [], “ their food of nestlings.”³³¹

Based on these passages, two types of geese are connected with nestlings: *r3*- and *zri.t*-geese,

suggesting that these birds were successfully laying eggs in captivity. As discussed above, the *r3*-

goose has been identified during the Old Kingdom as being the wild greylag (*Anser anser*). I

suggest that the term *zri.t*, from the New Kingdom onwards, rather than simply being a Late

Egyptian reading of the *srw*,³²⁸ should rather be understood as more specifically referring to the

domestic counterpart of the greylag, the *Anser anser domesticus*, which, as will be discussed

³³⁰ *Ibid.*, p. 119. It is this same meaning, which is reported in Wb IV p. 142 §7: die junge Brut des Geflügels.

³³¹ Caminos 1958, pp. 66-68 §93, 96; Ritner 2009, p. 357. The word *sms* is further cited in this text, along with a quantity of grain: 35 *h3r*, 1 *hk3.t* (Caminos 1958, pp. 135, 137 §§211 and 213; Ritner 2009, p. 372).

below, was placed under the care of *mniw*, gooseherds, during the Late Period. It also important to note that the *zri.t*-goose is never mentioned as being captured in the wild, in contrast with the *r3*-goose, but rather is solely featured in the context of poultry keeping. At the same time that domestic birds (*zri.t*) were being raised in captivity, wild greylag continued to be captured in the wild, brought to farmyards live (*r3 ʕnh*) and, and fattened (*r3 šd*).³³²

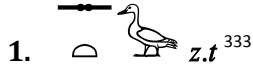
It is interesting to note that ancient Egyptians did not consider it worthwhile to represent the breeding of birds in captivity. The representation of nests with young is omnipresent in depictions of the marshlands, where the tomb owner is fowling and fishing. Why not include this same motif in the poultry-yards scenes? Would the symbolism associated with eggs, hatchlings, and new life emerging from the egg not be of special relevance in the economic context of the farm? We must wonder if the artists had opted to reserve this powerful symbolism exclusively for the environment of the marshes.

iii. Ducks

As presented in the Biogeography chapter of this dissertation, a wide variety of ducks currently takes advantage of the Nile Valley as a flyway towards the warmer climate of sub-Saharan Africa, where they remain for the winter months. Some of these birds stop in the wetlands of Egypt before continuing their journey; others choose to remain in Egypt and overwinter in the wetlands present in the Delta, Fayum, and Valley. This diversity was assuredly

³³² See for instance the 26th Dynasty donation stela in the Ny Carlsberg Glyptotek, Inv. Nr. ÆIN 1037, in which two *r3 šd* were said to be offered daily to the ram of Mendes, *B3-nb-dd*. In addition to these daily offerings, 240 *zri.(w)t* geese were also donated to this god's temple (Christensen 1983).

observed by ancient Egyptians and is reflected in the numerous bird names, which can be safely associated with different kinds of ducks.



This bird has been unquestionably identified as the northern pintail (*Anas acuta*) (**Figure 11**).³³⁴ The long central black tail feathers, which give the bird its name, can readily be recognized in art and in hieroglyphs, even when all pigments have disappeared on reliefs. In wall paintings, artists attempted to reproduce the distinctive patterns of the drake, with its brown head, white breast, vermiculated sides and flanks, black rump, and black dark covert and wing feathers. The female, which exhibits the same slender morphology as the male, is brown throughout and lacks the long tail feathers.³³⁵ These birds are accurately represented in details details in the *hr.t-mw* enclosure inspected by *Rmni*, in his tomb at Saqqara (**Figure 91**).³³⁶ Although they seem to be depicted over a blue pool, they are not shown swimming with pursed webbed feet, but rather they are depicted in a walking position, most likely an error on the part of the painter. Possibly to avoid monotony, the artist has also represented the males and

³³³ Wb III p. 407 §16

³³⁴ Boessneck 1960, p. 195; Houlihan 1986, pp. 71-74; Mahmoud 1991, pp. 61-65; Hannig and Vomberg 1999, p. 214; Germond 2002-3

³³⁵ Delacour 1956, pp. 129-130; Brown *et al.* 1982, pp. 264-265


³³⁶ Kanawati 2009, pl. 18a

females alternating with one another. They are accompanied by other waterfowl,³³⁷ all grouped by type: some geese, painted in a light brown color; some ruddy shelducks (*Tadorna ferruginea*), with a distinct orange brown plumage, lighter for the head. The bottom left section of the enclosure may be occupied by a group of Egyptian geese (*Alopochen aegyptiacus*). The pintail ducks remain, however, the more numerous birds in this aviary. During the Old and Middle Kingdoms, pintail ducks were also subjected to force feeding and are included among the birds placed in *štb.w*.³³⁸

Because of their importance as a major funerary offering throughout Egyptian history, northern pintails feature prominently in processions of birds presented to the deceased. Their relative significance is highlighted in the tomb of *Pth-htp* [II], where this high official considered it worthwhile to include the size of the various flocks of birds in his possession (**Table 19; Figure 28A**). Whereas the numbers associated with each flock should not be taken at face value, they nonetheless indicate which types of fowl were most needed and/or desired. Geese (the greylag and white-fronted), the pintail, the smaller *s*-duck, and doves are the most numerous, with more than 100,000 birds listed for each type. The third species of geese, perhaps the bean goose (*Anser fabalis*), differs by a factor of 10 and the swans by a factor of 100. Just as was the case with the *r3*-goose, ancient Egyptians differentiated the male from the female pintail, the



³³⁷ It is interesting to note that the painter(s) correctly identified the different colors of the various species' legs and feet: pintails, blue-grey; ruddy shelduck, dark grey-black; geese, dark orange; Egyptian goose, light orange-pink.

³³⁸ For the Old Kingdom, see the depictions in the tombs of *Ty* (Épron and Daumas 1939, pl. 7 and 19) and *K3-gm-ni* (Harpur and Scremin 2006, p. 497); for the Middle Kingdom, see the representation of force feeding in the tomb of *Dhwti-htp* (Newberry 1893-94, pl. 22).

term *z.t*, as expected, referring to the female bird, and the word  *hp*³³⁹ to her male partner. They are often represented together, the female depicted behind the male.³⁴⁰ In the tomb of *Htp-k3*, however, only the male *hp* is present.³⁴¹ The lexical distinction between the two genders of the northern pintail is rarely attested in texts, this differentiation being reserved for the most part for the bird processions scenes. The male pintail, for most of Egyptian history, is known under the feminine term *z.t*. The combination of male attributes and female name is puzzling. One may wonder if the Egyptians wanted to benefit from the reproductive abilities of the female bird, while using the distinctive features of the drake to guarantee proper identification.³⁴²

No evidence, whether textual or iconographic, suggests that the pintail successfully bred in captivity. Being highly sociable birds, pintails are known to adjust readily to captivity and

³³⁹ Wb III p. 69 §19; Hannig and Vomberg 1999, p. 214. O. Mahmoud (1991, pp. 79-80) proposed to identify this bird as being a northern shoveler (*Anas clypeata*), a surprising suggestion as the male shoveler is quite distinct with its dark green head, white breast and brown flanks, and especially its wide spatulate bill. None of these features can be identified in the representation of the *hp*-duck. See the discussions on this issue in Wolterman 1991-92, pp. 121-122 and Houlihan 1996, p. 32 n. 89.

³⁴⁰ Tombs of: *Ty* (Wild 1966, pl. 169); *R^c-m-k3i* (MMA 0.8.201.1f). On a fragment removed from the tomb of *Spd-hp* (Turin Inv. Nr. S. 1257; Harpur 1986, p. 63 fig. 5), the *hp* and *z.t* are separated from one another duck, possibly named  *m3^c* (Wb. II p. 24 §8) or  *m3š* (Hannig and Vomberg 1999, p. 212). Only attested in this tomb, it resembles the female pintail *z.t* preceding it. Is the *m3^c/m3š*-duck related to the pintail? If it is the case, it is possibly the representation of a male displaying a non-breeding, or eclipse, plumage, duller than the more conspicuous nuptial plumage and observed during the summer and early fall (Cramp *et al.* 1982, p. 521). See Godron 1997 for a presentation of the *m3š*-bird.

³⁴¹ Martin 1979, pl. 17

³⁴² I thank S. Thuault (Ph.D. Candidate in Egyptology at the Université Paul-Valéry Montpellier 3) for suggesting this possible explanation to me.

breed successfully if provided with proper environment and diet.³⁴³ It is therefore possible that ancient Egyptians managed to increase the size of their flocks of pintails with captive breeding; yet, the extant material does not allow us to verify this assertion.

2. 

Just like the northern pintail, this small duck is a main component of the funerary offerings expected by the deceased. It is tentatively identified with the Eurasian teal (*Anas crecca*) based on the bird procession from the tomb of *K3i-m-ꜥnh*.³⁴⁵ The smallest of the dabbling ducks, the drake teal is easily recognizable by the chestnut head and neck, and especially the broad metallic green band, which spreads from the eye to the nape. This band is bordered by a thin white line, which extends to the bill (**Figure 92**).³⁴⁶ All these field marks were remarkably captured by ancient Egyptian artists, who included these birds among the waterfowl captured in the wild.³⁴⁷ Once in captivity, some of the teals were sent to the *štb* to be fattened in the company of *mnw.t*, doves, as suggested by the tomb of *Ty*.³⁴⁸ Apart from this scene, no additional information is available with regards the treatment and management of

³⁴³ Delacour 1956, p. 132; Suchy and Anderson 1987; Weingartz 2007, p. 198.

³⁴⁴ Wb IV p. 1 §5


³⁴⁵ See Junker 1940, pl. 7 for a black and white photo of this bird procession scene; see also Boessneck 1960, p. 195; Mahmoud 1991, pp. 65-69; Hannig and Vomberg 1999, p. 214 for discussions on the bird's identification.

³⁴⁶ Delacour 1956, p. 96

³⁴⁷ Houlihan 1986, pp. 67-69

³⁴⁸ Épron and Daumas 1939, pl. 6

these ducks in captivity. Like many other species of *Anas*-ducks, the Eurasian teal is also said to adjust rather readily to captive settings, yet remaining shy.³⁴⁹

3.  *smn*³⁵⁰

The *smn*-bird identified as the Egyptian goose (*Alopochen aegyptiacus*) is, despite its vernacular name, more closely related to the family of the shelduck (*Tadorna* sp.).³⁵¹ The Egyptian goose differs from all the other waterfowl discussed in this section in it being a resident breeder of Egypt.³⁵² For this reason, this bird was thought to have been successfully bred in captivity, eventually domesticated, and even kept as a pet in ancient times.³⁵³ However, the aggressive behavior of the bird, which gave it its bad reputation in ancient Egyptian literature, has deterred people from attempting to domesticate it.³⁵⁴ Nevertheless, during the

³⁴⁹ Delacour 1956, p. 97

³⁵⁰ Wb IV p. 136 §2-3

³⁵¹ Houlihan 1986, pp. 62-65; Mahmoud 1991, pp. 71-76; Hannig and Vomberg 1999, p. 214

³⁵² According to S. Goodman and P. Meininger (1989, p. 156), it is now a “fairly common breeding resident along Lake Nasser and winter visitor to the Nile Valley almost as far north as Cairo.” It breeds in the country during the winter and migrates south in the spring.

³⁵³ For instance, J. Kear (1990, p. 22) describes this species as being the principal domestic bird in ancient Egypt until the Persian period, when it ceased to be present in poultry-yards. This suggestion continued to feature in discussions on bird domestication until recently, despite the convincing counter arguments proposed by J. Boessneck in his 1960 publication. The most famous example of an Egyptian goose considered by early scholars as being a pet accompanying its master in the marshes is depicted on the fragment from the Theban tomb of *Nb-Imm* now on display at the British Museum (EA 37977). It is true that this bird is represented at times in a funerary setting in the company of the elite. However, rather than depicting a pet bird, it is most likely the connection of the Egyptian goose with the god Amun, which was of special relevance in these depictions. See Kuentz 1934; Vandier 1971; Graindorge 1996, pp. 87-89; Gorg 1997 for discussions on the Egyptian goose and its symbolism and sacred associations, in particular with Amun.

³⁵⁴ Boessneck 1960, pp. 201-203; Weingartz 2007, p. 195

Old Kingdom, it features at times among the bird offerings listed for the deceased, along with the *r3/sr*- and *trp*-geese, the *z.t*- and *s*-ducks, and the *mnw.t*-doves (**Figure 5B**).³⁵⁵ In addition to the offering lists, Egyptian geese are also shown walking and being presented to the tomb owner, being depicted following a *trp*-goose,³⁵⁶ a northern pintail drake (*hp*),³⁵⁷ or all the other ducks of the flock.³⁵⁸ To serve these needs, they were initially maintained in captivity, as possibly shown in the tomb of *Rmni* (**Figure 91**).³⁵⁹ However, the poor quality of its flesh, added to the challenges it presents in captivity, most likely acted as deterrent against the maintenance of large flocks of these birds in fowl-yards.³⁵⁹ The birds being present in the country all year long, the needs of the Egyptians were better served by capturing them in the wild when the need arose to use them for cultic purposes.

4. Other Species of Ducks and Water Birds

Many other names which can be associated with diverse species of ducks feature in flock presentation scenes of the Old Kingdom. Some can be identified with confidence, such as the *w33.t*, the Eurasian widgeon (*Anas penelope*).³⁶⁰ The large majority, however, remain

³⁵⁵ Barta 1963, p. 51. See Mahmoud 1991, p. 73 and Graindorge 1996, pp. 87-89 for a description of the involvement of the *smn*-bird in other rituals and ceremonies such as the *w3/h-9h* offering during the Old Kingdom, along with the ritual of royal confirmation, or the opening of the mouth ceremony.

³⁵⁶ LD II, 69

³⁵⁷ Tomb of *Htp-k3*: Martin 1979, pl. 17.

³⁵⁸ Tomb of *R^c-m-k3i* (MMA 08.201.1f). For a complete list of examples, see Mahmoud 1991, p. 72 and Wassell 1991, p. 489 n. 7.

³⁵⁹ Boessneck 1960, p. 203; Houlihan 1986, p. 65

³⁶⁰ Wb I p. 369 §1; Houlihan 1986, pp. 69-70; Mahmoud 1991, pp. 81-82; Hannig and Vomberg 1999, p. 212.

unknown to us, lacking distinctive features that would help Ornithologists assign a genus or species to these Egyptian names. They are the following:³⁶¹ *ph*t (a large duck frequently placed behind the geese); *bd*3; *bsbs*; *mš.t*; *m3^c/m3š*; *msi.t*; *sw*. Other birds, whose name may feature in this list, can be identified in representations of poultry-yards, such as the ruddy shelduck (*Tadorna ferruginea*) mentioned above. A northern shoveler (*Anas clypeata*), whose name is barely visible (*h3b?*), can be seen making its way towards *R^c-m-k3i* on a fragmentary relief from the offering chapel of this official, now at the Metropolitan Museum of Art, New York.³⁶² All these waterfowl, known to migrate to and/or through Egypt, would have been captured by fowlers and later brought to poultry yards. Similarly, several documents from the New Kingdom, most especially pHarris I,³⁶³ list various birds, which were desired as offerings for the dead and expected to be delivered to the altars of the gods. *Wrd.w*,¹⁶⁰ and most especially *3pd.w n mw*, “water birds,” and *3pd.w mr*, “pond fowl,” are frequently mentioned, at times in massive numbers, as being among the many goods kings and private Egyptians alike offered to the gods and also to their dead relatives. Whether these birds were dispatched soon after being delivered to the temple or the tomb is unknown. Under these general terms, one can imagine that a large variety of wild waterfowl and other water birds – such as *Rallidae* (coots,

³⁶¹ See Mahmoud 1991, pp. 69-85 for a list of attestations. A lexicographical study of these birds’ names being beyond the scope of this project, see Wassell 1991, pp. 108-124 for her discussion on this theme.

³⁶² Museum Inventory Nr. MMA 08.201.1f

³⁶³ Grandet 1994; *ibid.* 1999

moorhens, and gallinules³⁶⁴), large and small wading birds (herons, egrets, snipes, sandpipers, plovers) – was captured *en masse* to fulfil all the needs listed in temple offering lists. How much time they spent in captivity or what treatment they received, however, remains the domain of speculation.

To conclude this section on water birds, I will discuss the maintenance in captivity and possible breeding of pelicans. In the Chamber of Seasons from the Sun temple of Niuserra, at Abu Ghurob, the noteworthy representation of large docile pelicans, with their characteristic throat pouch, shown in the company of *hm.w ntr*, “prophets,” testifies to the practice of keeping a flock of tame male and female pelicans in this temple.³⁶⁵ As indicated by the captions accompanying the scenes, the male birds shown on the temple blocks were to be kept away from their female counterparts at night so as not to mate,³⁶⁶ a most puzzling task for the priests in charge of the flock to undertake.³⁶⁷ What the exact role of this flock within a temple setting

³⁶⁴ The *Rallidae* known under the Egyptian name *sbh*, which I identify with the moorhen (*Gallinula chloropus*), already featured in Old Kingdom procession scenes (Mahmoud 1991, pp. 93-97). It remains otherwise absent from other contexts of bird husbandry.

³⁶⁵ Von Bissing 1955, pl. 12 (Fragment 254); Edel 1963, pp. 182-183; Vandier 1969, p. 428; Wenig 1974, pl. 11

³⁶⁶ No species of pelicans are known to currently breed in Egypt. The three species visiting the country (*Pelecanus onocrotalus*, *P. crispus*, and *P. rufescens*) solely fly through the country; they can also be observed, especially in the case of the white pelican (*Pelecanus onocrotalus*), resting in large numbers in the Delta lakes (Goodman and Meininger 1989, pp. 125-128). The representation of a nesting pelican on a block from the Chamber of Seasons may be testimony to the bird being a breeding resident in antiquity. See Edel 1961, pp. 232-233 for a discussion of this topic.

³⁶⁷ Meeks 1990, pp. 43-44; Krauss 1991; Jansen-Winkel 1998

was remains unclear; however, it is most likely for religious rather than pragmatic purposes that efforts were undertaken to maintain these birds in captivity.³⁶⁸

While featuring infrequently in marsh scenes during the Old Kingdom,³⁶⁹ the pelican makes a singular and notable appearance in Egyptian funerary art during the New Kingdom. In the Theban tomb of *Hr-m-hb* (TT 78), a small flock of five Dalmatian pelicans (*Pelecanus crispus*) are depicted in a clap-netting scene, standing beside four baskets filled with eggs and the *hri wḥꜥ*, “chief trapper,” *Pth-ms*, who acts as signal man in this scene and urges the men under his command to pull the hauling ropes of this fowling apparatus (**Figure 2**).³⁷⁰ What was the purpose of these birds? Why are they left unrestrained, in contrast to the ducks captured previously, placed in baskets or sitting on the ground with their wings twisted behind their backs, as depicted in the register above the pelicans? Were they tame birds belonging to *Pth-ms*, helping him to trap fish?³⁷¹ Were the eggs collected from pelican’s nests or other marsh birds? Unfortunately, no answer to these questions can be provided by the text accompanying the scene.³⁷²

³⁶⁸ Vernus 2005m, pp. 403-405

³⁶⁹ Houlihan 1986, p. 10

³⁷⁰ Guglielmi 1973, p. 153; Brack and Brack 1981, p. 63, pls. 24b, 73b.

³⁷¹ On the theme of pelicans used as fishermen’s helpers, see Störk, LÄ II, col. 924; Dumas, LÄ IV, col. 239.

³⁷² J. Schneider and J.-F. Voisin (1991, 1996) have postulated that the ancient Egyptians raised pelicans in captivity by incubating their eggs, the authors basing their arguments on the scene from the tomb of *Hr-m-hb* and the mention of a *msi.t*-birds in pHarris I (20b,5; 36a,2; 54b,4; 65c,5). While this practice may have taken place, it cannot be proved by the evidence they presented, as J. Schneider and J.-F. Voisin (1991, p. 63) did not recognize that the sign *ms* in the “pelican scene” from TT 78 belonged to the name of the chief trapper. Instead, they read the inscription as “le chef des pêcheurs... qui fait naître les jeunes oiseaux.” Furthermore, the avian name *msi.t*,


iv. *Columbidae*


A family of birds rarely mentioned in this essay thus far is that of the doves and pigeons, otherwise collectively known as *Columbidae*. As will be presented *infra* in the Epilogue, during the Greco-Roman period pigeon towers built in some instances to house several thousand pairs of birds became a prominent feature of the Egyptian landscape, just as it is still the case today. A multitude of Demotic and Greek texts reveal their importance in the agricultural economy of the time.³⁷³ Yet, prior to the arrival of the Ptolemies on the throne of Egypt, these birds virtually left no discernable trace in the archaeology. No structure has been identified as possibly housing them and their small and fragile bones are not attested in faunal assemblages. A unique wooden model of a pigeon tower recovered from the tomb of *Imn-m-ḥ3.t* at Dayr al-Barshā (tomb 21) attests to the existence of dovecotes in the landscape of ancient Egypt as early as the Middle Kingdom (**Figure 93**).³⁷⁴ Only a few mummified remains of palm and turtle doves (*Streptopelia senegalensis* and *S. turtur*) have been identified among the victual offerings deposited in several Theban tombs dated from the New Kingdom (see Appendix 5, **Table 37**).

which they cite from pHarris I, should not be translated as “volaille qui donne naissance, i.e. volaille couveuse” (*Ibid.* 1996, p. 65). It is indeed well documented that the *msi.t*-bird is a type of aquatic feathered game. See Meeks 2012, p. 540 n. 208 for a review of this word’s attestation.

³⁷³ Cobianchi 1936, pp. 94-121


³⁷⁴ This wooden model is now in the Cairo Museum (JE 34293). Representing a miniature farmyard, it includes two squatting herdsman taking care of a small herd of five recumbent heads of cattle, as well as a free standing tower, with crenellation at its top. A few pigeons roost at the windows cut into the tower’s walls. See Kamal 1901, p. 31; Tooley 1989, pp. 41-42. I thank S. Ikram for bringing this model to my attention.

Their presence in iconography is also limited. A few scenes from the Old Kingdom show the capture in the wild of $\epsilon b\beta$ -³⁷⁵ and $\check{s}zmt(y)$ -birds, both identified as possibly being some migratory species of *Columbidae*. These two types of birds are described in the Chamber of Seasons of Niuserra's Sun temple as coming to the Delta (, *iw.t (r) (t\beta) m\check{h}i.t (in)*

$\epsilon b(\beta) \check{s}zmt$),³⁷⁶ where a fowler (, *w\check{h}\epsilon*) is ready to trap them with a clap-net (**Figure 94**).³⁷⁷

E. Edel described these birds as both being two migratory sub-species of turtle doves, namely the *Streptopelia turtur turtur* and the *S. t. arenicola*,³⁷⁸ which Ornithologists have recorded as being common throughout Egypt as passage migrants each spring and fall.³⁷⁹ Another suitable candidate for the name $\check{s}zm.t$, the malachite-colored bird, could be the stock dove (*Columba oenas*). Although it currently is a rare winter visitor to Egypt, large flocks have occasionally been sighted visiting the Delta during the winter.³⁸⁰ It is predominantly a drab bird, with most of its plumage being pale to dark grey. Its only adornments are iridescent green patches on the side of its neck, along with some light purple markings on its chest. It may be these hints of colors which inspired the ancient Egyptians to name this bird after the green copper-based mineral.

³⁷⁵ **Figure 17**. See Wolterman 1991-91, p. 120 and Bojowald 2005 for a discussion of the association of the $\epsilon b\beta$ -bird with a species of dove.


³⁷⁶ See Edel 1961, p. 229 for a discussion of this passage and the reading of the  sign (Gardiner S17*) as $\check{s}zm.t$, the Malachite colored bird ("der Malachitfarbige").

³⁷⁷ Von Bissing 1955, pl. 13: Fragment 255

³⁷⁸ Edel 1961, p. 254.

³⁷⁹ Goodman and Meininger 1989, p. 314

³⁸⁰ *Ibid.*, p. 311. R. Hannig and P. Vomberg (1999, p. 215) favor this identification, most specifically the migratory sub-species, *Columba oenas oenas*.

A noticeably more common species of *Columbidae* in Egyptian iconography and texts is named the *mnw.t*.³⁸¹ Unanimously identified as being the turtle dove, in this instance probably the sub-species known to breed in the Nile Valley (*Streptopelia turtur isabellina*),³⁸² these birds are not depicted being captured in the wild. Yet, they are shown as being force fed in the tomb of *Mrrw-k3.i*.³⁸³ They are subjected to a similar treatment in the tomb of *Ty*, where they are parked in a *štb* with a flock of *s*-ducks.³⁸⁴ In this instance, the doves are clearly labeled as , *mnw.t*. During the 5th Dynasty, the *mnw.t*-bird became a standard item among the goods the deceased wished to enjoy in the afterlife, and remained popular as a funerary offering almost continuously until the Third Intermediate Period (Appendix 1).¹⁹⁶

Turtle doves were also a desired fare for the gods, as they frequently feature in temple offering lists during the New Kingdom. In pHarris I (20b,7), Ramesses III reminded his subjects that he ensured that at least 57,810 *mnw.t*-doves were delivered to the offering tables of the god Amun in Thebes.³⁸⁵ *Mnw.t*, and its later variants *mnī.t* or *mn.t*,³⁸⁶ are not the only terms

³⁸¹ Wb II p. 79 §3


³⁸² Boessneck 1960, p. 195; Mahmoud 1991, pp. 86-91; Hannig and Vomberg 1999, p. 213. This sub-species of turtle doves is encountered throughout the Nile Valley and is a common migrant breeder (Goodman and Meininger 1989, p. 314).


³⁸³ Duell 1938, pl. 52; Kanawati *et al.* 2010, pls. 32, 93



³⁸⁴ Épron and Daumas 1939, pl. 6


³⁸⁵ Grandet 1994 part I, p. 250

³⁸⁶ See Wassell 1991, pp. 487-490 for a discussion on the various spellings used to write the word *mn(w)t* in offering lists. In non-funerary contexts, possible confusion can occur with the term *mn.t*, “swallow.” Only the specific context of each written attestation can a priori elucidate which bird – the swallow or the dove – was in the mind of the author.

used to designate various types of doves and pigeons selected as divine offerings. The bird known as , *gr-(n-)pt*, has been identified as a dove, by comparison with the later Coptic term *qroompē*³⁸⁷ used to name this bird. In addition to the *mnw.t*-doves mentioned above, 6,510 *gr-(n-)pt* had also been promised by Ramesses III to Amun (pHarris I 20b,10).³⁸⁸ According to both pHarris I and the stela of *Mh-hy* discovered near the *šnꜥ ʿ3 wꜥb* of Karnak, recording the benefactions performed by Seti II for Amun,¹⁸⁸ a wide variety of birds were maintained in captivity in a *mḥwn* built in the temple. Among the birds Seti II filled this


poultry farm with, three types of *Columbidae* have been said to be present: some  *mnw*,


“turtle doves,”  *gr-(n-)pt*, “doves,” and  *s(t)ꜥš3*.³⁸⁹ The latter term has been interpreted in many ways. Its spelling on the stela of Seti II is unusual. More commonly

written with the a bird sign (G38 or G39) followed by the lizard sign *ꜥš3*, ,³⁹⁰ it has often been transliterated as *ʿpd ꜥš3* and translated as “ordinary bird.”³⁹¹ B. A. Wassell’s analysis of the



³⁸⁷ Crum 1939, col. 828b; Westendorf, p. 465; Černý 1976, p. 335; Vycichl 1983, p. 346. According to P. Vernus (2005g, p. 364), the literal meaning of the expression, “birds of the sky,” reveals how commonplace these birds were considered in the Egyptian mindset.

³⁸⁸ Grandet 1994 part I, p. 250

³⁸⁹ Wb IV p. 55 §20:  *s(t)ꜥš3*: “Art Geflugel, ob richtig?”

³⁹⁰ See Caminos 1954, p. 130; Wassell 1991, pp. 501 n. 58 for a list of attestations of  as offerings during the New Kingdom.

³⁹¹ For instance, Caminos 1954, p. 127: ordinary birds; Helck 1960, p. 507: “gewöhnliche Vögel;” Grandet 1999, p.4: “oiseau ordinaire.”

various attestations of the term convincingly places the , or  when the name is fully spelled out, in the same category of birds as the *mnw*- and *gr-(n-)pt*-doves, the two types of *Columbidae* which *sꜥꜥ* follows in the inscription of Seti II.³⁹² With this new identification in mind, it transpires that doves and pigeons were traditional and frequent bird offerings at temples, both for the daily cult and special festivals, during the entire New Kingdom, alongside the *r3*-goose (Appendix 1, **Table 25**).³⁹³ Whether *sꜥꜥ* designated a specific species of dove or pigeon is, however, impossible to say.

In addition to be deposited on altars and offering tables in tombs and temples, one scene adorning the East wall of the hall leading into the funerary chapel of the vizier *Rḥ-mi-Rꜥ* (TT 100) records the collection of taxes from the Southern and Northern towns of Upper Egypt under the vizier's supervision.³⁹⁴ Among the goods gathered by provincial officials to pay these taxes figure cages filled with *mnw.t*-birds. The towns located between Elephantine and Thebes are shown to at least deliver three crates of *mnw.t*-birds, with one cage said to contain a total of 110 birds.³⁹⁵ The towns located between Thebes and Asyut, on the other hand, are bringing at least 900 *mnw.t*-birds.³⁹⁶

³⁹² Wassell 1991, p. 132

³⁹³ Helck 1960, pp. 503-504, 507

³⁹⁴ Davies 1943a, pp. 32-36, 103-106; *ibid.* 1943b, pl. 30-35.

³⁹⁵ *ibid.* part I, pp. 104-105: 30 *mnw.t* were brought from the Islands in the Head of Egypt; 40 more came from Armant; and 40 from Edfu.

³⁹⁶ *ibid.* part I, pp. 105-106: 500 *mnw.t* were said to come from the Great House of King Amenemhat; an unknown number was delivered from Akhmim; and 400 were brought from the town of Hou. All the scenes recorded by N.

Where do all these *mnwt-*, *gr-(n-)pt-*, *stꜥš3*-doves/pigeons come from? From the wild or from captive breeding programs? It is hard to say whether the flocks of doves listed in pHarris (57,810 *mnw*; 19,928 *stꜥš3*; 6,510 *gr-(n-)pt*) could be gathered solely from birds captured in the wild. According to Meinterzhagen, immense flocks of stock pigeons (*Columba oenas*) could be observed during their autumn migration in the Northern Sinai at the beginning of the 20th century.³⁹⁷ No such phenomenon can be observed today, but it should not preclude the notion that populations of wild doves and pigeons may have been significantly larger in ancient times.³⁹⁸ Of the four species of *Columbidae* common in Egypt today, three of them breed in the country. Both the rock dove (*Columba livia*), ancestor of the domestic pigeon, and the palm dove (*Streptopelia senegalensis*) are breeding resident; the turtle dove (*Streptopelia turtur*) is a migrant breeder.³⁹⁹ As presented previously, it is well-attested that ancient Egyptians kept doves and pigeons in aviaries. Most species of this avian family adjust rapidly to captivity and breed successfully and abundantly.⁴⁰⁰ It is therefore quite likely that ancient Egyptian aviculturists managed to breed their own birds, providing each species with the proper

de G. Davies are fragmentary. The numbers of birds suggested here are based on the extant numbers. It should therefore be kept in mind that they could have been much larger originally, yet with the flocks brought from the districts north of Thebes being presumably much more substantial than those from further south. Raising pigeons may have been more prolific in this part of the country. See Part 3 for more information on dove keeping in the Delta and the Faiyum.

³⁹⁷ Meinterzhagen 1930, pp. 502-503

³⁹⁸ One only has to remember the gigantic flocks of passenger pigeons (*Ectopistes migratorius*), now extinct, which used to migrate through the United States until the early 20th century (Fuller 2014), to believe that populations of migrating pigeons in the Middle East were also larger before excessive hunting and loss of habitat took its toll.

³⁹⁹ Goodman and Meininger 1989, pp. 309-317

⁴⁰⁰ Holland 2007, p. 417; Skutch 1991, p. 83

conditions and materials to allow the birds to build their nests. Rock doves prefer to nest in rocky anfractuositities in cliffs, but will readily use sheltered parts of buildings, as can be observed with their feral relatives, present in all inhabited regions of the world.⁴⁰¹ It is also this behavioral characteristic, which inspired the ancient architects who designed dovecotes and pigeon towers, often filled with nest pots or niches to accommodate the needs of their avian residents (see Part 3). Turtle doves, on the other hand, build their open nest in trees, shrubs, or edges.⁴⁰² As aforementioned, however, the ancient Egyptian evidence remains for the most part silent on the captive breeding of *Columbidae*. The tax collection scenes from the tomb *Rh-mi-R^c* are most revealing and suggest that, despite being invisible so far in the archaeological repertoire of Dynastic Egypt, communal pigeon houses, built on state land in many rural communities, were already a part of the landscape during the New Kingdom. A certain number of the birds produced annually in the dovecote would be sent to the capital to pay the taxes due to the state. The significantly larger number of doves originating from the districts north of the Thebaid might possibly indicate that such bird facilities were more common or more productive in the North of Egypt than further south in the country.

c. Personnel Involved with the Care and Management of Captive Birds

As discussed by D. Franke and S. Quirke, a constant challenge in the study of ancient Egyptian administrative titles is assessing whether the person bearing the titles listed before his

⁴⁰¹ Gilbert *et al.* 2013

⁴⁰² Cramp *et al.* 1985, pp. 360-361

name did in fact perform the functions *a priori* associated with the office or whether the title was assigned as a purely honorific position and a reflection of the social status, or rank, of the individual.⁴⁰³ It is also often uncertain whether the title holders served in the said positions over a long period of time, seasonally, or only once in their lifetime, or whether the many titles listed were acquired simultaneously or successively. In some instances, insight into the function or the responsibility of an individual at a given time can be gathered from the context. In many cases, however, titles and professions solely appear in lists and captions inscribed in funerary settings and written on administrative documents, such as lists of personnel, short memoranda, and letters exchanged between officials. By their very nature, these terse documents lack the background information which would have allowed us to reconstruct the various duties and responsibilities associated with a specific title. Such challenges did not fail to be encountered in my attempt to identify the various groups of people, which handled and administered the flocks of birds held in captivity in poultry farms. Whereas the few Old Kingdom poultry-yard scenes described previously strive to present a vision of the hierarchical structure in charge of administering the farm yard on these officials' estates, no such detailed depiction is readily available for later periods of Egyptian history. Evidence is gleaned from a multitude of contexts (tombs, temple records, or expedition graffiti). Attempts at reconstructing from such scattered material – both chronologically and contextually – the organizational structure of poultry management in large institutions can therefore only be tentative at best and caution is applied

⁴⁰³ Franke 1984; Quirke 1996, p. 665; *Ibid.* 2004a, pp. 1-3. See also Grajetzki 2010 for a discussion on the challenges and limitations encountered by Egyptologists when attempting to build a model of ancient Egyptian society, which takes into consideration the relations both within and between each group composing this society.

in order to avoid drawing conclusions from unrelated material. Emphasis in the following paragraphs is set on professions and offices, whose involvement with bird management is alluded to by the inclusion of avian terms in the title. Whenever possible, I will also attempt to evaluate the place of bird husbandry within the overall administrative structure of the state and/or the temple at various periods of Egyptian history.

The representations of poultry-yards in Old Kingdom tomb offering chapels show a large main d'oeuvre being involved in the management and day-to-day running of these facilities.⁴⁰⁴ In his analysis of the personnel depicted in these scenes, O. Mahmoud aptly divided this staff into two groups: on the one hand, the workers having direct contact with the birds and ultimately being responsible for their care; on the other hand, the officials and agents in charge of recording and supervising the activities taking place in the facility, so as to report their findings to a superior authority.⁴⁰⁵ I will follow this division of labor as I review and discuss the titles held by the workforce, whose duty was the management of both the wild fowl delivered at large institutions by fowlers and the birds bred in captivity, prior to their being sent to the slaughterhouse and the poulterer's shop. I will especially consider whether the changes observed over time in the titles related to bird care should be considered a reflection of an evolution of aviculture practices.


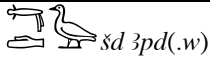
⁴⁰⁴ Mahmoud 1991, pp. 239-244

⁴⁰⁵ *Ibid.*, p. 240

i. Staff in Charge of Tending the Birds:

The staff in charge of taking care of the birds was presumably illiterate and, not surprisingly, left no direct evidence or description of its contribution in animal husbandry. The duties assigned to these men⁴⁰⁶ can tentatively and cautiously be reconstructed from the iconographic repertoire of funerary offering chapels. In a few rare instances, their titles are also listed in administrative documents, such as the Old Kingdom tablets recovered at Balat (see *infra*). The table below presents the most common titles held by these men, along with the periods of Egyptian history when they were used.

Table 16. Titles of men responsible for feeding captive birds

<i>Title</i>	<i>Proposed translation</i>	<i>Period(s) of attestation^a</i>	<i>References</i>
 <i>wšꜥ 3pd.w</i>	Fattener of fowl	MK	Lange and Schaffer 1908 part II, p. 289; CG 20656; Ward 1982, # 753a; Fischer 1985, p. 14; Stefanović 2011, p. 100
 <i>šd 3pd(.w)</i>	Bird feeder. This profession is also often translated as "fattener of fowl."	OK	Wb IV p. 565 §16; Jones 2000, #3681; Pantalacci 2005, p. 88
		MK	Blackman 1915 part 3, pl. 22; Fischer 1985, p. 28 # 1537a
		Early 3 rd IP (21 st Dynasty)	Gasse 1989, p. 85 n. 32: pLouvre AF 6347, Fgmt. A, vo. Line 6

^a For general references on Old Kingdom titles, see Jones 2000; for Middle Kingdom titles, see Ward 1982; Quirke 2004a; Grajetzki 2009; for New Kingdom titles, see Al-Ayedi 2006. The number indicated besides these authors' names are the index number they assigned for each title. Additional references not included in these compilations will be provided when possible.

The Old Kingdom depictions of bird feeding rarely include the titles of the many servants whose duty was to carry the bags of grain destined for the birds and to then scatter the seeds in their enclosures. They most likely belong to the teams of *šd.w 3pd.w*, "bird feeders," whose first

⁴⁰⁶ Prior to the Greco-Roman period, no evidence has surfaced to indicate that women were employed to care for birds in the poultry farms of large estates and temples.


responsibility was ensuring that the captive fowl receive their share of feed and had access to a constant supply of fresh water.⁴⁰⁷ These men may have also been in charge of keeping the pens clean to avoid the spread of disease.⁴⁰⁸

Further insight into the duties of the *šd 3pd.w* can be gathered from the tomb of *Ty*.⁴⁰⁹ In the register dedicated to the force feeding of a variety of birds, the representation of a man preparing the bread pellets, which a colleague forces down the throat of a crane, is accompanied by the caption: *zwṯ t in šd 3pd*,⁴¹⁰ “rolling the bread by the bird feeder”. It thus appears that some of the *šd.w 3pd.w* were also in charge of preparing the food destined to be forcibly consumed by a select number of birds, which were set aside and kept in the *štb.w* (see *supra*). The task of force feeding cranes, an activity labeled as *snm.t d3.t*, was undertaken by a man standing nearby. It is likely that the title *šd 3pd*, carved only once above the man sitting and rolling pellets in the spirit of conciseness favored in Old Kingdom representations, should nevertheless be understood as applying to both the man preparing the food and to his colleague administering it to the crane.

⁴⁰⁷ On tablet 4438 recovered at Balat in the 6th Dynasty archive associated with the governor’s palace, the poultry feeders, *šd.w 3pd.w*, are mentioned with the birds under their charge and the amount of grain delivered to each group of birds (Pantalacci 2005, p. 88).

⁴⁰⁸ As rightfully observed by O. Mahmoud (1991, p. 240), such mundane activities are never represented as they are beyond the concern of the tomb owner in the setting of his tomb. His main interest is guaranteeing the production of fattened birds, which are intended to become available in his afterlife.




⁴⁰⁹ Épron and Daumas 1939, pl. 8

⁴¹⁰ The word *3pd* is determined in this case by the sign of a crouching crane . While the word *3pd* may refer to birds in general, the specific determinative clearly indicates that, in this particular instance, the holder of the *šd 3pd(.w)* title was in charge of feeding cranes, a notion reinforced by the description of his action, *snm.t d3.t*, “causing the Eurasian crane to eat.”

During the Middle Kingdom, the person in charge of force feeding birds was, in rare instances, also known as being a *wšꜥ* or *wšꜥ 3pd.w*,⁴¹¹ “bird fattener.” The more common title of *šd 3pd.w*, on the other hand, continues to be attested in the written record until the beginning of the 3rd Intermediate Period.⁴¹²

Outside of their enclosures, flocks of birds are placed under the responsibility of a guardian known as *mniw*.⁴¹³ The various attestations of this title in relations to birds are listed in the following table.

Table 17. Attestations of the *mniw* title used in connection with captive flocks of birds


<i>Title</i>	<i>Proposed translation</i>	<i>Period(s) of attestation^a</i>	<i>References</i>
 <i>mniw</i> (<i>d3.t</i>)	Guardian of Eurasian cranes	OK	Épron and Daumas 1939, pl. 6: title with determinative  ; Jones 2000, #1603
 <i>mni(w) 3pd.w</i> (var. <i>ipd</i> , <i>ipt</i>)	Guardian of birds, gooseherds	OK	Pantalacci 2005, p. 90: Balat tablet 7723
		NK	El-Ayedi 2006, #943
		LP	Malinine 1950; <i>Ibid.</i> 1953; <i>Ibid.</i> 1968a; <i>Ibid.</i> 1968b; Cruz-Uribe 1980; Betrò 1980; Vernus 1991; Vleeming 1991

^a For general references on Old Kingdom titles, see Jones 2000; for Middle Kingdom titles, see Ward 1982; Quirke 2004a; Grajetzki 2009; for New Kingdom titles, see Al-Ayedi 2006. The number indicated besides these authors’ names are the index number they assigned for each title. Additional references not included in these compilations will be provided when possible.

The first extant example of this title is preserved in the tomb of *Ty*:⁴¹⁴ behind the man pouring grain into the crane enclosure, another worker known as a *mniw d3.t*, “guardian of


⁴¹¹ Wb I p. 369 §6; Hannig 2006, p.739 (Entry 8470)

⁴¹² Gasse 1989, p. 85 n. 32

⁴¹³ For a discussion on the reading *mniw* for the sign A47 , see Gardiner 1905; Černý 1941, pp. 57-61. The term *mniw*, from the verb *mni*, “to tie to a post,” evokes the practice of keeping captive animals attached by their leg to a stake. Such a practice is well attested and visible on the remains of wild animals recovered in the Predynastic elite cemetery of Hierakonpolis (Krutchen 1981, p. 132; Linseele et al. 2009)

Eurasian cranes,” and equipped with a long staff is seemingly keeping a watchful eye on the flock of cranes gathered before him. Bird guardians are more frequently represented anonymously in the offering chapels of members of the elite, leading flocks of birds before the tomb owner (see *supra*).⁴¹⁵ During the Old Kingdom, they frequently hold a long straight staff with one hand, while the other hand is clasping the opposite shoulder as a sign of respect in the presence of their superior (**Figures 79, 81, 89**). The theme of keeping track of the livestock owned by officials continued to feature in the funerary iconography of the Middle and New Kingdoms. In the 12th Dynasty offering chapels of *Hnm-htp* II (BH 3)⁴¹⁶ and *Hty* (BH 17)⁴¹⁷ at Beni Hassan, herdsmen are shown walking behind the flocks of birds under their charge, clasping in their hand a characteristic long staff curved at one end identified as a *ꜥw.t*-staff.⁴¹⁸ As illustrated in the tomb of *Hty*, such a staff could be used as a hook to seize by the neck single birds eager to wander on their own and away from the rest of their congeners (**Figure 95**). A few additional scenes in Theban tombs, in particular the animated flocks of domestic geese and their

⁴¹⁴ Épron and Daumas, pl. 8

⁴¹⁵ To the extent of my knowledge, the man leading the birds for inspection before the tomb owner is only labeled as a  *minw* in the Giza tomb of *Shm-ꜥnh-Pth* (Badaway 1976, Fig. 20). In the tomb of *Pth-šps* in Abusir, the workman, in this instance, in charge of a group of cranes is also known by name and title: he is the *imy-r3 šd 3pd(.w)*, “overseer of bird feeders,” named *Dfdy* (Verner 1977, p. 227, fig. 39)

⁴¹⁶ Newberry 1893a, pl. 30; Kanawati and Evans 2014, pl. 125. Two herdsmen are depicted in the tomb of *Hnm-htp*. One of them is seemingly shown without a staff, despite his hand being clasped tightly, as if holding onto a missing item. He is clasping his shoulder as he is advancing *Hnm-htp*, leading towards his superior three different flocks – geese, ducks, and doves - represented over three small registers. In the register above this scene, another herdsman, this time holding under his arm a hooked staff and clasping a small crane against his chest, is following a flock of Eurasian cranes, readily identified in this tomb by the presence of the characteristic red patch on their forehead and their overall grey plumage (**Figures 67A, 68**).

⁴¹⁷ Newberry 1893b, pl. 14

⁴¹⁸ Fischer 1978, pp. 7-10; Meeks 2012, p. 526

guardians from the 18th Dynasty tomb of *Nb-Imn* surviving on a fragmentary wall painting (BM EA37978), testify to the survival of the theme in early New Kingdom funerary iconography (**Figure 30**).⁴¹⁹





During the New Kingdom, most of the evidence on the profession of *mniw 3pd.w* is recovered in the written record, in particular in relation to animal husbandry in the estates belonging to the country's main gods, namely Ptah, Re, and Amun. It has been argued that herdsmen and shepherds, all known under the general term *mniw*, belonged to the margins of society, in particular because of the itinerant character of their occupation requiring for them to constantly search for adequate grazing land at the fringes of the agricultural plain.⁴²⁰ Possibly because of their association with large temple estates, the position in the Egyptian society of the New Kingdom of several herdsmen keeping the flocks of divine offerings was elevated enough to allow them to commission the carving of funerary monuments subsequently deposited in temples in their memory. During this period, certain *mniw 3pd.w* have thus been identified in association with the following deities and their temple estate, as listed in **Table 18**.⁴²¹

⁴¹⁹ The motif of the presentation and recording of geese before the tomb owner has only survived in a few fragmentary scenes, many of which are no longer in situ, as is the case with the aforementioned tomb of *Nb-Imn*: in the tomb of *Pwy-m-R^c* (TT 39), a mixed flock of bird is led by a herdsman equipped with a ^c*w.t*-staff (**Figure 82**). In the tombs of *Wnsw* (TT A4) and *Nfr-htp* (TT A5), the presence of a herdsman along with the flocks of geese represented on the fragments can only be surmised due to the damaged state of the scenes.

⁴²⁰ See the commentary of K. A. Kóthay (2013, pp. 498-500) on the ambivalent relationship between herdsmen in general and the rest of Egyptian settled society, in particular administrators and farmers. See also Bietak 2006, pp. 132-133, for a discussion of the ethnic background of shepherds tending flocks, for the most part small mammals, in the Eastern Delta during the 18th Dynasty.


⁴²¹ Vernus 1991, p. 246

Table 18. List of *mniw 3pd.w* titles attested during the New kingdom

Name(s) and Title(s)	Translation	Comments and References
<i>Pth-msw, mniw 3pd.w n pr R^c</i> 	<i>Pth-msw</i> , guardian of birds of the estate of Ra.	El-Banna 1990 Stela excavated in Heliopolis
<i>Mniw n (pr) Pth</i> 	Guardian of birds of (the estate of) Ptah.	Schafer and Roeder 1924, pp. 164-166: Berlin ÄM 7289; Steinmann 1991 Family of <i>K3-m^c</i> and his 4 sons all involved in the keeping of poultry for the temple of Ptah in Memphis.
<i>Mniw 3pd.w n Imn St (?)</i> 	<i>St (?)</i> guardian of birds of Amun	Schafer and Roeder 1924, p. 580: Berlin ÄM 15309
<i>hri mniw 3pd.w n Imn M^chw</i> 	<i>M^chw</i> , chief guardian of birds of Amun	Tosi and Roccati 1971, pp. 47-49: Turin 50012

As discussed previously, temples needed to have a supply of birds on hand to provide for the daily offerings in fowl presented before the cult statue(s). While some of these birds were kept in enclosures, others, known under the collective term of *mnmn.t 3pd.w*,²¹⁰ were granted more freedom of movement and were placed under the responsibility of the *mniw 3pd.w*. As depicted in funerary iconography (**Figure 96**),⁴²² flocks of geese were driven to fields located at the edge of the agricultural plain to graze during the day time, only to return to the safety of an enclosure at night. As stated in the decree king Seti I commissioned to carve at Nauri, in Nubia, the position of herdsman was expected to be handed down from father to son:

Mniw hr nwi ts.wt=sn hr^c.wy=sn m z3 n z3 r nhh hn^c dt, “The herdsmen look after their charges (lit. troops, gangs) under their care (lit. their arms), from son to son, eternally and forever.”⁴²³


⁴²² The pastoral theme of driving flocks of birds and herds of cows with their calves came to be incorporated into the ideal and paradisiac world the deceased wished to reach in the afterlife, known as the Fields of Yaru, as shown in a vignette painted on the 21st Dynasty funerary papyrus of *T3-wd3-R^c* (Cairo Museum; Piankoff and Rambova 1957, p. 142 and pl. 15). *T3-wd3-R^c* is specifically said to be  *mni 3pd.w*, “guarding the birds.”

⁴²³ Transcription: *KRI I*, 49:9-10, Translation: Griffith 1927, p. 199; Kitchen 1993, p. 43.



Such tradition is further attested on stele Berlin ÄM 7289 dedicated to *K3-m^c, ʕ3 n k^ch(.t) n t3 mni(.t) 3pd.w m3w n Pth* “the great one of the district⁴²⁴ of the new pasture land for poultry of Ptah.”⁴²⁵ This document dated to the New Kingdom reveals that the family of this official was fully involved with managing the flocks the god Ptah. *K3-m^c* and four of his sons held titles related to tending the birds belonging to the estate of the temple of Ptah in Memphis. Their duties were many and diverse, from the supervision of the land where the birds were sent to eat (*mni.t*) to the care of the birds themselves. The elder son of *K3-m^c* inherited the senior position of his father, *ʕ3 n k^ch. t n t3 mni(.t) 3pd.w n pr Pth rsy inb.w=f*, “the great one of the district of the pasture land for the birds of the estate of Ptah, south of his walls”, while the younger three brothers were working under the command of their older sibling as *mniw 3pd.w n (pr) Pth*, “guardian of birds of (the estate) of Ptah.”

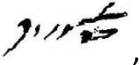
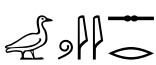
The profession of guardian of birds continued to be an integral part of animal husbandry practices during the Late Period. A unique collection of demotic receipts written during the reigns of Darius I and Psammetichus IV (497-485 BC) provides further insight into the tradition of leasing the care of poultry for the benefit of the temple of Amun at Karnak.⁴²⁶ The main

⁴²⁴ Wb V p. 20 §10: *k^ch.t*, “Distrikt,” attested in titles.

⁴²⁵ Schafer and Roeder 1924, pp. 164-166. See Steinmann 1991 for a discussion of the possible meaning of this unusual title. He proposes two possible translations: “**true** great one of the district of herding poultry,” reading the signs  as *m3^c*, true; or, more probably, “great one of the district of the **new** (*m3w*) pastureland for poultry,” *mni(t)* in this instance not referring to the action of herding but rather to the land where flocks of geese were sent to eat (cf. Wb II p. 75 §14). In either case, the men of this family were in charge of birds and/or the land necessary to feed them.

⁴²⁶ B. Kemp (1991, p. 191) comments that “it was common in the New Kingdom for people to look after livestock under a leasing arrangement with a temple.” He specifically cites the example of a royal butler named *Nfr-pr.t*, who, during the reign of Thutmose III, was put in charge by royal decree of a small herd of cattle (four Palestinian

protagonists in seven of these thirteen papyri held the title of ⁴²⁷  *mni* *3pd(.w)*, “guardian of birds,” and were employed by the Domain of Amun to look after the flocks of birds belonging to the temple in the region of Hou. As determined by S. Vleeming, the editor of these short texts, the domain of Amun in question is undoubtedly that of Karnak in Thebes.⁴²⁸ As discussed previously, it was not unusual for the Karnak temple to delegate the care of its animals to personnel working on lands the estate of the god Amun owned throughout the country. The aforementioned demotic receipts recording transactions between several *mni.w 3pd(.w)* from the region of Hou further strengthen the notion that the temple of Amun at Karnak obtained a large majority of the animals needed both for daily offerings and festival ceremonies from areas outside of the Thebaid.

It transpires from these texts that some provincial *mni.w 3pd(.w)* had the opportunity to lease small to medium flocks of *zri*-geese (⁴²⁹ ) from the office of the God’s Offering of Amun in Thebes in return for a yearly ‘rent’ in the form of birds produced by the flock during the breeding season. While the initial flock remained the property of the Domain of Amun, any additional bird produced after payment of the rent probably entered the

cows, two Egyptian cows, one bull, and a bronze bucket, presumably used during milking). This official was responsible for tending the herd and regularly delivering a quota of offspring and milk to the mortuary temple of Thutmose III.

⁴²⁷ pStrassburg 2, 2 in Vleeming 1991, p. 62.

⁴²⁸ *Ibid.*, p. 10

⁴²⁹ pLoeb 47, 3 in *Ibid.*, p. 22.

private property of these *mni.w*. It should be noted that, when encountered in texts dated to the Late and Greco-Roman periods, the word *mni* is frequently translated as “gooseherd” by comparison with the corresponding Greek title, *χηνοβοσκός*, “guardian of geese,” used in Greek documents of the time. The English appellation of gooseherd for Late Period *mni* seems most appropriate since, in the majority of cases, the birds placed under the charge of these men are *zri(.t)*-geese, as attested in this dossier.

The practice of delocalizing poultry husbandry could not only be construed as a practical and economic venture for the temple of Amun, it could also represent a profitable investment. On the one hand, it would dispense the temple of Karnak from keeping on site massive flocks composed of thousands of birds, a practice which has remained archaeologically invisible thus far.⁴³⁰ Maintaining flocks with tens of thousands of individuals, as listed in temple accounts, would be a prohibitively costly venture, requiring the temple to assign large amount of grain from its granary to care for these captive birds over long periods of time. In its stead, small manageable flocks of birds could be delivered to the temple on a regular basis as rent payments for the myriads of flocks of geese leased and assigned to gooseherds throughout the land. A constant and “fresh” supply of birds would then provide the daily offerings, which were to be deposited on the shrines housed in the sanctuary, without tapping into its avian ‘capital,’ namely the original flocks of birds leased by the temple. The responsibility of tending and feeding the birds would be delegated to provincial herders, who could lead their flock to graze

⁴³⁰ While a poultry yard has been identified near the sacred lake at Karnak (see *supra*), such a facility would not have been able to accommodate the numbers and variety of birds listed as offerings.

on suitable land, labeled as *ḥw n ʒḥ*, “surplus of land” in pStrassburg 5 and said to lie at the edges of the agricultural plain all along the Nile Valley.⁴³¹

Interestingly, several gooseherds mentioned in this set of documents exhibited some “entrepreneurial” spirit, as they are seen entering into shared partnerships for the responsibility of raising the birds assigned to them by the office of the God’s Offering of Amun.⁴³² They subsequently delegated the actual care of the geese to subordinates, also referred to as being *mniw ʒpd(.w)*. Was there a societal and hierarchical distinction between the gooseherds leasing the geese from the Domain of Amun, and those actually taking care of the birds? Is it simply a reflection of the more enterprising spirit of some individuals rather than a difference in status within society? The legal and brief style of these receipts does not allow us to answer these questions with certainty. Nevertheless, this collection of texts, along with additional textual material from the Late and Ptolemaic periods, indicate that some gooseherds had gathered enough wealth to have land registered in their name,⁴³³ borrow money or grain,⁴³⁴ and establish marriage contracts.⁴³⁵ They were able to invest in animals, co-owning

⁴³¹ Cruz-Urbe 1980. As described by S. Vleeming (1991, p. 55) “‘surplus of land’ is said of those strips of land along a field that were reckoned to belong to it, but were not tilled, usually because of the unevenness of the ground. Although the surplus of land was useless for producing grain [...], it was pre-eminently suitable for grazing geese.”

⁴³² pLoeb 47: Vleeming 1991, pp. 21-30

⁴³³ pStrassburg 5 (Cruz-Urbe 1980; Vleeming 1991, pp. 46-59)

⁴³⁴ Loan of money: pLoeb 48 + 49A (Malinine 1968; Vleeming 1991, pp. 156-177); loan of grain: pStrassburg 4 (Malinine 1950; Vleeming 1991, pp. 178-188).

⁴³⁵ oStrassburg D 1845, from the beginning of the Roman period (Spiegelberg 1909); See also Lüddeckens 1960, pp. 236-237.

and selling cattle and donkeys.⁴³⁶ Some were also able to commission a tomb and a funerary assemblage, such as stelae and offering tables bearing their names.⁴³⁷

ii. Administrative Staff

According to the poultry-yards scenes encountered in offering chapels, a small army of administrators was working alongside the men looking after the captive flocks of birds.⁴³⁸

Scribes (*zš.w*) are the most frequent members of this administrative staff. Whether they are


shown standing and looking towards the enclosure or sitting on the floor of the roofed

structure depicted beside the bird farm, with a reed pen behind one ear, these men, labeled as

zš.w 3pd.w, “scribes of the birds,”⁴³⁹ were always busy taking notes, recording the number of

birds present in the enclosures and keeping track of those being brought by fowlers or

⁴³⁶ Sale of a donkey foal: pLoeb 44 + 49; collective ownership of a cow: pLoeb 41; cession of a female donkey: pLoeb 43; cattle sale: pLoeb 51. See Spiegelberg 1931 for the original publication of these texts, and Vleeming 1991, pp. 94-154, for transcription, transliteration, translation, and commentaries on the economic transactions conducted in this community of provincial herdsmen.

⁴³⁷ Offering stela from *P3-di-Wsir*, a *nni ibd*  from the Saite period (Betrò 1980); CG 22094 and 23196: tomb stela and offering table dedicated to a *nni 3pd* from Ptolemaic Akhmim (Kamal 1904, pp. 83-84 and pl. 29; Spiegelberg 1904, pp. 67, 73; Kamal 1906, p. 139 and pl. 50; Vleeming 1991, p. 21).

⁴³⁸ See Mahmoud (1991, 239-245) for a presentation of the various titles encountered in Old Kingdom tombs. I do not agree with O. Mahmoud (1991, p. 242), who claims that the number of officials represented in the scenes should necessarily be seen as an indication of the size of the poultry-yard. While I cannot fully disprove this statement, poultry-yards being for the most part archaeologically invisible, I rather interpret the large number of administrators present before the tomb owner, best exemplified in the tomb of *Ty*, as being a reflection of the tomb owner's status, wealth, and importance in society. Based on the representations carved in his tomb, *Ty* undoubtedly owned a large estate, which required a large staff to manage, in particular *imy.w-r3 pr*, “stewards” (Épron and Dumas 1939, pl. 19). Furthermore, his involvement with the Sun temples of the kings of the 5th Dynasty may justify the presence of *iry-mḏ3.t*, archivists, also present in the staff mentioned in the Abusir Papyri (Épron and Dumas 1939, pl. 19; Posener-Krieger 1976, p. 467 (Fragment 80C)).

⁴³⁹ Jones 2000, p. 834 (title #3042); *zš (3pd.w)* are present in the following Old Kingdom tombs: *Ty*: in this tomb, several of these scribes are known by name (Épron and Dumas, pls. 6 and 19); *Hzi* (Kanawati and Abder Raziq 1999, pl. 56); *Mry-Tti* (*Ibid.* 2004, pl. 48); *K3-gm-ni* (Harpur and Scremin 2006, p. 496); *Rnni* (Kanawati 2009, p.28, pls. 17 and 45).

withdrawn by *hm.w-k3*, “funerary priests.” They also checked the amount of grain distributed to the birds by the *šd 3pd.w*. In the tomb of *K3-gm-ni*, it is the *imy-r3 šd 3pd.w*, “overseer of poultry feeders,”⁴⁴⁰ who verifies that the men working under his command are following his orders.⁴⁴¹ The interest of the granary department, the *šnw.t*, in keeping track of the amount of grain distributed to these flocks of birds is clearly indicated in the tomb of *Nfr-sšm-Pth*. Both a *hry-tp šnw.t*, “servant of the granary” and a *šd zš n šnw.t*, “inspector of granary scribes” are present behind two men delivering baskets of grain to *Nfr-sšm-Pth*’s *hr.t-mw*.⁴⁴² This *hry-tp* is promising that the birds will be well fed: *iw=i r di.t it r wr*, “I shall give barley in abundance.” As for the *šd zš*, he is recording that *it 10 r sh3=f*, “10 (sacks of) barley are for him (i.e. the feeder) to scatter” (Figure 65).

Some of these scribal records have survived in the form of clay tablets recovered at Balat, in the Dakhla Oasis. Dated to the end of the Old Kingdom, these documents, recovered in the vicinity of the local governor’s palace, complement the information gleaned from the funerary iconography of this period.⁴⁴³ One document in particular, tablet 4438, records the

⁴⁴⁰ Jones 2000, p. 258 (title # 933). M. Verner (1977, p. 78) translates the title *imy-r3 šd 3pd* as “overseer of poultry.”

⁴⁴¹ Harpur and Scremin 2006, p. 497

⁴⁴² Lloyd *et al.* 2008, p. 17, pl. 16





⁴⁴³ Pantalacci 2005, p. 91

activity of *šd.w 3pd.w*, “poultry feeders,” the birds under their charge (*sr-* and *trp*-geese; *z.t*-ducks, and *mnw.t*-doves), and the amount of grain delivered to each group.⁴⁴⁴

These scribes continue to be present in poultry-yard representations during the New Kingdom. In the Ramesside tomb of *Ṭy-mi-sb3* at Naga el-Mashayikh, a scribe, clearly differentiated from the men working with the birds by his more elaborate dress – shoulder length wig, tunic, and long kilt – is represented recording on a tablet the arrival of the long-legged bird, possibly a young crane, a worker is presenting him (**Figure 76**).⁴⁴⁵

Listed in **Table 19** are the additional titles, which have not been recorded in iconography, but whose terminology allows us to surmise that their holders were involved to some extent in poultry management:

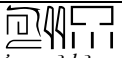


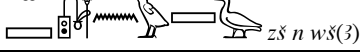


Table 19. List of administrative titles involved in poultry management

Title	Translation	Period(s) of Attestation^a	References
 <i>imy-r3 3pd(.w)?</i>	Overseer of birds/fowl	OK	Jones 2000, #258 Cleveland 1964.91: PM III, pp. 696-697; Strudwick 1985, pp. 107-108 Andreu 1997 Berman 1999, pp. 130-132
 <i>imy-r3 ʿb.w wḥm.w šw.w (nš.wt)</i>	Overseer of horned, hoofed, feathered, and scaled animals	MK NK	Ward 1982, #64; Quirke 1996 Loret 1916-1917; El-Ayedi 2006, #67-69
 <i>imy-r3 pr (?) 3pd(.w)</i>	Overseer of the aviary, department of fowl	OK	Jones 2000, # 463
 <i>imy-r3 pr n h3mw (?)</i>	Steward of the poultry yard (?)	MK-2IP	Ward 1982, #155 Martin 1971, p. 115 and pl. 11, Seal #1481

⁴⁴⁴ *Ibid.*, p. 88

⁴⁴⁵ Ockinga 1990, pl. 55

Table 19, continued.

Title	Translation	Period(s) of Attestation ^a	References
 <i>imy-r3 h3-r-mw/h3my/hmy.w</i>	Overseer of the poultry yard	NK: 18 th Dynasty	<i>T3y</i> , TT 349: Nasr 1985 <i>Nht</i> , TT C8: Manniche 1988, pp. 58-59
		NK: 19 th Dynasty	<i>Dhwty-m-h3b</i> , TT 194: Seyfried 1995
 <i>imy-r3 kbhw p3.ywt hnn.wt</i>	Overseer of migratory birds, those that alight and fly away ^b	MK	Hayes 1949; Ward 1982, # 384
 <i>hrp 3pdw (r hwt ntr)</i>	Controller of birds (?)	NK	<i>KRI</i> II, 536:11
 <i>zš n wš(3)</i>	Scribe of bird force-feeding	LP	Anthes 1939, p. 22: Berlin <i>ÄM</i> 15414
 <i>zš n h3i(t)-r-mw</i>	Scribe of the poultry yard	MK	Franke 2001, pp. 26-27
 <i>zš hsb k3.w 3pd.w</i>	Scribe and reckoner of bulls and birds	NK	El-Ayedi 2006, # 1893

^a For general references on Old Kingdom titles, see Jones 2000; for Middle Kingdom titles, see Ward 1982; Quirke 2004a; Grajetzki 2009; for New Kingdom titles, see Al-Ayedi 2006. The number indicated besides these authors' names are the index number they assigned for each title. Additional references not included in these compilations will be provided when possible.


^b Meeks 2012, p. 530. W. Ward (1982, p. 50) translates this title as "overseer of aquatic, flying, and fluttering birds."


As illustrated by this table, the desire on the part of the administration to keep track of the avian resources circulating and kept in captivity in the country is further manifested in the list of titles connected with bird management high officials enumerated in their tomb chapels or on the statues destined to be the recipient of their funerary cult. During the entire span of Egyptian history, it was presumably crucial for the administration⁴⁴⁶ to be aware at any given time of the number of birds present in the large institutions of the country, in particular the royal palace and the main temples of the country, in order to insure that the altars of the gods and of the royal mortuary cults were constantly and consistently supplied with bird offerings.

⁴⁴⁶ This bird accounting may be of special interest to the central administration, at times of political unity in the country, and also to the local and provincial administrations, depending on the strength of the bureaucratic power based in the capital.

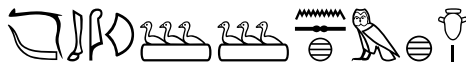
Accurate accounting was especially crucial at festival times, when the need for poultry grew exponentially (see Appendix 1, **Table 26**).

Despite our awareness of these titles, the lack of context for the large majority of their attestations in the written record does not allow us to readily assess how active a role the men holding these titles played in bird management. It is also unclear whether these people were in charge of managing wild birds or birds raised in captivity. V. Loret expressed his opinion on this issue in his study of the title of *imy-r3 ʕb.w wḥm.w šw.w nš.wt*,⁴⁴⁷ “overseer of horned, hoofed,

feathered, and scale animals,” often simply inscribed as .⁴⁴⁸ During the Middle

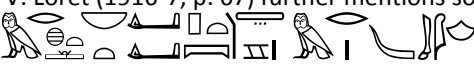

Kingdom, this title is at times found in association with the management of “that which the sky gives, the land produces, and the Nile brings.”  *ddi pt km3.t t3 inn.t*

ḥʕpy.⁴⁴⁹ During this same period, it is also accompanied by the title of “overseer of horned, hoofed, feathered, scale animals and of the two bird ponds of pleasure:”


 *imy-r3 ʕb.w wḥm.w šw.w nš.wt zš.wy n šḥms-ib*.⁴⁵⁰

⁴⁴⁷ Wb IV p. 424 §15. According to the Wb, the title can be encountered as simple *imy-r3 šwt* (Ibid. §13), and *imy-r3 šwt nšwt* (Ibid. §14).

⁴⁴⁸ Loret 1916-7

⁴⁴⁹ Couyat and Montet 1913, p.78; V. Loret (1916-7, p. 67) further mentions some variations to this title: tomb of Amenemhat (BH 2) in Beni-Hassan  (Newberry 1893a, pl. 7); Stela C2 in Le Louvre  (Gayet 1889, pl. 2).

⁴⁵⁰ Loret 1916-7, p. 67; CG 20053: Lange and Schaeffer 1902, p. 63; CG 20538 and 20539: *Ibid.* 1908, pp. 145-158. A modified version of this association of titles is encountered lines 11 and 12 of the inscription of *Hr* in Wadi el Hudi dated from the reign of Senusret I: *imy-r3 zš.wy imy-r3 ḳbh.wy imy-r3 ʕb wḥm šwt nšwt*, “overseer of the two bird

Based on these attestations and titular associations, should we then assume that the birds alluded to in the term *šwt*, feather, are only wild ones, provided by the sky and captured in the bird pools (*zš.w*)? If, as V. Loret proposed, the holder of the  title was in fact in charge of the overall animal production of the country,⁴⁵¹ one can only assume that the person holding this office would have occupied a high position in the hierarchy, most likely at the state level, overseeing the work of a multitude of administrators, various teams focusing on one type of animal husbandry – mammals, birds, fish – and regularly reporting to their superior. It has also been proposed that, rather than taking care of the management of animal husbandry, hunting, and fishing, the holder of this title may have been responsible for insuring that the institution (*pr*) to which he was attached (palace or large estate) was well provided with meat, poultry, and fish.⁴⁵²

The great steward *Hnnw*, working under Mentuhotep II during the late 11th Dynasty, was not only *imy-r3 ʿb.w wḥm.w šw.w nš.wt*, “overseer of horned, hoofed, feathered, and scale animals,” but he also held another wide encompassing title, *imy-r3 kbḥw p3(y).t hnn.t*, whose exact translation has led to scholarly discussion. **Error! Bookmark not defined.** According to W. Hayes, this title should be translated as “overseer of aquatic, (i.e. swimming) birds, flying birds, and fluttering birds” – in other words, overseer of the three principle classes of birds, or birds of

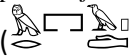
ponds, overseer of the two *kbḥw*-wetlands, overseer of the horned, hoofed, feathered, and scaled animals” (Seyfried 1984, p. 60).

⁴⁵¹ Loret 1916-7, p. 67

⁴⁵² Meeks 1979, p. 239; Quirke 1996, p. 669: the involvement with shipping of the official bearing the title *imy-r3 ʿb.w wḥm.w šw.w nš.wt* may indicate that this person was charged with transport of livestock and/or meat.

all kinds.⁴⁵³ D. Meeks, on the other hand, considers that the two participles *p3(y).t hnn.t* further describe the *kbh.w*, which he translates as “migratory birds.”⁴⁵⁴ According to this latter suggestion, the great steward *Hnnw* was “overseer of the migratory birds, those that alight and fly away.” Needless to say, if we are to take these lengthy titles as providing insight into the various activities connected to the positions, the great steward *Hnnw* was heavily invested with animal production in general and fowling expeditions in particular, especially during the fall and spring migrations. The bird farms under his jurisdictions could then be refilled with flocks of wild birds captured during these expeditions.

One additional title dated to the Old Kingdom is worthy of discussion as it was not discovered in a funerary or cultic setting, but rather in an inscription carved in the course of a mining expedition. In the 5th Dynasty, possibly during the reign of Djedkare-Isesi, a certain *Idw* joined an expedition through the Sinai presumably organized to visit and exploit the copper mines of the region. *Idw* left a mark of his passage in the form of a short inscription, in which he provided a short biography:⁴⁵⁵

mšci imy-r3 sr.w imy-r3 pr.wy wr.wy m pr nb=f
irr wd.t.n nb=f r^c nb imy(-r3) pr 3pd.w () *Idw*

Member of the expedition, overseer of the *sr*-officials, overseer of the great two houses in the estate of his lord;
 He who does daily what his lord commanded, the overseer of the department of poultry, *Idw*

⁴⁵³ New York MMA 26.3.217: Hayes 1949, p. 47 n. c

⁴⁵⁴ Meeks 2012, p. 530

⁴⁵⁵ Sinai Inscription 21: Gardiner and Peet 1952, pl. 10; Edel 1983, pp. 165-170; Eichler 1993, p. 36

The title of *imy-r3 pr 3pd.w*,⁴⁵⁶ as suggested by E. Edel,⁴⁵⁷ may have been held temporarily by *Idw* solely during the time of the expedition. In addition to the positions he occupied when posted in the Nile Valley, *Idw* presumably contributed to the welfare of the members of the expedition by insuring that they had access to fresh poultry during the journey. Prior to departure, he would have been responsible for assessing the number of birds – most likely geese, ducks, and possibly pigeons – needed to satisfy the needs of the expedition for the duration of the journey. These birds, gathered from the aviaries managed by the central administration, would be subsequently gathered in some crates and loaded onto donkeys. A minimum of food and water would be given to them on a daily basis to avoid premature death and subsequent spoiling of the meat in the heat of the Sinai. These birds could then be dispatched and cooked when the need arose during the expedition, both during the journey or at the mining site.

The titles related to poultry management attested after the Middle Kingdom illustrate the rise of the domain of Amun in Karnak as a major power in the overall economy of the country, especially from the New Kingdom onwards. Known solely from the 18th and 19th Dynasties is the title of overseer of the poultry-yard, *imy-r3 h3-r-mw/hmy*,⁴⁵⁸ an office held by

⁴⁵⁶ This title is otherwise only attested on the false door of *It3i*, who is buried at Dara, in Middle Egypt, close to the entrance of the Dakhla Oasis (Weill 1958, pl. 42). It is written in this case ." data-bbox="598 728 688 755"/>

⁴⁵⁷ Edel 1983, p. 169

⁴⁵⁸ It is possible that a precursor to this title is to be read on a Middle Kingdom seal, which used to belong to a certain *Snb* (Cairo JE 75138; Martin 1971, p. 115; Ward 1982, p. 24, title # 155). According to S. Quirke (2004a, p. 64), who reads the title as being *imy-r3 pr n h3<rm>w*, “overseer of goose-pens,” the holder of this title used to work alongside other notables associated with animal husbandry, all of them being closely tied to the Granary.

men employed by the estate of Amun. Three individuals bearing this title are known from their tombs in the Theban necropolis:

- *T3y*, active during the reign of Thutmose III. Fragmentary inscriptions in the offering chapel of his tomb, TT 359, state that he was *imy-r3 h3-r-mw n imr-r3 pr n [T]mn*, “overseer of fowl-house for the overseer of the estate of Amun.”⁴⁵⁹ Because of the large extent of the estate of Amun, known to own land throughout the country (see *supra*), it is unclear whether *T3y* was solely in charge of the bird enclosures located in the temple of Karnak, or whether he was also responsible for managing the aviaries built on temple land in other regions of Egypt.
- *Nht*, who was buried in the now lost tomb TT C8. He was active during the first half of the 18th Dynasty.⁴⁶⁰ He was especially involved with the fowl-houses holding the birds destined to become offerings for Amun, as stated in his tomb.²²³
- *Dhwtj-m-h3b*, buried in TT 194. Active during the reign of Ramesses II, he held in particular the following titles:⁴⁶¹
 - *imy-r3 sh.tyw n pr-Imn*, “overseer of the inhabitants of the *sh.t* of the Estate of Amun,” seemingly his main title;
 - *imy-r3 h3mw n Pr-Imn*, “overseer of the fowl houses of the Estate of Amun.”

⁴⁵⁹ Nasr 1985, pp. 77-78

⁴⁶⁰ Manniche 1988, p. 59

⁴⁶¹ Seyfried 1995, p. 101

As noted by K. Seyfried, combining the responsibility of both the *sh.tyw*, whom he translates in this instance as being specifically “fowlers,”⁴⁶² and the enclosures where the birds destined for the cult of Amun were maintained in captivity, appeared as an efficient way to insure that the fowl yards of the god were at all times filled with wild fowl captured in the wetlands located on the estate of Amun and delivered to Karnak by the fowlers under his jurisdiction. As holder of these two positions, he was in the best position to control a regular and manageable flow of newly caught wild birds, which would have been especially needed at times of festivals. As aforementioned, it is unknown what proportion of birds bred in captivity versus those captured in the wild was held in the bird facilities of the temple of Amun. Nonetheless, *Dhwti-m-h3b*'s knowledge of the sizes of the flocks owned by the estate of Amun gave him the opportunity to direct the occupations of the *sh.tyw*, requiring them to focus on the capture of birds at time of low stock and/or high demand and divert their attention to other products of the *sh.t* when birds were not needed.

d. Concluding Remarks

The Old Kingdom site of Kom el-Hisn in the Western Delta has yielded invaluable faunal and botanical material, leading the archaeologists and other specialists working at the site to identify this community as being a major center of cattle husbandry controlled by the central

⁴⁶² *Ibid.*, p. 102

administration.⁴⁶³ Rather than being consumed locally, most of the herd was exported throughout the country to answer the needs and requirements of the State. Unfortunately, no site susceptible to provide us with as detailed a picture of bird management as can be assessed for cattle at Kom el-Hisn has yet been identified. Apart from the titles listed previously, little data are available regarding the administration of avian resources during most of pharaonic Egypt, contrary to cattle, a prestigious commodity requiring more administrative oversight.⁴⁶⁴ The few titles connected with the Granary Department recorded in the poultry-yard scenes of the Memphite necropolis may testify to the involvement of this major institution in controlling the distribution of birds from the sites of their capture to the farms where they were kept in captivity temporarily, and finally to their final destination (tomb, temple, or kitchen) where they were dispatched. What the involvement of the national government (or *pr-ny-sw.t*) in this process is uncertain. Was the distribution organized nationally, or was it left to the responsibility of regional administrators acting as representatives of the central administration?

During the New Kingdom, the large majority of the extant documentation relative to poultry husbandry was provided by the large temples, which came to dominate and control the economy of the country. As a consequence, the titles related to avian exploitation place the individuals holding them among the massive effective of workers employed by these temples on their domains. The poultry-yards established on these estates and placed under the

⁴⁶³ Moens and Wetterstrom 1988; Redding 1992; Papazian 2013, p. 48

⁴⁶⁴ Ghoneim 1977; Moreno Garcia 1999b; *Ibid.* 2003, p. 85

management of a *imy-r3 h3mw* directly provided the offerings presented before the gods.⁴⁶⁵ The discovery of a poultry-yard within the *šn^c ʿ3 w^cb* of Karnak, a facility dated to the Late Period located on the banks of the sacred lake, seems to indicate that the management of the birds eventually fell under the responsibility of this workshop and its personnel, in charge of providing the victuals destined to become *h^{tp}.w n^{tr}*, “divine offerings.”⁴⁶⁶

3. Household Aviculture

As demonstrated above, the need for fowl of large institutions, such as temples and palaces, required that they disposed of fowl-yards to keep a flock of birds, upon which they could draw when necessary. What about individual households: did most families raise a few captive birds, both for meat and possibly eggs? If this was the case, where were the birds kept and who was responsible for their care? Can we identify an urban and/or a rural trend? To offer as complete an answer to these questions as possible, I will propose a model of household poultry farming in ancient Egypt, relying in part on the evidence gathered from both the written and the archaeological records revealing the presence of live birds in settlement contexts. I will complement these findings by consulting ethnographic studies on poultry farming in 19th- and 20th-century Egypt to better understand how poultry was raised in pre-industrial and predominantly rural societies.

⁴⁶⁵ Haring 1997, p. 119

⁴⁶⁶ According to B. Haring (1997, p. 119) and H. Papazian (2005, p. 186), the role of the *šn^c w^cb* during the New Kingdom was most likely limited, especially when compared with the later versions of these structures identified by C. Traunecker (1987).

a. Small Scale poultry Farming in Dynastic Egypt

i. Review of the Extant Data

It is a prevalent feature of the ancient Egyptian civilization that a large majority of the population has remained for the most part invisible in both the archaeological and textual records. The representations of non-elite Egyptians in funerary iconography, such as the “daily life” scenes depicted in the offering chapels of high officials, are frequently heavily biased and provide us with the image that the elite wanted to convey of their surroundings. Craftsmen, herdsmen, farmers, along with non-elite women are traditionally shown being employed by the tomb owner and serving his needs, both presumably during his lifetime and also in his afterlife. The daily lives of these workers, their dwelling and possessions, are rarely, if ever, depicted. Finding evidence for their ownership of poultry is therefore unlikely to be encountered in the iconographic record.

The segment of the population under study in this chapter is for the most part invisible in the written record in part because of their inability to read and write. The Ramesside community of craftsmen and their families living in the village of Deir el-Medina, however, stands out both because of the high level of literacy attested among these workers and the significant body of textual material recovered in the village, located at the desert margins on the west bank of Thebes.⁴⁶⁷ A selection of briefs texts belonging to this abundant collection of

⁴⁶⁷ Černý 1973; Valbelle 1985. It should be kept in mind that the community of Deir el-Medina, housing the artists and craftsmen building the royal tombs in the Valley of the King, benefited from a unique status and may not be representative of the rural community as a whole. Yet, the higher literacy rate of its inhabitants has provided us with some unparalleled insight into the lives of a tight-knit community, from the record of laundry lists to the reports of workers stealing offerings from nearby tomb chapels.

ostraca and papyri fragments may provide evidence to support the private ownership of small flocks of birds in rural communities (Appendix 7, **Table 45**). Birds are indeed mentioned in the barter system of the community. Several ostraca include *3pd.w*, “birds,”⁴⁶⁸ and *gr-(n-)p.t*, “pigeons and doves,”⁴⁶⁹ among the items changing hands.⁴⁷⁰ While the texts do not specify if the birds were alive at the time of the transaction, it is likely that poultry was only dispatched at the time of consumption to guarantee freshness. J. Janssen’s in-depth study of the prices recorded for the various commodities bartered at Deir el-Medina reveals that birds were inexpensive in comparison with most other items, costing either $\frac{1}{4}$ deben or $\frac{1}{2}$ oipe.⁴⁷¹ For this reason, they are rarely attested in price-ostraca, their exchange not requiring a record. It has been proposed that most households may have possessed their own flock, which could be exchanged to acquire other items needed by the family.⁴⁷² The most common birds owned by the community were probably geese, possibly also ducks, referred to in texts under the general term “*3pd.w*.” These birds would have been allowed to roam in the streets and passageways during the day, only to return to their owners’ home at night for protection from predators.


⁴⁶⁸ O. Ashmolean Museum 151; O. Brooklyn 37.1880E; O. DeM 556; O. BM EA5636; pTurin fgmt. beta.

⁴⁶⁹ O. UC3961; O. DeM 118

⁴⁷⁰ Where these transactions took place remains the domain of speculation. Whereas one may expect the exchange of goods to take place at a marketplace, it should be noted that no birds or cuts of meat are included among the many goods depicted in the extant representations of markets. See *infra* for a discussion on the representations of markets in ancient Egyptian iconography.

⁴⁷¹ Janssen 1975, p. 178. Only three instances have been identified: O. DeM. 556; O. BM EA5636, 3, and O. Ashmolean Museum 15, 3-4. However, as J. Janssen also remarks “the rarity of fowl in price-ostraca is certainly no proof that birds were rare in the Village.” Written records of sales and exchanges were rather reserved for goods more costly, and subsequently less abundant, than poultry.

⁴⁷² Valbelle 1985, p. 278

Doves and pigeons were also present in the village, perhaps housed in cages kept on the roofs of houses to allow for the birds to fly back and forth, as is still attested in Cairo today.⁴⁷³ It seems likely that some households managed for their flock to breed in captivity, as two letters recovered at the site, one of which was exchanged between two women,⁴⁷⁴ requested that young birds,  *ḫi/twiḫ*,⁴⁷⁵ be delivered. Having birds readily available in the house could also justify the request of the 19th Dynasty draughtsman, *Bḫki*, who asked his brother *Mḫy*, to bring him “a bird straightaway (*ḫpd rwd*).”⁴⁷⁶

As it was the case for most foodstuffs needed by the community, birds were delivered on occasion to the village from various Theban institutions, as recorded on fragmentary papyri from the time of Ramesses IX held in Turin.⁴⁷⁷ Many of the fowl arrived already processed and in jars, for the most part labeled *ḫpd.w mr*, “pond fowl.”¹¹⁰ In a few instances, the provenience of the birds is indicated alongside the content of the jar. For instance, on oTurin 57515



⁴⁷³ <http://www.theguardian.com/world/2014/aug/19/pigeon-fanciers-racers-egypt-prizes-birds> (Last accessed November 10, 2015).

⁴⁷⁴ O. DeM 676: letter exchanged between the two women *Bḫk.t* and *Tḫhḫynw*; pGrdseloff 1: small missive on papyrus exchanged between the two draughtsmen *Hḫyḫ* and *Pḫ-Rḫ-m-ḫb*. It should be noted that eggs have also been recovered among the food offerings deposited in the tomb of *Sn-ndm* (Valbelle 1985, p. 278). Although the very fragmentary state of these eggs did not allow the archaeologists to identify from which species they came from, it is in the realm of possibilities that these eggs had been laid by some of the domestic geese kept in the village.

⁴⁷⁵ According to B. Grdseloff (1940-41, p. 535 n. b),  *twiḫ* is a late Egyptian spelling of the word *ḫ* (Wb. V p. 339 §14-17), “young bird, hatchling.”

⁴⁷⁶ O. UC 32245 (Černý and Gardiner 1957, pls. 34-34A for transcription; Wente 1990, p. 158 for translation). A similar request is expressed in O. Michaelides 60. The scribe *Hḫwy* asks his father *Bḫki* to send him a goat and a bird.

⁴⁷⁷ pTurin 1881 + pTurin2080 + pTurin 2092 vs. Ila and IIIa: Valbelle 1985, pp. 63-64; Malaise 1988, p. 69.

recovered in the village, some 52   *3pd(.w) mr* were said to come from the estate of a royal scribe (*zš ny-sw.t*), whose name did not survive.⁴⁷⁸ Whether “52” refers to complete birds or simply bird parts is unknown. Although the record remains silent on the possibility, it is likely that live birds were also brought to the village in crates and distributed among the many families living in this closed community. Such a suggestion becomes all the more plausible when one considers the massive numbers of live birds delivered to Theban temples, as listed in the pHarris I (Appendix 1, **Table 26**). One cannot help but wonder what happened to all the live birds mentioned in these offering lists and said to be presented to the gods, most especially Amun. Were they dedicated, shown to the statue of the god, and thereafter sent back to their aviary? If such was the case, the facilities needed to house these birds would be expected to be vast and numerous. However, as presented above, no such facility has yet been identified in the archaeological record. It seems more likely, therefore, that a large portion of the live fowl assigned for the daily and festival offerings was redistributed as salary to the temple personnel and the local community employed by the Estate of Amun.⁴⁷⁹ During the Persian period, it is said that the priests from the temple of Amun at Teudjoi received 30 geese a year as part of their stipend.⁴⁸⁰ While evidence is lacking for earlier periods of Egyptian history,⁴⁸¹ the practice

⁴⁷⁸ López 1984, p. 29, pl. 170 and 170a; Andreu 2002, pp. 90-91.

⁴⁷⁹ Herodotus himself witnessed the distribution of birds, albeit already butchered, when visiting Egypt during the 5th century BC. In his *Histories* (II, 37), he wrote that priests received a daily supply of goose-meat and beef, with wine in addition. M. Millet and A. Masson (2011, p. 9) also recovered remains of geese in their excavation of the settlement built for priests employed in the Karnak complex.

⁴⁸⁰ pRylands 9, XVI 18: Griffith 1909, p. 100; Vittmann 1998 part I, pp. 78-79 (transcription) and pp. 172-173 (transliteration and translation).

of assigning flocks of live birds as salaries presumably already existed during the Ramesside period.⁴⁸² The beneficiaries of these allowances may have opted to slaughter some of these birds for immediate consumption and preservation.⁴⁸³ The remaining individuals could then be added to their own flock of birds, managed on their own property. The latter suggestion leads to the assumption that individual household had the capacity to keep some birds in captivity, either in a small aviary where the birds remained captive at all times, or in the form of a secure structure, similar to a modern chicken coop, where the birds, free to roam during the day, were kept at night to protect them from predators. As will be further discussed below, no such structure has been securely identified at excavated sites. One would expect them to be built with mudbricks and organic materials, such as wood and palm leaves, which do not always

⁴⁸¹ A letter recovered near the valley temple of the pyramid of Illahun, dated from the reign of Amenemhat III, may testify to the distribution of birds as allowance during the late Middle Kingdom. According to pBerlin 10016, temple employees, with the title of *hnty-s*, were expecting a delivery of 114 birds, which had yet to be received (Scharff 1924, pp. 24-27; Wente 1990, p.75). Due the concise nature of the memorandum, the exact purpose of the birds is not clearly stated. One can speculate that they were destined to be given to these employees as part of their stipend.

⁴⁸² See Haring 1997, pp. 7-12 for a review of the system of redistribution of offerings. As stated by B. Haring (1997, p. 7), "it is a well-known fact that the food presented to the divine statues in ancient Egyptian temples were divided between the priests after the offering ritual." Texts recording this practice most frequently report the distribution and repartition of grain, bread, and beer among the temple personnel. Less information is available regarding the meat and live animal offerings.

⁴⁸³ It is also possible, as suggested by pBoulaq 11, that some priests opted to dispose of some of the birds in their possessions by distributing them to various merchants or *šwtj.w*, in exchange for gold and silver. In this 18th Dynasty document, most of the meat consists of cuts of beef supplied by a wholesale supplier, possibly a temple. However, on day 20 of the 2nd month of *3h*t, in addition to several pieces of beef, the merchant *Mnw-nht* was also given **1 ½ r3-geese** in exchange for 1 ½ pieces of gold (pBoulaq 11, 2, 3; Peet 1935-38, p. 189). See also Megally 1974 and *Ibid.* 1975 for a detailed discussion of this document.

survive; if recovered during excavation, assessing their exact use in ancient times is rarely possible.⁴⁸⁴

An evaluation of the private ownership of small flocks of birds in Dynastic Egypt can only be speculative at best. Since poultry was not included among the goods subject to taxes by the royal administration, most transactions involving birds (sale and exchange) were unlikely to be recorded, the State having no interest in keeping track of them.⁴⁸⁵ Some indirect evidence, gleaned in the midst of offering lists, may suggest that the individual households of high officials had birds readily available.

- pBoulaq 18, an account from the royal court dated to the reign of Sobekhotep II, during the 13th dynasty, includes several references to officials being called upon to supply poultry as *inw* to support the royal family.⁴⁸⁶ For instance:

shwy inw hrw pn
dndn z.t sr mnw.t sntr t3-hd
inw imy-r3 niw.t t3ty imy-r3 hw.t wr.t 6 nhw

Assemblage of the *inw* of this day:

dndn-bird, pintail ducks, *sr*-geese, turtle doves, incense, white bread
Inw of the mayor, vizier, overseer of the six great law domains, *nhw*.⁴⁸⁷

⁴⁸⁴ Such readily available material continues to be used in rural Egypt today (see *infra*).

⁴⁸⁵ Allam 1988

⁴⁸⁶ Scharff 1922, p. 57; Spalinger 1986, p. 226; Bleiberg 1996, p. 75

⁴⁸⁷ Translation from Bleiberg 1996, p. 75. E. Spalinger (1986, p. 226) reads *in.t* instead of *inw* in the third line of the text as transcribed here, thus translating the passage as: “what the mayor, vizier, overseer of the six great chapels, *nhw*, brought.”

- Similarly, some of the fowl consumed at the *sed*-festivals of king Amenhotep III celebrated at Malqata came from the poultry-yards of several high officials. About 20 fragments of amphorae, containing processed and preserved poultry meat, indicate, in some instance, the name and title of the person offering the meat.⁴⁸⁸ For instance, the mayor (*ḥ3ty-ꜥ*) provided some butchered pond fowl (*3pd mr sft*).⁴⁸⁹ As for the royal scribe (*zš ny-sw.t*) *P3 ḥbs*, he contributed some good pond fowl meat (*3pd.w mr nfr*).⁴⁹⁰

Despite my attempt to assess the ownership of captive birds by non-elite Egyptians, it should not come as a surprise that most of the evidence presented thus far continues to draw a finer picture of the lives of the members of the upper echelons of society, yet leaving the other Egyptians in the shadow. In order to alleviate this absence of data, I will review the practice of backyard poultry husbandry as observed in contemporary Egypt, with a view to better evaluate the importance of bird husbandry in rural households.

ii. Ethnographic Study: Poultry Farming in Rural Egypt

In 21st century Egypt, household poultry production is an entirely female activity.⁴⁹¹ Contrary to working in the fields, raising poultry, rabbits, and taking care of a small number of livestock (cattle, *gamousse*, and ovicaprids) is not considered to be agricultural work; rather it is

⁴⁸⁸ Hayes 1951, pp. 92-93; Leahy 1978, p. 17

⁴⁸⁹ Hayes 1951, fig. 13, label #175

⁴⁹⁰ *Ibid.*, label #171

⁴⁹¹ Saunders and Mehenna 1986, p. 107; Hopkins 1987, p. 87.

seen as being part of the household activities assigned to women.⁴⁹² Until the outbreak of avian influenza in the country in the mid-2000s, rural backyard poultry production and trade were for the most part left uncontrolled.⁴⁹³ However, the spread of the disease to the human population⁴⁹⁴ acted as a strong impetus to first observe how domestic birds were raised both in urban dwellings and in the countryside and to subsequently take steps to raise awareness and implement strategies to avoid, or at the very least limit contacts between backyard birds and wild avian populations, potential carriers of the virus. Although efforts have been undertaken by women to minimize their contacts with the birds raised in the house, especially in urban dwellings where poultry are for the most part raised on the buildings' roof, flocks of backyard birds in rural Egypt often continue to spend their day roaming freely in and out of the house,⁴⁹⁵ in village streets and in the fields, scavenging for food and, especially for geese and ducks, gathering on canals and ponds to swim during the day. At dusk, they are all gathered back to the house and placed into a night shelter to avoid predation.⁴⁹⁶

Chicken are the most popular birds raised in Egypt today, not only for their meat but also for their prolific egg production, whose surplus can be sold once a week at the local

⁴⁹² Jensen 1994, p. 136

⁴⁹³ de Sainte Marie 1991, p. 409; El-Zoghby *et al.* 2011, p. 585

⁴⁹⁴ The first case of human infection with the H5N1, the most highly pathogenic strain of the virus, was confirmed by the Egyptian ministry of Health in February 2006 (http://www.unicef.org/egypt/reallives_4974.html. Last accessed November 13th, 2015).

⁴⁹⁵ J. Dickerscheid (1990, p. 17) noticed, as she was getting better acquainted with the daily routine of women in the Egyptian countryside, that "poultry and other animals roamed in and out of houses as freely as did human occupants."

⁴⁹⁶ El-Zoghby *et al.* 2011

market. Alongside chicken, ducks, geese, turkeys, and pigeons can be added to the flock, as household poultry flocks are frequently raised all together regardless of the species.⁴⁹⁷ It has been observed that a large majority of women, both in cities and rural settings, often irrespective of their social status,⁴⁹⁸ continue to own and maintain at home a small flock of poultry, comprised of 10 to 20 birds. This household poultry production represents not only a welcome additional income traditionally managed by the wife,⁴⁹⁹ but also an inexpensive source of high quality protein for the family.⁵⁰⁰ Children, in particular girls, help and learn alongside their mothers to care for the birds.⁵⁰¹ In large cities such as Cairo, the birds are strictly kept on rooftops or the unfinished upper floors of houses.⁵⁰² They are fed food scraps and left overs, to which can be added corn and clover.⁵⁰³ As mentioned above, birds raised in the

⁴⁹⁷ Gertel and Kuppinger 1994, p. 282; El-Zoghby *et al.* 2011, p. 584

⁴⁹⁸ The motivations for raising poultry may differ depending on the wealth of the households. Birds may be used solely as a source of poultry meat for the family, as is often observed in middle and upper middle class families. More humble households only keep a small portion for their own consumption, the rest of the production being kept to produce eggs or to be sold on the market (Saunders and Mehenna 1986, p. 110).

⁴⁹⁹ Larson 1991, p. 40: "Studies carried out in the Egyptian Delta have shown that income generated by women from livestock, poultry, and dairy products can contribute as much as 40% of the family's cash income." In most cases, women are able to keep the money they earned from selling their household production, thus granting them a certain amount of financial independence (*Ibid.*, p. 49).

⁵⁰⁰ Young roosters can be slaughtered for the family to eat, while hens are kept to lay eggs and raise chicks (Gertel and Kuppinger 1994, p. 277).

⁵⁰¹ Jensen 1994, p. 136

⁵⁰² I thank N. Moeller for bringing this fact to my attention.

⁵⁰³ In the city of Aswan, I have myself observed that an abandoned house located next to the hotel where I was staying was used to keep a small flock of sheep, in the midst of which several chickens were scavenging and scratching the floor to look for insects and seeds (**Figure 97B**).

countryside are granted more freedom and may share the same living space as the members of the household, especially during the winter (**Figure 97A**).

The involvement of Egyptian women in household poultry production is not a recent development. During the 19th century, when the vast majority of the Egyptian population was employed on the land, cultivating not only the produce necessary needed to feed the country's population, but also the cash crops, in particular cotton, traded abroad, women worked alongside their husbands in the fields and took care of the livestock.⁵⁰⁴ The fellahin's wives further contributed in producing the goods needed for the family's own subsistence, for petty trade at local markets where they played a dominant role, and also for the payments of taxes.⁵⁰⁵ Because of the lack of regulations on the part of landlords and the state, however, detailed documentation describing and recording backyard poultry production at this time is lacking. Some details can be gathered from the photographs, diaries, and notes European travelers brought back from their vagaries through the Egyptian countryside, on their way to see pharaonic monuments. In some of these photographs, women can be seen driving donkeys and pulling carts loaded with a wide range of poultry to sell at the market (**Figure 98**).

According to travelers' handbooks, pigeons and fowl, a common term for chicken at the time, were inexpensive⁵⁰⁶ and easy to acquire during the journey. It was therefore recommended to

⁵⁰⁴ Tucker 1985, pp. 16-18

⁵⁰⁵ *ibid.*, pp. 81-84

⁵⁰⁶ In 1827 Cairo, a goose was worth between 30 fodda and 2 piastres; a chicken, between 10 and 30 fodda; a pair of pigeon would cost 20 fodda. One could also acquire 80 eggs for 1 piastre. In comparison, a mule, which would be needed during the journey to carry goods and luggage, would cost the traveler between 800 and 2000 piastres (Wilkinson 1843, p. 472). In the country, prices were lower, sometimes half what was observed in cities such as

equip oneself with a portable chicken coop, so as to always have a source of fresh meat readily available.

One has to turn to more recent ethnographic studies to gain better insight into the daily lives of Egyptian fellahin, especially in the more conservative rural communities of Upper Egypt.⁵⁰⁷ Of special significance is the work of N. Henein conducted in the early 1970s in the Upper Egyptian hamlet of Mārī Girgis.⁵⁰⁸ For several months each year over a period of three years (1971-1973), N. Henein shared the lives of the 310 Coptic inhabitants of this small farming community, built around a monastery and located about 10 miles southeast of Akhmim. He endeavored to record all the minutia of their daily lives, from the distinct architecture of their houses, the tools they used in the fields, the ceremonies marking the various stages of their lives, to the songs that would enliven their hard working existence. Being trained as an architect, N. Henein described in great details the mudbrick dwellings he visited and lived in. Each house typically included a courtyard, one or several rooms, a storage area for hay, and in a few cases, one or two pigeon towers built on the roof.⁵⁰⁹ The courtyard was probably the space

Cairo and Alexandria (Lane 1871, p. 7). Because of the low value of poultry, it was recommended that the traveler “should provide himself with a sufficient quantity of piasters, 20, 10, and 5 para pieces, as in buying fowls or other things in the villages, his servants will not always find change for larger coins” (Wilkinson 1843, p. 104). An additional clue as to the lack of prestige and the commonality of poultry is found in their being sold at the market “Soog e’Zullut” in Cairo alongside “rags and any old goods” (*Ibid.*, p. 253). As Egypt became a more popular destination for travelers, prices increased quite significantly between 1827 and 1842: a goose came to be worth five piastres; a chicken, one to two piastres; a pair of pigeons, one piastre 10 fodda. Finally, one piastre would allow the traveler to only buy 24 eggs.

⁵⁰⁷ Ayroun 1938; Hopkins 1987

⁵⁰⁸ Henein 1988

⁵⁰⁹ *Ibid.*, pp. 13-26

most frequently used in the house. Described by N. Henein as being the personal domain of women, it was where they would cook, manufacture their crafts, in particular pottery, and where they would take care of animals (**Figure 99**). Every family in the village raised a small flock of birds, placed under the responsibility of these women. Chicken, duck and geese, turkeys, pigeons, both wild and domesticated, share the hamlet's space with the villagers.⁵¹⁰

- Wild pigeons, called *ǧabalī*, lived in the pigeons towers (*abrāǧ*) built specifically for them on the roofs of several of the village's houses (**Figures 100A-B**).⁵¹¹ As many as 2,000 pairs could use these towers to nest and raise their young. The guano harvested from the dovecotes' floors was an important commodity, applied in the fields as fertilizer and sold for profit. Domestic pigeons, or *baladī*, on the other hand, were kept in the house, either in holes (*gonn*) cut in the walls, each of which could accommodate a pair, or in different types of cages (*banāni* and *benneyya*).
- Turkeys (*malṭī*) were not common, being an expensive bird to acquire and requiring special care.⁵¹² Because of its cost, this type of poultry could be owned and raised jointly, especially within a family. Associative poultry keeping was also observed for the next category of poultry, ducks and geese.

⁵¹⁰ *Ibid.*, pp. 128-130

⁵¹¹ *Ibid.*, pp. 15-18

⁵¹² *Ibid.*, p. 129: Raising turkey chicks was a time consuming and expensive enterprise. "On les nourrit de fromage écréme et d'oeufs durs pendant environ deux mois, ensuite ils mangent du blé et du *lebbēn* (laitue vireuse)."

- Ducks and geese (*baḥḥ*) could be kept in the courtyard and rooms of the house. They could easily take advantage of the canal at the edge of the village to dabble during the day. Very often, however, farmers would take these waterfowl with them to the fields during the daytime, thus giving the birds a chance to freely graze.
- Chicken (*farrūġ*), on the other hand, were owned by all families, being an inexpensive bird to raise, as it spends its day scavenging in the courtyard and in the alleys of the village. They were raised both for their meat and their eggs, which merchants from neighboring villages used to come and buy twice weekly. So as to keep the birds safe at night, women manufactured mudbrick cages for them in the courtyard. Frequently, in order to maximize the space, these cages were built underneath the trough used to feed the donkey and/or *gamousse*.⁵¹³ At dusk, the chickens were gathered inside this cage to roost for the night. The entrance was kept closed with a stone that women removed in the morning.

This fascinating window opened by N. Henein on the lives of these villagers clearly reveals that backyard birds were an intrinsic part of their daily lives,⁵¹⁴ most especially the

⁵¹³ *Ibid.*, pp. 53-54, fig. 30, pl. 10. Mudbrick cages for chicks and adult chickens are not unique to this region of Egypt. N. Henein (2010, p. 400) had also observed them in the communities living on the islands of Lake Manzala, in the Nile Delta. Built of mud mixed with hay, the structures (1.5 m. high and 1 m. in diameter) were used to house chicks, which require constant care and supervision (**Figure 101**). In Upper Egypt, another style of small mudbrick coop, called *qoqa*, was also manufactured by the women of the house to keep chickens or rabbits safe in the courtyard (Ikram 2001, p. 168). Made with Nile silt, straw, and animal dung as temper, it was round in shape, with an opening at the top and small holes on its side, and measured at least 0.4m in height and 0.7 m in diameter (**Figure 102**).

⁵¹⁴ The shared lives of the inhabitants of the village and the birds raised by them is perhaps best illustrated by the evocative photograph included in N. Henein's volume portraying a man busy weaving palm leaves in a courtyard,

women's, who all had at least a few chicken to care for at home. Efforts were undertaken to increase the size of the flock by raising chicks, a time consuming and delicate operation.⁵¹⁵ Undesirable young roosters could be slaughtered and eaten by the family, or sold for additional cash. Families could also exchange male and female birds depending on their needs. Pigeons were always readily available to offer as gifts to visiting family members.⁵¹⁶ All these birds were a valuable commodity, which not only improved the quality of life of these farmers by their meat and the income they provided, they also reinforced the social bonds of the community via their exchange and trade.

It is not an uncommon practice for researchers attempting to reconstruct the daily lives of ancient people to turn to ethnographic studies, with the hope that the observation, analysis, and also experimentation of traditional technologies can “help them understand ancient artifacts and the people who made them.”⁵¹⁷ Known as ethnoarchaeology, this discipline combines the expertise of the archaeologist, eager to interpret the material culture he/she excavates at ancient sites, and that of the ethnographer, who shares the lives of communities in order to better observe the interactions within the various social groups, to discover their

undisturbed by the small group of chicks seemingly fascinated by the activity and perched on the man's foot to gain a better perspective (Henein 1988, pl. 42).

⁵¹⁵ That the demanding task of raising chicks was a woman's activity and responsibility is underscored by a proverb from Mārī Girgis, which states that “a woman who comes and goes, and chatters cannot raise chicks” (Henein 1988, p. 274).

⁵¹⁶ Pigeons are also often consumed during special celebrations, such as weddings (N. Moeller, personal communication).

⁵¹⁷ London 2000, p. 2

customs, and also to learn how they manufacture their crafts.⁵¹⁸ Caution, of course, should be applied when comparing modern techniques and practices with ancient data, even when strong similarities appear to exist between the two.⁵¹⁹ In Egypt, for instance, it would indeed be ludicrous to think that the country and its inhabitants have remained unaffected by the innumerable changes that occurred during the past 2,500 years. As N. Henein observed when concluding his study at the village of Mārī Girgis, “les civilisations et les religions se sont succédées sur cette terre d’Égypte et, avec elles, conquérants, envahisseurs et nouveaux dirigeants.”⁵²⁰ Even agricultural and hence rural life, often affected to a lesser degree by political and economic fluctuations, has seen a whirl of changes during the past 200 years, most especially after dams built upstream started to control the annual flood of the Nile.⁵²¹ Nevertheless, the data and observations collected in communities such as Mārī Girgis, where modern amenities and innovations had been, for the most part, kept at bay⁵²² when N. Henein visited the community, may provide some valuable insight into what could be qualified of “traditional” household poultry keeping in rural Egypt. And it is this data which I will use as a working hypothesis when attempting to create a model of small scale poultry husbandry in

⁵¹⁸ Moreno Garcia 2003, pp. 82-83; Müller 2013, p. xxix

⁵¹⁹ London 2000, p. 3

⁵²⁰ Henein 1988, p. 312

⁵²¹ Hopkins 1987, p. 1

⁵²² When N. Henein (1988, p. x) visited Mārī Girgis, concrete had yet to be incorporated into building practices and only a couple radios were present in the village.

pharaonic Egypt, an aspect of the ancient Egyptians' lives which has essentially remained invisible in the archaeological record and which has yet to be explored.

b. Towards a Model of Household Poultry Husbandry in Pharaonic Egypt

The various mentions of birds used in the barter system of Deir el-Medina (see *supra*) suggest that the households living in this community owned small flocks of birds, which could be traded for other commodities. If we indeed start with the assumption that the responsibility of poultry keeping in ancient Egyptian households was assigned to women, it is not surprising that mentions of this activity are absent from the historical record. In fact, such documents should not be expected. Just as can still be observed in Egypt today, exchanges and sales of birds most likely took place within the local community, often within extended families, consequently among women who knew each other. Such transactions did not require the need to keep a written record: an oral agreement was enough to make it "official." It is unclear where precisely these exchanges and trade would have taken place. One may assume that such transactions could be conducted at the house of one of the two parties. While markets are attested in the Egyptian iconographic record,⁵²³ the scenes showcasing the trade of various

⁵²³ For presentations and discussions of specific marketplace scenes, see Smith 1942; Hodjach and Berlev 1980 on the market scenes in the tomb of *Tp-m-ꜥnh*; Barta 1998 and Vachala 2001 on the scenes in the cemetery of Abusir; Fischer-Elfert 2000 on the elaborate depiction in the mastaba of *Ny-ꜥnh-Hnm* and *Hnm-hꜣp* in Saqqara. See Aly 2005 for an analytical study of the market scenes extant in the iconographic repertoire of the Old and New Kingdoms. As for C. Pino (2005), she focuses her attention most specifically on the New Kingdom attestations, in particular the well preserved scene carved in the tomb of *Hꜥ-m-hꜣ.t*, which showcases the arrival of goods from Nubia.

commodities do not incorporate birds of any kinds.⁵²⁴ One cannot explain this absence of bird exchange simply by the possible exclusion of women from the marketplace. They are, on the contrary, present as traders and buyers and, consequently, would have the possibility of bringing the birds they may wish to sell to their stall. As proposed by C. Eyre, the marketplace gave Egyptian women the opportunity to play a non-negligible role in the local economy, by providing them with an appropriate setting for the distribution of the perishable goods they had produced in their homes.⁵²⁵ In exchange, they would be able to trade for services (for instance an inscription on a vessel, as in the late Old Kingdom tomb of *Tp-m-ꜥnh*⁵²⁶) and/or goods which were not produced in their households (such as fish, seen in the 19th Dynasty tomb of *Ipwy*⁵²⁷).

⁵²⁴ I do not agree with M. Aly (2005, pp. 83-84), who interprets a series of short registers from the 5th Dynasty tomb of *Pth-šps*, in Abusir, as representing a series of transactions taking place at a market (Verner 1977, pp. 62-63, pls. 29-30). The four extant registers are all presenting the receipt of a variety of goods, including boxes, baskets possibly filled with fruits, bags, and most especially various cuts of meat and fowl. In the second register from the top, live birds figure among these goods: a crate filled with perching birds is stacked on top and among various vessels, while one man is about to add to this pile a waterfowl, which he holds by its neck. In its stead, I propose that these vignettes depict the receipt by *hm-k3* priests of choice cuts of meat, fowl, foodstuff, and other goods brought forth by a multitude of offering bearers. All these items were intended to be presented and offered to the funerary cult of the tomb owner, *Pth-šps*. They are traditionally represented in most elite offering chapels of the Old Kingdom in the form of piles accumulated at the foot of the tomb owner, shown seated and acknowledging the arrival of all the gifts and produce of his estates. Furthermore, the style of the representation in the tomb of *Pth-šps* differs quite significantly from the other marketplace depictions of the Memphite necropolis, whose various vignettes are carefully labeled with the lively dialogues exchanged during the trading transactions (for illustrations, see Aly 2005, *passim*).

⁵²⁵ Eyre 1998. See also Römer 1992 for a discussion on the various “actors” on the marketplace: the sellers and buyers.

⁵²⁶ Aly 2005, pp. 86-88, fig. 4.

⁵²⁷ *Ibid.*, p. 94, fig. 12.

How can we then explain the absence of birds at the marketplace? If the local market was, as suggested by C. Eyre and M. Aly, reserved for the distribution of goods most households did not typically produce themselves, one can therefore presume that, just as was observed at Mārī Girgis, the majority of rural households possessed poultry and thus did not need to acquire them at the marketplace. Another possible reason for this absence is that the marketplace depicted in funerary iconography does not showcase the local “neighborhood” markets, where women would have been able to acquire the goods lacking in their household in exchange for what they had produced themselves, including backyard poultry. It rather depicts more important venues taking place in larger towns, frequently located on the riverbanks, as suggested by their designation of *mry.t.*⁵²⁸ Craftsmen, such as seal makers and potters, would have stalls where they could both display their production and also manufacture goods on demand; foreign goods could be unloaded and acquired by the wealthier members of the community; fishermen could bring and sell their latest catch.⁵²⁹ The upper classes of Egyptian society, whose idealized view of their world was depicted on the walls of their offering chapels, were less likely to show interest in the petty trade taking place in the working class neighborhoods of towns and cities or in the rural communities of the provinces.

After discussing the potential ownership of poultry by women, it remains to ascertain the location in the house where they would have been able to keep and take care of their birds. Did they have a courtyard at their disposal, where birds could be sheltered at night, as observed

⁵²⁸ Römer 1992, pp. 259-260; Haring 2009, pp. 9-10

⁵²⁹ Bickel 1998

at Mārī Girgis? Did they prefer to keep them on their roof, to better protect them from predators and also keep them away from the living spaces, a frequent choice in modern urban dwellings? To find possible answers to these questions, we benefit from the recent developments of the sub-field of household archaeology, which, as stated by K. Spence, “has done much to illuminate the nature of social relations, production, and activities within dwellings, focusing both temporally and spatially at the scale of human experience.”⁵³⁰ The increasing interest in settlement archaeology, along with the multidisciplinary approach taken by archaeologists and scientists in the field has given researchers new tools to evaluate how the ancient Egyptians made use of the space at their disposal within their dwellings.

Egyptologists have come to an agreement that most rooms in Egyptian houses served several purposes, functions which could be space or season dependent.⁵³¹ Ideally, all food-processing activities, such as baking, grinding grain, and cooking were taken place in a courtyard adjacent to the house, separated from other houses and streets by an enclosure wall. Dust-, waste-, and smell-producing tasks would thus be kept away from the living space, where meals would be shared and visitors received.⁵³² The courtyard was also the preferred location for the animal stalls and pens. Similarly, crates and cages for birds could be built and kept within the enclosure wall, to insure their safety from predators at night (foxes and cats in

⁵³⁰ Spence 2015, p. 83. To better understand this new trend in the field of archaeology, I have relied extensively on the publication edited by M. Müller (2015), entirely dedicated to the study of households in complex societies. Many of the articles cited below are extracted from this book.

⁵³¹ Arnold 2015, p. 151. See Moeller 2015, pp. 448-449 for a discussion on the various ways scholars have applied the term “multifunctional” in their description of space in ancient Egyptian houses.

⁵³² Spence 2015, p. 94

particular). Such lay-out was observed, for instance, in the Late Middle Kingdom neighborhood F/I of Tell el-Dab'a, excavated and analyzed by M. Müller.⁵³³ The courtyard, thus equipped, could have been considered an area dedicated to women's activities. They most likely would spend a portion of their day in the food processing area, baking bread, and cooking meals for the whole household. Once these tasks were accomplished, they could turn their attention to the livestock kept in the subsidiary buildings, feeding them, milking the cow and/or goats, releasing the poultry to allow them to roam and find food within the confines of the yard, or possibly in the streets of the village. Animal pens have been identified in settlements, most notably in the Workmen's Village of Amarna, where pig farming was flourishing.⁵³⁴ The presence of a stone trough and a tethering stone for large mammals (cattle and donkeys), along with the accumulation of animal dung, are reliable indicators that livestock was kept for extended periods of times in these locals.

How can we assess the presence of birds at a site? It is unlikely that they benefited from large permanent structures as shelters. As observed by N. Henein both in the Delta and in Upper Egypt, round mudbrick structures have been designed to keep both adult and young chickens in courtyards near houses in the Egyptian countryside.⁵¹³ The distinctive shape of the larger mudbrick domed chicken coops built in the region of Lake Manzala had led N. Henein to compare these structures with some granary models attested from ancient Egypt (**Figure**

⁵³³ Müller 2015, p. 353, fig. 15.10

⁵³⁴ Hulin 1986; Boman 1986; *Ibid.* 1987; Heidorn 1987. See Miller 1990 for a presentation of the physiological and ecological aspects of pig husbandry and its implication on the subsistence economy of several settlements in ancient Egypt.

101).⁵³⁵ If N. Henein is justified in comparing the two designs, is it possible that some of the small circular mudbrick features identified in settlements, in particular inside courtyards, could in fact be the remains of mudbrick bird pens? Obtaining a chemical signature of the floor within the mudbrick structure would help clarify this issue.

Outdoor courtyards were not a luxury all ancient households could afford. In many instances, the local topography, as exemplified at Elephantine, greatly limited the space allotted to individual buildings in some parts of the island. In other instances, the space restrictions were imposed by the state, which designed and planned whole settlements to house the workers employed by the administration on major building projects. The Middle Kingdom town of Kahun, the New Kingdom settlements of Deir el-Medina and Workmen's Village of Amarna, all feature small and compact dwellings, frequently exhibiting a tripartite structure, tightly built next to one another.⁵³⁶ The absence of an outdoor courtyard implies that food production and animal keeping were frequently transferred into the house itself. Rooms used specifically as animal stalls have been identified inside Old, Middle, and New Kingdom houses. In a settlement founded near the pyramid complex of Men-Kau-Re, in Giza dated to the late Old Kingdom, A.-A. Saleh noted the presence of small rooms in the back of two houses, which he believed were used as fold for small cattle. A section of the room was especially set

⁵³⁵ Henein 2010, pp. 400, 402, ph. 100

⁵³⁶ Valbelle 1985, fig. 2; Arnold 1989; *Ibid.* 2015, pp. 154-158; Spence 2015, p. 92, fig. 4.5. Interestingly enough, in spite of the constraints imposed by the administrators who planned the town, the workmen assigned to live in the Walled Village at Amarna managed to design houses that responded to their own personal needs. "The result was considerable variation within the narrow limits available, a variation that was the result of innumerable minor domestic decisions within the privacy of each house" (Kemp 1987, p. 40).

aside and may have been used as an aviary for geese and ducks.⁵³⁷ Likewise, in House 70 at Elephantine, analysis of the floor surface of room E, located at the back of the house, has revealed that this space was used to keep goat.⁵³⁸ Interestingly, no direct access into room E was granted from the street, implying that it was necessary for the flock of goats to cross back and forth the internal courtyard, and thus the family's living space, to go in and out of their pen. While appearing impractical and unsanitary to a western urban mind, such arrangement was most likely considered by the owner of these animals to be the most effective approach to keep his prized possession safe from predators and especially from thieves.⁵³⁹ In The Workmen's Village of Amarna, limestone troughs have also been identified in 11 houses, in several instances in close proximity to the quern, suggesting that the animals kept within the rooms were possibly fed milled grain.⁵⁴⁰ B. Kemp entertains the possibility that this food may have been used to feed poultry, in particular geese, as alluded to in the mathematical problems 82 and 83 of pRhind, designed for pupils to calculate the amount of *w \overline{d} y.t*-flour needed to feed a variety of fowl.⁵⁴¹ The discovery in the house labeled East Street 1 of a "low brick coop 0.33 by

⁵³⁷ Saleh 1996, pp. 185-187

⁵³⁸ Arnold 2015, p. 157

⁵³⁹ Similar living arrangement was still observed at Mārī Girgis in the 1970s. "C'est le souci de protéger ses bêtes contre des vols éventuels qui détermine le lieu où couche le père de famille: toujours entre la porte d'entrée et l'étable. Il est impossible de résoudre les problèmes de l'habitation dans ce genre de société si l'on méconnaît ce lien fondamental entre le paysan et ses bêtes; il est naïf de se borner à dire ... qu'il est mauvais que le bétail habite avec le paysan et qu'il est nécessaire de doter l'étable d'une porte totalement indépendante de celle de la maison" (Henein 1988, pp. 14-15).

⁵⁴⁰ Kemp 1987, p. 42

⁵⁴¹ Peet 1923, pp. 124-126, pl. 10

0.15 m by 0.11 m high with entrance in front and hole in top, with barley husk inside”⁵⁴² may reinforce the notion that small birds, possibly goslings, were kept inside the house, so as to receive the frequent feedings, care, and protection they needed. Such a structure is reminiscent of the *qoqa* pot, manufactured by women in Upper Egyptian villages (**Figure 102**).⁵¹³

If space was lacking on the ground floor, ancient Egyptians had the option to use the roof of the house as a bird keeping area. As described previously, it remains fairly common in Egypt for urban women to keep their mixed flock of poultry in wooden enclosures on the roof of their buildings. Similarly, pigeon enthusiasts raise these birds as a hobby in cages kept on top of their houses.⁴⁷³ Elaborate dovecotes were also a characteristic of the rooftops of many dwellings at Mārī Girgis.⁵¹¹ Called *borġ* (pl. *abrāġ*), these dovecotes are designed as square towers, whose interior is divided by two perpendicular walls starting halfway up the structure, thus creating four small rooms whose walls are equipped with pots placed at a slight angle and intended to be used as nests for pairs of pigeons (**Figure 100A**). One tower may be equipped with as many as 2,000 nesting pots. The bottom section of the tower is kept wider in order to facilitate the task of gathering the guano. The roof is simply made of palm leaves covered with a thin layer of *‘aġin*, or plaster. Openings are cut in the walls to provide light and fresh air into the small cells. The exterior walls are also frequently equipped with branches to allow birds to perch, gather, and socialize. The pigeons inhabiting these towers were originally attracted from the surrounding countryside by the villagers. To motivate avian tenants to settle in a new

⁵⁴² Peet and Wooley 1923, p. 70: these archaeologists suggested that this small brick enclosure may have been a cage for small animals.

tower, villagers used to place corn cobs on the roof. Pigeons, eager to take advantage of an unexpected feast, would spend some time trying to get the kernels out of the cobs; they would slowly become acquainted with the place and remain near this source of food. Eventually, they would settle in the pots and raise their young. Once a few families were settled, other pigeons would join them and fill the remaining nesting pots.

The limited space available to the inhabitants of the ancient Egyptian communities cited previously (Elephantine, Deir el-Medina, Workmen's Village of Amarna) was likely to motivate them to build higher structures, equipped with multiple floors.⁵³⁶ The phenomenon of verticalization of the domestic space is best documented during the Greco-Roman and Byzantine periods.⁵⁴³ Yet, representations of dwellings during the Amarna period indicate that houses with an additional floor and a functional rooftop were already part of the urban landscape in Thebes.⁵⁴⁴ Furthermore, the well-attested presence of *Columbidae* among the birds exchanged at Deir el-Medina and especially offered to the cult of the god Amun in the region, along with the discovery of mummified doves deposited as victual offerings in elite tombs of the early New Kingdom, support the hypothesis that pigeons and doves were presumably raised in towers designed specifically for their exploitation. The absence of these towers in the archaeological record prior to the Ptolemaic period (see Part 3) suggests that rather than being built as separate structures, these pigeon towers were incorporated into and added on top of existing structures. Since, after several millennia of reuse, abandonment and

⁵⁴³ Moeller 2015, p. 451

⁵⁴⁴ Traunecker 1988

exposure, ancient Egyptian dwellings have survived at best in the form of a few courses of mudbricks, it is extremely difficult to reconstruct the height and especially the various structures, which might have crowned the buildings.

My attempts at justifying the invisibility of small scale poultry farming in ancient Egypt, especially in the countryside, an activity, which I believe was flourishing at the household level, must remain at this stage solely a working exercise. The absence of these birds in the textual and pictorial material can indeed be explained by their being the sole responsibility of non-elite women, a section of society whose activities were for the most part unrecorded. Furthermore, keeping small flocks of birds was an inexpensive venture and did not require much space. It is quite likely that, prior to the domestication of the greylag goose, most of the birds kept in households would be wildfowl captured locally by the family and thereafter kept in captivity until they were consumed. Those birds needed to be kept captive at all times if no modifications were made to their wings. However, the simple removal of the flight feathers would have been enough to prevent them from flying away. Once adjusted to captive life and accustomed to being fed regularly, attempts to escape and fear of human would greatly decrease. A founder flock of tame birds would thus be established. Additional birds from the wild or acquired as gifts and/or salary could be added to this original flock. Since the purpose of these flocks was to be a live “animal bank,” from which birds could be withdrawn to be consumed by the family or exchanged as barter, it is unlikely that efforts were undertaken to incite the birds to reproduce. It is also quite possible that a variety of species formed this flock, thus further preventing any chance of captive breeding.

With the advent of the domestication of the goose, presumably during the Middle Kingdom (see *supra*), increasing the size of the flock without a constant reliance on wild resources became possible by the simple acquisition of pairs of breeding geese. Finally, the meager quantities of avian remains discovered at settlements, as discussed in part 1, should not be used as evidence of their being a rare sight in Egyptian villages. A plethora of factors – fragile bone structure, damages incurred during cooking processes, possible consumption by scavengers⁵⁴⁵ – can certainly account for this scarcity. Despite the challenges encountered when attempting to ascertain the existence of household poultry farming in ancient Egypt, it is nevertheless worthwhile to acknowledge this practice, as new evidence may emerge in the archaeological repertoire, in the form of additional osteological remains or the remnants of a bird coop, which will provide additional insight into this sector of animal husbandry.

⁵⁴⁵ It should be noted that, today, both the meat with the bones are consumed by Egyptians. I thank N. Moeller for bringing this fact to my attention.

PART 3: EPILOGUE
THE EXPLOITATION OF LIVE BIRDS IN GRECO-ROMAN EGYPT
(332 BC-AD 395)

1. Introduction

Following the conquest of the region by Alexander in 332 BC and the subsequent rise of his general Ptolemy as Pharaoh in 305 BC, the land of Egypt experienced a wave of administrative and political changes set in motion by the arrival of this Macedonian ruling elite. No longer under the sway of a native ruler, the Egyptian population witnessed an influx of foreigners, in particular Greek military settlers known as cleruchs. A major land reclamation project initiated by Ptolemy II in the Faiyum led to the foundation of new cities and the rise of new communities composed in part of these Greek cleruchs, whom the Ptolemaic kings hoped to tie to Egypt by granting them landed property.¹ It is also from this region that a wealth of papyrological material was unearthed, textual evidence which provides remarkable insight into the political, administrative, and economic fabric of these multicultural communities. A large portion of these documents have been recovered in grouped finds,² such as the Zenon archive.³ Represented by 1,827 papyri, this massive collection of texts spanning several decades (from 263-229 BC) is the largest archive recovered for the Ptolemaic period and follows the career of Zenon, son of Agreophon, in Egypt. Originally from Kaunos, a Carian city in Asian Minor, and after a sojourn in Alexandria, Zenon became the manager of the private estate of Apollonios,

¹ Manning 1994; Bowman and Rogan 2000, p. 17; Manning 2003

² Vanderpe *et al.* 2015

³ Pestman *et al.* 1981; Orrioux 1985; Clarysse and Vanderpe 1995; Clarysse 2009

finance minister (*dioiketes*) who had received a gift-estate (*dorea*) of 10,000 arouras (ca. 2,750 ha) near the village of Philadelphia, founded in honor of the deceased queen Arsinoe. Several documents of this archive are of particular interest to this study, as they inform us on the strategies implemented by Zenon to manage the avian resources maintained on the estate and the staff responsible for them. Aside from these grouped finds of papyri, many more documents have been uncovered after their being recycled and used to manufacture cartonnage mummy casings.⁴

The written material of this period is undoubtedly far richer than the evidence gathered during the entire span of pharaonic Egypt, represented inconsistently both diachronically and geographically.⁵ Nevertheless, the richer textual evidence from the Greco-Roman period remains insufficient to draw a complete picture of the agricultural practices implemented throughout the country, some provinces being affected to a greater or lesser degree by the new edicts and policies decided in the capital of Alexandria.⁶ Furthermore, one should keep in mind that, despite a greater percentage of the population being considered literate during this period (10%)⁷ in comparison with the low estimates of 1 to 5% proposed for dynastic Egypt,⁸ scholars

⁴ Thompson 2011, p. 392

⁵ It should also be noted that iconography can no longer be used as a source of information for the study of poultry husbandry at this time. While it was an indispensable resource in my research conducted on Dynastic Egypt, I am unaware of similar material which could be exploited to complement the data collected from the papyri. This presentation of management of birds in Egypt during the Greco-Roman period therefore relies extensively on the written record.

⁶ Bowman and Rogan 2000, pp. 15-22

⁷ Clivaz 2013, p. 4097

specialized in the history of the Greco-Roman period are once again only able to access data from a select portion of society, the members of which often occupy positions in the administrative system, either locally or centrally. These biases and shortcomings should not act as deterrent in our preliminary investigation of avian exploitation in Ptolemaic and Roman societies. Yet, it is crucial to consistently and carefully identify the protagonists mentioned in the record and the context(s) in which they figure: are they members of institutional organizations? Did temples continue to play a major role in poultry husbandry? Can we identify private enterprise? If such private transactions are present in the record, what were the goals of these individuals: was their activity limited to fulfilling the needs of their household unit, or were private individuals considering poultry keeping as a form of investment to increase their wealth? Answers to these questions will be proposed in the final section of this dissertation, as I review the documentary evidence gathered in Appendix 11 related to poultry husbandry during the Greco-Roman period.

Whereas a complete and thorough review of the exploitation of birds for this period is beyond the scope of this dissertation, I nevertheless intend to draw attention in this chapter on the new features, which emerge from this body of evidence, complementing M. Cobianchi's thorough analysis of the Greek papyrological material⁹ with data inferred from select Demotic texts and archaeological excavations. I will review in turn the data related to the reliance not only on wild resources, but also on the most frequent barnyard birds of the Greco-Roman

⁸ Zinn 2013, p. 4101

⁹ Cobianchi 1936

period, namely the doves and pigeons, geese, and the most recently introduced chicken, paying special attention to the ownership and purpose of all these birds.

In addition to the poultry exploited for their meat and other secondary products, in particular eggs and guano, a different category of birds becomes of special interest to ancient Egyptian aviculturists. Captured in the wild, maintained in captivity, and possibly bred in massive numbers, ibises and birds of prey came to be placed under the special care of religious personnel employed in sanctuaries dedicated to the ibis god Thoth and to the many falcon deities worshipped in the country, at a time when the popularity of sacred animal cults reached unprecedented heights. In addition to the texts shedding light on the exploitation of these wild birds, researchers have access to the mummified avian remains deposited in cemeteries and catacombs as votive offerings dedicated to these avian deities. This chapter will thus end with a presentation of the new avenues of inquiries, which researchers dedicated to the study of mummified remains are pursuing in order to better understand the acquisition and management of the birds needed to satisfy the growing needs for animal mummies, tied to the rise in popularity of the complex and long lasting religious phenomenon that are these sacred animal cults.

2. Wild Fowl

The analysis of the faunal remains recovered at settlements in layers dated to the Ptolemaic and/or Roman periods suggests that ancient Egyptians did not stop relying on the

wild avian resources surrounding them. The main species of birds recovered are gathered in the following table:¹⁰

Table 20. Summary of the remains of wild birds recovered in settlement layers dated from the Greco-Roman period

<i>Bird Type</i>	<i>Current Status in Egypt^a</i>	<i>Frequency^b</i>	<i>Location of recovery</i>
Ostrich (<i>Struthio camelus</i>)	RB	Bones: R Eggshell: R	Tell el-Maskhuta Naukratis
Family <i>Podicipedidae</i> - Grebes	Most species are WV	R	Tell el-Maskhuta
Cormorants and Darters	Cormorant: PV, WV Darter: AV	R	Buto, Tell el- Maskhuta
Family <i>Pelecanidae</i>		R	Elephantine
Family <i>Ardeidae</i> – Bitterns, Egrets and Herons	Most species are RB, with additional WV from Eurasia	R	Buto, Tell el-Maskhuta
Family <i>Ciconiidae</i> - Storks	Most species are PV	R, except for Elephantine, for which it is F	Buto, Tell el-Maskhuta, Mons Claudianus, Elephantine
Family <i>Threskiornithidae</i> – Ibises and Spoonbills	Most species are PV, WV. <i>Platalea leucorodia</i> : also RB <i>Threskiornis aethiopicus</i> : FB	R	Buto, Tell el-Maskhuta, Elephantine
Greater Flamingo (<i>Phoenicopterus ruber</i>)	RB, PV, WV	R	Tell el-Maskhuta
Wild Goose Species (<i>Anser</i> sp.)	Most species are WV, AV	Relatively Frequent	Buto, Tell el-Maskhuta , Elephantine
Wild Duck Species (both dabbling and diving birds)	Most species are PV, WV <i>Alopochen aegyptiaca</i> : RB	Relatively Frequent	Buto, Elephantine
Family <i>Phasianidae</i> – Quails and Sand Partridges	Quail: (RB), PV, WV Sandpartridge: RB	R	Mons Claudianus, Qasr Ibrim
Family <i>Rallidae</i> – Coot	PV	Relatively Frequent	Buto
Family <i>Gruidae</i> – Cranes	PV	R	Buto, Elephantine
Doves and Pigeons (<i>Columba</i> and <i>Streptopelia</i> sp.)	Rock Dove: RB Turtle Dove: MB, PV Palm dove: RB	R	Mons Claudianus

^a Abbreviations based on Goodman and Meininger 1989, p. 15: FB: Former Breeder; MB: Migrant Breeder; RB: Resident Breeder; AV: Accidental Visitor or Vagrant; PV: Passage Visitor; WV: Winter Visitor.

^b F: Frequent; R: Rare

Just as had been observed in Pharaonic times, the communities settled in the vicinity of the wetlands of the Delta (Buto, Tell Maskhuta) continued to exploit the avian resources of the

¹⁰ See Appendix 4, **Table 34**, for a detailed list of the bird remains recovered in the sites mentioned in this table.

region and hunted the water birds (geese and duck in particular, but also a wide range of small wading birds), which gathered in massive flocks during migration and in some instances remained in these regions for the winter months.¹¹ Some regional trends also observed earlier remain visible in the record. Thus, the inhabitants of the island of Elephantine specifically targeted the flocks of storks (*Ciconia* sp.), which flew over their town.¹²

In the written record of this period, these wild fowl appear to be known under the Egyptian term of *ipt ḥwty*, “wild birds,” as suggested by E. Reymond.¹³ Other types of birds likely to have been captured in the wild are only attested as *hapax legomenon* and have yet to be identified. They are the *ḥwḏt*, the *ḥrppy*, and the *dwr*.¹⁴ As for the bird named *ḥrp*, it is the white-fronted goose (*Anser albifrons*), known in earlier phases of the language as *ḥrp*.¹⁵ References to wild fowl being sought after alongside birds raised in captivity also appear in Greek papyri. For instance, during the mid 3rd century BC, to prepare for the visit in the Arsinoite nome of Chrysippus, chief of body guards and *dioiketes*, a large quantity of birds were made available to him, some of which may have been intended to be consumed straight away, while the others were placed in crates and loaded onto the donkeys mentioned next in the

¹¹ Boessneck 1986; *Ibid.* 1988; Boessneck and von den Driesch 1997

¹² Von den Driesch and Peters 2008

¹³ Reymond 1976, p. 179

¹⁴ For a list of attestations for these terms, see CDD W, p. 75 (reference to *ḥwḏt* under the entry *Wp-wḏw.t*); 2nd H: p. 236 (reference to *ḥrppy*).

¹⁵ For a list of attestations of the term *ḥrp*, see CDD S: p. 4; T, p. 259.

letter, presumably to be consumed later as he pursued his journey.¹⁶ The birds listed as *xenia*, i.e. gift offered to traveling officials, are the following:

- 10 “white heads” (λευκομετώπους), an unknown type of bird, presumably featuring a white head, such as the ruddy shelduck (*Tadorna ferruginea*), with its pale orange-brown head, or simply the white-headed duck (*Oxyura leucocephala*);
- 5 domestic geese (χῆνας ἡμέρους);¹⁷
- 50 fowl (ὄρνιθας).

In addition to this *xenia*, he also received 200 additional fowl (ὄρνιθες), 100 pigeons (περιστριδίς), and some wild birds (ἄγρια), which consisted of 50 geese (χῆνες). Why the distinction between domesticated geese in one instance, and wild in the other? One can surmise that the domesticated birds, which had previously received special care at the farm and possibly followed a specific feeding regimen so as to fatten them, were considered to be a more prestigious good. The cooks at the estate would have been able to prepare them with the diligence that such a special fare deserved. On the other hand, the wild birds, possibly of lesser value, would not require such special treatment and their well-being during the journey and potential fate were of lesser concern.

¹⁶ pGrenf. II. 14 (b), 225 BC: Cobianchi 1936, p. 127; Hunt and Edgar 1959 part II, pp. 562-563, text # 414; <http://papyri.info/ddbdp/chr.wilck;;411> (Last accessed December 7th, 2015)

¹⁷ ἡμερος: tame, tamed, when used to describe animals. In this context, it can be translated as domesticated (LSJ p. 351).

Known for the most part as *wh^c 3pd.w*, but also as *sh.ty* and *k3p* during the dynastic era (see *supra*), the profession of fowler is mentioned in demotic texts under the term *grg*, which, according to W. Erichsen, is to be understood as “he who prepares bird-snares.”¹⁸ Some of these trappers seem to have specialized in the capture of specific birds, such as the *hw^t3t*-birds, as recorded in pBM 10589, dated to the Ptolemaic period.¹⁹ Others possibly used decoys in the form of a live heron, designated as a *grg bnw*. Fowlers even had the possibility to acquire these decoys from a *s n grg bnw*, “dealer of hunting herons.”²⁰ In addition to the word *grg*, scholars have proposed that two additional terms may have also been used to designate bird catchers or fowlers: *hm*²¹ and *sh^t*, the latter term being used to designate *P(3)-nfr-hr*, whose name appears in the sale document of a poultry yard dated from 74 BC.²² However, the exact meaning of these two words remains to be ascertained and the identification of these men as fowlers should be addressed with caution.

¹⁸ Shore and Smith 1959, p. 56 n. d.

¹⁹ pBM 10589, 4. Document from Asyut dated from April 15th, 175 BC. See Shore and Smith 1959, pp. 53-54; CDD G, p. 47. Photos of the document are available on http://www.britishmuseum.org/research/collection_online/collection_object_details.aspx?objectId=119399&partId=1&searchText=10589. Last accessed March 22nd, 2016.

²⁰ oStras. 174, 1/1: CDD B, pp. 51-52

²¹ pOnch. 17/23: CDD 2nd H, p. 126

²² pLoeb 87+63, 2: Thissen 2009, p. 406

During the mid-3rd century BC, managers of large estates such as Zenon also called on the services of fowlers (ὄρνιθοθήρας).²³ A certain Onnophris thus reported in his letter to Zenon that, despite going hunting (ἐπὶ τὴν θήραν, “to the hunting of wild prey”) with Eutychides, he had not been able to send him more than thirty κερκῆρεις-birds and twenty larger fowl (μίζονας κ).²⁴ Fowling expeditions, albeit rarely attested in the record, do not die out during the Roman period. Requesting the right to hunt birds for a fee in a certain area of wetlands was not restricted to the Persian period, as presented in part 1.⁵²⁹ A similar petition features in a letter dated from the mid-2nd century AD from the region of Theadelphia, in the Faiyum.²⁵ In this missive, the hunter (κυνεγός) Heron, son of Apollonius, wrote to the superintendents of pastures in the marshland of the village of Theadelphia to obtain the right to capture every bird in these marshes during the 18th year of the reign of Antoninus Pius (AD 155). In exchange, he offered to pay a total rent of 40 silver drachmae.

Just as wild fowl are currently sold at specialized markets in Delta towns, in particular in Port Said and Damietta,²⁶ it is quite possible that such venues were already taking place in Antiquity.²⁷ A variety of demotic terms refers to traders specialized in selling various types of

²³ Fowlers are mentioned in pCair. Zen. 3.59398, 9 (<http://papyri.info/ddbdp/p.cair.zen;3;59398>. Last accessed March 22nd, 2016). J. Manning (1994, p. 174 n. 10) suggests that *grg hyt.t* may be the Demotic equivalent of the Greek ὄρνιθοθήρας (LSJ p. 570).

²⁴ pCair. Zen. 2 59186: <http://papyri.info/ddbdp/p.cair.zen;2;59186>. Last accessed January 29th, 2016.

²⁵ pRyl. 98(a): Hunt and Edgar 1959, pp. 418-419, text # 351

²⁶ Goodman and Meininger 1989, pp. 80-84; Meininger and Atta 1994, pp. 273-280

²⁷ At Athens, specialized bird markets offered a wide range of avifauna, which could be then become pets or be eaten (Dalby 1996, p. 63. I thank E. Yamauchi for bringing this reference to my attention). It is therefore possible

wild birds, such as the *s n hrppy*, *s trp*, and *s dwr*, “seller of *hrppy*-bird, white-fronted geese, and *dwr* -bird.”²⁸

3. Domestic Birds

Domestic birds, however, eventually became a standard feature of village life, as visible in faunal assemblages (**Table 21**):

Table 21. Summary of the remains of domestic birds recovered in settlement layers dated from the Greco-Roman period

Bird Type	Frequency^a	Location of recovery
Domesticated goose (<i>Anser anser domesticus</i>)	F	Tell el-Maskhuta (Possibly 47% of avian remains), Buto
Domestic fowl (chicken) (<i>Gallus gallus domesticus</i>)	F	Berenike (92.5% of avian remains), Mons Claudianus (75% of avian remains), Abu Sha’ar, Qasr Ibrim, Buto, Tell el-Maskhuta, Buto

^aF: Frequent

A trend, which started during the Saite period (664-525 BC), can be observed in the analysis of avian remains recovered at settlements: wild bird remains become scarcer than those of domesticated species, with the domestic goose (*Anser anser domesticus*) at first dominating the assemblages. This shift in avian exploitation is clearly illustrated at the site of Tell el-Maskhuta, in the Wadi Tumilat, with approximately 47% of the bird remains recovered most likely belonging to this avian domesticate.²⁹ Breeding of domestic fowl (*Gallus gallus domesticus*), i.e. chicken, first left a significant mark in the archaeological repertoire during the

that some Egyptian markets, most especially in urban settings, were already specifically dedicated to select types of goods. A bird market would have displayed live domestic birds, both adults and chicks, eggs, along with wild fowl and possibly more exotic species, which could have been purchased as pets.

²⁸ For a list of attestations for these terms, see CDD S, p. 4.

²⁹ It is important to remain cautious, since it can be extremely difficult to differentiate skeletal remains of domestic geese from their wild ancestor, the greylag goose (*Anser anser*), especially when the remains are heavily fragmented. The bones exhibit many similar osteological features and the bone measurements can overlap greatly (Boessneck 1986; *Ibid.* 1991).

Ptolemaic period,³⁰ and eventually chicken remains dominate avian bone samples, especially at settlement sites located away from the Nile Valley (for example Mons Claudianus and Berenike).³¹

a. Domestic Goose (*Anser anser domesticus*): *ip(t)*;³² $\chi\eta\nu$ ³³

Most of the information regarding the exploitation of domestic geese during the Greco-Roman period frequently relates not to the birds themselves, but rather the people tending their flock. Geese continued to be an offering of choice for Egyptian deities,³⁴ and thus flocks needed to be maintained at temples and placed under the care of *mni.w ipt*, “gooseherds.”³⁵ Inscriptions at the temple of Edfu, for instance, allude to the existence of a poultry farm, a *h3mt*, where the birds, both geese and pigeons needed to supply the altars of the falcon god, were

³⁰ Chickens were already consumed at Elephantine during the Late Period (von den Driesch and Peters 2008, p. 667, Tab. 5).

³¹ Hamilton-Dyer 1997; Lentacker and Van Neer 1996

³² EG 29; CDD, I, p. 89, 104-107. This word derives from *3pd* and is attested as *wbt* in Coptic. If, as R. Faulkner (1952) suggested, the word *3pd* was originally the specific designation of the duck, only later to be used more generally to refer to birds, it is interesting to note that in demotic, this term, now read *ipt*, appears to once again be used most frequently to designate a distinct type of poultry, in this case the domestic goose.

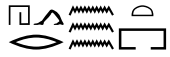
³³ Arnott 2007, pp. 30-31. See Cobianchi 1936, pp. 121-138 for a review of the exploitation of geese as recorded in Greek papyri from Egypt.

³⁴ For instance, offerings of doves and geese were made on the island of Elephantine: pBerlin 23651 (Zauzich 1971, p. 278); receipt for geese and other goods, possibly in prevision of some temple festival on the East bank of Thebes: oLouvre E 7871 (Devauchelle 1983, p.158 no.99). Beef and geese were also the main offerings to Serapis in Alexandria (UPZ I, 89; Cobianchi 1936, p. 127).

³⁵ As reviewed by J. Manning (1994), some gooseherds were connected with temple estates and owned some land. A certain *mn ip.t b3k Wpwꜣy*, “gooseherder, servant of Wepwawet,” had originally owned the land, which became at the center of the dispute in the Siut Archives (pBM 10575, 6; Thompson 1934, pp. 38-40; Manning 1994, p. 167 n. 109).

kept.³⁶ After being offered to the gods, this poultry meat was sometimes sold at temples. In the Serapeum at Alexandria, for instance, the twin girls Taous and Thaues, who played the role of Isis and Nephthys at the funeral of Osiris-Apis,²² were able to purchase, in addition to many other types of foodstuffs, some goose meat.³⁷

Greek documents from this period also make frequent references to χηνοβοσκοί, “gooseherds.” Based on the census and tax polls recorded by the officials and administrators involved in tax collection, most especially during the Roman period, the profession is attested throughout the country, from Alexandria to Syene.³⁸ While the majority of guardians of goose are χηνοβοσκοί, i.e. men, a few goosegirls (χηνοβοσκάι) also feature in the record.³⁹ The State appears as a major employer of gooseherds, as suggested by the frequent references to χηνοβοσκὸν βασιλικόν, “royal gooseherds,” in the written record of the Ptolemaic period⁴⁰ Large estates, such as that of Apollonios near Philadelphia, undoubtedly included in their personnel gooseherds, who were responsible not only for the care of domestic geese (χῆνας

³⁶ Edfou II, 193, 11; IV, 15, 7; VII, 286, 1. Meeks 1976, pp. 94-95; Wilson 1997, p. 600. In Dendera (IX, 186, 12-13), the *hrm.t*-enclosure () is said to receive trapped waterfowl (Daumas and Lenthéric 1987a). I thank D. Meeks for bringing this reference to my attention.

³⁷ UPZ 89 (160-159 BC): Cobianchi 1936, pp. 131-132; Crawford 1979, p. 144.

³⁸ For a list of texts dated from the Greco-Roman period mentioning χηνοβοσκοί, see Cobianchi 1936, p. 129 n. 1-5.

³⁹ pMon.inv.343.xiii.44.53, 2nd cent. BC: Clarysse and Thompson 2006 part II, p. 202.

⁴⁰ Cobianchi 1936, p. 129

ἡμέρους), but also wild ones (χῆνας ἄγριας) kept in captivity after their capture.⁴¹ It is the birds under their care that could promptly be gathered and offered as a *xenia* at the arrival of the *dioiketes* Chrisippus, a gift consisting of at least 55 geese, as mentioned previously.¹⁶

During this period of Egyptian history, geese, like most other livestock, were subjected to a variety of imposts and thus feature in tax registers.⁴² Just as the administration was eager to keep count of its people, animals, most especially cattle, ovicaprids, pigs, and also geese, were the subject of regular counts. With this data in hand, tax collectors could approach gooseherds and collect the impositions which were tied with this profession.⁴³ Thus, like all livestock, geese needed protection and their guardians were charged a guard tax (φυλακίτικον χηνῶν).⁴⁴ Similarly, if the birds were led to graze on communal land, they were charged the pasturage tax (*ktm* in demotic; κτάμιον or ἐννόμιον in Greek).⁴⁵ Finally, χηνοτρόφοι, “goose breeders,” were imposed an additional tax, the φόρος χηνῶν, due to the state annually.⁴⁶

⁴¹ To the extent of my knowledge, the profession is not recorded in the surviving documents comprising the Zenon Archive. Despite this silence, such men (and possibly women) must certainly have been employed by Zenon to tend the flocks of birds otherwise mentioned in the papyri and their absence from the record should be seen as a result of the hazard of document preservation.

⁴² Clarysse and Thompson 2006 part II, p. 208

⁴³ Cobianchi 1936, p. 124; Clarysse and Thompson 2006 part II, pp. 206-207

⁴⁴ Cobianchi 1936, pp. 132-134

⁴⁵ *Ibid.*, p. 133

⁴⁶ Such a tax is for example cited in pPetrie 112, dated 220 BC. It is possibly a “breeding” license paid to the state by professional goose breeders in order to have the right to be involved in goose husbandry. Evidence suggests that this tax was not paid in kind (such as a portion of the yearly production of birds) but rather with coins (Cobianchi 1936, pp. 132-133).

The ownership of geese by individuals outside of the privileged circle of the king, his officials, and priests is harder to ascertain, especially during the Ptolemaic period. As remarked by B. Menu, “whereas the demotic sale documents of animals, such as cattle, donkeys, and flocks of geese, were relatively frequent prior to the Macedonian conquest, they disappear almost entirely under the Ptolemies.”⁴⁷ They reappear during the Roman period, as early as the reign of Augustus.⁴⁸ A unique document from the reign of Marcus Aurelius (AD 161-180) attests to the leasing of geese as a possible form of investment for private individuals living in the Arsinoite nome.⁴⁹ In P.S.I 961.II01-39, dated AD 176, Amatius leased a flock of 23 breeding geese to Nilammon, son of Nilus, Ponnis, son of Heraclius, and Orsenophis, son of Pasis. These three men were to keep and rear this flock for one year. Payment of the lease was to be made in kind, in the form of 23 full grown birds born during the year. All other goslings and juvenile birds were to be shared by the three partners and enter their personal property. At the end of year, the three men were meant to return the original flock of 23 adult birds to Amatius. Were the birds to die under their care, the partners were required to pay the estimated value of the flock, i.e. 920 drachmai.⁵⁰ All members of this lease agreement should, theoretically, benefit

⁴⁷ Menu 1981, p. 229. Among the 65 sale contracts recorded for the Late Period by B. Menu, 19 contracts mention the sale of domestic animals, which represents about 29%. This number drops to 5% during the Ptolemaic period (*Ibid.*, p. 235). These few documents for the most part concern cattle, considered of greater relevance because of their active participation in agricultural work (ploughing in particular).

⁴⁸ *Ibid.*, p. 235

⁴⁹ Hunt and Edgar 1959 part I, pp. 134-139

⁵⁰ This lease agreement share similar features with the collection of documents from the region of Hou, as described in Appendix 6, **Table 44**. In this particular instance, however, the original flock of 23 birds is privately owned. No large institution, whether a temple or government facility, appears to be involved in this transaction.

from the transaction. Amatius, on the one hand, was spared the care of the flock of breeding geese and delegated the task to the three partners Nilammon, Ponnis, and Orsenophis. These three men, on the other hand, assuming they provided the geese with optimal conditions for breeding, had the potential to acquire a significant number of birds, which could constitute a starter flock for them to begin their own breeding program.⁵¹

A sale document from the 1st century BC may give us a hint as to the type of facility in which geese were kept. As recorded in pLoeb 87 + 63, *Ty-m-http*, son of *Msdr.wi-sdm*, a *mni ipt*, “gooseherd,” sold a *šyš* to *P(3)-nfr-ḥr*, son of *Glp3n*, a *šht(?)*, possibly a “fowler.”⁵² According to H.-J. Thissen, a *šyš*¹⁶⁶ may be the designation of a poultry farm, composed of a shelter and a pond, similar to the *h3(.t)-r-mw* attested earlier in Pharaonic Egypt (see *supra*).⁵³ If this interpretation and translation is indeed correct, the facility referred to in this sale document could have been first used by the gooseherd *Ty-m-http* to keep the flock of geese under his responsibility. Once in the possession of the fowler (?) *P(3)-nfr-ḥr*, the facility could have housed the wild birds captured by *P(3)-nfr-ḥr* prior to him sending them to their next destination.

⁵¹ To the extent of my knowledge, no specific data related to the number of eggs laid on average by domestic geese during the Greco-Roman period has yet been recovered from the written record. If we assume, as a working hypothesis, that these geese were laying at least as many eggs as their wild counterparts, the greylag goose (*Anser anser*), then we can expect at least a clutch of up to 10 eggs for each breeding female in the flock (Cramp *et al.* 1982, p. 420). If the flock of 23 birds were to include 10 breeding females for instance, at least 100 eggs could be produced in one year. Even with a poor breeding success of 50%, the partners could double the original number of birds in one year.

⁵² Thissen 2009

⁵³ *Ibid.*, p. 410

In some farms, geese were reared alongside chicken in mixed flock.⁵⁴ In the next paragraphs, I will discuss the arrival of the domestic fowl in Egypt and its subsequent adoption in the country's farmyards.

b. Domestic Fowl (*Gallus gallus domesticus*): *kymy*,⁵⁵ ἀλέκτωρ, ὄρνις, πούλλιον⁵⁶

The domestic fowl, more commonly known as the chicken, is the most numerous, most frequently, and universally consumed bird on the planet today. In 2009, more than 35 billion pounds of chicken were eaten in the United States.⁵⁷ This number is rising almost exponentially, with countries in South America, Africa, and Asia developing a taste for this bird, easy to rear both in the rural settings and especially in cities. During the past decade, the rapid increase in chicken consumption has been accompanied by a surge in research projects in Zoology and Genetics laboratories, in part to determine the source of domestication of this bird, but most especially to develop more resistant and productive breeds. It has now been determined that one of the ancestors of the domestic chicken is the red jungle fowl (*Gallus gallus*), which can still be encountered as a wild bird in South East Asia (**Figure 27B**).⁵⁸ An extremely shy bird and

⁵⁴ Clarysse and Thompson 2006 part II, p. 208 n. 15: in pMon.inv.344,369.iv.29.xvii.18.20 and pMil.Vogl.III 145. Reference to ὄρνιθες, most likely chicken, being kept together with geese (χῆνες) in a goose pen (χηνοβόσκιον). Columella (*Rust.* VIII 15,5) even advocates for the use of brooding hens to sit on eggs laid by geese and to thereafter raise the goslings.

⁵⁵ EG 560; CDD K, p. 12.

⁵⁶ T. Evans 2010, p. 194; Arnott 2007, pp. 9-11, 159, 199. See Cobianchi 1936, pp. 139-147 for a review of the exploitation of chicken as recorded in Greek papyri from Egypt.

⁵⁷ Lawler 2012, p. 1020

⁵⁸ West and Zhou 1988; Liu *et al.* 2006

about half the size of modern chicken breeds, its range extends from the foothills of the Himalaya Mountains to the tip of Sumatra. DNA studies have also revealed that, at some point in the domestication process, the grey jungle fowl (*Gallus sonneratii*) contributed to the genetic makeup of the domestic bird.⁵⁹ When and where exactly the domestication process started in Southeast Asia remains a question of debate. It is possible that it took place independently at multiple sites, possibly in Thailand or Vietnam, as early as the 6th millennium BC.⁶⁰ It is well established, however, that, by the 3rd millennium BC, the Indus civilization was exploiting the domestic fowl in their settlements.⁶¹ Via trade between the Indus Valley and Mesopotamia, already attested as taking place as early as the Akkadian period (ca. 2350-2150 BC), the chicken made its way westward from India, through Mesopotamia, to Syria.⁶² It is possibly when campaigning in this region of the Levant that Thutmose III, in his eagerness to gather faunal and floral specimens of the regions he conquered,⁶³ obtained a set of four domestic fowls as tribute. This assertion remains contentious, as it is based on a fragmentary passage of the king's

⁵⁹ Agnvall *et al.* 2012, p. 1; Cocker 2013, p. 65


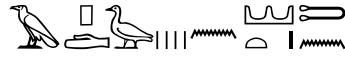

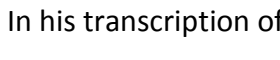
⁶⁰ Perry-Gal *et al.* 2015, p. 9849

⁶¹ Coltherd 1966, p. 220; Cocker 2013, p. 65; Perry-Gal *et al.* 2015, p. 9849. I thank J. Peters for bringing this last reference to my attention.

⁶² Brünner-Traut 1980, col. 70; For a review of this migration westward, taking into consideration textual and zooarchaeological data, see Garcia Petit 2002; von der Osten-Sacken 2015, pp. 408-411; Redding 2015, pp. 338-340.

⁶³ See Beaux 1990 for a presentation of the various plants and birds represented in the “botanical room” of the *3h-mnw*, in Karnak, built by Thutmose III.

annals in the Karnak temple. In this inscription, several types of birds are featured among the gifts brought forth by this newly annexed region:⁶⁴

	[Bird determinative thought to resemble a bird of prey] 2 n rh.tw
	2 (birds of prey?), which are unknown;
	3pd 4 n h3s.t tn
	4 birds of this land;
	ist st hr ...t r ^c nb
	They ... every day.

In his transcription of the text published in *Urkunden IV*, K. Sethe had already proposed to

restore the latter sentence as , *ist st hr ms.t r^c nb*, “they give birth every

day.”⁶⁵ Apart from epigraphic and linguistic considerations, K. Sethe’s suggestion that the four

birds presented to the king were in fact domestic fowl, renowned and selectively bred for their

abundant and frequent egg production, is not unreasonable. As stated previously, the bird was

already exploited in poultry farms of the Northern Levant and Mesopotamia at a time when

Thutmose was rapidly widening the boundaries of Egypt in this part of the Near East.⁶⁶ As the

depictions of foreign plants and birds in the *3h-mnw* at Karnak testify, the king would

undoubtedly have been enthusiastic to add this unusual and attractive bird in his personal

menagerie. Despite being included in a few depictions dated from the Ramesside and Third

Intermediate periods (**Figures 103-106**),⁶⁷ as well as from the 30th dynasty (**Figure 107**),⁶⁸ which

⁶⁴ *Urk. IV*, 700:12-14

⁶⁵ Sethe 1916, pp. 114-115

⁶⁶ Houlihan 1986, p. 80; Redding 2015, p. 338

⁶⁷ Ramesside ostrakon from the Valley of the King depicting a rooster, now in the British Museum (EA68539; Carter 1923); silver repousse bowl from Tell Basta, from the 21st or 22nd Dynasty, now in New York (MMA 07.228.20; Simpson 1959). On this silver vessel, a rooster and possibly two chicks are depicted alongside a group of ostriches, which a herder is painstakingly driving forward. If all these birds do belong to a bird farm, the facility should be considered at best as being experimental, as ostriches and chicken are otherwise unattested as farm birds. M.

demonstrate the Egyptians' acquaintance with the bird, the chicken only appears as a possible item of food in the tomb of *P3-di-Wsir* at Tuna el-Gebel, a monument dated from the reign of Philip Arrhidaeus (323-317 BC).⁶⁹ Two readily identifiable roosters are included in the many food offerings presented to the tomb owner, most likely to be consumed in *P3-di-Wsir's* afterlife (**Figures 27, 108**).

Named the "Persian bird" by Aristophanes in his play "The Birds" in 5th century BC Greece, it is during the Late Period, perhaps during the Persian occupation of the country, that domestic fowl made their first appearance in the faunal record, specifically at Buto and Elephantine.⁷⁰ During the Greco-Roman period, their osteological remains continue to be present at settlements, albeit in small numbers, throughout Egypt, from Buto in the Eastern Delta to Qasr Ibrim in northern Nubia (**Appendix 4, Table 34**). In most cases, the largest

Görg (1981) has also proposed to identify the bird mentioned in pAnast. IV, 2, 3, under the otherwise unattested term *skm* (written *s3-k3-m* in group writing), as being a possible Ramesside designation for the domestic fowl. In TT 100, scholars have also argued that a vase brought as tribute to *Rh-mi-Rc*, vizier during the reign of Thutmose III, was shaped as a rooster (Lowe 1929; *Ibid.* 1934; Darby *et al.* 1977). This details was already missing when N. de G. Davies examined the tomb (Davies 1943 a, p. 41; *Ibid.* 1943b, pl. 18). Therefore, it is now impossible to verify this hypothesis. Further south, in the Kushite cemetery of Nuri, the 7th century BC tomb of Queen Yeturow, daughter of Taharqa and sister-wife of Atlanersa, contained the remains of ivory artefacts decorated with depictions of roosters standing on papyrus blooms (**Figure 106**; Dunham 1955, pp. 53-55). The choice of this exotic fowl as a decorative motif is puzzling. Because of its rarity in iconography both in Egypt and in Nubia, the symbolic significance of the rooster is difficult to ascertain. It may simply have been a status symbol at this early stage of the bird's arrival on the African continent.

⁶⁸ ÄM 23001: fragment from the tomb of *Hp-iy-w* (Scharf 1938, pl. 3)

⁶⁹ Houlihan 1986, p. 81; Cherpion *et al.* 2007, pp. 115, 145

⁷⁰ MacDonald and Edwards 1993, p. 587; von den Driesch 1997; von den Driesch and Peters 2008. According to Darby *et al.* (1977, pp.301, 304), the earliest skeletal remains of chicken, along with their eggs were preserved in the Agricultural Museum of Cairo and were dated from the 18th Dynasty. A review of this material in the 1990s by A. von den Driesch has revealed that these bones came from a variety of birds – waterfowl and birds of prey – but not chicken (MacDonald and Edwards 1993, p. 587; Redding 2015, pp. 336-337).

concentrations of bones belonged to strata dated from the Roman era.⁷¹ Whereas avian assemblages at sites in the Nile Valley continue to be represented by a wide variety of wild birds, the chicken only representing a small proportion of the recovered bones, the trend is reversed at several settlements located along the Red Sea and in the Eastern Desert. Both at Berenike⁷² and Mons Claudianus,⁷³ for instance, more than 75% of the avian bones recovered belonged to domestic fowl. It has been proposed that the birds were brought alive in crates from the Nile Valley, and, being foraging and versatile birds, managed to thrive in these remote and arid locations. The egg shells recovered at these settlements further suggest that hens may have been favored for the production of eggs, while males would have been slaughtered at a young age and consumed for their meat.⁷⁴ In general, these domestic fowl remains belong to a breed significantly smaller than the chickens raised in Roman Europe, closer in size to their ancestor, the red jungle fowl (*Gallus gallus*). It is therefore unlikely that the birds raised in these encampments were originally brought from Europe by Roman settlers; rather, they represent a distinctive African population of semi-feral domestic fowl, which, after being introduced into

⁷¹ According to Ll. Garcia Petit (2002, p. 77), “ce sont probablement les romains qui sont à l’origine de l’exploitation “économique” de cette espèce.” The bird was to become widespread in the whole territory under Roman domination, including Egypt.

⁷² Lentacker and Van Neer 1996, p. 489. 92.5% of the avian remains found in Berenike were identified as originating from chickens.

⁷³ Hamilton-Dyer 1997, pp. 326-327. Out of the 334 bird bones recovered at this Roman settlement, 248 were identified as domestic fowl, thus about 75%.

⁷⁴ Lentacker and Van Neer 1996, p. 494; Hamilton-Dyer 1997, p. 328

Lower Egypt from the East, spread throughout the country, into Nubia, and subsequently in sub-Saharan Africa.⁷⁵

Egyptian terms used specifically to designate domestic fowl are rare in the written record and are not usually encountered in an economic context. Thus, the demotic word *kymy*, identified as naming the hen based in part on the Coptic term *qaime*, “hen, domestic fowl,”⁷⁶ belongs to an alphabetical list of birds and trees.⁷⁷ Furthermore, according to J. Osing,⁷⁸ one of the names of the hen in Bohairic Coptic, *anapai*,⁷⁹ may derive from an earlier Egyptian compound word *ʕ-n-3pd*, literally “a piece of bird.”⁸⁰ To gain insight into the relevance of chicken in the Greco-Roman economy, one has to turn to the extant Greek documentation of this period. This bird is generally referred to under the general term ὄρνις. Originally simply meaning “bird” it came to more specifically mean “domestic fowl” as early as the 5th century BC.⁸¹ Large country estates of the Ptolemaic period, best illustrated by that of Apollonios

⁷⁵ MacDonald and Edwards 1993, p. 589; Lentacker and Van Neer 1996, p. 491; Hamilton-Dyer 1997, p. 328. Mwacharo *et al.* 2013. The breeds of domestic fowl raised today in the Egyptian oases continue to be characterized by their small size (Bagnall 1997, p. 41). This type of small domestic fowl, also encountered in numerous village communities of sub-Saharan Africa and often identified as ‘African chicken,’ is left free to roam and scavenge for food during the day. It is well adapted to harsh environmental conditions and possible food shortages (Guèye 1998, pp. 73, 77-78).

⁷⁶ Crum 1939, p. 818a

⁷⁷ Smith and Tait 1983, p. 202 n. s; Gaudard 2012

⁷⁸ Osing 1976 part II, p. 589 n. 519

⁷⁹ Crum 1939, 12a

⁸⁰ Westendorf 1965, p. 12; Vycichl 1983, p. 13

⁸¹ Arnott 2007, p. 159. It is worthwhile noting that, just as the “most typical” bird in Pharaonic Egypt was the goose, known under the generic term *ipt* at this time, the generic Greek bird was the domestic fowl. However, T.

described in the Zenon archive, appeared to be equipped with substantial bird rearing facilities, as one letter written by Apollonios requests that Zenon acquires a flock of 400 ὄρνιθες, most likely male birds that were to be fattened for the table, along with 100 hens (τοκάδες), presumably to produce eggs.⁸² Likewise, at the occasion of the visit of the *dioiketes* Chrysippus mentioned above, 50 ὄρνιθες had to be gathered immediately and possibly slaughtered straightaway, while 200 others were placed inside crates so as to feed Chrysippus during the rest of his journey.¹⁶ Large installations, equipped with food storage and night shelters, had to be devised to accommodate flocks of several hundred individuals. It is also likely that hens were housed separately from the rest of the birds to facilitate their egg production and the care of their chicks. It may be such a specialized structure which is mentioned in a contract from Oxyrhynchus dated from the Roman period (AD 175-6).⁸³ A building formerly used to keep camels was said to be turned into a fowl house (ὄρνειθῶνα) and leased for five years. The leasee was in turn expected to pay 300 drachmai a year, along with four roosters (ἀλεκτύωνες), eight hens (ὄρνειθες τοκάδες), and 100 eggs.

While there is scant evidence for the consumption of eggs during the whole span of Dynastic Egypt, the frequent mentions of eggs in lists of food dated from the Greco-Roman

Evans (2010, p. 200) advises against translating this word automatically as meaning “chicken.” As the author remarks, it is true that in Attic Greek, ὄρνις mostly refers to the domestic fowl (LSJ p. 570). In *PSI VI 569*, from the Zenon archive, however, it is used to describe various breeds of pigeons (I thank T. Vorderstrasse for bringing this article to my attention). Such confusion cannot unfortunately always be avoided, as the word is most frequently present in lists, with no additional descriptive information.

⁸² pMich. I. 48 (<http://papyri.info/ddbdp/p.mich;1;48>. Last accessed December 8th, 2015).

⁸³ pOxy.9.1207,3: Cobianchi 1936, p. 146. A similar contract is recorded on pMich. 18 788 and may be referring to the same building (<http://papyri.info/ddbdp/p.mich;18;788>. Last accessed December 8th, 2015).

period suggest that they were incorporated into the diet of the Egyptians of the Ptolemaic era⁸⁴ and may have become common in Roman Egypt.⁸⁵ In Tebtunis, in AD 46, one could purchase 5 eggs for 2 obols, or 30 for 10 obols.⁸⁶ In Oxyrhynchus, during the late Roman period, effort were undertaken by the town officials to ensure that traders regularly supplied the city with the food necessary to feed its inhabitants. Thus, in AD 327 an egg seller made a declaration to the *logistes*, chief financial official of the city, and promised that he would bring a fresh supply of eggs to the market place on a daily basis and that he would abstain from selling them from his home.⁸⁷ Whether this trader was the egg producer himself or whether he collected them from various locations is not stated. Just as eggs could be purchased at the market, a bird dealer, or ὄρνιθάς, made poultry available to customers. In Karanis, during the 2nd or 3rd century AD, one could purchase 50 hens with 100 drachmai (i.e. one hen is worth 2 drachmai) and 16 roosters for 64 drachmai (i.e. one rooster is worth 4 drachmai).⁸⁸ It is possible that the higher value placed on roosters may be connected to their ability to fight, deemed more valuable than the

⁸⁴ For instance, in pCairo Zen.2.59266, Zenon confirms that Krotos received two fowl and 25 eggs; in pTebt.1081, an account specifically lists poultry, eggs and pigeons, among other foodstuffs to be purchased.

⁸⁵ See Van der Horst 1982 and his presentation of the work of Chaeremon of Alexandria, whose 1st century AD work on the history of Egypt (Αἰγυπτιακά or Αἰγυπτιακὴ ἱστορία) is only preserved as excerpts in the writings of later authors, such as Josephus. In his description of the lifestyle of Egyptian priests, Chaeremon mentioned that priests “did not even eat an egg,” in periods of fasting and purification, implying that eggs could have been part of their diet otherwise. I thank D. Meeks for bringing this work to my attention.

⁸⁶ pMich. Inv. 966, processing #s 3227 and 3228. In this same account, 100 figs were said to cost 1 ½ obols and 5 breads, 5 obols. On the other hand, on papyrus roll would cost 4 drachmai (i.e. 24 obols). During the 2nd or 3rd century AD, the price of eggs had remained stable, as 300 eggs were worth 20 drachmai, i.e. 120 obols in the town of Karanis (pMich.inv. 5984, processing # 2612).

⁸⁷ pOxy. I 83; Sharp 2007, pp. 221-222.

⁸⁸ pMich.inv. 5984, processing # 2612.

egg producing capabilities of the hen.⁸⁹ Male birds may have also been favored for sacrifices, in particular to the goddess Isis, whose worship spread throughout the Roman empire. In AD 226, 100 roosters were thus recorded as being offered in a temple.⁹⁰

c. Doves and Pigeons: *mnt*, *grmp*, περιστερὰ, περιστέρεις⁹¹

Whereas they had remained rather elusive in the record during Dynastic times, doves and pigeons are the most frequent kinds of poultry mentioned in texts for the Greco-Roman period. Their meat appears as having been especially enjoyed, even by children,⁹² and they feature in accounts⁹³ and lists of foodstuff to purchase.⁹⁴ Being an easy bird to keep in crates and transport, a lot of 100 pigeons (περιστριδεῖς) was added to the already important flocks of birds (50 wild geese and 200 chickens) donated to the *dioiketes* Chrysippus, for him to have at

⁸⁹ Roosters were bred in Greece and Rome for their strong propensity to show hostility and fight each other. For a presentation of cockfighting in ancient Greece and Rome, see Toynbee 1973, p. 257; Pollard 1977, pp. 107-108; Shelton 2007, pp. 102-106. Cockfighting continues to this day to be an attraction and a sport in many parts of the world (Cocker 2013, p. 69-73).

⁹⁰ Benaissa 2006, p. 229 n. 7. Chicken of a specific color, most frequently white, also feature in magical papyri of this period (Jordan 2001, p. 189 n. 9).

⁹¹ *mnt* (var. *mn̄t*): CDD M pp. 104, 107; *grmp* (var. *grp(y)*, *grppy*, *grp^ϛ*): CDD G, p. 43. For the Greek terminology, see Arnott 2007, pp. 177-179.

⁹² pOxy. 736 (ca. AD 1): mention of a pigeon said to be for the children and being worth 1 obol (Hunt and Edgar 1959 part 1, pp. 420-425, text #186).

⁹³ pTebt.3.2.1083 (2nd cent. BC; <http://papyri.info/hgv/8051/>. Last accessed March 23rd, 2016)

⁹⁴ pTebt.3.2.1081 (early 2nd cent. BC; <http://papyri.info/ddbdp/p.tebt;3.2;1081>. Last accessed December 8th, 2015)

his disposal for the rest of his journey, as mentioned above.¹⁶ More modest gifts also consisted of a couple of doves and small birds and could be given by children to their teachers.⁹⁵

In addition to being a food item, doves and pigeons are included among the birds listed as offerings in temples, thus continuing a trend started during the early Dynastic Period (see Appendix 1). At the temple of Elephantine, for instance, during the Ptolemaic period, accounts record their being delivered alongside geese and other cuts of meat.⁹⁶ During the Roman period, not only were they offered as sacrifice to deities, they were also an offering of choice to celebrate the cult of the emperor, the new State religion imposed by Rome. Young pigeons were especially desired: for the deification of Emperor Augustus, 10 young pigeons (περιστεριδεῖς) were thus selected by priests to be sacrificed.⁹⁷

The exploitation of doves and pigeons was well integrated into the economic system of Greco-Roman Egypt. Not only were they valuable as a commodity in villages, they were also a source of revenue for officials, who imposed a series of taxes on the buildings in which the birds were raised.⁹⁸ Attested during this entire period, both in Demotic and Greek texts, are taxes

⁹⁵ pGiess.80 (2nd cent. AD; Hunt and Edgar 1959 part 1, pp. 310-311, text #116).

⁹⁶ pBerlin 23651 (Zauzich 1971, p. 278). A similar scenario is recorded in Tebtunis (pTebt.Frag.10,749 dated ca. 137/6 BC; <http://papyri.info/apis/berkeley.apis.2334>. Last accessed March 23rd, 2016): *grpy*-pigeons are listed in a temple account.

⁹⁷ pOxy.VIII,1143,6 (1st cent. AD; Hunt 1911, p. 242). Similarly, περιστεριδεῖς were also presented as sacrifice to the cult of Claudius, during the 2nd cent. AD (pOxy.VIII, 1144) (Cobianchi 1936, pp. 103-104).

⁹⁸ See Cobianchi 1936, pp. 106-121 for a study of dovecotes, as recorded in Greek texts from the Greco-Roman period in Egypt.

levied annually on dovecotes, known as *s.t mnt*⁹⁹ or *mḥwl grmpy*¹⁰⁰ in Demotic and περιστερεών¹⁰¹ in Greek. In Karanis, for instance, 12 people were charged a dovecote assessment in the period AD 173-175.¹⁰² The best documented tax is the τρίτη περιστερώνων, whose designation seemingly implies that a third of a dovecote's production was susceptible to be levied as tax by local officials.¹⁰³ Some of these dovecotes were owned by the village community and built on common land, as is attested in Kerkeosiris. In this village, a dovecote filled with 1,000 nests was said to assign a third of its production to the cult of the local god Sobnebtunis.¹⁰⁴ Another tax levied on dovecotes, the πηχισμὸς περιστερεώνων, was based, at least during the Roman period, on the surface occupied by the structure.¹⁰⁵ An additional tax, known from ostraca from the Roman period recovered near the temple of Medinet Habu in Thebes, the *tny s.t mnḫ(.t)*,¹⁰⁶ appears to refer to yet another charge imposed

⁹⁹ CDD S, p. 11. Var. *s.t mnḫ* (pHeid. 734c, 6-7; oMH 2800,3). In pLouvre 3268,3, F. de Cénival (1972, pp. 61-62) proposed to translate *t3 s.t krpp3.t* as possibly being a "pigeonnier."

¹⁰⁰ CDD M, p. 193. Var. (?): *m3hn.t* (CDD M, p. 36)

¹⁰¹ LSJ p. 632

¹⁰² Youtie and Perl 1939 part II, pp. 136-137; Husselman 1953, pp. 84, 86, 90

¹⁰³ Cobianchi 1936, p. 119

¹⁰⁴ pTebt.1. 84,9 (118 BC; <http://papyri.info/ddbdp/p.tebt;1;84>. Last accessed March 23rd, 2016); Crawford 1971, pp. 47, 99

¹⁰⁵ According to M. Cobianchi (1936, p. 111), the dovecotes for which the surface area is recorded in the extant written material have standard measurements: either 1/32th of an aroura (ca. 86 m²), as recorded in the Faiyum during the 2nd century BC, or twice this amount, 1/16th of an aroura (ca. 172 m²), as attested in the Thebaid during the 2nd century AD. These measurements may have been imposed by the administration, in order to facilitate the imposition of taxes. See also *ibid.*, pp. 119-121 for a discussion of this tax and the evolution of its collection during both the Ptolemaic and Roman periods.

¹⁰⁶ CDD T, p. 234

on dovecote owners.¹⁰⁷ In this case, no mention is made as to the size of the structure or the numbers of birds reared within. M. Lichtheim, the editor of these short demotic receipts, proposes that they may constitute licensing fees, which needed to be paid to obtain the right to raise birds.¹⁰⁸

In addition to being owned as a communal property, as previously mentioned, dovecotes were also owned by private individuals and could represent a most lucrative business. Large estates such as that of Apollonios were equipped with large pigeon facilities, which required the help of a pigeon keeper, or περιστεροτρόφος, to maximize the production.¹⁰⁹ Dovecotes were valuable in part for the large numbers of birds which could rapidly be produced¹¹⁰ and subsequently sold at markets. Young pigeons in particular, also known as squabs,¹¹¹ were so popular that salesmen, *s n grppy*, “dove seller,”¹¹² may have specialized in trading them on the marketplace. It is also the large quantities of droppings

¹⁰⁷ Lichtheim 1957, pp. 49-50, pl. 20

¹⁰⁸ *ibid.*, p. 49

¹⁰⁹ pCair. Zen. 3.59498 (ca. 250 BC; <http://www.trismegistos.org/tm/detail.php?quick=1136>. Last accessed March 23rd, 2016). A similar demotic term is attested in pBM 10856 B, 2/4 dated from the Ptolemaic period: *mn n gr[mp]* (CDD m, p. 96).

¹¹⁰ Doves and pigeons are prolific breeders. According to Aelian (*Var. Hist.* 1.15), Egyptian pigeons used to produce up to 12 broods a year. More traditionally, however, pigeon breeders expect their birds to breed up to eight times a year, thus producing a maximum of 16 squabs (Bretton 1914, p. 63; Aggrey and Cheng 1992, p. 554; Cocker 2013, p. 237).

¹¹¹ Nestlings are taken from their nest to be sold for their meat around the age of 25 to 30 days old (Britannica Academic, s. v. "domestic pigeon," last accessed February 1st, 2016, <http://academic.eb.com/EBchecked/topic/168560/domestic-pigeon>).

¹¹² CDD G, p. 43. The equivalent term in Greek is περιστεροπώλης, as attested in documents of the Roman period (Cobianchi, 1936, p. 104).

produced in these pigeon towers which were of special interest to the rural communities owning the dovecotes. Known as guano, the mass of pigeon droppings represented an invaluable source of fertilizer that farmers could spread on their own fields, vineyards, and gardens.

Dovecotes are frequently mentioned in texts as being owned by several people, especially when the bird facility was part of an inheritance. In such situations, each member of this joint venture shared in the profits and loss of the operation. Women, alongside men, could be (co-)owners of pigeon towers, as they may inherit them from their fathers¹¹³ or mothers.¹¹⁴ Owners of dovecotes could maximize their investment by leasing not only the building but also the birds housed inside. Thus, in year AD 256 in the town of Antinoe, Aurelius Theon, son of Theon, leased to Aurelii Dioscurus, son of Eudaemon, and Ammon, son of Serenus, a pigeon house with its brood for a period of 5 years.¹¹⁵ Aurelius Theon was to provide two *artabae* of feed, most likely barley and/or lentils,¹¹⁶ to the lessees, who would be in charge of feeding and caring for both the birds and the facility. In return, Aurelii Dioscurus and Ammon would pay a rent in the form of young pigeons and guano. At the end of the five years, the tower with a

¹¹³ pGrenfell I.21 (126 BC): Originally from Crete, Dryton chose to give the dovecotes, which he owned to his daughters. In his will, he also asked that they build another one (Hunt and Edgar 1959 part I, pp. 239-243; Pomeroy 1990, pp. 105-117).

¹¹⁴ Pomeroy 1990, pp. 158-160: Eirene, daughter of Orphis and wife of Agamemnon, who lived in the Fayum during the 2nd cent. BC, had inherited property and most importantly a dovecote from her mother. It appears that she probably supervised her own agricultural estate.

¹¹⁵ Gapp 1933

¹¹⁶ According to two documents from the Zenon archive, barley (pCair.Zen.4.59710) and lentils (pCair.Zen.5.59306) were distributed as feed to the pigeons on the estate (<http://papyri.info/ddbdp/p.cair.zen;4;59710> and <http://papyri.info/ddbdp/p.cair.zen;3;59306>. Last accessed December 8th, 2015).

flock similar in size to what was originally leased was to be returned to Aurelius Theon.

According to K. S. Gapp, it was not uncommon for wealthy individuals to acquire a dovecote and subsequently lease it, thus delegating the responsibility of caring for the pigeons, yet benefiting from the production of young birds and manure.¹¹⁷

The discovery of dovecotes at the site of Karanis, excavated by the University of Michigan from 1924 to 1935, has allowed us to draw of finer picture of the pigeon facilities mentioned in the textual record. Located in the Arsinoite nome of the Faiyum, the town of Karanis, founded during the reign of Ptolemy II, yielded the remains of six dovecotes, dated from the 1st century BC to the 5th century AD.¹¹⁸ It is quite likely that many more pigeon towers were originally standing at this site and have not survived, since, as stated in some documents, the dovecotes were built in the upper stories or on the roofs of houses and were therefore the first sections of the buildings to collapse.¹¹⁹ The foundations of the pigeon towers excavated at Karanis, on the other hand, suggest that these surviving examples were free standing buildings, some of which were located in the outlying farmland surrounding the village (**Figure 109A**). Several dovecotes were specifically built as part of an agricultural complex and included several

¹¹⁷ Gapp 1933, p. 89

¹¹⁸ Boak and Peterson 1931; Husselman 1953. The six dovecotes are labeled as: D301, from the 1st century BC, with a square footprint (94 m²); from the period ranging from AD 150 to 250: C35 and C37, composed of three towers roughly 4.5 m² at the base, whose basement was used for storage; C91, composed of a tower also approximately 4.5 m² at the base; C65, with a rectangular footprint (7.5 by 2.5 m), built in the forecourt of large granary; from the period ranging from AD 250 to 350: B9, which is part of the courtyard of a house.

¹¹⁹ pOxy.VIII,1127,15 (AD 183) makes reference to a dovecote built on the roof of a house, rented for a period of four years (Cobianchi 1936, pp. 106 ,117; Husselman 1953, p. 89).

towers housing the pigeons, storage areas for grain, and courtyards.¹²⁰ The majority of these dovecotes had a square foundation.¹²¹ Inside the tower, the walls made of mudbrick were lined with clay pots set horizontally into the masonry, the mouth of the vessel opening towards the inside of the tower, so as to serve as entrance to the nesting pairs (**Figure 109B**; see *supra* for similar design in the village of Mārī Girgis). Beneath the rows of pots, E. Husselman discovered small rectangular niches, which, as she proposed, were used by pigeon breeders to house the squabs after these young birds were removed from their nest, thus allowing the parents birds to breed again.¹²² Estimates made on the larger dovecote D301 suggest that it could have housed 1250 nesting pairs. Furthermore, if E. Husselman's identification of the small niches is correct, 200 young birds could have been kept separately and fattened in the niches built in the lower level of the tower.¹²³

The best preserved pigeon tower so far documented in the archaeological record is located in the Kharga Oasis, approximately 18 km north of Kharga town, at the site of Ain al-

¹²⁰ This complex design was observed for buildings C35 and C37 (Husselman 1953, p. 82). For the presence of courtyards connected to dovecotes, see pBakchias 138, an account of pigeons dated from the 3rd cent. AD (Nachtergaele 1999, pp. 117-120). In this document, numbers of pigeons are associated with a courtyard (αὐλή) and a personal name, presumably a reference to the various individuals owning a dovecote in the courtyard of their houses. The pigeons listed in this account may have been delivered to the temple where the papyrus was recovered.

¹²¹ One exception is C65, with a rectangular base (**Figure 109A**; Husselman 1953, pp. 84-85).

¹²² *Ibid.*, p. 83

¹²³ *Ibid.*, p. 86

Dabashiya and dates from the late Roman period.¹²⁴ Erected at the north end of the settlement, the mudbrick tower was designed as a rectangular building with a footprint of 5.1 by 7.7 m, or 39.27 m² (**Figures 110A-B**). Pigeons could enter the tower via a series of arched windows located at the top of the tower. The interior structure was very carefully and intricately designed to both accommodate the nesting of pairs of pigeons and to allow the people in charge of the facility to access the tower, gather eggs and/or young birds, and also collect the bird droppings accumulating on the floor of the dovecote. Birds were not intended to nest in clay pots, as attested at Karanis. Instead, square niches, with sides measuring 20 cm and with a depth of about 30 cm, were regularly incorporated into the masonry of the walls. It has been estimated that about 700 niches used to cover all the interior surfaces of the tower, “suggesting that upwards of 1,400 pigeons were housed in the tower, which would have provided eggs, meat, and most significantly, fertilizer for the inhabitants of the adjacent settlement.”¹²⁵

A large majority of the textual and archaeological evidence presented *supra* focuses on the region of the Faiyum and could lead one to believe that the breeding of pigeons was an agricultural specialty of the region. While it is clear that raising these birds was popular in this part of Egypt, the discovery of dovecotes in the oasis of Kharga in the Western desert, along with the few references of such facilities in the Thebaid¹²⁶ attest to it being a countrywide

¹²⁴ Ikram and Warner 2012. According to the authors, dovecotes were part of the Roman landscape of the oasis. The remains of such towers have been identified at the sites of Umm al-Dabadib, Beleida, Qurn al-Gennah, Bir al-Gebel, and Nessima (*Ibid.*, p. 1)

¹²⁵ *Ibid.*, p. 3

¹²⁶ For instance, Wilcken 1899, p. 279; Lichtheim 1957, pp. 49-50.

practice. Building styles probably varied from region to region to accommodate local traditions and environmental conditions.¹²⁷ Some areas would have favored the use of pots lying upon their sides as nests, while others provided nesting niches inside the mudbrick walls. Dovecotes and pigeon towers have remained hallmarks in the Egyptian landscape for millennia, regardless of the political powers in charge of the country and the religions practiced by its inhabitants. Since the Napoleonic campaign, they have fascinated travelers, who recorded and drew their unique styles and designs as they wandered through the countryside.¹²⁸

4. Sacred Birds: The Ibis and the Falcon

In addition to the various kinds of poultry exploited in Egypt during the Greco-Roman period, a different category of birds has had a major impact on the society of the time, an importance reflected both in the written and archaeological records. They are the ibis sacred to the god Thoth and the falcon most traditionally associated with the god Horus.¹²⁹ The cults of these sacred birds have left a significant mark in the Egyptian landscape in the form of cemeteries scattered throughout the country, including the oases of the Western desert.¹³⁰ Mummified remains of these birds continue to emerge from the sands and to be discovered in

¹²⁷ As observed at Ain al-Dabashiya, “the exterior walls of the tower are elegantly rounded above the height of two meters to combat erosion” (Ikram and Wagner 2012, p. 1). The need to provide the building with a solid roof and drainage system was also dependent on the frequency of rainfall in each location.

¹²⁸ Hornell 1947; Keimer 1956; Ayroun 2005, p. 99, fig. 20

¹²⁹ It should be noted that the avian features and characteristics of the falcon have been assigned to a large number of Egyptian deity, Horus being the main representative. See Altenmüller, LÄ II, cols. 94-95 for a list of sites with falcon cults and their associated deity.

¹³⁰ Ikram 2012, pp. 44-45

tombs and necropoleis specifically dedicated to house these birds for eternity.¹³¹ After a phase of development during the Late Period, the cults of the ibis and falcon, in which live birds played a key role, reached their acme during the Ptolemaic period. They continue to be attested during the Roman period, only to come to an end with the spread of Christianity in the country and the edict of Theodosius in AD 395, which ordered the closing of all pagan temples in Egypt.¹³² With almost a thousand years of activity, a wealth of evidence, both in the form of texts and also in the form of the millions of animal mummies discovered in the cemeteries attached to these cult centers, attest to the popularity of these religious practices, not only among the populations of native Egyptians, but also for the Greek settlers living in their midst.

The study of sacred animal cults, a remarkable phenomenon not only in terms of popularity and longevity, but also because of the quasi-industrial production of animal mummies associated with them, has generated considerable interest among scholars. This academic fascination started in ancient times, with Greek historians and geographers, most notably Herodotus, Diodorus Siculus, and Strabo, recording at length the rituals and practices

¹³¹ A falcon necropolis was recently discovered at Qesna (Rowland and Ikram 2013). Furthermore, as the team of J. Galan was excavating the Theban tomb of *Dhwtj* (TT 11), they came upon a cache of bird mummies, both ibises and falcons. It has been estimated that 1,000 mummies are present in this tomb and in tomb 399, located nearby (see campaign summary of 2015, http://www.excavacionegipto.com/el_proyecto/campaigns.php?year=2015&option=summary. Last accessed December 15th, 2015).

¹³² Evidence in the form of amphorae found in the bird catacombs of Tuna el-Gebel, however, suggests that the worship of Thoth at the site continued after this edict. “Deux de ces amphores datent du V^e siècle apr. J.-C.; elles témoignent des festivités ou des rites qui se déroulaient en ce lieu mais aussi de la durée d’utilisation du cimetière d’animaux, que l’on pensait jusque-là s’arrêter au I^{er} ou II^e siècle apr. J.-C.” (Flossmann-Schütze 2014, p. 11).

they observed, so bewildering in their eyes.¹³³ More recently, during the 19th and early 20th centuries in particular, naturalists and zoologists endeavored to gather some of these mummies brought back from Egypt in order to identify their contents, as they were eager to determine which birds were encountered on the banks of the Nile in Antiquity.¹³⁴ In the course of the 20th century, much emphasis has been placed in the Egyptological community on understanding the theology and unique ritual traits of this phenomenon, along with the motivation for the involvement of the Ptolemaic royal house in sponsoring these native cults.¹³⁵ The management of the live birds involved in these rituals, however, is only starting to be fully investigated.¹³⁶ For instance, where did the Egyptians acquire the flocks of birds, both ibises and birds of prey, which came to be buried by the millions in underground galleries, in abandoned tombs, or simply under the desert sand? What proportion was captured in the wild vs. bred in captivity? In the next paragraphs, I will endeavor to propose answers to these questions by gathering clues both from the written record and from the study of the remains of the birds involved in the religious fervor of Greco-Roman Egypt.

¹³³ For quotes of these classical authors on sacred animal cults, see Charron 2015, *passim*.

¹³⁴ Cuvier 1804; Lortet and Gaillard 1901-1909; Guichard 2014, p. 28 cat. 2;

¹³⁵ Kessler 1989; Fitzenreiter 2003

¹³⁶ I am extremely grateful to A. Charron who generously shared with me his notes on the various options available to ancient Egyptians to obtain the animals involved in the cults of sacred animals. He addresses this topic in a forthcoming article (Charron 2015). I will not discuss in this essay the motivations behind the mass production of animal mummies, which I intend to investigate in the course of future research. At this time, I will solely and briefly present the evidence regarding the management of live birds by personnel employed in the sanctuaries dedicated to these bird cults.


a. The Ibis of Thoth

Of all the animal cults celebrated in Egypt, involving bulls, rams, crocodiles, dogs and cats, fish, serpents, and shrews, the cult of the ibis appears to have been the most popular, this predilection for the bird of the god Thoth being reflected in the innumerable sanctuaries and cemeteries housing the remains of these birds attested throughout Egypt.¹³⁷ Already during the 19th Dynasty, a scribe named *Hri* recorded on a clay vessel having proceeded to the proper burial of an ibis, which he had found dead in the “canal of Ramses I (*Mn-ph.ty-R*”).¹³⁸ Whereas the opportune discoveries of dead birds in the countryside may have been enough to fulfil the needs of an incipient cult of the ibis of Thoth, temple personnel soon had to develop alternative methods to acquire more birds in order to answer the demands of devotees. Efforts were undertaken to not only acquire wild birds and maintain them in captivity, but also to increase the size of flocks via breeding programs. While the capture of wild ibises is, to the extent of my knowledge, not mentioned in the record, ample evidence has survived to shed some light on the various facilities and personnel put in charge of captive ibises.


Of the three species of ibises present in ancient Egypt, it was the sacred ibis (*Threskiornis aethiopicus*), *hb* in Egyptian and ἰβίς in Greek, which was specifically associated with the god Thoth.¹³⁹ A rich collection of Demotic and Greek texts attest to the existence of

¹³⁷ Ray 1976, p. 136; Smelik 1979

¹³⁸ Spiegelberg 1928, pp. 14-17, pl. 2b

¹³⁹ Houlihan 1986, pp. 28-30; Arnott 2007, pp. 73-75; Gaudard 2012, p. 65. The two other species are the glossy ibis (*Plegadis falcinellus*), best known as the model for the hieroglyph G28 , read *gm*; and the hermit ibis

captive flocks of sacred ibises, placed under the care and responsibility of a specialized personnel.¹⁴⁰ Texts have remained silent on the various ways the birds were originally acquired. Did fowlers visit colonies of wild ibises, captured some specimens and brought them back to the sanctuary? While this remains a possibility, scholars have rather suggested that Egyptians took advantage of natural bodies of water, where ibises used to congregate and find food aplenty, and established the cult centers in their vicinity.¹⁴¹ These lakes and wetlands, most of which have now completely vanished, were present near the site of Tuna el-Gebel, the necropolis associated with the main cult center of the god Thoth in Hermopolis, and also at Abusir and Dahshur, near the major sacred animal necropolis of North Saqqara.¹⁴² These wetlands were thus incorporated into the cultic complex, to an extent which remains to be investigated. It is unlikely that fences and netting were set up in the landscape to prevent the birds from flying away. It seems more likely that ibises and a variety of other wading birds, especially *Ardeidae* (egrets and herons), could fly in and out at will. Perhaps, with time,

(*Geronticus eremita*), well known as the *3h*-bird, or sign G25 . See the work of J. Janák (2007, 2010, 2014) on this latter bird.

¹⁴⁰ Such insightful documents have been recovered most especially in the sacred animal necropoleis located in North Saqqara (Martin 1975; Ray 1976; *Ibid.* 2011; *Ibid.* 2013), at Tuna el-Gebel (Ebeid 2006; *Ibid.* 2013), and in Kom Ombo (Preisigke and Spiegelberg 1914). One depiction also confirms these written attestations. In the cenotaph of Alexander of Great in Medinet Madi, a section of a wall painting is dedicated to the feeding of sacred ibises. A group of six birds is gathered around a man, loaded with a bag and holding a cup in his left hand. Two birds are already perched on this cup, seemingly eager to partake of the food and water brought for them (**Figure 111**; Bresciani 1980, p. 34, pl. 17).

¹⁴¹ von den Driesch *et al.* 2005, p. 204; Charron 2015, pp. 76-78

¹⁴² These natural pools of water are known as the Hod Tuna (von den Driesch *et al.* 2005); the pool of Abusir (Ray 1976, p. 138), and Lake Dahshur (Ikram 2012, p. 43; Baha el-Din 2012).

especially if the temple personnel provided additional food, these avian populations grew accustomed of the human presence in their surroundings.

According to a passage from Strabo's *Geographica*, sacred ibises, an extremely rare sight in modern Egypt, used to be abundant in ancient times, especially in the Delta.¹⁴³ Their recent status as invasive species in the wetlands of the Everglades in Florida and in Brittany's Morbihan Bay in France, where they were involuntary introduced, is testimony to their ease at adapting to new habitats and at adjusting their diet and breeding habits to new environmental conditions.¹⁴⁴ In ancient Egypt, while this species only visited Egypt as a breeding migrant during the summer, it is possible that, if provided with favorable conditions, in particular nesting areas, freshwater, plentiful food resources, and minimal human disturbance, some of the birds opted to remain in the country all year long and established breeding colonies, as suggested by the Egyptologists and Zooarchaeologists excavating the catacomb system of Tuna el-Gebel.¹⁴⁵ Permanent wild ibis populations would thus have been at the sanctuaries' disposal.

¹⁴³ Yoyotte *et al.* 1997, pp. 202-203. The manufacture of millions of ibis mummies during the Greco-Roman period has long been considered one of the main factors for the decline of sacred ibis populations in Egypt. J. Ray himself (1976, p. 136) wrote: "Anyone surveying the remains of known ibis-cults at Hermopolis (Tûna el-Gebel), Thebes, Abydos, Bahrîya Oasis, and the Delta Hermopolis (Baqliya) will understand ruefully why the sacred ibis, with its characteristic black head and tail feathers and shining white body, is now extinct in Egypt." We should not blame the ancient Egyptians, however, for the absence of the sacred ibis on the banks of the Nile today. This species of ibis was still common in Egypt in the early 19th century, as reported by members of the Napoleonic expedition. The absence of sacred ibises in Egypt is most likely tied to the loss of habitat and human disturbance, especially after the building of several dams on the river Nile and the drainage of residual wetlands (Goodman and Meininger 1989, p. 149; von den Driesch *et al.* 2005, p. 230). Efforts are currently undertaken to establish new breeding colonies north of the High Aswan dam (<http://www.egyptindependent.com/node/529281>. Last accessed December 11th, 2015).

¹⁴⁴ Marion 2013

¹⁴⁵ von den Driesch *et al.* 2005, pp. 204-205

However, it remains to ascertain whether access to wild populations was enough to provide the massive numbers of birds destined to be mummified.

The archive of *Hr* of Sebennytos, a collection of 60 ostraca recovered near the ibis galleries of North Saqqara and dated from the first half of the 2nd century BC, is an invaluable resource to help scholars evaluate how the local cult of the ibis was administered and operated in the Memphite necropolis.¹⁴⁶ In one of his dreams, which he subsequently recorded on an ostrakon, *Hr* referred to the quantity of clover destined to feed 60,000 ibises.¹⁴⁷ The editor of these demotic texts, J. D. Ray, basing his reasoning on an estimate of 4 million birds being buried in the ibis galleries of North Saqqara, has further proposed that 10,000 ibises on average may have been mummified and buried on average every year during the centuries of religious activity at the site.¹⁴⁸ Even if one keeps in mind that not all mummies contain an ibis¹⁴⁹ or even a complete bird, wild local resources would simply not be enough to accommodate such numbers, especially considering that the catacombs of North Saqqara are not a unique feature in the Egyptian ritual landscape.¹⁵⁰ Ibis sanctuaries throughout the country were in need of

¹⁴⁶ Ray 1976

¹⁴⁷ Text 8 in the archive of *Hr*: *Ibid.*, pp. 38-44

¹⁴⁸ *Ibid.*, p. 138

¹⁴⁹ As demonstrated by the sampling studies conducted in several of the underground galleries at Tuna el-Gebel, sacred and glossy ibises were mummified alongside other water birds (pelicans, cormorants, *Ardeidae* – herons, egrets, and bitterns – and rails), storks, cranes, as well as birds of prey, as will be discussed *infra*. Gallery B, for instance, was filled with mummies belonging to at least 70 bird taxa (von den Driesch *et al.* 2005, pp. 229-235).

¹⁵⁰ D. Kessler (1989, p. 265) has proposed that the local environment could accommodate at most a colony of 3,000 birds. I thank A. Charron for bringing this reference to my attention. In Tanzania, colonies of up to 2,000 pairs have been observed (Hancock *et al.* 1992, p. 214).

birds to mummify: only captive maintenance and breeding of ibises could accommodate such enormous needs.

As discussed by P. Gallo and K. Vandorpe, the ibises, once in a captive setting, were kept in a *ḥi(.t)*, “aviary,”¹⁵¹ well attested as ἰβιδών in the Greek sources of the Ptolemaic period.¹⁵² Such facilities, around which villages grew, have been identified throughout the country, from Elephantine to the Delta, and the great majority of them date to the Ptolemaic period.¹⁵³ In some instances, personal names tied to these bird reserves may indicate that private individuals and devotees to the god Thoth originally funded and/or founded these aviaries.¹⁵⁴ While some birds keeping facilities were presumably incorporated into each cultic complexes dedicated to the ibis of Thoth, it is highly probable that large sanctuaries, such as Saqqara and Hermopolis, depended on several *ḥi.w/ἰβιδώνες* located in their vicinity to supply additional birds when necessary.

Teams of “servants of the ibis,” known as *sdm.w-ḥš (n) n3 hbw* in demotic, would have tended these flocks of ibises reared for temple purposes. As recorded in the archive of *Hr*, it appears that these attendants were responsible not only for maintenance of the flock, but also for their burials, two activities known under two separate titles in Greek: the ἰβιοβοσκοί,

¹⁵¹ *An. Lex.* 78.0794: volière, réserve d’oiseaux (?). See Spiegelberg 1912, pp. 32-34, where *ḥi.t* is listed alongside a *šš*, a *mḥwl*, and a *s.t mnw.t*.

¹⁵² Gallo 1986; Vandorpe 1991

¹⁵³ Smelik 1979, pp. 228-229

¹⁵⁴ Vandorpe 1991, p. 118

“guardian/feeders of ibises,” and ἰβιοτάφοι, the “ibis embalmers.”¹⁵⁵ One of the main tasks of these men would have been to ensure that the birds had all the food they needed. Whereas sacred ibises favor insects, mollusks, fish, and crustaceans as food in the wild,¹⁵⁶ Greek and Demotic texts frequently refer to them as receiving a vegetarian diet composed of clover,¹⁵⁷ wheat,¹⁵⁸ lentils, and wild legumes known as *aracus*.¹⁵⁹ Such food was grown on the *t3 hr.t n n3 hb.w*, or ἰβιῶν τροφή,¹⁶⁰ “the feeding place of the ibises,” land administered by the cult centers and specifically set aside to grow crops destined to be distributed to the sanctuary’s ibises.¹⁶¹ A stela from the reign of Nekau II, king of the 26th Dynasty (610-595 BC), already attests to the donation of land specifically for the cult of the ibis of Thoth of Baqlīya.¹⁶² It is likely that the land was leased to farmers, who cultivated it and provided a portion of their

¹⁵⁵ Ray 1976, p. 142. For a discussion of the titles in Greek papyri, see Traversa 1960 and Smelik 1979, p. 231 n. 36.

¹⁵⁶ Hancock *et al.* 1992, p. 214

¹⁵⁷ *ῥtm*: Text 8 Recto, l. 18 in the Archive of *Hr* (Ray 1976, p. 38-44)

¹⁵⁸ BGU 1753.6 (64-63 BC): 13 *artabai* of wheat were set aside by the βασιλικὸς γραμματεὺς to be sent to the ibis sanctuary located at Sobthis (Smelik 1979, p. 231). A unit of volume, the *artaba* is approximately equivalent to 39.3 liters.

¹⁵⁹ pTebt. 62 mentions wheat, *aracus*, and lentils being grown on the ibis farms located at Kerkeosiris, in the Faiyum (*Ibid.*).

¹⁶⁰ Thompson 1937; Traversa 1960, p. 52. Smelik 1979, p. 230: “[...] the three ibis sanctuaries in Kerkeosiris had four, five, and five *arourai* of land respectively. (One *aroura* was 2,756 m²).”

¹⁶¹ According to E. Reymond (1972, p. 255), “in the Demotic texts the feeding places are always described as boundary parts of more important plots of arable lands.”

¹⁶² Meeks 1972, p. 68; *Ibid.* 1979, p. 676, entry # 26.2.14; Zivie 1975, p. 92

harvest as payment of the rent to the ibis sanctuaries. Whether the crops were used to feed the birds and/or the personnel in charge of them is not explicitly stated in these texts.¹⁶³

In certain sanctuaries and ibis aviaries, the *sdm.w-š (n) n3 hbw* benefited in their care of the flock from the help of the *mn-niw.t (?)*, possibly to be translated as “door keeper.”

According to Text 33 of the archive of *Hr*, the man holding this title had to be a reliable man, in charge of guarding the ibises and their young.¹⁶⁴ Flocks of sacred ibises were thus not limited to adult birds, but also included young ones. The discovery of considerable quantities of ibis eggs at Saqqara, both in the catacombs buried on their own or with adult birds, and also above ground in the remains of mudbrick cult buildings, had prompted scholars to identify the phrase, *t3 ḥy.t n ms*, “the birth aviary,” cited in this same Text 33, as naming a facility possibly specialized in the incubation of eggs and subsequent rearing of young birds.¹⁶⁵ All evidence (see *infra*) indeed indicates that the Egyptians had successfully managed to establish breeding populations of sacred ibises. One could surmise that the servants of the ibises were responsible for removing and gathering eggs in the nests of the ibis colony under their charge, thus enticing the breeding pairs to lay additional eggs. Sacred ibis females traditionally lay between two to five eggs each year, a clutch of two or three eggs being more common.¹⁶⁶ It has been observed

¹⁶³ von den Driesch *et al.* 2005, p. 241

¹⁶⁴ Ray 1976, p. 142. K. A. D. Smelik (1979, p. 240) compares this title to the Greek ἰβιδῶν φύλακες, “the guardians of ibises,” attested in Panopolis.

¹⁶⁵ Ray 1976, p. 138; Smelik 1979, p. 230. A similar expression, *t3 s.t ms*, “the place of birth,” is also encountered in the context of the cult of the ibis in Hermopolis at the beginning of the 2nd century BC (pLouvre 3334; Ray 1977, p. 111).

¹⁶⁶ Hancock *et al.* 1992, p. 214

that these females will readily lay eggs again after removal of the previous clutch.¹⁶⁷ The gathered eggs could then have been handled in two ways. They could have been placed in the nests of domestic poultry, such as geese and chicken, in order to complete the incubation process and care for the chicks.¹⁶⁸ It is also possible that Egyptian aviculturists had devised a system to artificially incubate these eggs, as suggested by D. Meeks and tentatively confirmed by the recent discovery at Medinet Madi of a hatchery and nursery for young crocodiles.¹⁶⁹ At this site located in the Faiyum, the excavation of a building located near a temple dedicated to the god Sobek exposed a large clutch of crocodile eggs containing fetuses at various stages of development, as could be expected for eggs kept in a heated incubation chamber.¹⁷⁰ It would not be unreasonable to assume that a similar system of artificial incubation, described at length by Classical scholars as being an Egyptian practice,¹⁷¹ had also been put to use by teams of *sdm.w-š (n) n3 hbw*, eager to gain control over the population of ibises under their care. Such installations, if indeed the technology had been implemented, would have allowed the ibis sanctuary staff to increase the size of the flocks at various cult centers and thereby meet the demands for bird mummies. It should be noted that sacred ibises, at all stages of development,

¹⁶⁷ Burton 2012, p. 56

¹⁶⁸ See Columella (*Rust.* VIII 15,5) for the use of brooding hens to incubate the eggs of other species of birds.

¹⁶⁹ Meeks 1997; Bresciani 2005, pp. 204-205

¹⁷⁰ It is interesting to note that, as remarked by P. Gallo (1986, p. 47) and A. Egbert (1987, p. 31), the word *ḥyt* could mean “brazier,” i.e. heat, a crucial element to an incubation chamber.

¹⁷¹ See Meeks 1997, p. 132 for passages from Aristotle, Diodorus Siculus, and Pliny the Elder. European travelers, as early as the 17th century and especially after the publication of *La Description de l'Égypte*, continued to be amazed at the ingenuity of Egyptians to artificially raise poultry. See for instance the lithograph entitled “four d'incubation pour faire éclore les poulets” based on a drawing made by Egypt enthusiast J.-J. Rifaud during his stay in Egypt during the first quarter of the 19th century (Robette 1998).

from embryo to full grown adult, have been identified among the mummified remains of birds deposited in tombs and catacombs.¹⁷²

Just as the servants of the ibis were responsible for gathering fertile eggs from the nests of breeding pairs, they also collected the remains of all the animals, most especially birds, that had died in the bird colony, in the aviary, and/or on the temple property. It has recently been suggested that all the animals present in the temple precinct, even though they may not have been related to the ibis family and thus the god Thoth, had nonetheless acquired some sacred status, a special divine connection with the god worshipped in the sanctuary's temple, and were thus deemed worthy of being mummified and of receiving the various rituals granting the dead birds the Osirian status. Similarly, all materials that would have come in contact with the birds, such as dropped feathers, abandoned infertile eggs, and also nesting material, have been said to deserve the same respect as the sacred ibises themselves. They too were included in the mummified packets deposited in sacred bird necropoleis.¹⁷³

A few letters, in some instances addressed to the god Thoth himself, reveal that not all *sdm.w-š (n) n3 hbw* were conscientious about their duties towards the birds under their care and the god, whom they served. Thus, during the 27th Dynasty, *ḏw=f-šw*, probably serving the

¹⁷² For instance, Oriental Institute Museum (OIM) E9235: ibis egg recovered in the animal cemetery of Abydos (Bailleul-LeSuer 2012, p. 200); OIM E9164 contains the remains of a neonate ibis. For an example of a full grown sacred ibis, see Pelizzari *et al.* 2012, p. 117. For examples of ibis eggs known to contain the remains of embryos, see Spigelman *et al.* 2008.

¹⁷³ Ikram 2012, p. 42. The mummified bundles incorporating little or no animal remains have been referred to in the literature as “fake” mummies and more recently as “pseudo-mummies” (McKnight 2010, pp. 81-87; McKnight and Atherton 2014).

cult of the ibis at the site of Tuna el-Gebel, complained to Thoth about the abusive behavior of his colleague *P3-šr-t3-ih.t*, who, as *Tw=f-ꜥw* laments, failed to perform his duty for the birds, taking their food and not providing the care they required.¹⁷⁴ Inappropriate treatment of the bird remains, fraud, and/or misappropriation of funds were also taking place during the Ptolemaic period at the Sacred Animal Necropolis of North Saqqara, abuses reported by *Hr* of Sebennytos.¹⁷⁵ Some reforms were later implemented to better regulate the administration of the ibis cult, seemingly to no avail.¹⁷⁶

b. The Falcon of Horus

It is well documented that the cults of the ibis and that of the falcon, the two most revered birds in Egypt, were frequently administered jointly, as some servants of the ibis (*sdm.w-ꜥš (n) n3 hb.w*; ἰβιοβοσκοί) were also in charge of taking care of falcons and held the titles of servants of the falcon (*sdm.w-ꜥš (n) p3 bik*; ἰερακοβοσκοί).¹⁷⁷ Furthermore, in many

¹⁷⁴ Hughes 1958; Scalf 2012d, pp. 192-193

¹⁷⁵ Ray 1976, pp. 143-144

¹⁷⁶ See also pLouvre E3333 and E3334, Demotic documents of the early 2nd century BC, which describe the problems *Hriw*, embalmer of ibises based at the site of Tuna el-Gebel, encountered when he was sent to another site of the ibis cult (Ray 1977; Ziegler 2004, pp. 178-179).

¹⁷⁷ SB 6925 (ca. 87 BC): Armiusis and his colleagues held both titles at the temple of Hermes-Thoth in Tebtubis (Traversa 1960, p. 52). See also a similar trend attested at the Sacred Animal Necropolis of North Saqqara, as mentioned in texts 19, 21, and 22 of the Archive of *Hr* (Ray 1976, p. 137). In the latter series of texts, it is not certain that the same people occupied both positions at the same time. However, it is clear that both the cults of the ibis and the falcon (*p3 hb p3 bik*) were tied together. A visual attestation of the close tie uniting the two birds can be seen on stela FCO-70, uncovered in the Falcon catacombs of Saqqara and dated 89 BC. In the lunette painted at the top of this object, a squatting sacred ibis and a falcon are depicted facing each other, with an offering table (?) depicted between them (Davies and Smith 2005, p. 79, pl. 29a).

animal cemeteries, mummies of ibises and falcons were deposited in the same galleries.¹⁷⁸ We do not dispose, however, of a body of evidence as rich for the management of falcons and birds of prey connected to these cults as we did for the cult of the ibis. What J. D. Ray observed regarding the cult of the falcon at Saqqara, namely that there was “little or no hieroglyphic sources to shed light on the temple of Horus the Falcon and its cult; the walls of the various corridors and gateways [in the falcon galleries] are almost devoid of graffiti,”¹⁷⁹ also applies to other sanctuaries associated with the numerous cemeteries where mummies of birds of prey had been deposited.

The bird connected to the cult of the falcon was named the *bik*, or ἴεραξ. The type of bird of prey to which it corresponds in our modern taxonomy remains a question of debate. There appears to be no doubt that the bird of Horus is a member of the genus *Falco*, readily identified by its short hooked bill equipped with a “tooth” on its upper mandible, and its long pointed wings, which, when folded, are as long as the bird’s tail.¹⁸⁰ The peregrine or lanner falcons (respectively *Falco peregrinus* and *F. biarmicus*) have often been favored as being

¹⁷⁸ Mummies of falcons and ibises deposited side by side have been excavated at Kom Ombo, Thebes, Abydos, Tuna el-Gebel, and Saqqara (Cauville 1989, p. 63; Davies and Smith 2005, p. 8). In the falcon catacombs in the Sacred Animal Necropolis of North Saqqara, W. B. Emery (1971, p. 9) remarked that “it is notable that some of the communication passages of the Ibis mausoleum go in the direction of the Falcon Galleries, and that demotic graffiti in the masonry blockings and gates blocking some of the side galleries of the falcon installations bear dedications to Thoth the Ibis more frequently than they do to Horus the Falcon.” For a discussion of the possible motivations for the combinations of the cults, whether on religious or purely pragmatic grounds, see Quaegebeur 1975, p. 23 n. 36; Smelik 1979, pp. 240-241; Ritner 1986, p. 103 n. 28; Vandorpe 1991, p. 116 n. 12; von den Driesch *et al.* 2005, p. 236; Ray 2011, p. 211.

¹⁷⁹ Ray 2011, p. 222

¹⁸⁰ Brown *et al.* 1982, p. 442

representative of the god Horus, in part because of the coloring of their plumage resembling that of the bird depicted in Egyptian art, and the characteristic black moustachial streaks on the pale cheeks of these two species of falcons. Scholars, however, favor the theory that the Horus falcon was in fact an amalgam of the various falcons ancient Egyptians artists would have observed with, possibly, a hint of artistic license.¹⁸¹ Most species of falcons observed today in Egypt are solely migratory birds, including the peregrine falcon;¹⁸² only a few are known to breed in the country.¹⁸³

Inscriptions and attestations in the papyrological record reveal that members of these sacred bird installations included, just as was the case for ibises, staff responsible for the care of falcons, presumably kept captive in an aviary. These men were known as the servants/guardians of the falcon (*sdm.w-ꜥꜥ (n) pꜣ bik*; ἱερακοβοσκόι),¹⁸⁴ as aforementioned. Despite the use of a singular avian noun in this title, *pꜣ bik*, more than one bird of prey were said to have been kept captive at sanctuaries, with one of them, as will be discussed below,

¹⁸¹ Houlihan 1986, pp. 46, 48; Kozloff 2012, p. 59-60

¹⁸² Goodman and Meininger 1989, pp. 199-211 (PV: passage visitor; WV: winter visitor): Red-footed falcon (*Falco vespertinus*), PV; Merlin (*F. columbarius*), WV; Eleonora's falcon (*F. eleonora*), PV; Saker (*Falco cherrug*), PV, WV; Peregrine (*F. peregrinus*), PV, WV.

¹⁸³ *Ibid.* (MB: migrant breeder; RB: resident breeder; CB: casual breeder; PV: passage visitor; WV: winter visitor): Lesser kestrel (*Falco naumanni*), CB, PV (WV); Kestrel (*F. tinnunculus*), RB, PV, WV; Hobby (*F. subbuteo*), MB, PV (WV); Sooty falcon (*F. concolor*), MB (WV); Lanner (*F. biarmicus*), RB, WV; Barbary falcon (*F. pelegrinoides*), RB PV? Most of them are scarce local breeders in Egypt. The kestrel (*Falco tinnunculus*) is most likely the best attested resident breeder in the country.

¹⁸⁴ For a list of attestation of the title ἱερακοβοσκόος, see Sosin 1999, p. 140 n. 3-4.

granted a special status.¹⁸⁵ Little is known of the duties of these employees, but it undoubtedly included feeding the birds, in particular meat, as is fitting for these carnivorous birds.¹⁸⁶ They would have also cleaned the aviaries, removed the decaying left over food, provided the birds with clean water, and insured their overall well-being. Just like their colleagues, the servants of the ibis, they would also have gathered the remains of dead birds of prey discovered on the temple premises, as a short inscription on a limestone sarcophagus discovered in the falcon cemetery at Saqqara alludes to.¹⁸⁷ While it is still uncertain what mummy is confined in this sarcophagus, which has remained unopened, the inscription states that “a perished one” (*sge*) had been found lying near the entrance of a gallery of the Serapeum.¹⁸⁸ Its remains had been collected, probably mummified and placed inside the sarcophagus, and subsequently deposited in the falcon cemetery.

The innumerable “falcon” mummies encased in jars specifically manufactured for these birds’ burials, carefully deposited in stone sarcophagi, or simply laying on the ground in reused tombs and catacombs’ passages were found to contain the remains of a wide range of diurnal

¹⁸⁵ Shore 1979, p. 149; Cauville 1989, p. 63 n. 87: In Dendera, the *strategos* was responsible for *t3 hrt n p3 ʿhm irm n3 bik.w ʿnh(w) hr hrw*, “the food of the sacred falcon and the living falcons daily.” This Demotic inscription is incised on a copper alloy writing tablet kept in the British Museum, London (BM EA57371).

¹⁸⁶ Charron 2009, p. 55. Diodorus Siculus, Greek historian of the 1st century BC, recorded what had been reported to him regarding the feeding of falcons in temples: “The caretakers for the hawks cut meat into tidbits; then, summoning the birds with a sharp cry, they toss each morsel up to them as they fly by, until they catch it” (*Bibliotheca Historica* I, 83; translation from Murphy 1990, p. 104).

¹⁸⁷ Sarcophagus inventoried as FCO-434 by the archaeologists and now kept in the Cairo Museum, Inv. Nr. JE 91911 (Davies and Smith 2005, p. 119).

¹⁸⁸ Ray 2011, pp. 271-272

and also nocturnal birds of prey. At Tuna el-Gebel, for instances, Zooarchaeologists identified the following 35 species of raptors, including eagles, kites, hawks, vultures, harriers, falcons, and owls:

Table 22. List of the remains of birds of prey recovered in the catacombs of Tuna el-Gebel (from von den Driesch *et al.* 2005, pp. 216-217)

<i>Scientific Name</i>	<i>English Name</i>	<i>Status</i> ^a	<i>Minimal Number of Individuals (MNI)</i>
<i>Haliaeetus albicilla</i>	White-tailed sea eagle	A	4
<i>Haliaeetus vocifer</i>	African fish eagle	A	4
<i>Mivus migrans</i>	Black kite	R/M	26
<i>Elanus caeruleus</i>	Black-shouldered kite	R	29
<i>Circaetus gallicus</i>	Short-toed eagle	M	3
<i>Accipiter nisus</i>	Sparrowhawk	W	49
<i>Accipiter brevipes</i>	Levant sparrowhawk	W	7
<i>Accipiter gentilis</i>	Goshawk	A	10
<i>Buteo lagopus</i>	Rough-legged buzzard	A	1
<i>Buteo rufinus</i>	Long-legged buzzard	R/W	12
<i>Buteo buteo</i>	Buzzard	R/W	5
<i>Hieraetus fasciatus</i>	Bonelli's eagle	W	1
<i>Hieraetus pennatus</i>	Booted eagle	W	2
<i>Aquila heliaca</i>	Imperial eagle	W	18
<i>Aquila pomarina</i>	Lesser spotted eagle	W	12
<i>Neophron percnopterus</i>	Egyptian vulture	S	1
<i>Targos tracheliotus</i>	Lappet-faced vulture	M	4
<i>Aegyptius monarchus</i>	Black vulture	W	1
<i>Gyps fulvus</i>	Griffon vulture	R	10
<i>Circus aeruginosus</i>	Marsh harrier	M	23
<i>Circus cyaneus</i>	Hen harrier	W	20
<i>Circus macrourus</i>	Pallid Harrier	W	7
<i>Circus pygargus</i>	Montagu's Harrier	M	21
<i>Falco cherrug</i>	Saker falcon	W	13
<i>Falco biarmicus</i>	Lanner falcon	R	20
<i>Falco pelegrinoides</i>	Barbary falcon	R	8
<i>Falco Subbuteo</i>	Hobby	W	10
<i>Falco vespertinus</i>	Red-footed falcon	W	9
<i>Falco naumanni</i>	Lesser kestrel	W	23
<i>Falco tinnunculus</i>	Kestrel	R/W	249
<i>Tyto alba</i>	Barn owl	R	5
<i>Bubo bubo</i>	Eagle owl	R	6
<i>Asio flammeus</i>	Short-eared owl	W	17
<i>Athene noctua</i>	Little owl	R	15
<i>Otus scops/O. brucei</i>	Scops owl/Striated scops owl	W/R	1

^a A: Absent form Middle Egypt; M: Migratory Visitor; R: Resident; S: Summer Visitor; W: Winter Visitor

The large majority of the species attested in this animal cemetery of Middle Egypt are in fact migratory species, here shown written in green. They probably were only briefly seen in the Nile Valley as they flew through the country (shaded in light green); they may also have remained in Egypt for the winter (shaded in purple). Although the capture of birds of prey has yet to be identified in the written record, it is almost beyond doubt that the ancient Egyptians acquired in the wild most of the raptors destined to be mummified and deposited in galleries attached to falcon sanctuaries. Based on the data recorded at Tuna el-Gebel, the winter months would have been the busiest time of the year for specialized fowlers, well acquainted with the behaviors and migratory habits of these birds.¹⁸⁹ For the rest of the year, it appears that kestrels (*Falco tinnunculus*) were the most common targets, this small falcon being a relatively familiar bird in the Egyptian landscape, usually nesting in cavities encountered in cliffs, trees, or buildings.¹⁹⁰ It is therefore not surprising to find this bird dominating the mummified raptorial assemblages. All the captured birds, residents and migrants, would have been brought to aviaries to be placed under the care of the *sdm.w-š (n) p3 bik*. No evidence suggests that these

¹⁸⁹ Birds of prey, especially large falcons, continue to be favorite targets of some Egyptians fowlers active in the Sinai, as these birds can be sold to falconers living in Saudi Arabia and several of the Gulf States (Baha el-Din and Salama 1991, pp. 22-33).

¹⁹⁰ It should be noted that the kestrel (*Falco tinnunculus*) is represented in Egypt by two subspecies, one residing in the country all year long, and one visiting the country as a migrant. “[T]he form *F. t. rupicolaeformis* is a fairly common breeding resident in the Nile Delta and Valley and in several Western Desert oases. [...] Between (early) mid-September and mid-May (early June) the resident population is augmented by migrants belonging to *F. t. tinnunculus*” (Goodman and Meininger 1989, p. 200).

men were able, or even intended, to breed birds of prey in captivity. It is therefore in the wild that the large majority, if not totality, of these birds were acquired.¹⁹¹

While, as mentioned previously, the management of most captive birds of prey is scarcely attested in the record, the Upper Egyptian site of Edfu stands out for the quality and quantity of information regarding the coronation ceremonies, during which a live falcon rose to prominence and sat for a year on the throne beside the god Horus of Behdet.¹⁹² Carved during the reign of Ptolemy IX Soter II, a series of reliefs and detailed inscriptions relate how the statue of the god housed in this temple selected among the flock of birds kept at the site the special falcon which would become the living and breathing receptacle of his *b3*, or manifest physical power.¹⁹³ This chosen bird was referred to in inscriptions under a plethora of names, including *bik*, “falcon,” *bik ʕ3*, “great falcon,” *p3 bik ʕnh*, “the living falcon,” and more specifically *ʕw.t nt Hr-3h.ty*, “sacred animal of the god Horakhty.”¹⁹⁴ Because of its elevated status, the sacred falcon of Edfu benefited from a privileged existence within the temple precinct during its life. It

¹⁹¹ The challenges encountered by the scientists who dedicated their efforts to restoring the rapidly declining populations of bald eagles (*Haliaeetus leucocephalus*) and peregrine falcons (*Falco peregrinus*) in the United States during the past several decades testify to the difficulty of successfully breeding birds of prey in captivity without the help of modern techniques, such as artificial insemination and incubation (Enderson *et al.* 1998; Holland 2007, pp. 525-531).

¹⁹² See Alliot 1949; Baum 2007; Charron 2009 for a detailed description of each step in the elaborate coronation ritual of the living falcon by the god Horus of Edfu.

¹⁹³ Charron 2009, p. 51; Scalf 2012a, p. 36

¹⁹⁴ For *ʕw.t* meaning “sacred bird,” see Blackman 1945, p. 63 n. 26; Alliot 1949, p. 577; Charron 2009, p. 54; Meeks 2012, p. 526.

was fed special meat dishes, including fowl and also perhaps donkey meat, symbols of the enemies of the god which had been ritually exterminated.¹⁹⁵

The rituals of Edfu specifically state that the sacred falcon was chosen in the midst of a flock of *ḏr.tyw*, “raptors.”¹⁹⁶ Such a designation implies that it is only by being chosen by the god that the bird became a *bik*, a falcon. Should we then assume that the actual species of the chosen bird, prior to undergoing the complex series of rites, was of no real importance, it being an eagle, a kite, or a hawk, for instance? The ceremonies and the ritual actions of the statue of Horus of Behdet would transformed the “ordinary” bird into the living falcon, *p3 bik ʿnh*, the proper embodiment of the Behdetite.

c. Insight into Sacred Bird Cults: The Study of Bird Mummies

As aforementioned, millions of bird mummies were manufactured for centuries at a multitude of sites throughout Egypt, at times at a quasi-industrial rate. While countless numbers of them still remain buried in Egyptian tombs and underground galleries, these mummified bundles have also made their way into the Egyptian collections of museums

¹⁹⁵ Blackman 1945. Donkey meat is specifically listed on pBerlin 13547 dated from the Ptolemaic period (Porten *et al.* 1996, p. 323). On this document from Elephantine, the flesh of 10 donkeys were said to have been put aside as being the food of the falcon. The bird in question here is most likely the sacred falcon of Philae, this temple also housing a sacred, unique, falcon. See Junker 1912 for more information on the sacred falcon of the temple of Philae. A sacred falcon was also housed in the temple of Horus Khenty-Khety, in Athribis, as mentioned on the statue base of *ḏd-Hr*, on display in the Oriental Institute Museum (OIM E10589). *ḏd-Hr* claimed to have been the chief guardian of the falcon, *hry s3w n p3 bik*, responsible for preparing the food for the falcons and also insuring their proper burials after their death (Sherman 1981; Teeter 2003, pp. 101-102; Scalf 2012a, p. 38).

¹⁹⁶ Wb V p. 597 §5-12: der Falke. I agree with A. Charron (2009, p. 54) that the word *ḏr.tyw* should not strictly be translated as “falcons,” since it has been demonstrated that both Isis and Nephthys could be referred to as *ḏr.tyt*, often represented as kites (*Milvus* sp.) or kestrels (*Falco tinnunculus*). The words “raptors, birds of prey” are more appropriate to describe the cast of birds from which the sacred falcon was to be selected.

throughout the world. Several multidisciplinary research projects, in particular the Ancient Egyptian Animal Bio Bank created in 2010 and based at the KNH Center of the University of Manchester,¹⁹⁷ along with MAHES (Momies Animales et Humaines ÉgyptienneS) started in 2013 and based at the Musée des Confluences, Lyon,¹⁹⁸ are specifically dedicated to the in-depth study of mummified animal remains, hoping to gain further insight into the mummification practices associated with the sacred animal cults.¹⁹⁹ Each mummy, referred to as *ntr.w*, “gods,” by the ancient Egyptians, contains unique material, whose examination may highlight different aspects of the treatments received by the animals involved in the cults after their demise.²⁰⁰ In some instances, it may even be possible to gather clues about these animals’ lives from the analysis of their skeletal remains and soft tissues.

The maintenance of ibises in captivity, alluded to in the textual record, has in part been confirmed by the discovery of healed bone fractures in a few ibis mummies.²⁰¹ According to several Zooarchaeologists and Egyptologists, the healing of fractures may be suggestive of the care the birds received at the hands of temple personnel, since these ibises would have been

¹⁹⁷ Project directed by L. McKnight and S. Atherton-Woolham. See <http://www.knhcentre.manchester.ac.uk/research/animalbiobank/>. Last accessed December 14th, 2015.

¹⁹⁸ Project coordinated by S. Porcier. See <http://archimede.cnrs.fr/index.php/annuaire/94-projets-en-cours/219-mahes-aap1>. Last accessed December 14, 2015.

¹⁹⁹ In parallel with these collaborative research projects, several museum exhibits have been solely dedicated to showcasing the cults of sacred animals and the mummies manufactured in conjunction with this religious phenomenon. See Bleiberg *et al.* 2013; McKnight and Atherton-Woolham 2015.

²⁰⁰ Atherton 2012

²⁰¹ von den Driesch *et al.* 2005, p. 227; Atherton *et al.* 2012

unlikely to survive in the wild for the duration of the healing process.²⁰² Likewise, the analysis of the gizzard contents in a mummified kestrel, readily visible after CT-scanning of the mummy and manipulation of the resulting data using 3D imaging software, has allowed researchers to identify the type and quantity of food consumed by the bird prior to its death.²⁰³ In this particular instance mummy SACHM 2575 from the Iziko Museums of South Africa had consumed not only small birds, such as sparrows, but also several mice, some of which were partially digested and could still be identified in the kestrel's esophagus and gizzard. Since it is considered unlikely that so many preys would have been consumed by the bird in one day, S. Ikram and her collaborators suggest that the kestrel, in this instance a male, had been force fed, positive evidence of it having been kept in captivity for a certain period of time.²⁰⁴

One cannot emphasize enough the potentials and benefits of inter- and multi-disciplinary studies of bird mummies. The contributions of each discipline – Egyptologists, for the translation and analysis of texts, along with their thorough knowledge of Egyptian society; Archaeologists and Zooarchaeologists, for their work in animal cemeteries in Egypt and their

²⁰² von den Driesch *et al.* 2005, p. 227; Charron 2015, p. 88. S. Atherton and colleagues (2012), however, rightfully advise for caution when drawing conclusion based on the presence of osteopathologies in bird mummies. As remarked by D. Serjeantson (2009, pp. 57-58) and S. Atherton (2012, p. 47), fractured bird bones are known to heal more rapidly than those of mammals, and injured birds, if sufficient food and few predators are present at a site, can survive in the wild for an extended period of time. Whether the birds presenting the healed fractures were cared for by servants of the ibis after suffering the injury, or whether they had been found dead by these employees, is difficult to ascertain. Similarly, the presence of freshwater snail shells with or within the remains of sacred ibises is not automatically an indication that the birds had access to natural wetlands. It has been suggested that these shells may have been added by the embalmers, possibly as a food offering for the deceased bird on its way to the afterlife (Wade *et al.* 2012; Bailleul-LeSuer 2012, p. 197).

²⁰³ Ikram *et al.* 2015

²⁰⁴ *Ibid.*, p. 76-77

study of avian remains; Ornithologists, for their knowledge of bird morphology and behaviors, as well as feeding, breeding, and migration patterns; Medical Physicists, for the acquisition and analysis of X-Ray images and CT-scan data; Biologists, for the study of ancient DNA and Stable Isotope Analysis; Analytical Chemists, for the analysis of balms and resins used during the mummification – are bound to add many pieces to the puzzle, which the cults of sacred animals continue to be.

5. Concluding Remarks

The wealth of written material which has survived from this period allows us to better appreciate the role that birds played in the society of Greco-Roman Egypt. Poultry was a desirable commodity, raised both by individual households and also in the large estates of the elite. Domestic species, especially pigeons, geese, and chickens, are most frequently mentioned and appear to be favored over wild resources. Eggs also become a more common item in the diet and could be readily obtained at the marketplace.

In addition to being exploited for their meat, eggs, and feathers, the pigeons and doves, housed in dovecotes built on top of the house or as separate structures at the edge of villages, represented a valuable investment. Pigeon towers could be leased and the guano produced by the flocks of *Columbidae* living in the facility could be used and/or sold as fertilizer.

Birds continued to be appropriate temple offerings to deposit on the altars dedicated to the cults of Egyptian deities and of the Roman emperor. Temple employees also undertook considerable efforts to gather in the wild and raise in captivity a wholly different category of

birds destined to be ultimately offered to the cults of avian gods such as Thoth and Horus. For several centuries until the fall of the Roman Empire, the cults of sacred animals came to be associated with the mass production of millions of animal mummies. Flocks of sacred ibises were thus placed under the special care of a multitude of temple workers throughout the country, whereas specialized fowlers were sent out during migration times to trap the falcons, hawks, or eagles, which were needed to fill the aviaries built on the estates of the many Egyptian falcon gods. The masses of mummified birds, which have survived since Antiquity, are witness to the religious fervor of this time. Multidisciplinary teams of scholars are thus coming together and combining their efforts and expertise in an attempt to gain access to the information hidden underneath the mummies' wrappings, in order to better understand how these cults acquired such an important status and remained popular over such a long period of time.

CONCLUSION

*Egypt is a land of water-birds. In the migration season lagoons of the Delta, the reed-banks of the Fayum, the canals, ponds, and flooded fields are crowded with thousands of water-birds, ibises, pelicans, cranes, cormorants, herons of all kinds, flamingoes, ducks and geese.*¹

H. Kees could not help but be amazed at the wealth of avian life he witnessed taking over the wetlands of the Nile Delta during spring and fall migrations. Every year, all expanses of water in Egypt come to be filled with a wide range of bird species, among which ducks and geese dominate in number and variety. This dissertation project started with the ambitious goal of assessing how the ancient Egyptians exploited this rich and varied avifauna. How did they manage to trap live birds and thereafter maintain them in a captive setting? Prior studies on the impact of birds on Egyptian economy and society commonly had a restricted scope, which only partially opened a window on the topic of avian exploitation in ancient Egypt. Some of these investigations focused on gauging the importance of processed poultry when compared to other sources of animal proteins. Other projects undertook to analyze one source of data only, most frequently the fowling and farmyard representations encountered in the offering chapels of the elite Egyptians. This present study is unique in adopting a multidisciplinary approach to evaluate the importance of birds in Egyptian society. Rather than focusing my attention on the methods ancient Egyptians had devised to process and preserve poultry meat, a topic investigated by S. Ikram,² I focused my attention on the strategies implemented to acquire and manage flocks of **live** birds, both in large institutional settings and in individual

¹ Kees 1961, p. 93

² Ikram 1995

households. In order to evaluate how these aviculture strategies may have evolved through time, I proceeded to review such practices for the whole span of pharaonic history, taking into consideration not only the undeniably rich repertoire of bird life in iconography, but also attestations of avian exploitation in the written and archaeological records. This broad chronological spectrum gave me the opportunity to identify of patterns of management and distribution. It also underscored the methods developed over time to gain better control over the flocks of birds maintained in captivity.

As attested in the wall scenes, texts, and faunal assemblages reviewed in the course of this study, wild birds never ceased to be trapped by fowlers of Dynastic and Greco-Roman Egypt, the mass of migratory fowl visiting the country on a yearly basis representing too valuable a resource to be ignored. As early as the 1st dynasty, the system of clap-nets had already been devised to capture whole flocks of wild water birds, the depiction of which came to be incorporated into the royal ideology of the time, a reflection of the relevance of this activity in Egyptian society. The ancient Egyptians' preference for this category of feathered game is confirmed not only by their prevailing role in the traditional funerary offering lists encountered in elite tombs, but also by their presence in faunal assemblages excavated in settlement and religious contexts (see Appendix 5). The ritual use of birds idealized on the walls of offering chapels and temples, on funerary stelae and models, is reflected in the remains of offerings deposited in tombs, at temples, and in the foundations of buildings.

In the first section of this dissertation, I focused my attention on assessing the possible fowling locations favored by ancient Egyptians. As highlighted in H. Kee's quote, the preferred habitats for ducks, geese, and wading birds are encountered near and/or on bodies of water, including the Nile River itself, but most especially canals, lakes, and marshlands, perfect ecosystems where waterfowl could find food, water, and refuge from predators in the vegetation growing in the vicinity. As emphasized in previous scholarship, the wetlands of the Delta and the Faiyum are well documented during the entire course of Egyptian history as being a traditional destination for fowling expeditions. However, it is important to keep in mind that swamps and residual waters could also be encountered in Upper Egypt, most especially at the desert margins. A variety of terms applied to these watery and lush areas (*ph.w*, *zš*, *š3*, *mh.t*, *iw*, *idh.w*, *sh.t*, *grg.t*) are encountered in the written record. This multiplicity and frequency of attestations clearly underscore the importance of wetlands in the production system regulated by the Egyptian administration. A term is of special significance, the *ph.w*. These areas, often translated as "marshlands," were considered to be the marginal lands listed along with the *w.w*, "cultivated lands," which were present in every nome of both Upper and Lower Egypt. Both had their economic potentials, which needed to be managed and exploited. Far from being the chaotic lands filled with uncontrollable creatures, the *ph.w* were areas full of potential, so much so that they were placed under the control of an overseer, who managed their production, including the birds encountered within. These marginal lands were exploited by a specific category of workers, well aware of its resources and its challenges, known as the *sh.tyw* and *mh.tyw*, "the inhabitants of the *sh.t*-marshlands and of the Delta." Better known under the term

of *wḥꜥ.w*, literally ‘trappers,’ some of them specialized in the capture of fish or of waterfowl, adapting the nets at their disposal for each kind of prey.

The systematic review of the avian remains identified in the domestic contexts of archaeological sites located along the Nile Valley and in the Western desert oases provides new insight into the categories of wild birds hunted by ancient Egyptians. A more complex and also more nuanced picture emerges, which differs from the idealized vision that can be gathered from the fowling representations on tomb and temple walls. Whereas great emphasis was placed throughout the country to select waterfowl (ducks and geese) and *Columbidae* (doves and pigeons) as offerings in temples and tombs, regional trends emerge when it comes to the actual consumption of birds. Some unexpected birds, such as flamingoes, storks, or cormorants are at times the most common species recovered, dominating the expected waterfowl in the middens of several sites, such as Tell el-Dab’a, Elephantine, and Amarna. These peculiarities may be considered as reflecting local preferences. They also indicate that the inhabitants of these towns took full advantage of the resources offered by their environment and exploited all the birds, whose migration paths led them to fly over or stop in the vicinity of these sites.

Prior to this study, the possible fate of the birds trapped during fowling expeditions had rarely been considered. Some of these birds were probably slaughtered straightway, especially those injured during the hunt. Such a treatment could only account for a portion of the catch, since preserved meat remains safe for consumption for a limited time. Consequently, the large majority of the wildfowl was intended to be captured alive, gathered in cages, and transported

to farmyards. At their final destination, they would be dispatched solely when the need for fresh meat was needed. At the fowling site the crated birds were loaded onto boats and took the Egyptian “road” most traveled, namely the Nile River. Some ships were seemingly equipped with large aviaries, thus giving the birds more freedom of movement, a ‘luxury’ perhaps reserved for longer journeys. The birds finished their journey from the banks of the Nile to the poultry-yard on the back of a worker or a donkey, as can still be observed in Egypt today.

The elaborate representations of farmyards with aviaries included in the iconographic repertoire of offering chapels are a valuable resource to gather insight into the types of birds Egyptian aviculturists employed by large institutions were eager to maintain captive. Waterfowl were joined in captivity by cranes (*d3.t*, *wd^c*, *g3*, and *rw*) and turtle doves (*mnw.t*), all birds destined to participate in rituals as offerings. Most likely to avoid aggressive behaviors to develop between the captive birds, the various avian categories are invariably depicted as being penned in different aviaries or enclosures. Waterfowl were specifically provided with a pond, a necessary feature for their survival. First known as *hr.t-mw* during the Old Kingdom, these *h3.t-r-mw*-enclosures, built around a source of fresh water, frequently feature in the written record of the Middle and New Kingdoms, most especially in association with temple flocks.³⁶ The *h3.t-r-mw*-pens, filled with a variety of ducks and geese, belonged to large institutional poultry farms known as *mhn* during the Ramesside Period. Many more types of birds could be encountered in a *mhn*, as described on a stela dated from the reign of Seti II,³ including the cranes and doves, already part of poultry farms as early as the Old Kingdom. A portion of the captive birds

³ Ricke 1937

was seemingly selected to undergo force feeding sessions in structures known as *štb.w*, literally “cages” during the Old Kingdom, and later as *šn^c.w (n) wš3 3pdw*, “bird fattening facilities.” The birds kept within these installations were force fed bread pellets, in part to fatten them and to ultimately improve the quality of their flesh, but also to render them heavier and thus less likely to fly away and escape. To a large extent, these facilities have left no mark in the archaeological record, suggesting that the large majority of the enclosures were built with perishable material, in particular wood or palm leaves which has not survived or did not leave for us a recognizable signature.⁴

In order to supply all the birds needed for rituals, both in temples and in funerary offering chapels (see Appendix 1), Egyptians quickly felt the need to gain better control over avian resources. Their knowledge of animal husbandry acquired with other types of livestock motivated them to attempt to develop breeding programs with the birds under their care. Experiments would have ensued, as illustrated in the Old Kingdom depictions of poultry farms, filled with captive geese, ducks, cranes, and doves placed under the care of specialized workers. It may be as early as the Middle Kingdom that the Egyptian countryside came to be dotted with dovecotes, in which doves and pigeons would be induced to reside and breed, thus providing the people owning and/or in charge of these structures with birds offerings for tomb chapels and religious festivals. These birds could also be used to pay taxes in kind, as recorded in the 18th Dynasty tomb of *Rh-mi-R^c*. Yet, prior to the Ptolemaic period, the existence of pigeon towers in Egypt is only attested in the form of a single wooden model from a Middle Kingdom

⁴ I thank N. Moeller for sharing her experience with settlement archaeology and the challenges encountered when attempting to identify small structures recovered in courtyards.

tomb. Such scarcity in the archaeological record can in part be explained by the probable inclusion of niches and nests for pigeons on the roof of structures that have long vanished. It is also possible that free standing structures for pigeon keeping will emerge as more settlement sites dated from the Dynastic period become the focus of archaeological investigations.

No evidence has surfaced in texts or in faunal assemblage, which suggests that ancient Egyptians managed to successfully breed cranes and ducks in captivity. More rewarding to aviculturists, however, were the trials they conducted with the geese of the *Anser* genus. Already underway during the Old Kingdom, as revealed by the presence of goslings and white geese in the iconography of the time, the domestication of the *Anser anser*, or greylag goose, was well established by the New Kingdom, so much so that the goose keeping, under the guidance of a guardian, came to be seen as a typical feature of agricultural life, worthy of being incorporated into the tasks the elite wished to accomplish in their afterlife, along with ploughing, sowing, and harvesting. During the Late Bronze Age, goose keeping and consumption came to be considered by neighboring vassal city states located in Southern Levant as a typical Egyptian activity, which the local Egyptianized elite chose to emulate, as suggested by I. Koch.⁵

The development of a domestic breed of goose, which I propose to identify as *zri.t* in Egyptian, partially decreased the reliance on wild avian resources, a trend which is reflected in the recurrent mention in the textual record of flocks of *zri.t*-geese placed under the care of gooseherds, or *mniw 3pd.w*. Large temple estates, especially from the New Kingdom onwards,

⁵ Koch 2014

came to rely on teams of *mnw* in charge of the *zri.t*-geese ultimately destined to be offered on the altars of the gods. Goose keeping was thus incorporated into an elaborate network, which involved the constant transport of live birds from the various poultry farms owned by temples and scattered throughout the country, a system devised to insure that all sanctuaries received adequate supplies of fowl. Interestingly, a similar strategy was implemented during the Greco-Roman period and applied to the breeding and distribution of ibises to all the sanctuaries dedicated to the sacred bird of Thoth. While a flock of live birds was most likely maintained at each major cult center of the ibis, just as the temple of Amun in Karnak incorporated a poultry-yard into the temple structure, the large majority of birds were provided by a multitude of breeding sites, referred to in texts as ἰβίων, established throughout the country.

To a large extent, the documentary record describes the patterns of bird exploitation in large institutions, first emphasizing the role of the central government in providing high officials with the resources needed for their funerary cults, as is depicted on the walls of Old Kingdom tombs. From the New Kingdom onwards, temples of major deities, most especially Amun in Thebes, but also Ptah in Memphis, became major players in the management and circulation of birds that were for the most part tended on their estates, away from the temple itself and scattered throughout the country. Evidence for the private ownership of birds, in particular in rural contexts, has proved to remain more elusive. Despite the heavily one-sided nature of the evidence, it is important to emphasize how birds affected the lives, to a greater or lesser extent, of all members of society, of all social classes, of all ages and genders. Birds, obviously, served different functions depending on where one stood in the society's hierarchy:

- For members of the elite, live birds represented future dishes, which could be prepared and deposited on their tables. The aviary owned by the palace needed to be filled at all times, since the king granted personal gifts of live birds to temples, as suggested in pHarris I. Pharaoh also gave fowl as a gift to his worthy officials.
- For more humble classes of society, birds, originally consecrated on the altars of temples, were later received as income, which could be bartered for goods needed and not produced in the household. All evidence therefore suggests that birds were owned by all, albeit for some families in the form of a flock counting only a few individuals. Within the household, the care and maintenance of the birds was added to the duties assigned to women and children. A passage from the Middle Kingdom tale, *The Pleasures of Fishing and Fowling*, further alludes to children in the Delta also being involved in the capture of wild *wi3yt*-birds. The youths were helped in their task by women who flushed the birds out.
- Birds as a resource provided employments to men living in the marginal *sh.t*- and *mh.t*-marshlands. They could become fowlers and trap the wild waterfowl needed in the Valley. Similarly, a range of specialized personnel in the form of poultry feeders or guardians of birds was required in institutional poultry-yards to tend the flocks maintained in captivity.
- Finally, alongside bread, beer and choice cuts of meat, birds were a desired dish for all in the afterlife.

Bird exploitation in ancient Egypt changed drastically with the adoption of the domestick fowl (*Gallus gallus domesticus*), or chicken, in the farmwayds of the country. The potentials of this bird have proved to be immense and it is now part of the diet of the entire world. Not only valuable for its meat, it is a cheap source of renewable protein in the form of eggs, laid during many months of the year, contrary to most other avian species. Being a scavenging bird, which can be left roaming for food on its own during the day, it represents a valuable addition to any households, a principle adopted by many families in both urban and rural Egypt today. Despite the Egyptians being aware of the existence of this attractive bird as early as the New Kingdom, it is only after the Roman period that it becomes commonplace in the country. These birds, easily transportable in crates from the Valley to some of the less hospitable regions of the country where Romans had established military and mining camps, were considered to be a most valuable source of food exploited to its full potential, both for its eggs and meat.

The interdisciplinary approach followed in the course of this research underscores the importance to consider all available data to draw a more nuanced and more “realistic” image of what life was like on the banks of the Nile, a pursuit eagerly followed by early Egyptologists, as stated in the Introduction. Considerable amount of data from various fields are at our disposal, not only from Egyptology and Archaeology, but also from Ornithology and Zooarchaeology. Bird remains may not dominate the faunal assemblages recovered in Egyptian settlements. However, birds surrounded Egyptians, as illustrated in the visual and written records, and were exploited accordingly, as demonstrated in my research. This project thus constitutes the

missing link in the study of animal exploitation and husbandry in ancient Egypt, thus far dominated by the mammalian domestic quartet (cattle, sheep, goats, and pigs) and represents a strong basis upon which comparative research can be conducted. For instance, can the exploitation of pigs in rural settings compare with that of poultry? How did other Ancient Near Eastern cultures, similarly located along migration flyways, exploit the avian resources at their disposal? How does it compare with the Egyptian model presented in this dissertation?

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APPENDIX 1: BIRDS IN OFFERING LISTS

1. Birds Listed as Divine Offerings

A selection of offering lists is presented in the tables below. The information has been organized chronologically, with special emphasis on the variety and number of birds destined to be brought to divine establishments. Whenever possible, the specific Egyptian name of the birds is indicated. The letter “x” is used when the exact number of birds has not survived.

a. Old and Middle Kingdoms

Table 23. Attestations of bird offerings during the Old Kingdom

<i>Dynasty</i>	<i>Reign</i>	<i>Temple</i>	<i>Description of the offering and Frequency</i>	<i>Comments and Publication(s)</i>
5 th Dynasty	Userkaf	For the <i>b3.w</i> Heliopolis	132 <i>3pd.w</i> and 12 <i>z.t</i> -ducks for every festival	<i>Urk.</i> I, 240, §2, l. 5 Strudwick 2005, p. 69
		Sun Temple at Abu Ghurob. For the gods of Nekhen-Re	2 <i>z.t</i> daily	Information from the Palermo Stone. Strudwick 2005, p. 70
	Niuserra	Sun Temple at Abu Ghurob	<ul style="list-style-type: none"> ▪ 10 geese for the opening of the year festival ▪ 10 geese for the Coming Forth of Min festival ▪ 1,000 fowl [unknown occasion] ▪ 10 fowl for the Day of Taking the Rivers 	Festival calendar. Helck 1977 El-Sabban 2000, pp. 3-7 Strudwick 2005, pp. 86-91
5 th and 6 th Dynasties	Mostly from the reigns of Djedkara-Isesi to Pepy II	Mortuary temple of Neferirkara-Kakai	Birds identified by name: <ul style="list-style-type: none"> • <i>z.t</i> (possibly 3 daily) • <i>mnw.t</i> • Ⲛⲓ (58 given by individual) • Ⲛⲓ • <i>s</i> • <i>dr.t</i> 22 birds, whose specific names are not extant, were meant to be offered daily	Posener-Kriéger 1976; <i>ibid</i> 1979
6 th Dynasty	Reigns of Teti and Merenra	Unknown god	Two types of birds: <ul style="list-style-type: none"> • 1 specimen of one type • 200 specimens of the other. 	From the sarcophagus' lid of Queen Ⲛⲏⲩⲓⲥⲏ Ⲡⲡⲓ. Zone F6. Baud and Dobrev 1995, p. 41 and fig. 16 Strudwick 2005, p. 77

Table 23, continued.

<i>Dynasty</i>	<i>Reign</i>	<i>Temple</i>	<i>Description of the offering and Frequency</i>	<i>Comments and Publication(s)</i>
8 th Dynasty	Possibly Neferkauhor	Sanctuary of Min, Mut-Min and Thoth in Coptos	<p>“Available for the annual needs:”</p> <ul style="list-style-type: none"> • 6 <i>r3</i>-geese • 1,200 <i>3pd.w ʕš3 hr šw(t)</i>, “various birds in addition to the fowl (?)” 	Goedicke 1994, p. 78

Table 24. Attestations of bird offerings during the Middle Kingdom

<i>Dynasty</i>	<i>Reign</i>	<i>Temple</i>	<i>Description of the offering and Frequency</i>	<i>Comments and Publication</i>
12 th Dynasty	Amenemhat II	Temple of Ptah in Memphis	<p>Endowment:</p> <ul style="list-style-type: none"> • 16 <i>htʕ3</i> • 64 <i>ʕš3</i> • 20 <i>htʕ3</i> (from a <i>hr.t-mw</i> enclosure) • 80 <i>ʕš3</i> (from a <i>zš</i> enclosure) 	Data gathered from the Annals of the king. Altenmüller and Moussa 1991 Altenmüller 2015
		Cult of the god Igai (19 th Upper Egyptian nome)	<p>For a series of six festivals. All the birds came from the <i>pr-ny-sw.t</i>:</p> <ul style="list-style-type: none"> • 1 <i>htʕ3</i> • 4 <i>ʕš3</i> 	
	Amenemhat III	Unknown temple	2 <i>ʕš3</i> for evening sacrifice	From a personal letter from the town of Kahun (pBerlin 10023B). Scharff 1923
13 th Dynasty	Sobekhotep II	Temple of Montu in Medamud	<p><i>Inw</i> for the festival of Montu:</p> <ul style="list-style-type: none"> • 5 <i>ʕš3</i> • 11 <i>3pd.w</i>, including <i>z.t</i>, <i>sr</i>, <i>mnw.t</i> and <i>ḏndn</i> 	From P. Boulaq 18. Griffith 1891, p. 105 Scharff 1922, pp. 57, 63 Bleiberg 1996, pp. 75-76 Quirke 1991
	Sobekhotep IV	Temple of Amun in Karnak	x <i>3pd.w</i> yearly	Helck 1969




b. New Kingdom

The extant offering lists from the New Kingdom are too numerous to be systematically reviewed in this dissertation, such an enumeration being beyond the scope of this project. Listed below are the various names of birds attested in the major lists of this period, most specifically pHarris I (BM 9999; abbreviated PH¹) and The Medinet Habu Calendar (abbreviated

¹ When referring to data from pHarris I, I will use the numbering system established by P. Grandet in his edition of the text.

MHC), as presented in the works of W. Helck, P. Grandet, and B. Haring.² Also taken into consideration are the ostraca uncovered at Deir el-Bahri, near the mortuary temple of Queen Hatshepsut.³

Table 25. Attestations of bird offerings during the New Kingdom

	<i>Dynasty</i>	<i>Reign</i>	<i>Temple</i>	<i>Description of the Offering and Frequency (if extant)</i>
<i>r3</i> -goose	18 th Dynasty	Thutmose III	Temple of Amun, Karnak ^a	Between 1 and 4 <i>r3(.w) sd(.w)</i> (fattened <i>r3</i> -geese) offered to the god daily.
	20 th Dynasty	Ramesses III	Medinet Habu	MHC: 931 <i>r3</i> -geese offered yearly, with 888 specifically said to be alive (<i>ʿnh</i>). PH, list B ^b (12b,9): 744 live <i>r3</i> -geese offered yearly.
			Heliopolis	PH, list B (32b,11): 540 ½ live <i>r3</i> -geese offered yearly
			Memphis	PH, list B (52a,1): 135 live <i>r3</i> -geese offered yearly
<i>trp</i> -goose	18 th Dynasty	Thutmose III	Temple of Amun, Karnak ^a	1 <i>trp</i> -goose offered daily
	20 th Dynasty	Ramesses III	Medinet Habu	MHC: 32 <i>trp</i> -geese delivered yearly
<i>sr(.t)/zr</i> -goose	18 th Dynasty	Thutmose III	Temple of Amun, Karnak ^a	1 <i>zr</i> -bird  offered daily
	20 th Dynasty	Ramesses III	Medinet Habu	MHC: 32 <i>sr.t.</i> -bird  delivered yearly
<i>htʿ3</i> -goose	18 th Dynasty	Thutmose III	Temple of Amun at Karnak ^a	125 fattened (<i>sd</i>) and 1100 from a flock (<i>idr</i>) possibly for special festivals (?) ^c
		Thutmose IV	Temple of Amun, Thebes	1 <i>htʿ3</i> -bird
		Akhenaten	Temple of Aten, Thebes	21 <i>htʿ3</i> -bird
<i>z.t</i> -duck	18 th Dynasty	Thutmose III	Temple of Amun at Karnak ^a	1 <i>z.t</i> -duck as daily offering
	20 th Dynasty	Ramesses III	Medinet Habu	MHC: 33 <i>st</i> -duck  delivered yearly
<i>mnw.t</i> -dove	18 th Dynasty	Thutmose III	Temple of Amun at Karnak ^a	1 <i>mnw.t</i> -dove offered daily
	20 th Dynasty	Ramesses III	Medinet Habu	3 <i>mnw.t</i> -dove offered at the temple monthly

² Helck 1963; Grandet 1994-99; Haring 1997

³ Hayes 1960

Table 25, continued.

<i>3pd.w</i> ^c <i>š3/s</i> ^c <i>š3</i>	18 th Dynasty	Thutmose III	Temples of Amun, Ptah, and Hathor in Thebes	Between 2 and 4 <i>3pd.w</i> ^c <i>š3</i> offered to these gods, most likely on a daily basis ^e
		Amenhotep IV	Temple of Ra-Horakhty in Memphis	2 <i>3pd.w</i> ^c <i>š3</i> offered daily To these would be added, or substituted, 2 <i>3pd.w</i> ^c <i>š3</i> on New Year's Day ^f
<i>3pd.w</i> ^c <i>š3/s</i> ^c <i>š3</i>	20 th Dynasty	Ramesses III	Medinet Habu	MHC: 12,412 <i>3pd.w</i> ^c <i>š3</i> offered at the temple yearly
^c <i>š3</i> -bird	18 th Dynasty	Thutmose III	Temple of Amun at Karnak ^a	258 fattened (<i>šd</i>) and 5237 from a flock (<i>idr</i>) possibly for special festivals (?)
<i>3pd n mw</i> : Water birds	20 th Dynasty	Ramesses III	Medinet Habu	PH, list B (12b,6): 289,530 <i>3pd.w n mw</i> delivered to the temple yearly
			Heliopolis	PH, list B (32b,9): 37,465 <i>3pd.w n mw</i> delivered to the temple yearly
<i>3pd.w</i> ^c <i>š3</i> and <i>nds</i> : Large and small birds	18 th Dynasty	Hatshepsut	Temple of Deir el-Bahri	Ostrakon #9: ^g receipt for offering brought by wife of 1 st prophet <ul style="list-style-type: none"> • (unknown number) <i>3pd</i> ^c<i>š3</i> and 1 <i>3pd nds</i> Ostrakon #10: list of temple offerings <ul style="list-style-type: none"> • 1 <i>3pd</i> ^c<i>š3</i> and 2 <i>3pd nds</i>

^a See Gardiner 1952 for facsimile and translation of the fragmentary text from Karnak, which includes a calendar of feasts celebrated at Karnak during the reign of Thutmose III.

^b Grandet 1994 part I, p. 67: "Liste B enregistre et quantifie l'allocation régulière, automatiquement versée chaque année en vertu de la disposition réglementaire appelée *htr*, aux institutions des listes A."

^c *Urk.* IV, 755:17-756:1

^d *Urk.* IV, 756:2-3

^e Helck 1963, pp. 503-509

^f See Saad and Manniche 1971; Helck 1973

^g Numbering system from Hayes 1960

In addition to listing the types of fowl destined to be presented to the gods' altars, offering lists from the New Kingdom also specify the state in which the bird should be delivered: alive (^c*nh*), fattened (*šd*, *hpn*), or butchered (*sft*, *wgs*). Papyrus Harris I (pBM 9999) is a fundamental resource to better evaluate the needs for birds in temple cults as it carefully lists the lavish offerings made to the major deities of the country during the reign of Ramesses III (ca. 1184-1153 BC). It transpires from this document that the king could complement the

required yearly and festival offerings by profusely giving additional birds from his own property.

These goods are gathered in Lists C⁴ and E⁵ in P. Grandet's analysis of this document:

Table 26. List of bird offerings in pHarris I (From Grandet 1994)

	<i>List C (Personal gifts from the king)</i>	<i>List E (Additional festival offerings)</i>		
Medinet Habu	(16a,13) <i>r3</i> <i>nh</i> : 2,940 (16a,14) <i>trp</i> <i>nh</i> : 5,200 (16a,15) <i>3pd.w n mw</i> <i>nh</i> : 126,300 (16b,1) <i>r3</i> <i>hpn</i> : 20	(20b,1) <i>r3</i> <i>nh</i> : 6,820 (20b,2) <i>ht</i> ³ <i>nh</i> : 1,410 (20b,3) <i>trp</i> <i>nh</i> : 1,534 (20b,4) <i>d3w</i> -Crane <i>nh</i> : 150 (20b,5) <i>ms(i)t</i> <i>nh</i> : 4,060 (20b,6) <i>3pd.w n mw</i> <i>nh</i> : 25,020 (20b,7) <i>mni.t</i> : 57,810 (20b,8) <i>p^r.t</i> -Quail <i>nh</i> : 21,700 (20b,9) <i>3pd.w</i> <i>s3</i> <i>nh</i> : 1,240 (20b,10) <i>gr-n-p.t</i> : 6,510		
Heliopolis ^a	*****	(36a,1) <i>r3</i> <i>nh</i> : 1,150 (36a,2) <i>ms(i)t</i> <i>nh</i> : 2,300 (36a,3) <i>3pd.w n mw</i> <i>nh</i> : 13,800	(38a,4) <i>r3</i> <i>hpn</i> : 192 (38a,5) <i>r3</i> <i>nh</i> and <i>ht</i> ³ (?): 3,938 (38a,6) <i>ms(i)t</i> : 364 (38a,7) <i>3pd.w n mw</i> : 2,653 (38a,8) <i>mni.t</i> : 68 (38a,9) <i>3pd.w</i> <i>s3</i> : 19,928	
Memphis	(53b,6) <i>r3</i> <i>nh</i> : 269 (53b,7) <i>trp</i> <i>nh</i> : 150 (53b,8) <i>wrdw fnd n nbw</i> <i>nh</i> : 1,035 (53b,9) <i>wrdw</i> <i>nh</i> : 41,980 (53b,10) <i>3pd.w n mw</i> <i>nh</i> : 576	(54b,2) <i>r3</i> <i>nh</i> : 574 (54b,3) <i>ht</i> ³ <i>nh</i> : 84 (54b,4) <i>ms(i)t</i> <i>nh</i> : 164 (54b,5) <i>3pd.w n mw</i> <i>nh</i> : 287 (54b,6) <i>3pd.w</i> <i>s3</i> <i>nh</i> : 3,025		
Small Temples	(65c,3) <i>r3</i> <i>hpn m st</i> : 4 (65c,4) <i>r3</i> <i>nh</i> : 190 (65c,5) <i>3pd.w n mw</i> : 576 (65c,5) <i>3pd.w n mw wgs</i> : 1,920			

^a For the temple of Heliopolis, List E is divided by P. Grandet between List E.1, "produits d'offrandes" and List E.2, "produits pour les offrandes au Nil."

⁴ According to P. Grandet (1994 part I, p. 69), "listes C, ou inw-n-nb, enregistrent et quantifient le don, libre de toute périodicité précise et de quantification prévisionnelle, de divers biens offerts par Ramsès III aux domaines divins, afin de compléter leur revenus, ou de fournir des produits dont ils n'étaient pas producteurs."



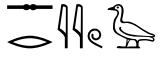
⁵ On the other hand, "listes E enregistrent et quantifient les produits divers offerts par Ramsès III au cours de son règne aux domaines des différentes divinités pour assurer ou améliorer la célébration des grandes cérémonies religieuses spécifiques des principales localités du pays" (*Ibid.*, p. 71).

This document ends with a recapitulative list of the various goods mentioned either as yearly requirements for the temples (List B: *htr rnp.t*) or as gifts from the king (Lists C and E). During the 31-year reign of Ramesses III, the following quantities of birds were said to have been delivered to temples of Upper and Lower Egypt:

- List B:
 - 426,995 *3pd.w n mw*
 - 1,920 *r3 ʿnh*
 - These birds were delivered **yearly** to the temples of Medinet Habu and Heliopolis.
- Lists C and E:
 - 353,919 *r3.w hpn, r3.w ʿnh* and *3pd.w n mw*
 - This number represents the total number of birds offered by the king during his reign, amounting to an average of 11,417 birds per year.

c. Third Intermediate and Late Period

Table 27. Attestations of bird offerings during the Third Intermediate and Late Period

<i>Dynasty</i>	<i>Reign</i>	<i>Temple</i>	<i>Description of the offering and Frequency</i>	<i>Comments and Publication</i>
22 nd Dynasty	Takelot II and Sheshonq III	Temple of Amun and various divine estates in Thebes	<ul style="list-style-type: none"> • 730 <i>r3</i>-geese yearly for Mut, Montu, Amenemope • <i>x r3-šd</i>, daily for Amun-Re • <i>x 3pd.w</i> specifically for the Southern Opet Festival 	Records of the deeds of the eldest son of King Takelot, 1 st prophet of Amun, Osorkon. Camino 1959 Ritner 2009, pp. 348-377
25 th Dynasty	Piye	For the gods in Thebes, Ptah in Memphis, Horus and Horus Khenty-Khety in Athribis	<i>x 3pd.w</i>	Ritner 2009, pp. 465-492
26 th Dynasty	Psamtek I	Temple of Amun in Thebes	(unknown number) <i>ipd.w</i> needed for the cult in Thebes and obtained in the <i>Oxyrhynchos</i> nome	P. Rylands IX, 8, 4-6. Griffith 1909, p. 82 Vittmann 1998, p. 139
	Apries	Mendes: <ul style="list-style-type: none"> • Sacred ram • Osiris • Osiris-Hapy, in the Temple of <i>Hwt Mhyt</i> 	<ul style="list-style-type: none"> • 2 <i>r3-šd</i>, daily • 240 <i>zr.t</i>, yearly • 3 <i>r3-šd</i>, daily • <i>x zr.t</i>, yearly • 1 <i>r3-šd</i>, on each epagomenal days • <i>x zr.t</i> yearly <p>Also donation of land (120 arouras) for the maintenance of the <i>zr.t</i>.</p>	Donation Stela Æ 1037 in Ny Carlsberg Glyptotek Meeks 1979a, p. 678 (entry 26.4.4a) Christensen 1983 Vernus 1991 The bird <i>zr.t</i> is  written: 
	Amasis	Temple of Bastet in Bubastis	Offering of a pigeon house (? <i>šš</i>)	Donation Stela Berlin 8439 Meeks 1979, p. 680 (entry 26.5.34)
27 th Dynasty	Reigns of Darius I and Psamtek IV	Temple of Amun in Thebes	(Unknown number) <i>zry.w</i> 	P. Loeb 46 and 47 P. Strassburg 2 and 5 Malinine 1968 Cruz-Urbe 1980 Vleeming 1991

2. Birds Listed as Funerary Offerings

The data gathered in this table is based in part on W. Barta's study of the composition and evolution of offering lists in Ancient Egypt, from the Early Dynastic to the Greco-Roman period,⁶ complemented by the review of the offering lists published in the *Giza Mastabas* series of the Museum of Fine Arts, Boston, as well as in the works of N. de Garis Davies⁷, H. Junker,⁸ L. Borchardt,⁹ C. Peck,¹⁰ O. Mahmoud,¹¹ and N. Strudwick.¹²

Table 28. List of birds given as funerary offerings during the span of Egyptian history

<i>Bird names attested in offering lists</i>	<i>Period(s) and context(s) of attestation</i>
<i>r3</i>	<ul style="list-style-type: none"> • In offering lists of private individuals as early as the 2nd Dynasty. Less frequent during the 3rd and 4th Dynasties, but reappears in the 5th Dynasty. • Not attested in extant lists of the 1st Intermediate Period; a few attestations from the Middle Kingdom. • Once again included in offering lists in private and royal tomb chapels for the New Kingdom. • Part of the ritual list in the divine cults of the New Kingdom and Late Period. • Also present on sarcophagi of the 3rd Intermediate Period.
<i>lrp</i> , abbreviated as <i>l</i> , <i>lp</i> , or <i>lr</i> .	<ul style="list-style-type: none"> • In offering lists of private individuals as early as the 2nd Dynasty and for the duration of the Old Kingdom, 1st Intermediate Period, Middle Kingdom. • Also included in offering lists in private and royal tomb chapels for the New Kingdom. • Part of the ritual list in the divine cults of the New Kingdom and Late Period • Also present on sarcophagi of the 3rd Intermediate Period.
<i>z.t</i>	<ul style="list-style-type: none"> • In offering lists of private individuals as early as the 2nd Dynasty and for the duration of the Old Kingdom, 1st Intermediate Period, Middle Kingdom. • Also included in offering lists in private and royal tomb chapels for the New Kingdom. • Part of the ritual and daily lists in the divine cults of the New Kingdom and Late Period

⁶ Barta 1963

⁷ Davies 1900; *ibid.* 1901; *ibid.* 1902; *ibid.* 1920

⁸ Series of 12 volumes on the Giza necropolis published by H. Junker between 1929 and 1955

⁹ Borchardt 1937

¹⁰ Peck 1958

¹¹ Mahmoud 1991

¹² Strudwick 2005

Table 28, continued.

<i>Bird names attested in offering lists</i>	<i>Period(s) and context(s) of attestation</i>
<i>sr, srw, sr.t</i>	<ul style="list-style-type: none"> • In offering lists of private individuals as early as the 2nd Dynasty and for the duration of the Old Kingdom, 1st Intermediate Period, Middle Kingdom. • Also included in offering lists in private and royal tomb chapels for the New Kingdom. • Part of the ritual and daily lists in the divine cults of the New Kingdom and Late Period • Also present on sarcophagi of the 3rd Intermediate Period.
<i>d3.t</i>	<ul style="list-style-type: none"> • In offering lists of private individuals of the 4th Dynasty. • Also present on sarcophagi of the 3rd Intermediate Period.
<i>s</i>	<ul style="list-style-type: none"> • Only attested in offering lists of private individuals of the 5th and 6th Dynasties.
<i>mmw.t</i>	<ul style="list-style-type: none"> • First attested in offering lists of private individuals of the 5th Dynasty. • Not attested in lists of the 1st Intermediate Period. • Once again included in offering lists of the Middle Kingdom, as well as in private and royal tomb chapels for the New Kingdom. • Part of the ritual list in the divine cults of the New Kingdom and Late Period. • Also present on sarcophagi of the 3rd Intermediate Period.
<i>mz(3).t</i>	<ul style="list-style-type: none"> • First attested in offering lists of private individuals of the 5th Dynasty. • Attested in lists of the 1st Intermediate Period • No attestations for the Middle Kingdom. • Reappears in a few offering lists in private and royal tomb chapels of the New Kingdom. • Also present on sarcophagi of the 3rd Intermediate Period.
<i>smn</i>	<ul style="list-style-type: none"> • Attested in some offering lists of the 4th and 5th Dynasties. • Used as burnt offering for the festival of <i>w3h-cj</i>. • Also used as offering in the Opening of the Mouth ritual during the New Kingdom.
<i>g(3)s.t</i>	<ul style="list-style-type: none"> • Attested in some offering lists of the 1st Intermediate Period

APPENDIX 2: MAJOR CATEGORIES OF WETLANDS IN EGYPT AND MAIN SPECIES OF BIRDS ENCOUNTERED WITHIN

This table, based exclusively on the research of the Ornithologists and Biologists P. Meininger, W. Mullié, S. Goodman, and S. Baha e-Din, lists the wetlands encountered today on the Egyptian territory. Since these habitats record the largest densities of birds in the country, I also present the common species encountered in each area.

Table 29. Major wetlands in Egypt, with a list of the most common birds observed in each area

Mediterranean coastal wetlands	<p>Six major coastal shallow lagoons occupy the northern most part of the Nile Delta — Bardawil, Malaha, Manzala, Burullus, Idku, and Maryut — and “comprise today a vestige of the Delta’s historic wildness.”^a They remain important staging areas for birds during the spring and fall migration,^b as well as a wintering area of international importance for a wide variety of waterfowl. They are, however, constantly suffering the threats of land reclamation, pollution and over exploitation.^c</p> <p>Possibly 500,000 birds winter at Lake Burullus and 300,000 at Lake Manzala. The most common birds at these two locations are:</p> <ul style="list-style-type: none"> • coot (<i>Fulica atra</i>; over 200,000), • Northern shoveler (<i>Anas clypeata</i>; over 70,000), • Eurasian widgeon (<i>Anas penelope</i>; over 35,000), • and black-headed gull (<i>Chroicocephalus ridibundus</i>; over 50,000).^d
Red Sea coastal habitats and wetlands	<p>The Red Sea coral reefs, which benefit from the water’s relative warmth (surface average of 21°C) and high salinity (4%), are Egypt’s most important habitat in term of biodiversity. These reefs are separated from the land by shallow lagoons. At low tide, exposed mudflats become popular feeding grounds for wading birds and waterfowl. In some of the protected lagoons of the mainland shores and Red Sea islands, thickets of mangrove plants flourish and provide breeding and feeding habitats for:</p> <ul style="list-style-type: none"> • Western reef heron (<i>Egretta gularis</i>), • striated heron (<i>Butorides striata</i>), • spoonbill (<i>Platalea leucorodia</i>), • and osprey (<i>Pandion haliaetus</i>).^e

Table 29, continued

Inland wetlands	<p>Nowadays, six major areas can be isolated:^f</p> <ul style="list-style-type: none"> ○ The Bitter Lakes ○ Wadi el-Natrun ○ Lake Qarun at the Northern end of the Faiyum depression, fed in the past from the Nile River by the Bahr Yusef Canal <ul style="list-style-type: none"> ▪ the most common birds of this area are: <ul style="list-style-type: none"> • coot (over 18,000), • Northern shoveler (over 60,000), • and black-necked grebe (<i>Podiceps nigricollis</i>; over 10,000).^g ○ Wadi el-Rayan lakes ○ Nile River ○ Lake Nasser
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^a Goodman and Meininger 1989, p. 35

^b This is especially true for Lake Maryut and Idku (Meininger and Mullié 1981, p.7; Meininger and Atta 1994).

^c Meininger and Mullié 1981, p. 15; Henein 2010, pp. 417-420

^d *ibid.*, p. 7

^e Goodman and Meininger 1989, p. 63; Baha el-Din 1999, p. 15

^f Baha el-Din 1999, p. 15: "In addition, there are smaller wetlands dispersed in the Nile Delta and Valley, and in oases of the Western Desert".

^g Meininger and Mullié 1981, p. 9

APPENDIX 3: AVIAN REMAINS RECOVERED AT PREHISTORIC SITES IN EGYPT

The tables below record the Prehistoric sites I consulted in the course of this research project, whose faunal assemblages have been published and which yielded avian remains. Specifically indicated are the time periods when the sites were occupied, and, when possible, the context in which the remains were recovered (domestic, ceremonial, or funerary).

Table 30. List of Prehistoric sites consulted

<i>Site^a</i>	<i>Nature of excavated area</i>	<i>Period of Occupation^b</i>	<i>Bibliography</i>
Merimde	Domestic	Layers I-II: Neolithic Layers III-IV: Badarian	Von den Driesch and Boessneck 1985; Boessneck 1986; <i>Ibid.</i> 1988
Maadi	Domestic	Naqada IC-IIB	Boessneck <i>et al.</i> 1989
Tell es-Iswid	Domestic	Naqada III	van den Brick <i>et al.</i> 1989
Buto	Domestic	Layers 1-3: Naqada I-III A	Boessneck and von den Driesch 1997; von den Driesch 1997
Omari	Domestic	Neolithic period	Boessneck and von den Driesch 1990
Nile Valley	Domestic (Camp sites)	Palaeolithic period (ca. 20,000-8000 BC)	Gautier 1987a; <i>Ibid.</i> 1988
Fayum	Domestic (Camp sites)	Faiyum B (ca. 6500-5500 BC) Faiyum A (ca. 5500-4400 BC)	Brewer 1986
Qasr el-Sagha, Faiyum	Domestic	Neolithic	von den Driesch 1986
Selima Sandsheet	Domestic (Camp sites)	5800 BP	Van Neer and Uerpmann 1989
Naqada	Domestic	Naqada I-IIA/B	Van Neer and Gautier 2009
El Abadiya 3	Domestic? (Camp sites)	ca. 10,000 BC	Vermeersch <i>et al.</i> 2006
Armant	Domestic	Badarian-Naqada IIC	Boessneck and von den Driesch 1994
Sites E71K12 near Esna	Domestic (Camp sites)	Late Paleolithic (ca. 15,000-10,500 BC)	Baker and Gautier 1997
Hierakonpolis HK 29A	Ceremonial center	Naqada IIB- IIIA	Linseele <i>et al.</i> 2009
Hierakonpolis HK 6	Funerary (Tomb 19)	Naqada IC-III	Van Neer <i>et al.</i> 2004
Kom Ombo	Domestic (Camp sites)	Late Palaeolithic (ca. 15,000-10,500 BC)	Churcher and Smith 1972 Peters 1990
Adaima	Domestic	Naqada IC-IIID	Van Neer 2002
Wadi Kubaniya	Domestic (Camp sites)	Palaeolithic period (ca. 18,000 BP)	Gautier and Van Neer 1989

Table 30, continued.

Site ^a	Nature of excavated area	Period of Occupation ^b	Bibliography
Gilf Kebir	Domestic (Camp sites)	6000-5000 BP	Van Neer and Uerpman 1989
Abu Ballas	Domestic (Camp sites)	7500 BP	Van Neer and Uerpman 1989
Nabta Playa	Domestic (Camp sites)	Neolithic period	Gautier 2001; Boshenki and Tomek 2001

^a The sites are listed geographically, from North to South

^b Upper Egyptian Equivalent for sites located in Lower Egypt

Table 31. Avian remains recovered at Prehistoric sites, organized by species

Bird species	Sites and associated avian remains ^a
Order Struthioniformes:	
<i>Family Struthionidae</i>	
Ostrich (<i>Struthio camelus</i>)	Merimde: 7 Maadi: 1 Omari: 20 fragments of eggshell Fayum: Eggshell fragments (B: 20; A: 11) Qasr el-Sagha: 5 (eggshell) Selima Sandsheet, Site 85/73-2: Bones only Naqada: 2 fragments of eggshell Tukh, near Naqada: eggshell fragments Predynastic Settlement near Armant: 1 fragment of eggshell Site E71 near Esna: 1 fragment of eggshell Plain of Kom Ombo - Gebel Silsila: ostrich remains (type not specified) Adaima: 86 fragments of eggshells Gilf Kebir: R (bones and eggshell) Abu Ballas: F (bones)
Order Podicipediformes	
<i>Family Podicipedidae</i>	
Little Grebe (<i>Tachybaptus ruficollis</i>)	Nile Valley: F Site E71 near Esna: 2. Wadi Kubaniya: 5% of avian remains
Great Crested Grebe (<i>Podiceps cristatus</i>)	Nile Valley: RR Fayum, B: 15
Red-necked Grebe (<i>Podiceps grisegena</i>)	Nile Valley: RR
Order Pelecaniformes	
<i>Family Phalacrocoracidae</i>	
Cormorant (<i>Phalacrocorax carbo</i>)	Merimde: 3. Nile Valley: R Plain of Kom Ombo - Gebel Silsila: X Wadi Kubaniya: 4
<i>Family Anhingidae</i>	
African Darter (<i>Anhinga rufa</i>)	Merimde: 2.

Table 31, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Family Pelecanidae	Wadi Kubbania: 10
White Pelican (<i>Pelecanus onocrotalus</i>)	Merimde: 1 Nile Valley: R
Order Ciconiiformes	
Family Ardeidae	Wadi Kubbania: 3
Little Bittern (<i>Ixobrychus minutus</i>)	Merimde: 1. Fayum, B: 1.
Night Heron (<i>Nycticorax nycticorax</i>)	Hierakonpolis HK 29A: 1.
Cattle Egret (<i>Bubulcus ibis</i>)	Omari: 1. Hierakonpolis HK 29A: 1.
Grey Heron (<i>Ardea cinerea</i>)	Merimde: 8. Nile Valley: RR Naqada: 2. Hierakonpolis HK 29A: 1. Plain of Kom Ombo - Gebel Silsila: X Adaima: 1?
Purple Heron (<i>Ardea purpurea</i>)	Tell es Iswid: 1. Omari: 1. Adaima: 1?
<i>Ardea</i> sp.	Hierakonpolis HK 29A: 1.
Family Ciconiidae	Wadi Kubbania: 4
Yellow-billed Stork (<i>Mycteria ibis</i>)	Nile Valley: RR Hierakonpolis HK 29A: 6.
Black Stork (<i>Ciconia nigra</i>)	Nile Valley: RR Hierakonpolis HK 29A: 2. Adaima: 1.
White Stork (<i>Ciconia ciconia</i>)	Hierakonpolis HK 29A: 2.
<i>Ciconia</i> sp.	Hierakonpolis HK 29A: 19. Adaima: 2. Nabta Playa: 2.
Family Threskiornithidae	
Bald/Hermit Ibis (<i>Geronticus eremita</i>)	Maadi: 1.
Spoonbill (<i>Platalea leucorodia</i>)	Nile Valley: RR Hierakonpolis HK 29A: 2? Plain of Kom Ombo - Gebel Silsila: X Wadi Kubbania: 2
Order Phoenicopteriformes	
Family Phoenicopteridae	
Greater Flamingo (<i>Phoenicopterus ruber</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Order Anseriformes	
Family Anatidae	Wadi Kubbania: 464
Whooper Swan (<i>Cygnus cygnus</i>)	Fayum, A: 1
Bean Goose (<i>Anser fabalis</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X

Table 31, continued.

Bird species	Sites and associated avian remains^a
White-fronted Goose (<i>Anser albifrons</i>)	Maadi: 6. Omari: 2. Nile Valley: R Plain of Kom Ombo - Gebel Silsila: X Wadi Kubbania: X
Greylag Goose (<i>Anser anser</i>)	Maadi: 1.
Goose sp. (<i>Anser anser</i> or <i>albifrons</i>)	Merimde: 37. Maadi: 3. El Abadiya 3, near Naqada: 1. Site E71 near Esna: 2. Hierakonpolis HK 29A: 3.
Red-breasted Goose (<i>Branta ruficollis</i>)	Nile Valley: RR
<i>Branta</i> sp.	Plain of Kom Ombo - Gebel Silsila: X
Egyptian Goose (<i>Alopochen aegyptiacus</i>)	Omari: 1. Nabta Playa: 2.
Ruddy Shelduck (<i>Tadorna ferruginea</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Shelduck (<i>Tadorna tadorna</i>)	Nile Valley: RR Fayum, B: 1
<i>Tadorna</i> sp.	Wadi Kubbania: 2
Spur-winged Goose (<i>Plectropterus gambesii</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X? Nabta Playa: 2.
Wigeon (<i>Anas penelope</i>)	Merimde: 3. Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Gadwall (<i>Anas strepera</i>)	Merimde: X
Teal (<i>Anas crecca</i>)	Merimde: X Buto: 1. Omari: 1. Nile Valley: RR Fayum, B: 2 Hierakonpolis HK 6, Tomb 19: 1. Plain of Kom Ombo - Gebel Silsila: X
Mallard (<i>Anas platyrhynchos</i>)	Merimde: X Maadi: 3. Tell es Iswid: 2. Buto: 1. Nile Valley: R Site E71 near Esna: 2. Plain of Kom Ombo - Gebel Silsila: X Wadi Kubbania: X
Pintail (<i>Anas acuta</i>)	Merimde: X Maadi: 1. Nile Valley: R Plain of Kom Ombo - Gebel Silsila: X

Table 31, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Garganey (<i>Anas querquedula</i>)	Merimde: 57. Nile Valley: RR Site E71 near Esna: 2.
Shoveler (<i>Anas clypeata</i>)	Merimde: 5. Maadi: 2. Nabta Playa: 3.
Dabbling Duck sp.	Merimde: 66. Maadi: 3. Buto: 7. Fayum, B: 16; A: 10 Hierakonpolis HK 6, Tomb 19: 1. Plain of Kom Ombo - Gebel Silsila: X Wadi Kubbania: X Nabta Playa: 1.
Pochard (<i>Aythya ferina</i>)	Merimde: X Maadi: 5. Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X Wadi Kubbania: X
Ferruginous Duck (<i>Aythya nyroca</i>)	Merimde: 1.
Tufted Duck (<i>Aythya fuligula</i>)	Merimde: X Maadi: 2. Buto: 1. Nile Valley: RR Qasr el-Sagha: 1. Wadi Kubbania: X Nabta Playa: 1.
Greater Scaup (<i>Aythya marila</i>)	Wadi Kubbania: 5.
Diving duck sp.	Merimde: 7. Buto: 3. Site E71 near Esna: 1.
Smew (<i>Mergus albellus</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Goosander (<i>Mergus merganser</i>)	Plain of Kom Ombo - Gebel Silsila: X
Red-breasted Merganser (<i>Mergus serrator</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Middle Size Suck sp.	Merimde: 11. Adaima: 4.
Order Accipitriformes	
Family Accipitridae	
Black Kite (<i>Milvus migrans</i>)	Wadi Kubbania: 6. Buto: 1 Skeleton Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X Adaima: 1.
Lappet-faced Vulture (<i>Torgos tracheliotus</i>)	Maadi: 1.
Goshawk (<i>Accipiter gentilis</i>)	Adaima: 1.
Sparrowhawk (<i>Accipiter nisus</i>)	Adaima: 1.
<i>Buteo</i> sp.	Wadi Kubbania: 1.
Imperial Eagle (<i>Aquila heliaca</i>)	Maadi: 3.

Table 31, continued.

Bird species	Sites and associated avian remains^a
Golden Eagle (<i>Aquila chrysaetos</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Family Pandionidae	
Osprey (<i>Pandion haliaetus</i>)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Order Falconiformes	
Family Falconidae	
Peregrine Falcon (<i>Falco peregrinus</i>)	Nile Valley: RR
Falco sp.	Merimde: 2.
Order Galliformes	
Family Phasianidae	
Quail (<i>Coturnix coturnix</i>)	Merimde: 14. Omari: 1. Nile Valley: RR Naqada: 1. Nabta Playa: 57.
Helmeted Guineafowl (<i>Numida meleagris</i>)	Nabta Playa: 11.
Order Gruiformes	
Family Rallidae	
Water Rail (<i>Rallus aquaticus</i>)	Adaima: 2. Wadi Kubbania: 52% of avian remains Merimde: 1.
Spotted Crake (<i>Porzana porzana</i>)	Merimde: 1.
Corncrake (<i>Crex crex</i>)	Merimde: 31.
Moorhen (<i>Gallinula chloropus</i>)	Merimde: 3. Fayum, B: 1 Nabta Playa: 1.
Purple Gallinule (<i>Porphyrio porphyrio</i>)	Fayum, B: 1 Hierakonpolis HK 29A: 1?
Coot (<i>Fulica atra</i>)	Merimde: 1. Maadi: 4. Nile Valley: F Fayum, B: 11; A: 1 Qasr el-Sagha: 1. El Abadiya 3, near Naqada: 1. Nabta Playa: 1.
Family Gruidae	
Eurasian Crane (<i>Grus grus</i>)	Wadi Kubbania: 4. Merimde: 4. Maadi: 1. Nile Valley: RR Naqada: 2. Plain of Kom Ombo - Gebel Silsila: X Nabta Playa: 1.
Demoiselle Crane (<i>Anthropoides virgo</i>)	Nile Valley: RR Hierakonpolis HK 29A: 1? Wadi Kubbania: 1.
Family Otidae	
Houbara Bustard (<i>Chlamydotis undulata</i>)	Merimde: 2.

Table 31, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Order Charadriiformes	
<i>Family Burhinidae</i>	
Stone Curlew (<i>Burhinus oedicnemus</i>)	Merimde: 3.
<i>Family Charadriidae</i>	
Spur-winged Plover (<i>Hoplopterus spinosus</i>)	Omari: 1.
<i>Family Scolopacidae</i>	
Woodcock (<i>Scolopax rusticola</i>)	Merimde: 1.
Curlew sp. (<i>Numenius</i> sp.)	Nile Valley: RR Plain of Kom Ombo - Gebel Silsila: X
Wood Sandpiper (<i>Tringa glareola</i>)	Merimde: 1.
<i>Family Laridae</i>	
	Merimde: 1. Nile Valley: RR Wadi Kubaniya: 2.
Order Pteroclidiformes	
<i>Family Pteroclididae</i>	
Spotted Sandgrouse (<i>Pterocles senegallus</i>)	Merimde: 5.
Order Columbiformes	
<i>Family Columbidae</i>	
Turtle Dove (<i>Streptopelia turtur</i>)	Naqada: 3. Hierakonpolis HK 6, Tomb 19: 1.
<i>Streptopelia</i> sp.	Adaima: 2.
Order Strigiformes	
<i>Family Tytonidae</i>	
Barn Owl (<i>Tyto alba</i>)	Adaima: 1.
<i>Family Strigidae</i>	
Short-eared Owl (<i>Asio flammeus</i>)	Merimde: 1.
Order Coraciiformes	
<i>Family Coraciidae</i>	
Roller (<i>Coracias garrulus</i>)	Merimde: 1 Nabta Playa: 1.
<i>Family Upupidae</i>	
Hoopoe (<i>Upupa epops</i>)	Nabta Playa: 1.
Order Passeriformes	
<i>Family Alaudidae</i>	
	Adaima: 2. Nabta Playa: 1.
<i>Family Turdidae</i>	
Wheatear sp. (<i>Oenanthe</i> sp.)	Merimde: 2.
<i>Family Corvidae</i>	
	El Abadiya 3, near Naqada: 1.
Hooded Crow (<i>Corvus corone</i>)	Merimde: 1. Adaima: 4.
Brown-backed raven (<i>Corvus ruficollis</i>)	Merimde: 1. Maadi: 4
Raven (<i>Corvus corax</i>)	Merimde: 1. Maadi: 5 (1 Ind) Naqada: 2.

^a Key to abbreviations: F: Frequent; R: Rare; RR: Very Rare; X: indicates that remains of this species are present at the site; ?: Precise species not ascertained.

APPENDIX 4: AVIAN REMAINS RECOVERED IN ANCIENT EGYPTIAN SETTLEMENTS

Listed in this table are the various settlement sites I consulted in the course of this research project, whose faunal assemblages have been published and which yielded avian remains.¹³ Whenever possible, I attempted to only select the bird remains, which were recovered in a domestic setting, thus presumably originating from kitchen middens. The remains specifically associated with temples and tombs are listed in Appendix 5. In some instances, however, the cultic and domestic activities could not be readily differentiated, since the excavated area included cultic facilities, such as shrines and temples, as well residential structures. In these instances, I have opted to include the remains in both this table dedicated to the more pragmatic use of birds in the lives of ancient Egyptians, as well as the table presenting the types of birds used as offerings in cultic and funerary settings. Because of the uncertainty as to the exact nature, however, these entries are written in italic.

Table 32. List of Dynastic and Greco-Roman sites consulted

<i>Site^a</i>	<i>Nature of excavated area</i>	<i>Period of Occupation</i>	<i>Bibliography</i>
Fortress of Zawiyet Umm el-Rakham	Domestic	19 th Dynasty, reign of Ramesses II	Bertini and Ikram 2015
Buto	Domestic	Layers 6 to 9: OK to Saite Period Layers 10 to 12: Saite to Roman Period	Boessneck and von den Driesch 1997; von den Driesch 1997
Sais	Domestic	New Kingdom - Third Intermediate Period	Bertini and Linseele 2011
Kom el-Hisn	Domestic	Old Kingdom	Wenke <i>et al.</i> 1988
Tell el-Dab'a	Domestic and Cultic	Second Intermediate Period-Early New Kingdom (ca. 1800-1500 BC)	Boessneck 1976; <i>Ibid.</i> 1986; <i>Ibid.</i> 1988; Boessneck and von den Driesch 1992; von den Driesch 2015

¹³ The avian remains recovered in the faunal assemblages excavated at Tell es-Iswid (Early Dynastic Period: Boessneck and von den Driesch 1989); Tell Ibrahim Awad (Boessneck and von den Driesch 1988); Memphis (19th-20th Dynasties: Jeffreys et al. 1986) and in Quantir-Pi Ramesse (Ramesside period: von den Driesch 2006) were not discussed, being too insignificant.

Table 32, continued.

<i>Site^a</i>	<i>Nature of excavated area</i>	<i>Period of Occupation</i>	<i>Bibliography</i>
Minshat Abu Omar	Domestic	Late to Early Roman period	Boessneck 1988
Tell el-Mashkuta	Domestic	6 th cent. BC to AD 200	Boessneck 1986; <i>Ibid.</i> 1988
Tell el-Herr	Domestic	Persian Period (5 th century BC)	Chaix 2002
Giza	Domestic	1 st -4 th Dynasties	Kokabi 1980; Redding 2007
Qasr el-Sagha, Faiyum	Domestic and possibly cultic (rubbles of temple)	12 th Dynasty	von den Driesch 1986
El Amarna: Workmen village	Domestic	18 th Dynasty	Luff 2001
El Amarna: house of Ranefer	Domestic	18 th Dynasty	Payne 2004
El Amarna: house of Panhesy	Domestic and cultic (preparation of temple offerings)	18 th Dynasty	Payne 2006; <i>Ibid.</i> 2007
Abydos, town of <i>W3h-Swt</i>	Domestic	Middle Kingdom	Rossel 2007
El Kharafish	Domestic (seasonal pastoral camp site)	Early Dynastic	Riemer <i>et al.</i> 2008; Pöllath 2011
Ayn Asil, Balat	Domestic (Palace of the governor)	Late Old Kingdom	Pantalacci and Lesur-Gebremariam 2009
Thebes, Karnak Temple	Domestic or cultic	13 th Dynasty to Ptolemaic Period	Boessneck 1986
Gebel Zeit	Domestic (Mining camp)	12 th -19 th Dynasties	von den Driesch 2001
Abu Shaar	Domestic (Military installation)	4 th to 6 th cent. AD	Lentacker and Van Neer 1996
Mons Claudianus	Domestic (Quarry site)	1 st to 3 rd cen. AD	Hamilton-Dyer 1997
Quseir al-Qadim	Domestic	Early Roman period (1 st and 2 nd cent. AD)	Wattenmaker 1979, pp. 250-252; <i>Ibid.</i> 1982, pp. 347-352
Berenike	Domestic	3 rd cent. BC to 6 th cent. AD	Lentacker and Van Neer 1996
Elephantine	Cultic (Satet Temple)	1 st -5 th Dynasties	Boessneck 1981; <i>Ibid.</i> 1986; <i>Ibid.</i> 1988; Boessneck and von den Driesch 1982; von den Driesch and Peters 2008
	Domestic	11 th -12 th Dynasties 21 st -25 th Dynasties	

^a The sites are listed geographically, from North to South

In order to organize the avian remains recovered in the aforementioned settlements, I have followed the sequence (orders, families, genera, and species) and nomenclature used by S. Goodman and P. Meininger (1989). The figures indicate the number of identified specimens, as listed by the original authors of the reports.

Table 33. Avian remains recovered for the Dynastic period

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Order Struthioniformes:	
<i>Family Struthionidae</i>	
Ostrich (<i>Struthio camelus</i>)	Tell el-Dab'a: 4 bones and 15 eggshell fragments. Tell el-Herr: 9 eggshell Ayn Asil, Balat - Dakhla Oasis: 7: one bone and 6 eggshell fragments. Elephantine: 3. Gebel Zeit: 1.
Order Podicipediformes	
<i>Family Podicipedidae</i>	
Little Grebe (<i>Tachybaptus ruficollis</i>)	Tell el-Dab'a: 1.
Great Crested Grebe (<i>Podiceps cristatus</i>)	Tell el-Dab'a: 2.
Order Pelecaniformes	
<i>Family Phalacrocoracidae</i>	
Cormorant (<i>Phalacrocorax carbo</i>)	Buto: 1. Tell el-Dab'a: 3. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1. El-Amarna, Workmen's village: FF.
Long-tailed Cormorant (<i>Phalacrocorax africanus</i>)	Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1.
<i>Family Anhingidae</i>	
African Darter (<i>Anhinga rufa</i>)	Buto: 3. Tell el-Dab'a: 6.
<i>Family Pelecanidae</i>	
White Pelican (<i>Pelecanus onocrotalus</i>)	Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1. Elephantine: 21. Tell el-Dab'a: 2 (1 male, 1 female)
Order Ciconiiformes	
<i>Family Ardeidae</i>	
Little Bittern (<i>Ixobrychus minutus</i>)	Elephantine: 1.
Night Heron (<i>Nycticorax nycticorax</i>)	Elephantine: 1.
Little Egret (<i>Egretta garzetta</i>)	Tell el-Dab'a: 4. Tell el-Dab'a: 3. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1. Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X. Elephantine: 2.
Grey Heron (<i>Ardea cinerea</i>)	Tell el-Dab'a: 1. Tell es-Iswid: 1. Elephantine: 1.
Purple Heron (<i>Ardea purpurea</i>)	Elephantine: 1.

Table 33, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Family Ciconiidae	Tell el-Herr: X
Yellow-billed Stork (<i>Mycteria ibis</i>)	Elephantine: 15.
Black Stork (<i>Ciconia nigra</i>)	Elephantine: 30.
White Stork (<i>Ciconia ciconia</i>)	Tell el-Dab'a: 1. Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X. Elephantine: 38. Gebel Zeit: 3 bones for 1 individual
Stork sp.	Abydos - Town of <i>W3h-sw.t.</i> : X. Elephantine: 65.
Family Threskiornithidae	
Glossy Ibis (<i>Plegadis falcinellus</i>)	Tell el-Dab'a: 14 (10 males, 4 females) Elephantine: 9.
Sacred Ibis (<i>Threskiornis aethiopicus</i>)	Tell el-Dab'a: 1.
Spoonbill (<i>Platalea leucorodia</i>)	Tell el-Dab'a: 4. Elephantine: 3.
Order Phoenicopteriformes	
Family Phoenicopteridae	
Greater Flamingo (<i>Phoenicopterus ruber</i>)	Tell el-Dab'a: 43.
Order Anseriformes	
Family Anatidae	
Bean Goose (<i>Anser fabalis</i>)	Tell el-Herr: X.
White-fronted Goose (<i>Anser albifrons</i>)	Tell el-Dab'a: 1. Buto: 1. Tell el-Dab'a: 28. Elephantine: 3.
Lesser White-fronted Goose (<i>Anser erythropus</i>)	Tell el-Dab'a: 4?
Greylag Goose (<i>Anser anser</i>)	Buto: 1. Tell el-Dab'a: 22? Tell el-Dab'a (Settlement of Middle Kingdom in Ezbet Ruschdi): 1. Temple area of North Karnak, dated from Dyn. 13 to Ptolemaic period: X.
Unidentified Goose sp.	Sais (Phases III and IV - Late Ramesside Domestic contexts): 14. Tell el-Dab'a: 46. Dahshur - Waste pit of pyramid builders (12th Dynasty): 1. Qasr el Sagha, Fayum: 1. El-Amarna - Workmen's village: RR El Amarna - House of Panhesy: 78% of Avian Remains Abydos - Town of <i>W3h-Sw.t.</i> : X.
Domestic Goose (<i>Anser anser domesticus</i>)	Tell el-Dab'a: 22? Qasr el Sagha, Fayum: 1? Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X.
Egyptian Goose (<i>Alopochen aegyptiacus</i>)	Buto: 2. Tell el-Dab'a: 17. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1. El-Amarna - Workmen's village: RR Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X. Elephantine: 1.

Table 33, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Ruddy Shelduck (<i>Tadorna ferruginea</i>)	Tell el-Dab'a: 17. Giza: 1.
Shelduck (<i>Tadorna tadorna</i>)	Tell el-Dab'a: 26 specimens and 1 skeleton
Tadorna sp.	Tell el-Dab'a: 8.
Wigeon (<i>Anas penelope</i>)	Tell el-Dab'a: 22. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 4. Giza - Gallery III.4: 1. El-Amarna - Workmen's village: RR
Gadwall (<i>Anas strepera</i>)	Tell el-Dab'a: 2 wings Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 2. El-Amarna - Workmen's village: RR
Teal (<i>Anas crecca</i>)	Buto: 2. Kom el-Hisn: F Tell el-Dab'a: 31. Giza - Main Street: 1. El-Amarna - Workmen's village: R <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X.</i>
Mallard (<i>Anas platyrhynchos</i>)	Buto: 3. Tell el-Dab'a: 127 specimens and 1 skeleton Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 3. El-Amarna - Workmen's village: RR <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X.</i>
Pintail (<i>Anas acuta</i>)	Buto: 5. Tell el-Dab'a: 91. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 3. Giza - Gallery III.4: 5. Dahshur - Waste pit of pyramid builders (12th Dynasty): 8. <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X.</i> Elephantine: 1.
Garganey (<i>Anas querquedula</i>)	Buto: 2. Tell el-Dab'a: 64. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 2. El-Amarna - Workmen's village: R Ayn Asil, Balat - Dakhla Oasis: 3. Elephantine: 1.
Shoveler (<i>Anas clypeata</i>)	Buto: 4. Tell el-Dab'a: 52. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 2. El-Amarna - Workmen's village: RR
Marbled Duck (<i>Marmaronetta angustirostris</i>)	Tell el-Dab'a: 2 feet Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1.
Dabbling Duck sp.	Buto: 2. Tell el-Dab'a: 447. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1. Giza: 19.
Red-crested Pochard (<i>Netta rufina</i>)	Tell el-Dab'a: 3.
Pochard (<i>Aythya ferina</i>)	Buto: 1. Tell el-Dab'a: 118. <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X?</i>

Table 33, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Ferruginous Duck (<i>Aythya nyroca</i>)	Tell el-Dab'a: 31. Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 3. <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X.</i>
Tufted Duck (<i>Aythya fuligula</i>)	Buto: 3. Tell el-Dab'a: 54 specimens and 1 skeleton El-Amarna - Workmen's village: F <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X?</i>
Greater Scaup (<i>Aythya marila</i>)	Tell el-Dab'a: 5.
Diving Duck Sp.	Buto: 2. Sais (Phases III and IV - Late Ramesside Domestic contexts): 45. Tell el-Dab'a: 126.
Smew (<i>Mergus albellus</i>)	Tell el-Dab'a: 2 males
White-headed Duck (<i>Oxyura leucocephala</i>)	Tell el-Dab'a: 4.
Middle Size Duck sp.	Buto: 9. Tell el-Dab'a: 188.
Order Accipitriformes	
<i>Family Accipitridae</i>	
Black-shouldered Kite (<i>Elanus caeruleus</i>)	Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1.
Black Kite (<i>Milvus migrans</i>)	Elephantine: 1.
African Fish Eagle (<i>Haliaeetus vocifer</i>)	Elephantine: 1 foot
White-tailed Eagle (<i>Haliaeetus albicilla</i>)	Tell el-Dab'a: 2 males
Egyptian Vulture (<i>Neophron percnopterus</i>)	El-Amarna - Workmen's village: R Elephantine: 1.
Black (Cinereous) Vulture (<i>Aegyptius monachus</i>)	El-Amarna - Workmen's village: RR
Common Buzzard (<i>Buteo buteo [vulpinus]</i>)	Elephantine: 1.
<i>Family Pandionidae</i>	
Osprey (<i>Pandion haliaetus</i>)	Tell el-Dab'a: 1.
Order Falconiformes	
<i>Family Falconidae</i>	
Kestrel (<i>Falco tinnunculus</i>)	Tell el-Dab'a: 1.
Order Galliformes	
<i>Family Phasianidae</i>	
Quail (<i>Coturnix coturnix</i>)	Tell el-Dab'a: 1. El Karafish 02/5: 1.
Order Gruiformes	
<i>Family Rallidae</i>	
Spotted Crake (<i>Porzana porzana</i>)	Tell el-Dab'a: 1 female El Karafish 02/5: 1.
Corncrake (<i>Crex crex</i>)	Tell el-Dab'a: 2. El Karafish 02/5: 1.
Coot (<i>Fulica atra</i>)	Buto: 4. Tell el-Dab'a: 233. Giza: 7. Elephantine: 6.

Table 33, continued.

Bird species	Sites and associated avian remains^a
Family Gruidae	
Eurasian Crane (<i>Grus grus</i>)	Buto: 1. Tell el-Dab'a: 4. Giza: 80. Abydos - Town of <i>W3h-Sw.t</i> : X. Elephantine: 3.
Demoiselle Crane (<i>Anthropoides virgo</i>)	Giza: 1. Elephantine: 1.
Order Charadriiformes	
Family Recurvirostridae	
Pied Avocet (<i>Recurvirostra avosetta</i>)	Tell el-Dab'a: 1. Elephantine: 1.
Black-winged Stilt (<i>Himantopus himantopus</i>)	Tell el-Dab'a: 5.
Family Scolopacidae	
Little Stint (<i>Calidris minuta</i>)	Tell el-Dab'a: 1.
Ruff (<i>Philomachus pugnax</i>)	Tell el-Dab'a: 6 males, 3 females
Snipe (<i>Gallinago gallinago</i>)	El Karafish 02/5: 1.
Great Snipe (<i>Gallinago media</i>)	<i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X.</i>
Black-tailed Godwit (<i>Limosa limosa</i>)	Tell el-Dab'a: 3 specimens from 1 individual
Wood Sandpiper (<i>Tringa glareola</i>)	Elephantine: 1.
Family Laridae	
Tell el-Herr: X.	
Order Columbiformes	
Family Columbidae	
Palm Dove (Laughing Dove) (<i>Streptopelia senegalensis</i>)	El-Amarna - Workmen's village: R Abydos - Town of <i>W3h-Sw.t</i> : X. <i>Temple of North Karnak, dated from Dyn 21-26: 1 humerus</i>
Order Strigiformes	
Family Tytonidae	
Barn Owl (<i>Tyto alba</i>)	Tell el-Dab'a: 1.
Order Coraciiformes	
Family Meropidae	
Bee-eater (<i>Merops apiaster</i>)	El Karafish 02/5: 1.
Order Passeriformes	
El Karafish 02/5: 10.	
Family Corvidae	
El-Amarna - Workmen's village: R	
Family Sturnidae	
Starling (<i>Sturnus vulgaris</i>)	Tell el-Dab'a: 1.

^a Key to abbreviations: F: Frequent; R: Rare; RR: Very Rare; X: indicates that remains of this species are present at the site; ?: Precise species not ascertained.

Table 34. Avian remains recovered for the Greco-Roman period

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Order Struthioniformes:	
<i>Family Struthionidae</i>	
Ostrich (<i>Struthio camelus</i>)	Tell el Maskhuta: 18 bones
Order Podicipediformes	
<i>Family Podicipedidae</i>	
Great Crested Grebe (<i>Podiceps cristatus</i>)	Tell el Maskhta: 3.
Order Pelecaniformes	
<i>Family Phalacrocoracidae</i>	
Cormorant (<i>Phalacrocorax carbo</i>)	Buto: 1. Tell el Maskhuta: 16.
Long-tailed Cormorant (<i>Phalacrocorax africanus</i>)	Tell el Maskhuta: 6.
<i>Family Anhingidae</i>	
African Darter (<i>Anhinga rufa</i>)	Buto: 1. Tell el Maskhuta: 8.
<i>Family Pelecanidae</i>	
White Pelican (<i>Pelecanus onocrotalus</i>)	Elephantine: 6 for the Roman period Tell el-Dab'a: 2 (1 male, 1 female)
Order Ciconiiformes	
<i>Family Ardeidae</i>	
Night Heron (<i>nycticorax nycticorax</i>)	Buto: 1.
Little Egret (<i>Egretta garzetta</i>)	Tell el Maskhuta: 2.
Great Egret (<i>Ardea alba</i>)	Tell el Maskhuta: 7.
Grey Heron (<i>Ardea cinerea</i>)	Tell el Maskhuta: 14.
Goliath Heron (<i>Ardea goliath</i>)	Tell el Maskhuta: 3.
<i>Family Ciconiidae</i>	
Yellow-billed Stork (<i>Mycteria ibis</i>)	Buto: 2.
White Stork (<i>Ciconia ciconia</i>)	Tell el Maskhuta: 1?
Stork sp.	Mons Claudianus: X.
<i>Family Threskiornithidae</i>	
Sacred Ibis (<i>Threskiornis aethiopicus</i>)	Buto: 1.
Spoonbill (<i>Platalea leucorodia</i>)	Tell el Maskhuta: 2.
Order Phoenicopteriformes	
<i>Family Phoenicopteridae</i>	
Greater Flamingo (<i>Phoenicopterus ruber</i>)	Tell el Maskhuta: 6.
Order Anseriformes	
<i>Family Anatidae</i>	
Bean Goose (<i>Anser fabalis</i>)	Elephantine: 70 for the Roman period Buto: 3?
White-fronted Goose (<i>Anser albifrons</i>)	Buto: 3. Tell el Maskhuta: 19.
Greylag Goose (<i>Anser anser</i>)	Buto: 3?
Unidentified Goose sp.	Tell el Maskhuta: 3.

Table 34, continued.

Bird species	Sites and associated avian remains^a
Shelduck (<i>Tadorna tadorna</i>)	Buto: 1.
Wigeon (<i>Anas penelope</i>)	Buto: 1. Tell el Maskhuta: 4.
Teal (<i>Anas crecca</i>)	Buto: 2. Tell el Maskhuta: 20.
Mallard (<i>Anas platyrhynchos</i>)	Buto: 7. Tell el Maskhuta: 16 and 13?
Pintail (<i>Anas acuta</i>)	Buto: 10. Tell el Maskhuta: 20 and 13?
Garganey (<i>Anas querquedula</i>)	Buto: 2. Tell el Maskhuta: 88.
Shoveler (<i>Anas clypeata</i>)	Buto: 1. Tell el Maskhuta: 43.
Marbled Duck (<i>Marmaronetta angustirostris</i>)	Tell el-Dab'a: 2 feet Tell el-Dab'a - Settlement of Middle Kingdom in Ezbet Ruschdi: 1.
Dabbling Duck sp.	Buto: 14. Tell el Maskhuta: 20.
Red-crested Pochard (<i>Netta rufina</i>)	Buto: 1.
Pochard (<i>Aythya ferina</i>)	Buto: 13. Tell el Maskhuta: 117.
Ferruginous Duck (<i>Aythya nyroca</i>)	Buto: 7. Tell el Maskhuta: 14.
Tufted Duck (<i>Aythya fuligula</i>)	Buto: 4. Tell el Maskhuta: 22.
Diving Duck Sp.	Buto: 7. Tell el Maskhuta: 23.
Smew (<i>Mergus albellus</i>)	Tell el Maskhuta: 1 female
Middle Size Duck sp.	Buto: 3.
Order Accipitriformes	
Family Accipitridae	
Black Kite (<i>Milvus migrans</i>)	Tell el Maskhuta: 1.
Egyptian Vulture (<i>Neophron percnopterus</i>)	Tell el Maskhuta: 5 bones from 1 individual
Griffon Vulture (<i>Gyps fulvus</i>)	Tell el Maskhuta: 1.
Lappet-faced Vulture (<i>Torgos tracheliotus</i>)	Tell el Maskhuta: 2.
Order Galliformes	
Family Phasianidae	
	Quseir al-Qadim: X (<i>Alectoris barbara</i> ?)
Quail (<i>Coturnix coturnix</i>)	Tell el Maskhuta: 19. Mons Claudianus: X.
Domestic Chicken (<i>Gallus gallus domesticus</i>)	Buto: 5. Tell el Maskhuta: 8. Elephantine: 2 from the Roman period Abu Sha'ar: X. Mons Claudianus: 248 bones; 23 fragments Quseir al-Qadim: 3. Berenike: X.

Table 34, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Order Gruiformes	
<i>Family Rallidae</i>	
Water Rail (<i>Rallus aquaticus</i>)	Tell el Maskhuta: 1.
Spotted Crake (<i>Porzana porzana</i>)	Tell el Maskhuta: 4.
Corncrake (<i>Crex crex</i>)	Tell el Maskhuta: 32.
Moorhen (<i>Gallinula chloropus</i>)	Tell el Maskhuta: 3.
Purple Gallinule (<i>Porphyrio porphyrio</i>)	Tell el Maskhuta: 2.
Coot (<i>Fulica atra</i>)	Buto: 31. Tell el Maskhuta: 241.
<i>Family Gruidae</i>	
	Elephantine: 4 from the Roman period
Eurasian Crane (<i>Grus grus</i>)	Buto: 4. Tell el Maskhuta: 2.
Order Charadriiformes	
<i>Family Recurvirostridae</i>	
Black-winged Stilt (<i>Himantopus himantopus</i>)	Tell el Maskhuta: 4.
<i>Family Charadriidae</i>	
Ringed Plover (<i>Charadrius hiaticula</i>)	Tell el Maskhuta: 1.
Kentish Plover (<i>Charadrius alexandrinus</i>)	Tell el Maskhuta: 1.
Grey Plover (<i>Pluvialis squatarola</i>)	Tell el Maskhuta: 5.
Spur-winged Plover (<i>Hoplopterus spinosus</i>)	Tell el Maskhuta: 1.
Lapwing (<i>Vanellus vanellus</i>)	Tell el Maskhuta: 3.
<i>Family Scolopacidae</i>	
Little Stint (<i>Calidris minuta</i>)	Tell el Maskhuta: 7.
Ruff (<i>Philomachus pugnax</i>)	Tell el Maskhuta: 56.
Jack Snipe (<i>Lymnocyptes minimus</i>)	Tell el Maskhuta: 2.
Snipe (<i>Gallinago gallinago</i>)	Tell el Maskhuta: 12.
Black-tailed Godwit (<i>Limosa limosa</i>)	Tell el Maskhuta: 18.
Greenshank (<i>Tringa nebularia</i>)	Tell el Maskhuta: 3 (1 individual)
Green Sandpiper (<i>Tringa ochropus</i>)	Tell el Maskhuta: 2.
Wood Sandpiper (<i>Tringa glareola</i>)	Tell el Maskhuta: 3.
Order Pteroclidiformes	
<i>Family Pteroclididae</i>	
Chestnut-bellied Sandgrouse (<i>Pterocles exustus</i>)	Tell el Maskhuta: 1.

Table 34, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Order Columbiformes	
<i>Family Columbidae</i>	
Rock Pigeon (Rock Dove) (<i>Columba livia</i>)	Tell el Maskhuta: 2 domestic birds?
Turtle Dove (<i>Streptopelia turtur</i>)	Mons Claudianus: X.
Palm Dove (Laughing Dove) (<i>Streptopelia senegalensis</i>)	Tell el Maskhuta: 1.
Order Strigiformes	
<i>Family Tytonidae</i>	
Barn Owl (<i>Tyto alba</i>)	Buto: 1 Skeleton Tell el Maskhuta: 2.
<i>Family Strigidae</i>	
Little Owl (<i>Athene noctua</i>)	Tell el Maskhuta: 13.
Order Coraciiformes	
<i>Family Meropidae</i>	
Bee-eater (<i>Merops apiaster</i>)	Tell el Maskhuta: 1.
Order Passeriformes	
<i>Family Alaudidae</i>	
Greater Short-toed Lark (<i>Calandrella brachydactyla</i>)	Tell el Maskhuta: 3.
Crested Lark (<i>Galerida cristata</i>)	Tell el Maskhuta: 6?
Skylark (<i>Aluada arvensis</i>)	Tell el Maskhuta: 6?
<i>Family Turdidae</i>	
Wheatear sp. (<i>Oenanthe</i> sp.)	Tell el Maskhuta: 2.
<i>Family Sylviidae</i>	
Warbler sp. (<i>Phylloscopus</i> sp.)	Tell el Maskhuta: 1.
<i>Family Corvidae</i>	
Rook (<i>Corvus frugilegus</i>)	Tell el Maskhuta: 3..
Hooded Crow (<i>Corvus corone</i>)	Mons Claudianus: X.
<i>Family Sturnidae</i>	
Starling (<i>Sturnus vulgaris</i>)	Tell el Maskhuta: 6.
<i>Family Passeridae</i>	
House Sparrow (<i>Passer domesticus</i>)	Tell el Maskhuta: 12.

^a Key to abbreviations: F: Frequent; R: Rare; RR: Very Rare; X: indicates that remains of this species are present at the site; ?: Precise species not ascertained.

APPENDIX 5: REMAINS OF BIRD OFFERINGS IN TEMPLES AND IN TOMBS

The tables included in this appendix gather data regarding the use of birds as offerings both in cultic and in funerary settings. Are included not only the birds that have been identified as being offered on temple altars, but also the avian remains, which had been deposited as foundation offerings. Furthermore, thanks to the work of S. Ikram on meat offerings and vidual mummies, it has been possible to identify the types of birds, which had been mummified and/or deposited in tombs as offering to the owners of these sepultures. To her findings I have added corresponding material recently excavated and published. In many instances, only the presence of a bird species in an assemblage was reported, with no details as to the number of identified specimens. In these instances, I indicate the presence of the species in the assemblage with the letter X. Finally, the foundation offerings mentioned in J. Weinstein's dissertation¹⁴ are indicated in bold.

¹⁴ Weinstein 1973

Table 35. List of sites and publications consulted

<i>Site^a</i>	<i>Nature of excavated area</i>	<i>Period of Relevance</i>	<i>Bibliography</i>
Tell el-Dab'a	Funerary and cultic	Second Intermediate Period-Early New Kingdom (ca. 1800-1500 BC)	Boessneck 1976; <i>Ibid.</i> 1986; <i>Ibid.</i> 1988; Boessneck and von den Driesch 1992; von den Driesch 2015
Dahshur	Funerary	Middle Kingdom, reign of Amenemhat III	Boessneck 1981; Boessneck and von den Driesch 1982
Dayr al-Barshā Tomb shaft of Djehutinakht IV or V	Funerary	end 11 th -early 12 th Dynasty	De Meyer and Dils 2012; De Meyer <i>et al.</i> 2014
Abydos: tomb of Aha	Funerary	1 st Dynasty	Boessneck 1986, p. 325
Abydos: tomb of Qa'a	Funerary	1 st Dynasty	Von den Driesch and Peters in Dreyer <i>et al.</i> 1996
Thebes: Karnak Temple	Cultic?	13 th Dynasty to Ptolemaic Period	Boessneck 1986
Thebes: King Tutankhamun's funerary banquet	Funerary and cultic	18 th Dynasty	Winlock 1941
Thebes: Tomb offerings	Funerary	18 th -19 th Dynasties	Lortet and Gaillard 1903; <i>Ibid.</i> 1907; <i>Ibid.</i> 1909; Boessneck and von den Driesch 1982; Dorman 1991; Ikram 1995; Andreu 2002; Fóthi <i>et al.</i> 2010
Thebes: Victual mummies	Funerary	Late 17 th to 21 st Dynasties	Goodman 1987; Ikram 1995; <i>Ibid.</i> 2004; <i>Ibid.</i> 2012b; Ikram and Iskander 2002

^a The sites are listed geographically, from North to South

Table 36. Avian remains recovered as offerings and foundation deposits

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Order Struthioniformes:	
<i>Family Struthionidae</i>	
Ostrich (<i>Struthio camelus</i>)	Abydos, Umm el Qaab. Tomb of Qa'a: Eggshell
Order Ciconiiformes	
<i>Family Ardeidae</i>	
Grey Heron (<i>Ardea cinerea</i>)	Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X
<i>Family Ciconiidae</i>	
White Stork (<i>Ciconia ciconia</i>)	Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X
<i>Family Threskiornithidae</i>	
Spoonbill (<i>Platalea leucorodia</i>)	Thebes - TT 32: 3 fragments - mummified?
Order Anseriformes	
<i>Family Anatidae</i>	
<i>Cygnus</i> sp.	Abydos, Umm el Qaab. Tomb of Aha: 2.

Table 36, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Bean Goose (<i>Anser fabalis</i>)	Thebes - Tutankhamun's Banquet: 2. Thebes - Votive Mummies (see detailed table): R
White-fronted Goose (<i>Anser albifrons</i>)	Dahshur Tomb 7 : X Dahshur Tomb 10 : X Thebes - Tutankhamun's Banquet: 1. Thebes - Tomb of Wife of Ramses III: X Thebes - Votive Mummies (see detailed table): FF
Lesser White-fronted Goose (<i>Anser erythropus</i>)	Thebes - Votive Mummies (see detailed table): F
Greylag Goose (<i>Anser anser</i>)	Dahshur Tomb 7: X Dahshur Tomb 10: X Abydos, Umm el Qaab. Tomb of Qa'a: 21? <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X</i> Thebes - Tomb of Wife of Ramses III: X Thebes - Votive Mummies (see detailed table): FF
Goose sp.	Dahshur Tomb 7 : 7. Dahshur Tomb 10 : 7. Gournah - Foundation deposit of Temple of Thutmose III - Portico: 1.
Domestic Goose (<i>Anser anser domesticus</i>)	<i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X</i> Thebes - TT 32: 13 (Perhaps mummified?)
Brent Goose (<i>Branta bernicla</i>)	Thebes - Tutankhamun's Banquet: portion
Red-breasted Goose (<i>Branta ruficollis</i>)	Abydos, Umm el Qaab. Tomb of Aha: 1.
Egyptian Goose (<i>Alopochen aegyptiacus</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 3. Abydos, Umm el Qaab. Tomb of Aha: 4. Abydos, Umm el Qaab. Tomb of Qa'a: 21? <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X</i> Gournah - Foundation deposit of Temple of Thutmose III - Portico: 5 mummies Elephantine - Foundation deposit dated from time of Senusret I, near Satet Temple: 1 skeleton
Ruddy Shelduck (<i>Tadorna ferruginea</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 7.
Wigeon (<i>Anas penelope</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 1.
Gadwall (<i>Anas strepera</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 2. Thebes - Tutankhamun's Banquet: 1.
Teal (<i>Anas crecca</i>)	Dahshur Tomb 10 : 3. <i>Thebes - Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X</i> Thebes - Tutankhamun's Banquet: 4. Thebes - Tomb of Wife of Ramesses III: X Thebes - Votive Mummies (see detailed table): F

Table 36, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Mallard (<i>Anas platyrhynchos</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 12. Tell el-Dab'a (Temple offerings - Temple V in area A/II K/9): 8 feet (4 left and 4 right) Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X
Pintail (<i>Anas acuta</i>)	Tell el-Dab'a (Temple offerings - Temple V in area A/II K/9): 3 feet (2 left and 1 right) Dahshur Tomb 7 : 3. Dahshur Tomb 10 : 4. <i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X</i> Thebes - Tomb of Wife of Ramses III: X Thebes - Votive Mummies (see detailed table): XX Deir el-Bahri - Foundation deposit of Temple of Mentuhotep II: 1 male bird,
Garganey (<i>Anas querquedula</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 4. Dahshur Tomb 7 : 3. Dahshur Tomb 10 : 2 males, 2 females Thebes - Tomb of Wife of Ramses III: X Thebes - Votive Mummies (see detailed table): F
Shoveler (<i>Anas clypeata</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 6. Thebes - Tutankhamun's Banquet: 2.
Dabbling Duck sp.	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 4. Abydos, Umm el Qaab. Tomb of Qa'a: 1.
Marbled Duck (<i>Marmaronetta angustirostris</i>)	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 4. Tell el-Dab'a (Temple offerings - Temple V in area A/II K/9): 2 feet (1 left and 1 right)
Pochard (<i>Aythya ferina</i>)	<i>Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X?</i>
Ferruginous Duck (<i>Aythya nyroca</i>)	<i>Thebes - Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X</i>
Diving duck sp.	Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 3.
Middle Size Suck sp.	Tell Dafna - Building east of Central Fort - Foundation Deposit - Psametichus I: fragment of tibiotarsus Dayr al-Barshā: 3 Individuals Medinet Habu - Mortuary temple of Ay- Foundation deposit 3: head and neck of duck
Order Accipitriformes	
Family Accipitridae	
Black Kite (<i>Milvus migrans</i>)	Tell el-Dab'a (Offerings in tombs; areas i/22 , j/20, j/23): 4 individuals
<i>Circus</i> sp.	Dayr al-Barshā: 1.

Table 36, continued.

<i>Bird species</i>	<i>Sites and associated avian remains^a</i>
Order Galliformes	
<i>Family Phasianidae</i>	
Quail (<i>Coturnix coturnix</i>)	Thebes - Unwrapped offerings: X Thebes - Votive Mummies (see detailed table): X Deir el-Bahri - Mortuary temple of Hatshepsut - Foundation deposit B: 1. Armant - Temple of Hatshepsut: 1.
Order Gruiformes	
<i>Family Gruidae</i>	
Eurasian Crane (<i>Grus grus</i>)	Dayr al-Barshā: 2 Individuals
Order Charadriiformes	
<i>Family Scolopacidae</i>	
Great Snipe (<i>Gallinago media</i>)	<i>Thebes - Temple of North Karnak, dated from Dyn. 13 to Ptolemaic period: X</i>
Order Columbiformes	
<i>Family Columbidae</i>	
	Thebes - Votive Mummies (see detailed table): F Thebes - Mortuary Temple of Tawesret - Foundation deposit: 1 in deposit I\1 head in deposit VI Deir el-Bahri - Foundation deposit of TT 53, tomb of Senenmut: X?
Turtle Dove (<i>Streptopelia turtur</i>)	Dahshur Tomb 7: 1. Dahshur Tomb 10: 3. Deir el-Bahri - Foundation deposit of Temple of Mentuhotep II: 1.
Palm Dove (Laughing Dove) (<i>Streptopelia senegalensis</i>)	<i>Thebes - Temple of North Karnak, dated from Dyn 21-26: 1 humerus</i> Deir el-Bahri - Foundation deposit of Temple of Mentuhotep II: 1.
Additional unidentified bird remains	Tanis - Anta Temple Complex, Foundation deposit at North Gateway - Reign of Siamun: Bird bones in 2 deposits Tanis - Anta Temple Complex - Foundation deposit - Reign of Ptolemy IV: Bird bone in NW corner of pavement Tanis - Great Temple Complex - Foundation deposit at east gate of enclosure wall - Ptolemy I: Bird bones Tell el-Dab'a (Temple of Middle Kingdom in Ezbet Ruschdi): 53. Tell Dafna - Building east of Central Fort - Foundation Deposit - Psametichus I: X

^a Key to abbreviations: F: Frequent; R: Rare; RR: Very Rare; X: indicates that remains of this species are present at the site; ?: Precise species not ascertained.

Table 37. Victual mummies with remains of birds (From Ikram 1995, Appendix 1)

<i>Location Tomb Owner</i>	<i>Date</i>	<i>Total boxes of food offerings</i>	<i>Total birds recovered</i>	<i>Birds identified</i>	<i>Identification numbers (Museum numbers and inventory number in Ikram 1995)</i>	<i>Select Bibliography</i>
Thebes, KV 35 and 34 Amenhotep II and Thutmose III	18th Dynasty	200+	2	<i>Anser albifrons</i> (?)	Lortet and Gaillard 177 and 209, Ikram S5 and S7	Loret 1898 Daressy 1902 Gaillard and Daressy 1905 Lortet and Gaillard 1905; <i>Ibid.</i> 1907 Ikram 1995, p. 242
Thebes, KV 62 Tutankhamun	18th Dynasty	48	11	3 pigeons (Unspecified) together in an oval box	Carter 62ll, JE 61439, Ikram S223	Carter 1932 Ikram 1995, p. 254
				3 pigeons (Unspecified) together in an oval box	Carter 62 uu, JE 61441, Ikram S229	
				Goose (Unspecified)	Carter 62 nn, JE 61400, Ikram S224	
				Goose (Unspecified)	Carter 62 x, JE 61397, Ikram S225	
				Goose (Unspecified)	Carter 62 j, JE 61396, Ikram S226	
				Goose (Unspecified)	Carter 62 k, JE 61399, Ikram S227	
				Duck (Unspecified)	Carter 62 ss, JE 61401, Ikram S228	
				Goose Liver ?	Carter 62 pp, JE 61390, Ikram S230	
Thebes, KV 43 Thutmose IV	18th Dynasty	6	6	<i>Anser albifrons</i> (?)	CG 29704, Ikram S231	Gaillard and Daressy 1905 Lortet and Gaillard 1908 Ikram 1995, pp. 255-256
				<i>Anser albifrons</i> (?)	CG 29705, Ikram S232	
				<i>Anser albifrons</i> (?)	CG 29707, Ikram S234	
				Small duck (<i>Anas crecca</i> ?)	CG 29706, Ikram S233	
				Small migratory (?) bird	CG 29708, Ikram S234	
				Very small bird (<i>Coturnix coturnix?</i> <i>Columbidae</i> ?)	CG 29709, Ikram S235	
Thebes, KV 36 Maherpri	18th Dynasty, reign of Thutmose IV	11	4	Goose (Unspecified)	CG 24051, JE 33838, Ikram S241	Daressy 1902 Lortet and Gaillard 1905 Ikram 1995, p. 258
				<i>Anser albifrons</i> (?)	CG 24052, JE 33839, Ikram S242	
				Wooden box and duck (?) inside	CG 24053, JE 33840, Ikram S244	
				Pigeon or small duck	CG 24054, JE 33841, Ikram S245	

Table 37, continued.

Location Tomb Owner	Date	Total boxes of food offerings	Total birds recovered	Birds identified	Identification numbers (Museum numbers and inventory number in Ikram 1995)	Select Bibliography
Thebes, KV 46 Yuya and Thuyu	18th Dynasty	18	6 or 7	Pigeon or small bird	CG 51086, JE 95341, Ikram S251	Quibell 1908 Ikram 1995, pp. 260-261
				Goose (Unspecified)	CG 51092, JE 95336, Ikram S257	
				Goose (Unspecified)	CG 51095, JE 95335 a-c, Ikram S260	
				Goose (Unspecified)	CG 51096, JE 953328, Ikram S 261	
				Small duck (<i>Anas crecca?</i>) or <i>Columbidae</i>	CG 51094, JE 95332, Ikram S259	
				Duck (Unspecified)? Possibly from another burial?	JE 95333 a,b, Ikram S267	
Thebes, KV 60 Unknown woman	18th Dynasty	16	3	Avian neck vertebrae	Ikram S419	Carter 1903 Ikram 1995, pp. 281-282
				Two mummified avian tibiae and femurs	Ikram S420	
				Mummified avian vertebrae	Ikram S421	
Thebes, QV 46 Vizier Imhotep	18th Dynasty	25	6	Duck?	Turin 5084, Ikram S289	Schiaparelli 1924 Ikram 1995, pp. 264-268
				Duck?	Turin 5085, Ikram S290	
				Duck?	Turin 5083, Ikram S291	
				Small bird	Turin 5088, Ikram S308	
				Preserved duck (now lost)	Turin 5099, Ikram S309	
				Preserved duck (now lost)	Turin 5100, Ikram S310	
Thebes, QV 51 Queen Isit, mother of Ramses VI	19th Dynasty	4	4	Mummified remains of 4 geese or ducks	Ikram S433-S436	Lortet and Gaillard 1908, p. 145 Ikram 1995, p. 283
Thebes Prince Amenhemhat Q	18th Dynasty	81	42	<i>Anser anser</i> or <i>A. fabalis</i>	MMA 19.3.212, Ikram S314	Goodman 1987 Ikram 1995, pp. 268-278; <i>Ibid.</i> 2012
				<i>Anser anser</i> or <i>A. fabalis</i>	MMA 19.3.214/215, Ikram S316	
				<i>Anser anser</i> or <i>A. fabalis</i>	MMA 19.3.217, Ikram S318	
				Fragmentary remains of <i>Anser anser</i> or <i>A. fabalis</i>	MMA 19.3.216z, Ikram S317	
				<i>Anser anser?</i>	MMA 19.3.213, Ikram S315	
				<i>Anser anser</i> or <i>A. albifrons</i>	MMA 19.3.280, Ikram S348	
				<i>Anser</i> sp.	MMA 19.3.224, Ikram S325	

Table 37, continued.

Location Tomb Owner	Date	Total boxes of food offerings	Total birds recovered	Birds identified	Identification numbers (Museum numbers and inventory number in Ikram 1995)	Select Bibliography
Thebes Prince Amenhemhat Q (continued)				<i>Anser</i> sp.	MMA 19.3.226, Ikram S327	
				<i>Anser albifrons</i> or <i>erythropus</i>	MMA 19.3.218, Ikram S319	
				<i>Anser albifrons</i> or <i>erythropus</i>	MMA 19.3.220, Ikram S321	
				<i>Anser albifrons</i>	MMA 19.3.222; OIM E18275 Ikram S323	
				<i>Anser albifrons</i>	MMA 19.3.219, Ikram S320	
				<i>Anser albifrons</i>	MMA 19.3.221; Probably MFA Boston, Ikram S322	
				<i>Anser albifrons</i>	MMA 19.3.223; Probably MFA Boston, Ikram S324	
				<i>Anser albifrons</i>	MMA 19.3.227, Ikram S328	
				<i>Anser albifrons</i>	MMA 19.3.228, Ikram S329	
				<i>Anser albifrons</i>	MMA 19.3.233 Ikram S334	
				Duck (<i>Anas acuta</i> ?)	MMA 19.3.229, Ikram S330	
				Duck (<i>Anas acuta</i> ?)	MMA 19.3.232, Ikram S333	
				<i>Anas acuta</i>	MMA 19.3.230, Ikram S331	
				<i>Anas acuta</i>	MMA 19.3.231, Ikram S332	
				Small duck (<i>Anas querquedula</i> ?)	MMA 19.3.234, Ikram S335	
				Small duck (<i>Anas querquedula</i> ?)	MMA 19.3.238, Ikram S339	
				Small duck (<i>Anas querquedula</i> ?)	MMA 19.3.276, Ikram S347	
				<i>Anas querquedula</i>	MMA 19.3.235, Ikram S336	
				<i>Anas querquedula</i>	MMA 19.3.237, Ikram S 338	
				Small and narrow bird (Pigeon?)	MMA 19.3.236, Ikram S337	
				Columbidae	MMA 19.3.239, Ikram S340	
Columbidae	MMA 19.3.240, Ikram S341					
<i>Streptopelia turtur</i>	MMA 19.3.241, Ikram S342					
<i>Streptopelia turtur</i>	MMA 19.3.242, Ikram S343					

Table 37, continued.

Location Tomb Owner	Date	Total boxes of food offerings	Total birds recovered	Birds identified	Identification numbers (Museum numbers and inventory number in Ikram 1995)	Select Bibliography
Thebes Prince Amenhemhat Q (continued)				<i>Streptopelia turtur</i>	MMA 19.3.243, Ikram S344	
				Bird? Completely wrapped	MMA 19.3.273, Ikram S345	
				Duck (Unspecified), with case	MMA 19.3.275, Ikram S346	
				Dove/pigeon (<i>Columba</i> sp. or <i>Streptopelia</i>); neck cut off close to torso for <i>Columbidae</i>	MMA 19.3.276	
				Duck (Unspecified)	MMA 19.3.283 a,b; MFA Boston 37.553, Ikram S351	
				Duck (Unspecified)	MMA 19.3.284 a, Ikram S352	
				Goose?	MMA 19.3.285, Ikram S353	
				Duck?	MMA 19.3.286 a,b Ikram S354	
				Ikram 1995: box said to contain a goose (unspecified) Ikram 2012: case found empty	MMA 19.3.281, Ikram S349	
				Goose (<i>Anser anser</i> ?)	MMA 19.3.282, Ikram S350	
				Ikram 1995: case said to be with small bird (<i>Coturnix coturnix</i> or <i>Columbidae</i>). Ikram 2012: case found empty. Said to be for the remains of dove/pigeon or a small duck such as garganey	MMA 19.3.289 a,b Ikram S357	
				<i>Columbidae</i> ? Quail?	MMA 19.3.290 a,b, Ikram S358	
				<i>Columbidae</i> ? Quail?	MMA 19.3.291 a,b; MFA Boston 37.552 Ikram S359	
Thebes, TT 358 Meryetamun. Probably wife of Amenhotep I	18 th Dynasty		1	Sycamore box in shape of duck, with only part of a bird inside	MMA 30.3.21 a,b Ikram S417	Winlock 1932 Ikram 1995, p. 281

Table 37, continued.

<i>Location Tomb Owner</i>	<i>Date</i>	<i>Total boxes of food offerings</i>	<i>Total birds recovered</i>	<i>Birds identified</i>	<i>Identification numbers (Museum numbers and inventory number in Ikram 1995)</i>	<i>Select Bibliography</i>
Thebes, Deir el-Bahri Cache, TT 320 Isitemkheb D, wife of Pinudjem II	21 st Dynasty	21	9	Duck (Unspecified)	JE 46879, Ikram S269	Ikram 1995, pp. 262-264; <i>Ibid.</i> 2004
				Duck (Unspecified)	JE 46885, Ikram S271	
				Goose or Duck	JE 26263, Ikram S272	
				Small mummified bird: Duck?	Cairo 2308, Ikram S 276	
				<i>Anser</i> sp.	CG 29840A, JE 26263 [box]	
				Dove/pigeon (<i>Columba</i> sp. Or <i>Streptopelia</i> ; head still present)	CG 29840B, JE 26263 [box]	
				Dove/pigeon (<i>Columba</i> sp. Or <i>Streptopelia</i> ; head still present)	CG 29840C, JE 26263 [box]	
				Duck?	CG 29842, JE 46875	
<i>Anas acuta</i> ?	CG 29847, JE 46896					

Table 38. Unwrapped funerary bird offerings, as recorded in Ikram 1995, Appendix 1

Location Tomb Owner	Date	Total Birds	Birds identified	Identification numbers (Museum numbers and inventory number in Ikram 1995)	Select Bibliography
Thebes, KV 51 unknown owner	18th Dynasty	3 1	Ducks: Victual mummies? Mummified ibis (Votive mummy deposited at a later date?)	Ikram R3; current location unknown	Davis 1908, p. 18 Ikram 1995, p. 284
Thebes, Deir el-Bahri, Bab el- Hosan Mentuhotep II	11th Dynasty	2	Skeletons of ducks	Ikram R7; current location unknown	Carter 1901, pp. 201-2 Ikram 1995, p. 284
Dahshur, L.LVIII Tomb 2 Princess Nubhotepkhered	mid 13th Dynasty	?	Mummified poultry	Ikram R8; current location unknown	de Morgan 1895, pp. 107-8 Ikram 1995, p. 285
Dahshur, L.LI Princess Ita, Amenemhat II's daughter	12th Dynasty	?	Shallow bowl holding the bones of several waterfowl of all sizes	Current location unknown	de Morgan 1903, p. 48 Ikram 1995, p. 285
Dahshur, L.LI Princess Khnumhet		?	Bones of birds scattered on the ground	Current location unknown	de Morgan 1903, p. 50 Ikram 1995, p. 285
Lisht, enclosure of L.LX Senebtisi	12th Dynasty	2	Bowl containing 2 complete waterfowl, as well as some fragmentary bones from ducks, doves, and pigeons	Ikram R12	Mace and Winlock 1916 Ikram 1995, pp. 285-286
Thebes, Deir el-Medina Tomb of Kha (TT 8)	18th Dynasty	?	Bowl with disarticulated pieces of salted (?) birds, probably doves or pigeons (pieces of breasts, legs, and wings of the birds) Birds of different types placed in a bowl, most likely dove or pigeons; it seems that salt was used for preservation Large amphora containing the remains of dessicated and salted birds. The birds still have their feet; they seemingly had been beheaded, eviscerated and salted.	Ikram R16 Turin 8251, Ikram R18 Turin 8526, Ikram R19	Schiaparelli 1927 Ikram 1995, pp. 286-287
Thebes, Deir el Medina Unspecified tombs	New Kingdom	N/A	Pintail duck (<i>Anas acuta</i>) Pigeon	N/A	Bruyère 1937, pp. 107-108 (cited in Malaise 1988, p. 70) and 181-182 Ikram 1995, p. 287
Thebes, Deir el Medina, East cemetery	18th Dynasty	N/A	3 birds, spatch-cocked, with wings trimmed but retaining feet. Possibly all ducks	Louvre E 14551 Louvre unnumbered Louvre unnumbered	Ikram 1995, p. 160 n. 11 Andreu 2002, p. 109 Cat. 49

Table 38, continued.

Location Tomb Owner	Date	Total Birds	Birds identified	Identification numbers (Museum numbers and inventory number in Ikram 1995)	Select Bibliography
Saqqara, Tomb 3477	Early Dynasty	?	Pigeon stew (?) on pottery dish Cooked quail on a pottery dish; bird is cleaned, dressed with the head tucked under one wing	Emery 22, Ikram R22; unknown current location Emery 18, Ikram R23; unknown current location	Emery 1962, p. 6 Ikram 1995, pp. 287-288
Balat tomb of Medunefer	6th Dynasty	3+ ? ? ? ?	A few jars of preserved waterfowl (at least 3, if not more) <i>Anas acuta</i> <i>Cygnus</i> sp. <i>Aythya fuligula</i> <i>Anas querquedula</i>	No number given	Valloggia 1986, p. 208 Ikram 1995, pp. 289-290

**APPENDIX 6: THE GOOSEHERDS OF HOU:
RECORDS OF BIRD TRANSFERS BETWEEN *mni.w 3pd* OF THE DOMAIN OF AMUN DURING
THE LATE PERIOD (EARLY 5TH CENTURY BC)**

This table provides a brief presentation of the texts originally from the region of Hou, in Upper Egypt, which specifically relate with the transfer of geese between several gooseherds employed by the Domain of Amun in Thebes.

Table 39. Selection of texts recording the transfer of geese between several gooseherds (From Vleeming 1991)


<i>Text ID and date</i>	<i>Protagonists and description of transaction</i>	<i>Select references</i>
pLoeb 47 Year 34, 3 rd month of <i>šmw</i> of the reign of Darius I	In this document, <i>Tr.t-Ḥr-r=w</i> , son of <i>Ḍd-Ḥr</i> , and <i>Ḥnsw-i(.ir-di.t)-s</i> , son of <i>Tr.t-Ḥr-r=w</i> , both <i>mni 3pd</i> of the Domain of Amun, enter into a partnership to raise ten  , <i>zri</i> -geese, drawn from the flock of God's Offering of Amun. These two men thus agree to share in the profits and loss incurred in tending the small flock. They do not care for the birds themselves: they hire two other <i>mniw 3pd</i> of the Domain of Amun, namely <i>P3-di-š-sdm=f</i> , son of <i>Tr.t-Ḥr-r=w</i> and <i>Ḥnsw-t3y=f-nḥt</i> , son of <i>Tr.t.w-r=w</i> , who each is responsible for five geese.	Spiegelberg 1931, col. 79-80, pl. 26 Malinine 1968b Vleeming 1991, pp. 19-30
pStrassburg 5 Year 35, 3 rd month of <i>pr.t</i> of the reign of Darius I	Two texts written on this papyrus: - In a short note written in the upper right-hand corner, <i>P3-di-Imn-ny-sw.t-t3.wy</i> promises that he will pay three geese on account of the flock of twenty birds, which were entrusted to him. This may be a reference to the payment due yearly to lease a flock of twenty geese belonging to the Domain of Amun. - The main text on this papyrus is a receipt recording that the <i>mni 3pd P3-di-Imn-ny-sw.t-t3.wy</i> , son of <i>P3-whr</i> , paid three geese to the god's father <i>Ḍd-Ḥr</i> , son of <i>P3-ḥr-Ḥnsw</i> , responsible for the branch of the God's Offering of Amun located in the district of Hou. This payment in kind in the form of geese covered the harvest tax due on the five arouras of "surplus of land" used for grazing registered in the name of <i>P3-di-Imn-ny-sw.t-t3.wy</i> . The three geese were most likely a portion of the birds born during the year.	Spiegelberg 1902, pl. 1 Revillout 1907, p. 74 Cruz-Urbe 1980 Vleeming 1991, pp. 46-59
pLoeb 46 Year 35, 4 th month of <i>pr.t</i> of the reign of Darius I	Fragmentary papyrus recording the payment of x-geese, by <i>Ḥnsw-i(.ir-di.t)-s</i> , son of <i>Tr.t-Ḥr-r=w</i> , to PN, son of <i>P3-di-Imn-ny-sw.t-t3.wy</i> , working for the office of the God's Offering of Amun. This payment in kind may have been what was due on a yearly basis to the domain of Amun for leasing a flock of ten geese.	Spiegelberg 1931, col. 78-79, pl. 26 Malinine 1968b Vleeming 1991, pp. 31-41

Table 39, continued.

Text ID and date	Protagonists and description of transaction	Select references
<p>pStrassburg 2 Year 2, 1st month of <i>pr.t</i> of the reign of Psammetichus IV</p>	<p>This document records the delivery by <i>P3-di-Imn-ny-sw.t-t3.wy</i>, son of <i>P3-whr</i>, of a flock of 21 geese (20 geese and one additional bird to cover transport expenses) to the office of the God's Offering of Amun. The birds are specifically entrusted to three <i>nni 3pd</i> of the Domain of Amun, namely: <i>Wsir-i(.ir-di.t)-s</i>, son of <i>P3-di-Imn</i>; <i>P3-di-3s.t</i>, son of <i>Wd3-Hr</i>; and <i>P3-di-Sm-rs (?)</i>, son of <i>Dd-Hr</i>.</p> <p>According to both M. Malinine and S. Vleeming, this transaction does not record the payment of a tax to the office of the God's Offering of Amun. M. Malinine proposed that this delivery may represent remuneration in kind for services previously rendered by these three men, whereas S. Vleeming interprets the transaction as being a transfer of a flock of bird to a team of three guardians, who will be charged to look after the birds.</p>	<p>Spiegelberg 1902, pl. 1 Revillout 1907, p. 73 Malinine 1968a, pp. 188-192 Vleeming 1991, pp. 60-69</p>

APPENDIX 7: BIRDS IN TRANSACTIONS AT DEIR EL-MEDINA TEXTUAL EVIDENCE

In this table are gathered the texts I have consulted in the course of this dissertation to assess the presence of birds and their use inside the community of workmen at Deir el-Medina on the West Bank of Thebes.

Table 40. Texts from the Deir el-Medina community reflecting their use of birds in their daily life.

<i>Text ID and date</i>	<i>Relevant information</i>	<i>Select references</i>
O. UC39631 Ramesside period	Commodities purchased by a woman from a certain <i>P3-ʿ3</i> : beans, bread, pigeons (<i>gr-m-p.t</i>), cakes, incense, wine.	Černý and Gardiner 1957, p. 9, pls. 29 and 29A (Description and transcription) Allam 1973, pp. 238-239 (Translation) http://petriecat.museums.ucl.ac.uk/ (Last accessed November 9, 2015)
O. Michaelides 048 rt. Ramesside period	List of foodstuff and objects delivered at the occasion of various festivals. Included in these goods are five birds (<i>ʒpd.w</i>).	Goedicke and Wente 1962, pl. 71 (Transcription) KRI III, 557:2 (Transcription)
O. Louvre E 3262e Ramesside period	Fragmentary receipt (?): a <i>wḥꜥ</i> (fisherman or fowler) is said to receive some items, possibly including birds (<i>ʒpd.w</i>).	Koenig 1991, pp. 106-107 (Transcription)
O. DeM 559 Ramesside period	Fragment of a letter mentioning fowl (<i>ʒpd.w</i>) with a request to have something brought within 5 days.	Sauneron 1959, pl. 6 and 6A, line 3 (Transcription)
O. IFAO 00301 Ramesside period	Account listing several items with amounts: birds, bread, papyrus.	Unpublished Černý Notebook 103.126 (Transcription)
O. UC 32245 Early 19 th Dynasty	Letter from the draughtsman <i>B3ki</i> asking his brother <i>Mḥi</i> to bring him a bird at once.	Černý and Gardiner 1957, p. 10, pls. 34 and 34A (Description and transcription) Wente 1990, p. 158, # 237 (Translation) http://petriecat.museums.ucl.ac.uk/ (Last accessed November 9, 2015)
O. DeM 118 rt. 19 th Dynasty, reign of Ramesses II	Request by <i>Dḥwtꜣ-ms</i> to <i>P3-Rꜥ-ḥtp</i> for a delivery of 25 pigeons (<i>gr-p.t</i>) possibly in exchange for a goat.	Černý 1937, pl. 4 and 4A (Transcription) Wente 1990, p. 158, # 236 (Translation)
O. DeM 676 19 th Dynasty, reign of Ramesses II	Fragment of a letter from <i>B3k.t Dw3</i> to <i>T3ḥ3ynw</i> asking her to send her a small bird (<i>t3i</i>)	Černý 1970, pl. 21 (Transcription) KRI III, 545 (Transcription)
pGrdseloff 1 19 th Dynasty, reign of Ramesses II	Letter from the draughtsman <i>Hꜥy3</i> to his colleague <i>P3-Rꜥ-m-ḥb</i> : request for a young bird (<i>twi3</i>) and a few sycamore figs.	Grdseloff 1940-41 (Transcription) Wente 1990, p. 157, #234 (Translation)
O. Michaelides 060 19 th Dynasty	Letter from the scribe <i>Hwꜣy</i> to his father, the scribe <i>B3ki</i> : "Send me a goat and a bird (<i>ʒpd</i>) as well."	Goedicke and Wente 1962, pl. 44 (Transcription) Wente 1990, p. 161, #248 (Translation)
O. Ashmolean Museum 151 Mid. 20 th Dynasty	Account for payment of paintwork, i.e. a coffin: basketry, birds (<i>ʒpd.w</i>), goat, vegetables.	KRI VII, 346:8 (Transcription) Janssen 1975, p. 178

Table 40, continued.

Text ID and date	Relevant information	Select references
O. Brooklyn 37.1880E 20 th Dynasty, reign of Ramesses III	Workman <i>Imn-m-Ipt</i> bought a statue of Seth and paid the carpenter <i>Mry-R^c</i> the following items: 1 ½ sacks of grain, 3 bundles of vegetables, 1 basket with lid, 1 pair of fowl (ⲉⲛ ⲓⲡⲃ.ⲱ).	KRI VII, 311:5 (Transcription) McDowell 1999, pp. 84-85
O. DeM 556 20 th Dynasty, reign of Ramesses III	List of items paid by the workman <i>P3-R^c-Itp</i> to the carpenter <i>Ity</i> for preparing a piece of funerary equipment, among which figure two birds (ⲓⲡⲃ.ⲱ).	Sauneron 1959, pl. 4 and 4A (Transcription) KRI V, 592:14 (Transcription) Allam 1973, p. 130 (Translation) Janssen 1975, p. 178
O. BM EA5636 Mid. 20 th Dynasty, reign of Ramesses VI	List of priced items given (?) by workman <i>Imn-w^c</i> : a pair of birds (ⲓⲡⲃ.ⲱ), goat, metalwork, woodwork.	Černý and Gardiner 1957, p. 23, pls. 86 and 86A (Description and transcription) KRI VI, 374:9-12 (Transcription) Janssen 1975, p. 178
pTurin 1881 + pTurin2080 + pTurin 2092 vs. IIa and IIIa 20 th Dynasty, reign of Ramesses IX	Deliveries of fowl and wood to the community.	KRI VI, 609-619 (Transcription)
pTurin fragment beta End of 20 th Dynasty	Account of a transaction between a priest and a chantress (?). Among the items exchanged are sandals, emmer, wheat, plaster, loaves, fowl, and honey.	Unpublished Černý Notebook 152.2 (Transcription)

APPENDIX 8: MENTIONS OF PIGEONS AND DOVECOTES GEESE, CHICKENS, AND EGGS IN TEXTS FROM THE GRECO-ROMAN PERIOD

The following two tables gather the textual references concerned with the use of birds, poultry, and the exploitation of dovecotes, which I have consulted for Part 3 of this dissertation. These texts are tentatively organized chronologically. In addition to making references to published texts, I have also made use of online papyrological databases, namely:

- www.trismegistos.com.¹ References to texts on Trismegistos will be introduced by TM, followed by the text number in this database.
- Papyrus.info, produced by the Duke Collaboratory for Classics Computing and The Institute for the Study of the Ancient World. Texts gathered from this source will be identified by their URLs.

Table 41. Texts from the Ptolemaic Period consulted

<i>Text ID and date</i>	<i>Language^a</i>	<i>Relevant information</i>	<i>Select references</i>
pBerlin 23651 ca. 332-30 BC	D	Account from Elephantine (Geziret Assuan). Offering of doves, geese and meat.	TM 45728
pCairo Zen.3.59375, JE 48902 ca. 258-256 BC	G	Letter from Addaios, agent of Apollonios to Memphis, to Zenon. Reference to fatted fowl Zenon had asked for.	Clarysse and Vandorpe 1995, pp. 90-91 TM 730
pCairo Zen.2.59186, JE 48632 Oct. 17, 255 BC	G	Letter from Onnophris to Zenon. Onnophris went fowling with Eutychides but has not been able to send him more than 30 <i>kerkereis</i> (?) and 20 larger birds.	TM 832
pCairo Zen.2.59251, JE 48699 April 13, 252 BC	G	Letter from Artemidoros to Zenon. Artemidoros asks Zenon to keep an eye on farm animal, including geese.	TM 896 Hunt and Edgar 1959 part I, pp. 276-277, text #93
pMich. Inv. 3101 – pMich. I.48 Sept. 19/20, 251 BC	G	Letter from Apollonios instructing Zenon to buy him a large supply of fowl to be fattened for the table (or for festival?). Need for 400 fowl (ὄρνιθες) for fattening and 100 hens (τοκάδες).	TM 1948
pCairo Zen. 4.59710 ca. 250 BC	G	Account of barley to feed pigeons, among other animals.	TM 1337

¹ Depauw and Gheldolf 2014; Clarysse and Verreth 2000; Vandorpe *et al.* 2015

Table 41, continued.

<i>Text ID and date</i>	<i>Language^a</i>	<i>Relevant information</i>	<i>Select references</i>
pCairo Zen. 5.59306 250 BC	G	Mention of 10 artabas of lentils used to feed pigeons.	TM 1172
pCairo Zen. 3.59498 ca. 250 BC	G	Letter from Petobastis, pigeon keeper, to Zenon. Complaint for no receipt of wages for four months.	TM 1136
pCairo Zen.2.59266 ca. 251 BC	G	Receipt of two fowl and 25 eggs by Krotos.	TM 910
pCol. IV.70; pCol. Zen. II.70 Ca. 256-246 BC	G	Letter of Sossos, commercial agent, to Zenon. Mention of fowl (ὄρνιθες) for the king's celebration.	TM 1785
pTebt. UC 2361 Verso ca. 225-200 BC	D with heading in G	Dovecote account. The Greek heading refers to a dovecote. Remainder in demotic is a list with numbers, possibly mentioning sesame.	http://papyri.info/apis/berkeley.apis.1717
pGrenf.ii.14(b) ca. 224 BC (?)	G	Goods that needed to be ready for the visit of Chrysippus, chief of the bodyguards and <i>dioiketes</i> : <ul style="list-style-type: none"> • 10 "white heads" (λευκομετώπους) • 5 domestic geese (χῆνας ἡμέρους) • 50 fowl (ὄρνιθας) Also wild animals (ἄγρια): <ul style="list-style-type: none"> • 50 wild geese (χῆνες) • 200 fowl (ὄρνιθες) • 100 pigeons (περιστριδῆις). 	Hunt and Edgar 1959 part II, pp. 562-563, text #414
pTebt.1081 early 2 nd cent. BC	G	Food costs. Account concerning poultry, pigeons, eggs and other comestibles. From a mummy cartonnage recovered in Kerkesucha.	http://papyri.info/ddbdp/p.tebt;3.2;1081 TM 8049
pTebt. 3.2.839 162 BC: 11 th year of Ptolemy IX Soter II	G	Receipt from Krokodilopolis for tax on pigeon houses written by the banker Ptolemaios.	http://papyri.info/ddbdp/p.tebt;3.2;839 TM 5410
pDuk.inv. 607v 26 th Aug. 133 BC	G	Official business related to poultry and pigs, in the Heracleopolite nome.	http://papyri.info/apis/duke.apis.31194735
pGrenfell I.21 126 BC	G	Will of Dryton. Originally from Crete, Dryton married, as a 2 nd wife, Apollonia. He gives the dovecotes, which he owned, to his daughters. They are also asked to build another.	Hunt and Edgar 1959 part I, pp. 239-243, text #83 Pomeroy 1990, pp. 105-117
oLouvre p.158 no. 99 Oct. 13, 121 BC	D	Receipt from Thebes East (Dios Polis): value of cattle, geese, etc. possibly for temple festivals.	TM 43369
pTebt. 1.84,9 118 BC		Reference to a dovecote from Kerkeosiris filled with 1000 nest pots.	Cobianchi 1936, p. 108 n. 1
pTebt.2.571 ca. 107/106 BC	G	Receipt from Tebtynis for the tax on pigeon houses.	http://papyri.info/ddbdp/p.tebt;2;571v TM 78782
pTebt.3.2.1083 2 nd cent. BC	G	Account of pigeons from Tebtynis.	http://papyri.info/ddbdp/p.tebt;3.2;1083 TM 8051
pMon.inv. 343.xiii.44.53 2 nd cent. BC	G	Reference to two goosegirls, Teteesis and Senyris, daughters of Sokeus, among a list of 14 gooseherds.	Clarysse and Thompson 2006 part II, p. 202 n. 437

Table 41, continued

Writing tablet 1 st half of Ptolemaic period	D	Reference to places where birds are kept: <i>šš3; mḥwr; st mnt.</i>	Spiegelberg 1912b, pp. 32-34 Meeks 1991, p. 238 n. 36
pPetrie III 109a.ii.5	G	Mention of the guard tax needed to be paid by gooseherds for the protection of their flock (φυλακίτικον χηνῶν).	Clarysse and Thompson 2006 part II, p. 72 n. 200
pLoeb 87+63 19 th Nov. 74 BC	D	Sale of a poultry yard (<i>šys.</i>), which includes building and pond. It involves a gooseherd (<i>mni ipt</i>) and possibly a fowler (<i>šḥt (?)</i>).	Thissen 2009
UPZ 84-5; 89; 96; 104	G	Mention of food purchased at the Serapeum by twin girls Taous and Thaues, who played the role of Isis and Nephthys at the funeral of Osiris-Apis. Among other things, they bought goose meat.	Crawford 1979, p. 144

^a Abbreviations for the languages used to write these texts: D: Demotic; G: Greek; L: Latin

Table 42. Texts from the Roman period consulted

Text ID and date	Language^a	Relevant information	Select references
pOxy.736 ca. AD 1	G	Private account: mention of a pigeon, said to be for the children, being worth 1 obol. Also worth 1 obol: salt, wax and stylus for children, leeks, and pomegranate.	Hunt and Edgar 1959 part I, pp. 420-425, text #186
oMed. Habu 110 Reign of Augustus, year 38: AD 8	D	Tax for pigeon house in Jeme. For year 36: 1 ½ kite and 1 obol. Same for year 37. Plenios, son of Psamonthes, is to pay it to the bank of the northern district.	Lichtheim 1957, pp. 49-50, pl. 20
pMich.9.539 June 23, AD 53	G	Document from Karanis. Declaration of property by Petheus, son of Dionysios. Specific mention of a dovecote.	http://papyri.info/ddbdp/p.mich;9;539 TM 12033
pMich.9.541 AD 69-79	G	Document from Karanis. Declaration of property by Ptolemaios, son of Apion. Mention of a district known as "The Goosepens."	http://papyri.info/ddbdp/p.mich;9;541 TM 12035
pMich.9.554 AD 81-94	G	Document from Ptolemais Euergetis. Division of inherited property between Gaius Minucius Aquila and his two sisters. Mention of a dovecote in the contract.	http://papyri.info/ddbdp/p.mich;9;554 TM 12047
pCtYBR inv.694 1 st cent. AD	G	Perhaps draft of a letter concerning a goose given to Germanios, son of Tiberius, which needed to be fed.	http://papyri.info/apis/yale.apis.0006940000
SB.12.11128 Early 2 nd cent. AD	G	Mention of a dovecote in a letter recovered in Karanis.	http://papyri.info/ddbdp/p.mich.mchl;26 TM 26782
pCol.10.259 April 10, AD 146	G	Loan document from Ptolemais Euergetis. Mention of a district known as "The Goosepens."	http://papyri.info/ddbdp/p.col;10;259 TM 10559
pTebt.3.2.875 AD 150	G	Official account from Kerkesucha dealing with geese and birds owned both by the state and private individuals.	http://papyri.info/ddbdp/p.tebt;3.2;875 TM 7957
SB.18.13911 July 19, AD 162	G	Receipt from Ptolemais Euergetis with mention of a goose farm.	http://papyri.info/ddbdp/sb;18;13911 TM 14779
pOxy.9.1207 (JE 47438) ca. AD 175-6	G	Lease for 5 years for premises, which had been used to keep camels and which were about to be turned into a fowl house. Rent: 300 drachmas per annum. In addition, yearly gift of four roosters, eight hens and 100 eggs.	http://papyri.info/ddbdp/p.oxy;9;1207 TM 21593
P.S.I. 961.II.1-39 AD 176, 17 th year of the reign of Marcus Aurelius	G	Lease to three men of 23 geese for breeding.	Hunt and Edgar 1959 part I, pp. 134-139, text #45
pOxy.8.1127 AD 183	G	Lease of an upper room with a pigeon cote for four years at an annual rate of 60 drachmas.	http://papyri.info/ddbdp/p.oxy;8;1127 TM 21745
pMich. 8 468 early 2 nd cent. AD	L	Document from Alexandria. Mention of a chicken coop (<i>caveam gallinaria</i>) in a letter Claudius Terentianus wrote to his father (?) Claudius Tiberianus.	http://papyri.info/ddbdp/c.ep.lat;142 TM 27081
pMich.18.786 2 nd cent. AD (after AD 182)	G	Document from Oxyrhynchos. Household account with mention of eggs.	http://papyri.info/ddbdp/p.mich;18;786 TM 22914

Table 42, continued.

<i>Text ID and date</i>	<i>Language^a</i>	<i>Relevant information</i>	<i>Select references</i>
pGiess.80 2 nd cent. AD	G	Reference to pigeons and small fowl as gift to teacher (?).	Hunt and Edgar 1959 part I, pp. 310-311, text #116
pCtYBR inv.615 2 nd cent. AD	G	Account of birds and chicken.	http://papyri.info/apis/yale.apis.0006150000
pMich.6.428 AD 154	G	Document from Karanis. Mention of a dovecote in an agreement dealing with the sale of a house.	http://papyri.info/ddbdp/p.mich;6;428 TM 12266
pRyl.98(a) AD 154-5	G	Request to hunt in the marshlands in the village of Theadelphia for hunting and catching for a year. Such a permit was said to cost 40 silver drachmas.	Hunt and Edgar 1959 part II, pp. 418-419
pMich. 4 224 AD 172-173	G	Tax register from Karanis listing a dovecote tax.	http://papyri.info/ddbdp/p.mich;4.1;224
pMich.inv.4172 AD 173-174	G	Tax register from Karanis listing a dovecote tax.	http://papyri.info/apis/michigan.apis.3338
SB 5 7814 AD 256	G	Document from Oxyrhynchos. Lease of pigeon house together with its brood of young pigeon for a period of 5 years. The rent was to be paid in part as dung and also young pigeons.	http://papyri.info/ddbdp/sb;5;7814 TM 18003 Gapp 1933
pTebt.0469 2 nd or early 3 rd cent. AD	G	Letter of Achilles to Kronion, recovered in Tebtynis. Business document, regarding two geese, which Achilles wants Kronion to obtain for him.	http://papyri.info/ddbdp/p.tebt;2;469 TM 28444
SB.6.9245 2 nd -3 rd cent. BC	G	Text from Karanis. Account of expenses, including 50 hens, made for the Semasia festival.	http://papyri.info/ddbdp/sb;6;9245 TM 27291
pFlor.10 ca. mid 3 rd cent. AD	G	Documents from Ptolemais Euergetis. Reference to two pigeon houses and <i>kella</i> let for 400 drachmas.	http://papyri.info/ddbdp/p.flor;1;10 TM 10942
pCol.inv.468b 4 th cent. AD	G	Reference to a bird keeper and breeder.	http://papyri.info/apis/columbia.apis.p1662

APPENDIX 9: LIST OF PRIVATE INDIVIDUALS MENTIONED IN THE DISSERTATION

Table 43. Names and references of private individuals cited in the dissertation

<i>Personal Names</i>	<i>PM reference, when available</i>	<i>Additional relevant information (publication, location of tomb, etc.)</i>
<i>3h.t-htp</i>	III ² pp. 599-604	Davies 1901
<i>3h.t-htp</i>	III ² pp. 633-634	Petrie and Murray 1952
<i>3h.t-htp</i>	III ² pp. 634-637	Louvre E 10958
<i>Ty-mi-sb3</i>	****	Tomb in Naga el-Mashayikh
<i>Ty-mry</i>	III ¹ pp. 170-174	
<i>T^ch-ms</i>	IV p. 214	Amarna
<i>Tbi</i>	IV pp. 243-244	Deir el-Gebrawi, tomb 8
<i>Tpwy</i>	I ¹ pp. 315-317	TT 217
<i>Tm3-Ppy</i>	****	Tomb in Balat
<i>Tmn-m-h3.t</i>	IV pp. 141-144	Beni Hassan, BH 2
<i>Tmn-m-h3.t</i>	IV p. 184	Dayr al-Barshā, tomb 21
<i>Ti(=i)-ib(=i)-iḳr</i>	****	Asyut
<i>Tt3i</i>	****	Dara, near Dakhla Oasis; Weill 1958
<i>ᶜnh-m-ᶜhr:Zzi</i>	III ² pp. 512-515	
<i>ᶜh3-nht</i>	IV pp. 181-182	Dayr al-Barshā, tomb 8
<i>W3h-k3 [III]</i>	V pp. 11-13	
<i>Wnsw</i>	I ¹ pp. 447-448	TT A4
<i>Wsr</i>	I ¹ pp. 35-37	TT 21
<i>Wsr-h3.t:Nfr-hb=f</i>	I ¹ pp. 97-99	TT 51
<i>B3kt [III]</i>	IV pp. 151-155	Beni Hassan, BH 15
<i>B3kt [II]</i>	IV pp. 160-161	Beni Hassan, BH 33
<i>P3-hm-ntr</i>	I ¹ pp. 366-367	TT 284
<i>P3-hri</i>	V pp. 177-181	El Kab, tomb 3
<i>P3-di-Wsir</i>	****	Heliopolis (?); Montagno Leahy 1988, p. 706
<i>P3-di-Wsir</i>	IV pp. 169-174	Tuna el-Gebel
<i>Pwy-m-R^c</i>	I ¹ pp. 71-75	TT 39
<i>Ppy-ᶜnh:Hny-Km</i>	IV pp. 247-249	Meir, tomb A2
<i>Pr-sn</i>	III ² pp. 577-578	
<i>Pth-ms</i>	III ² pp. 713-715	
<i>Pth-htp[I]</i>	III ² pp. 596-598	
<i>Pth-htp[II]</i>	III ² pp. 600-605	
<i>Pth-špss</i>	III ¹ pp. 340-342	Abusir
<i>M^chw</i>	IV, pp. 222-223	Amarna
<i>Mnn3</i>	I ¹ pp. 134-139	TT 69
<i>Mn-hpr-snb</i>	I ¹ pp. 156-157	TT 79
<i>Mry</i>	I ¹ pp. 195-197	TT 95
<i>Mrw</i>	IV p. 89	Sheikh Said
<i>Mry-R^c[III]</i>	IV pp. 212-214	Amarna
<i>Mry-R^c[I]</i>	IV pp. 214-217	Amarna

Table 43, continued.

<i>Personal Names</i>	<i>PM reference, when available</i>	<i>Additional relevant information (publication, location of tomb, etc.)</i>
<i>Mry-Tti:Mri</i>	III ² pp. 536-537	
<i>Mrrī</i>	III ² pp. 518-521	
<i>Mrrw-k3.i:Mri</i>	III ² pp. 525-534	
<i>Mrs-ḥnh[III]</i>	III ¹ pp. 197-199	
<i>Mkt-R^c</i>	I ¹ pp. 359-364	TT 280
<i>Mtti</i>	III ² pp. 646-648	
<i>Ny-ḥnh-Ppy:Km</i>	IV p. 247	Meir, tomb A1
<i>Ny-ḥnh-Nfrtm</i>	****	Saqqara; Myśliwiec <i>et al.</i> 2010
<i>Ny-ḥnh-Ḥnm and Ḥnm-ḥtp</i>	III ² pp. 641-644	
<i>Ny-k3.w-Ḥzzi</i>	****	Saqqara; Kanawati and Abder-Raziq 2000
<i>Nb-Imn</i>	I ¹ pp. 286-289	TT 181
<i>Nb-Imn</i>	I ² pp. 817-818	Fragments in the British Museum
<i>Nb-m-3ḥ.t</i>	III ¹ pp. 230-231	
<i>Nfr</i>	III ¹ p. 138	
<i>Nfr.t-i3b.t</i>	III ¹ pp. 59-60	Niche stela Louvre E 15591
<i>Nfr-m3^c.t and Itt</i>	IV pp. 92-94	Meidum
<i>Nfr-mry-R^c:K3r</i>	III ¹ pp. 184-185	
<i>Nfr-ḥr-n-Pth</i>	III ² pp. 637-638	
<i>Nfr-ḥtp</i>	I ¹ pp. 448-449	TT A5
<i>Nfr-sšm-Pth</i>	III ² p. 616	
<i>Nḥt</i>	I ¹ pp. 99-102	TT 52
<i>Nḥt</i>	I ¹ pp. 459-460	TT C8
<i>R^c-m-k3.i</i>	III ² pp. 487-488	MMA 08.201.1
<i>R^c-špss</i>	III ² pp. 494-496	
<i>Rmni</i>	****	Kanawati 2009: tomb in Saqqara
<i>Rḥ-mi-R^c</i>	I ¹ pp. 206-214	TT 100
<i>Ḥn3t</i>	III ² p. 719	Saqqara (?); Montagno-Leahy 1988, p. 619
<i>Ḥnḳw</i>	IV p. 242	Deir el-Gebrawi, tomb 67
<i>Ḥwy3</i>	IV pp. 211-212	Amarna
<i>Ḥp-iy-w</i>	III p. 224	Probably Heliopolis; Montagno-Leahy 1988, p. 698
<i>Ḥm-R^c:Isi</i>	IV p. 46	Deir el-Gebrawi, tomb 46
<i>Ḥm.t-R^c, Ty</i>	III ² pp. 450	
<i>Ḥm3-k3</i>	III ² pp. 440-442	
<i>Ḥr-m-ḥb</i>	I ¹ pp. 152-156	TT 78
<i>Ḥzi</i>	****	Saqqara; Kanawati and Abder-Raziq 1999
<i>Ḥtp-k3</i>	III ² p. 447	
<i>Ḥ^c</i>	I ¹ pp. 16-18	TT 8
<i>Ḥ^c-m-ḥ3.t:M^cḥw</i>	I ¹ pp. 113-119	TT 57
<i>Ḥnw</i>	III ² pp. 625-626	
<i>Ḥnsw</i>	I ¹ pp. 47-49	TT 31
<i>Ḥnty-k3</i>	****	Balat
<i>Ḥrw=f</i>	I ¹ pp. 298-300	TT 192

Table 43, continued.

<i>Personal Names</i>	<i>PM reference, when available</i>	<i>Additional relevant information (publication, location of tomb, etc.)</i>
<i>Hnm-htp</i> [II]	IV pp. 144-149	Beni Hassan, BH 3
<i>Hty</i>	IV pp. 154-159	Beni Hassan, BH 17
<i>Z3-Wsr</i>	I ¹ pp. 447-448	
<i>S3bw</i>	III ² p. 461	
<i>S3bni</i>	V p. 232	Aswan
<i>Spd-htp</i>	III ² pp. 481-482	
<i>Sn-n-mw.t</i>	I ¹ pp. 417-418	TT 353
<i>Sn-ndm</i>	I ¹ pp. 1-6	TT 1
<i>Sndm-ib:Mhi</i>	III ¹ pp. 87-89	
<i>Shm-^cnḥ-Pth</i>	III ² pp. 454-455	
<i>Shm-k3.i</i>	III ¹ p. 53	
<i>Shm-k3-R^c</i>	III ¹ pp. 233-234	
<i>Sšm-Nfr</i>	III ¹ pp. 153-154	
<i>Sšm-Nfr:Twfy</i>	III ¹ pp. 224-226	
<i>Ššnk</i>	I ¹ pp. 43-45	TT 27
<i>Kn-Imn</i>	I ¹ p. 316	TT 93
<i>K3-irr</i>	III ² pp. 631-632	
<i>K3-w^cb</i>	III ¹ p. 187	
<i>K3-pw-R^c</i>	III ² p. 455	
<i>K3.i-m-^cnḥ</i>	III ¹ pp. 131-133	
<i>K3-ny-ny-sw.t</i> [I]	III ¹ pp. 78-79	
<i>K3-h3.i</i>	III ² pp. 639-641	
<i>K3-gm-ni</i>	III ² pp. 521-525	
<i>Tp-m-^cnḥ</i>	III ² pp. 343-344	
<i>T3y</i>	I ¹ pp. 415-417	TT 349
<i>T3-Nfr</i>	III ¹ p. 224	Heliopolis; Montagno Leahy 1988, p. 724
<i>Ty</i>	III ² pp. 468-477	
<i>D^cw</i>	IV pp. 244-246	Deir el-Gebrawi, tomb 12
<i>Dḥwty-m-h3b</i>	I ¹ pp. 300-301	TT 194
<i>Dḥwty-nḥt</i>	IV pp. 177-179	Dayr al-Barshā, tomb 10A
<i>Dḥwty-htp</i>	IV pp. 179-181	Dayr al-Barshā, tomb 2

APPENDIX 10: FIGURES

Introduction



Figure 1. Year-label of 1st Dynasty king Den depicting him trapping birds with a net (From Dreyer *et al.* 1998, pl. 12f; line drawing by R. Bailleul-LeSuer)

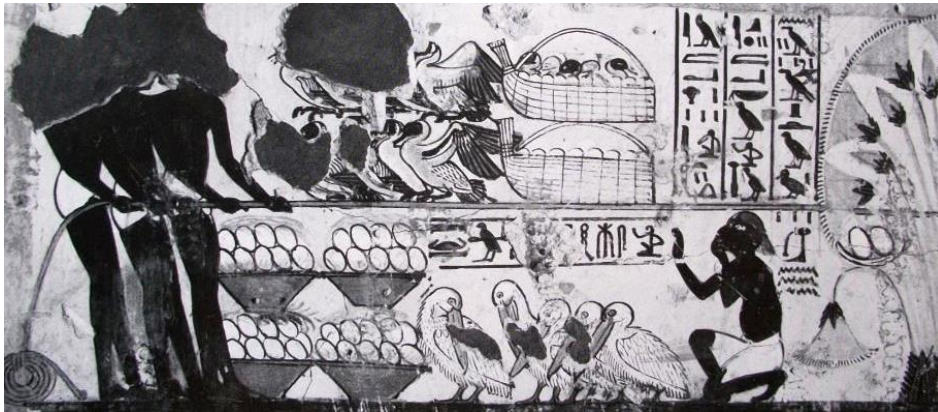


Figure 2. Representations of baskets of eggs and a group of five Dalmatian pelicans (*Pelecanus crispus*) in tomb of *Hr-m-hb* (TT 78) (From Brack and Brack 1980, pl. 73b)

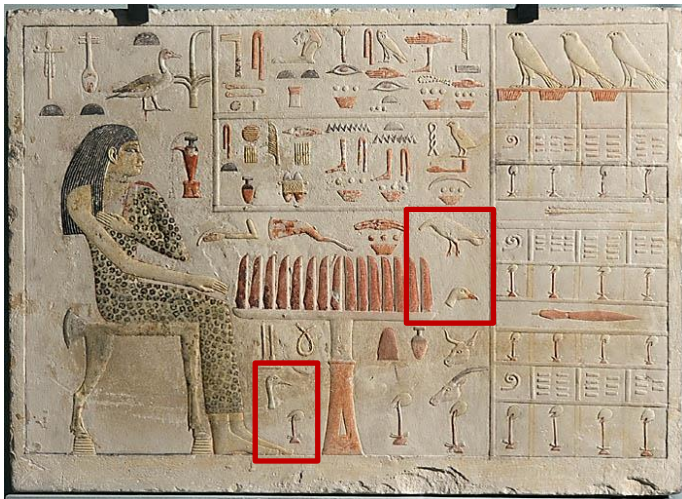


Figure 3. : Slab stela of princess *Nfr.t-ib.t*, Louvre E 15591 (From Arnold and Ziegler 1999, p. 244)



Figure 4. Niche stone from the 2nd Dynasty, Saqqara (From Emery 1962, pl. 3A)

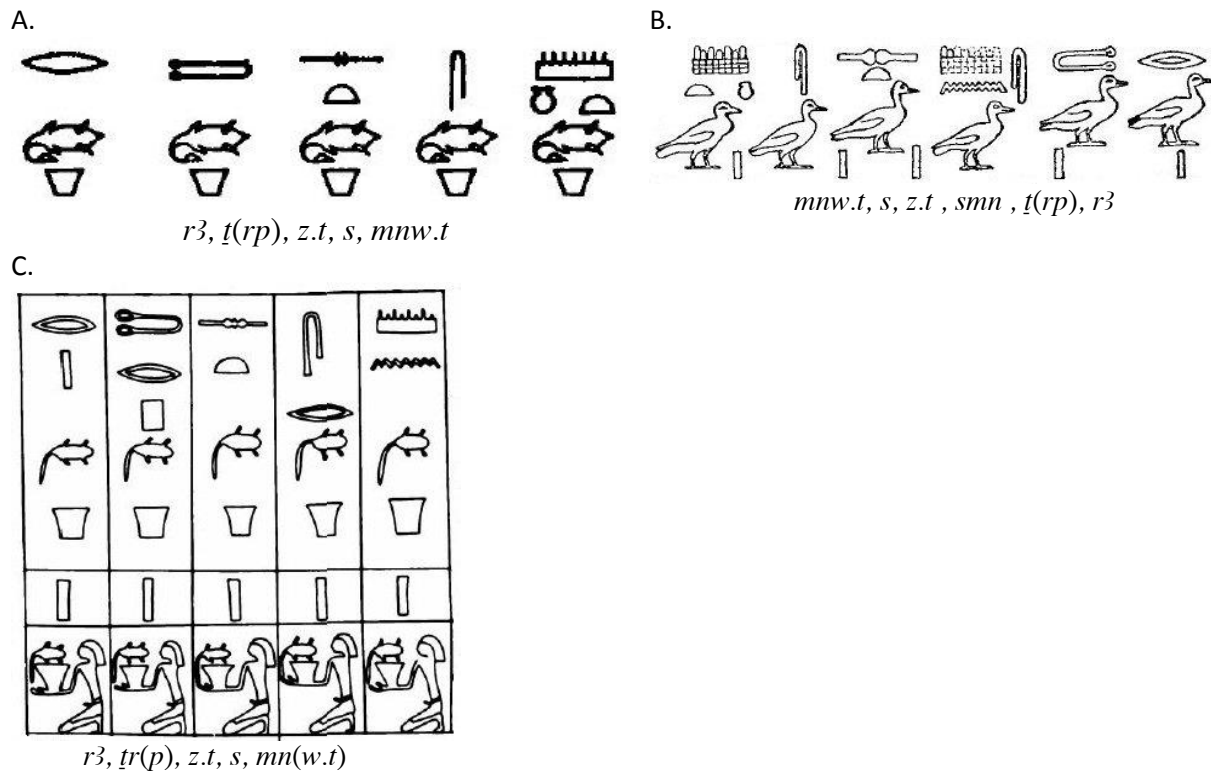
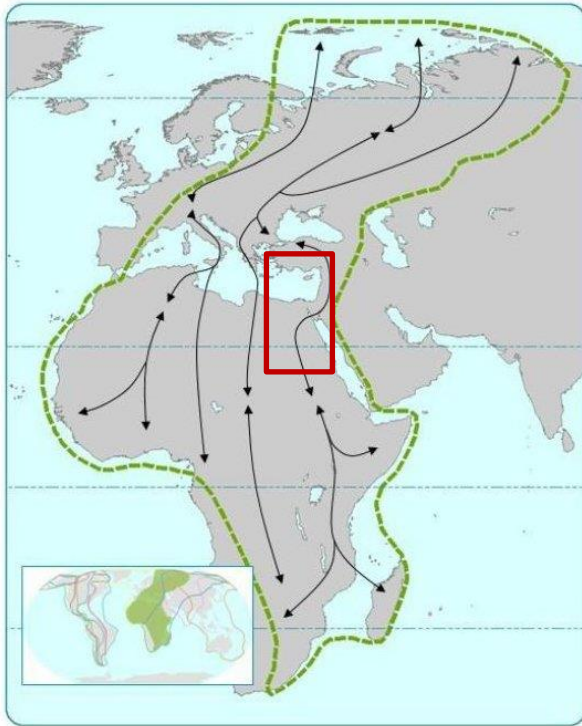


Figure 5. Examples of bird offering lists from the Old Kingdom: (A) From the false door of *Shpt-n-sh*, Saqqara, now in Cairo (CG 1482 ; from Borchardt 1937, p. 171); (B) From the mastaba of *K3-ny-ny-sw.t*, Giza (From Junker 1934, p. 155, fig. 21); (C) From the mastaba of *K3r*, in Giza (G 7101) (From Simpson 1976, fig. 23).

Part 1- Capture of Wild Birds

A.



B.

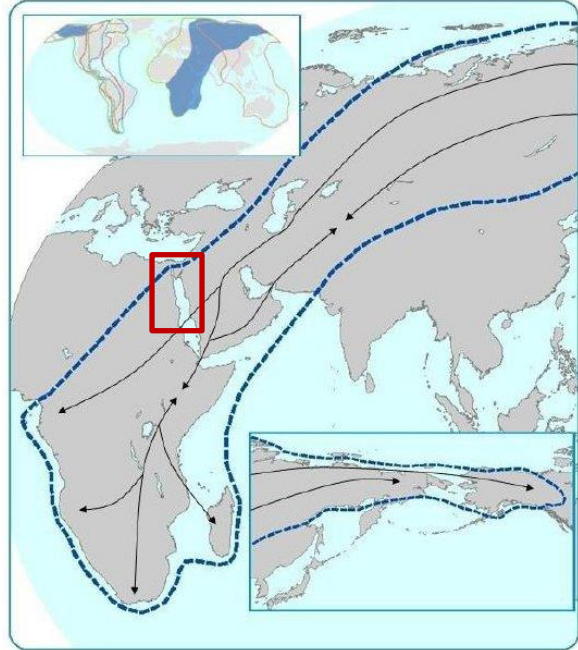


Figure 6. Egypt and Migration Flyways (From <http://www.birdlife.org/datazone/sowb/spotFlyway>. Last accessed February 24th, 2016). (A) Black Sea/Mediterranean Flyway; (B) East Asia/East Africa Flyway

A.



B.



C.



Figure 7. Representation of ostrich hunting in Rock Art: (A) Dog chasing an ostrich. Eastern desert (From Rohl 2000, pp. 105-106); (B) Two dogs attacking an ostrich; (C) Hunter with feather as headdress, holding a throwstick and a club (?) and dog (?) chasing ostrich. Western desert (From Rhotert 1952, pls. 11.4 (left) and 11.6 (right)).

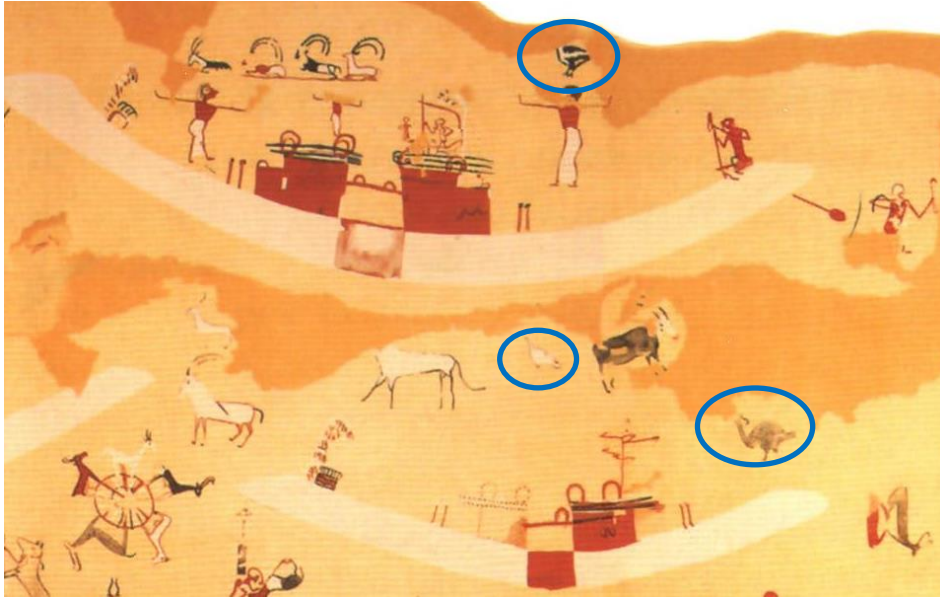


Figure 8. Facsimile of the wall painting in Tomb 100, in Hierakonpolis. The birds incorporated in the scene are marked (From Hendrickx 2011a, pp. 76-77, fig. 8.20)



Figure 9. Clap-netting of large birds depicted on a disk discovered in the tomb of *Hm3-k3* (From Emery and Saad 1938, pl. 12)



Figure 10. Etched scene of the netting of birds near the site of Balat, Dakhla Oasis (From Kuhlmann 2002, p. 132, fig. 1)



Figure 11. Male pintail duck (*Anas acuta*) in breeding plumage (©iStock.com/ShaftInAction)

A.



B.



C.

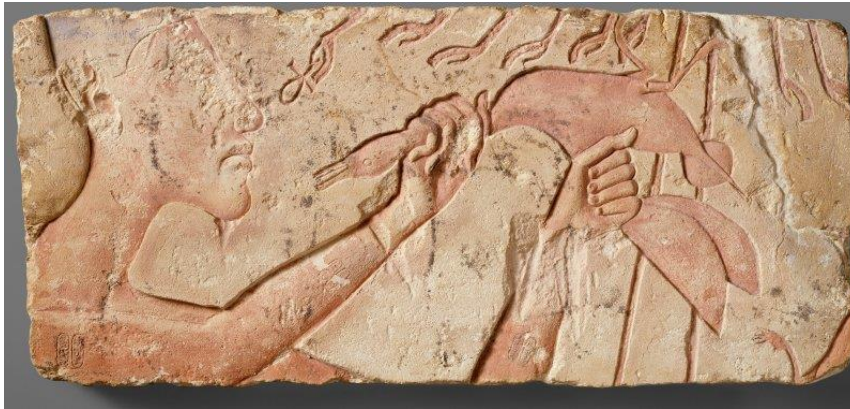


Figure 12. Pintail in ancient Egyptian iconography. (A) Flock of pintail drakes being trapped with a clapnet in the tomb of *Hnm-ḥtp* II in Beni Hassan (From Kanawati and Evans 2014, pl. 53). (B) Two pintail ducks, a male (left) and a female (right), with their neck intertwined as offerings on the coffin of *Dḥwty-Nḥt* from Dayr al-Barshā (From Freed *et al.* 2009, p. 118, fig. 72). (C) King Akhenaten breaking the neck (*wšn*) of a pintail duck. Talatat in New York, MMA 1985.328.2.

A.



B.

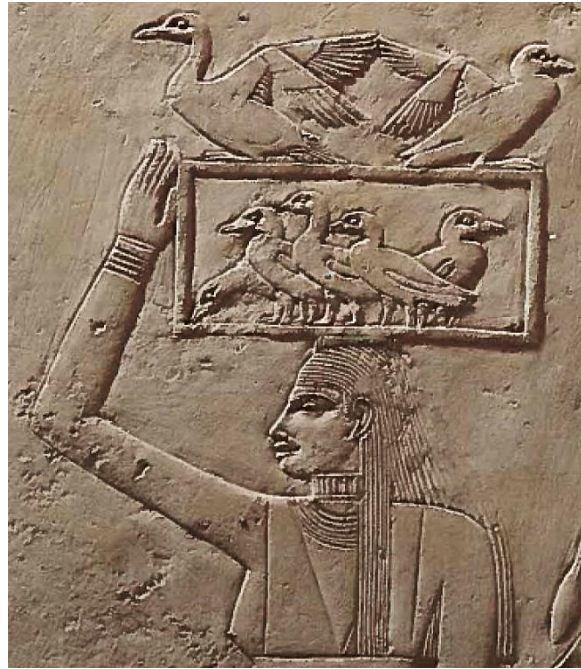


Figure 13. Waterfowl brought forward in the Saqqara tomb of *Pth-htp* [I]: (A) an *Anser* goose (From Mourad 2015, pls. 56a); (B) smaller ducks in a crate (From *Ibid.*, pl. 34a)



Figure 14. Stylized representation of a flock of ducks from the tomb of Ay (KV 23) (©Theban Mapping Project/Francis Dzikowski)

A.



B.

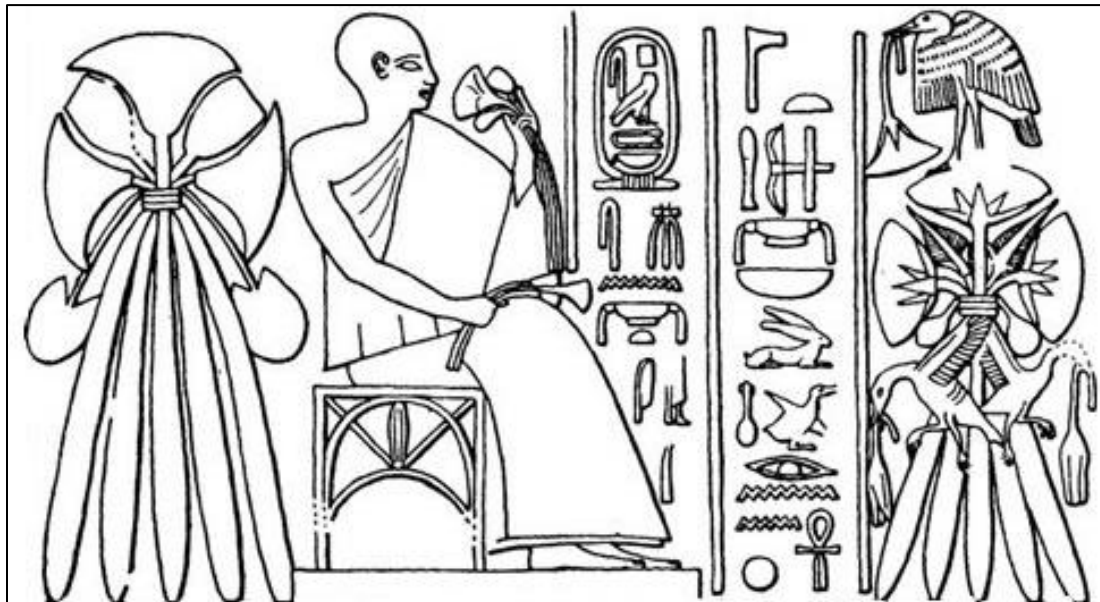


Figure 15. Birds in offering processions during the Late Period: (A) From the Theban tomb of *Šsnk*, TT 27 (From Donadoni 1976, pl. 6); (B) From the tomb of *T3-nfr* (JE 29211; from Williams 1918, pl. 40)

A.



B.



C.



Figure 16. Cranes and their capture: (A) Eurasian crane (*Grus grus*) (©iStock.com/ilyasov); (B) Demoiselle crane (*Anthropoides virgo*) (©iStock.com/eROMAe); (C) Clap-netting of Eurasian and Demoiselle cranes, represented in the mastaba of *Mhwt*, at Saqqara (From Altenmüller 1998, pl. 7)

A.



B.

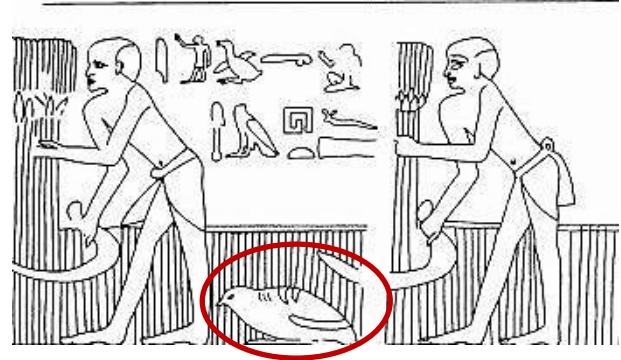


Figure 17. Clap-netting of *ḥ3*-birds and crating of the trapped birds. Representations from the tomb of *Nfr-ḥr-n-Pth*, Saqqara (@osirisnet.net)

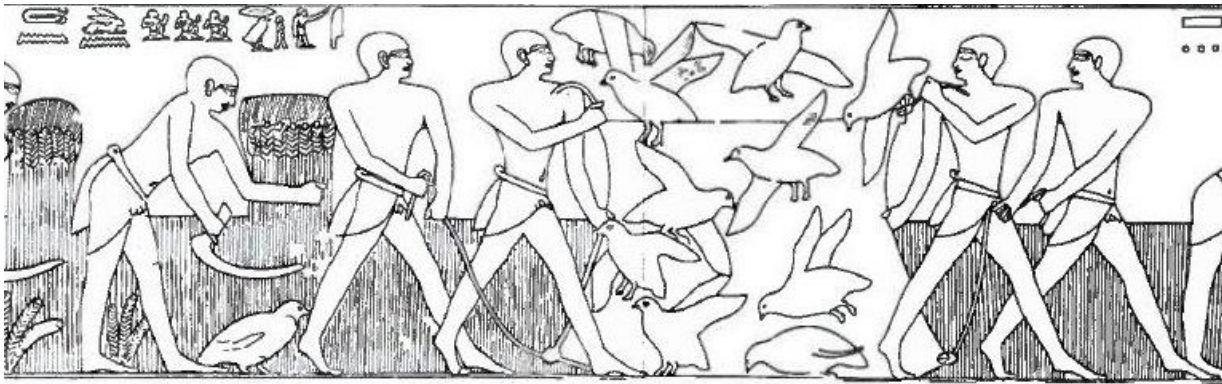
A.



B.



C.



D.



Figure 18. Quails and their capture: (A) Common quail (*coturnix coturnix*) (©iStock.com/chefmd); (B) Quail feeding on grain fallen to the ground. Tomb of *Hzi* (From Kanawati and Abder-Raziq 1999, pl. 52); (C) Quail netting in the tomb of *Mrrw-k3.i* (From Kanawati *et al.* 2011, pl. 82); (D) Quail netting in the Theban tomb of *Nb-Imn* (ÄM 18529; from Parkinson 2008, p. 118, fig. 123)

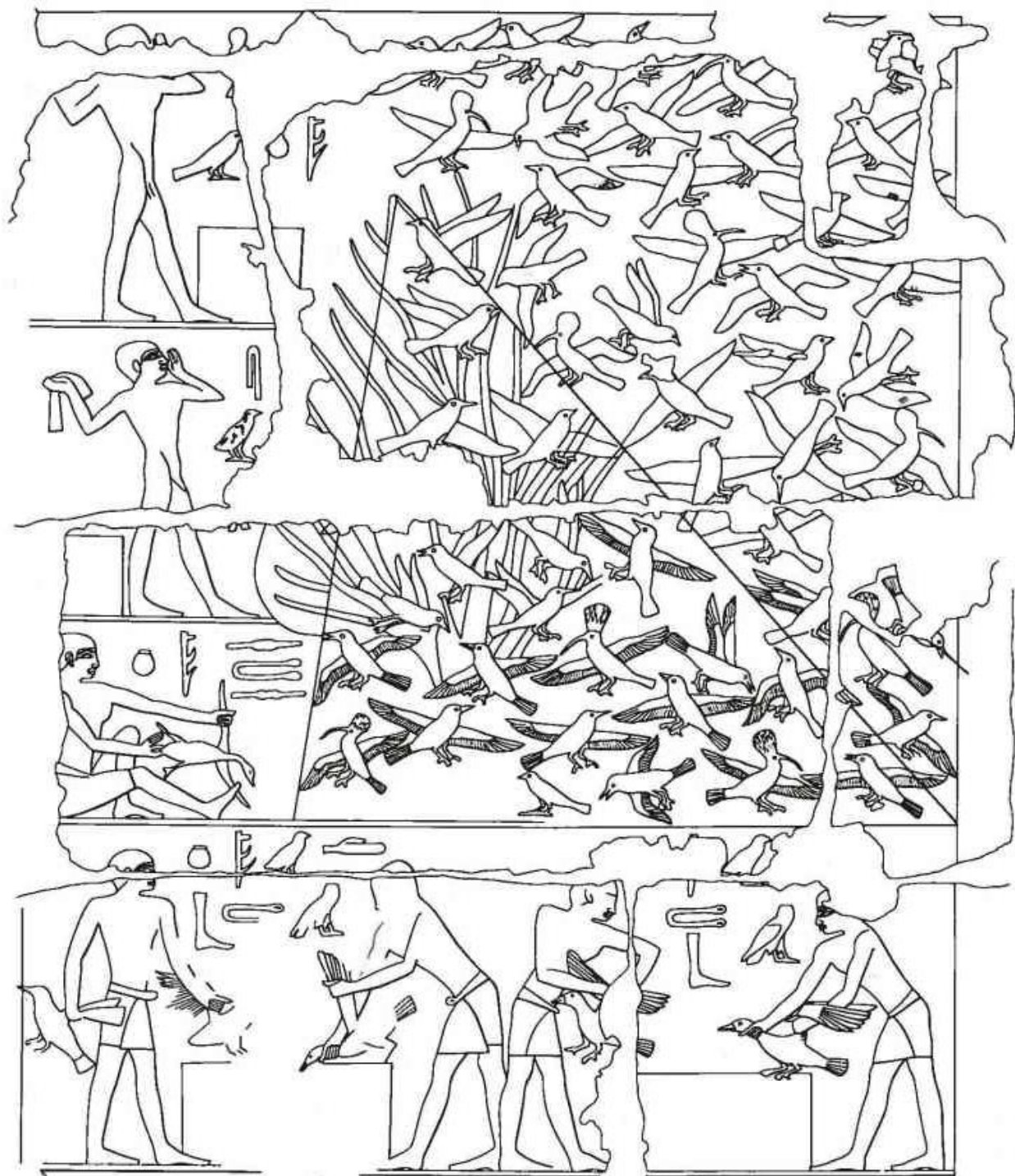
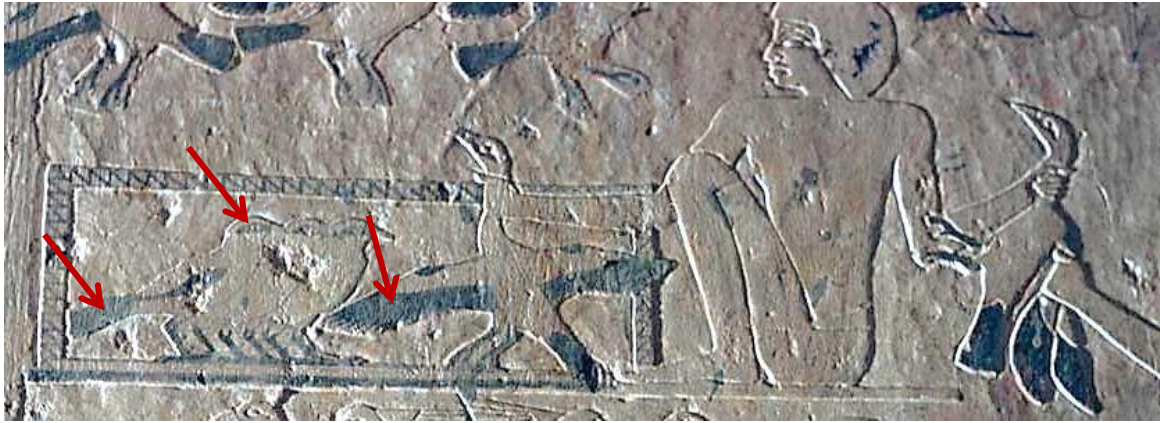


Figure 19. Tree netting of *gnw*-birds, along with a few hoopoes, in the tomb of *Ny-nh-hnm* and *Hnm-htp* in Saqqara (From Moussa and Altenmüller 1977, pl. 9)

A.

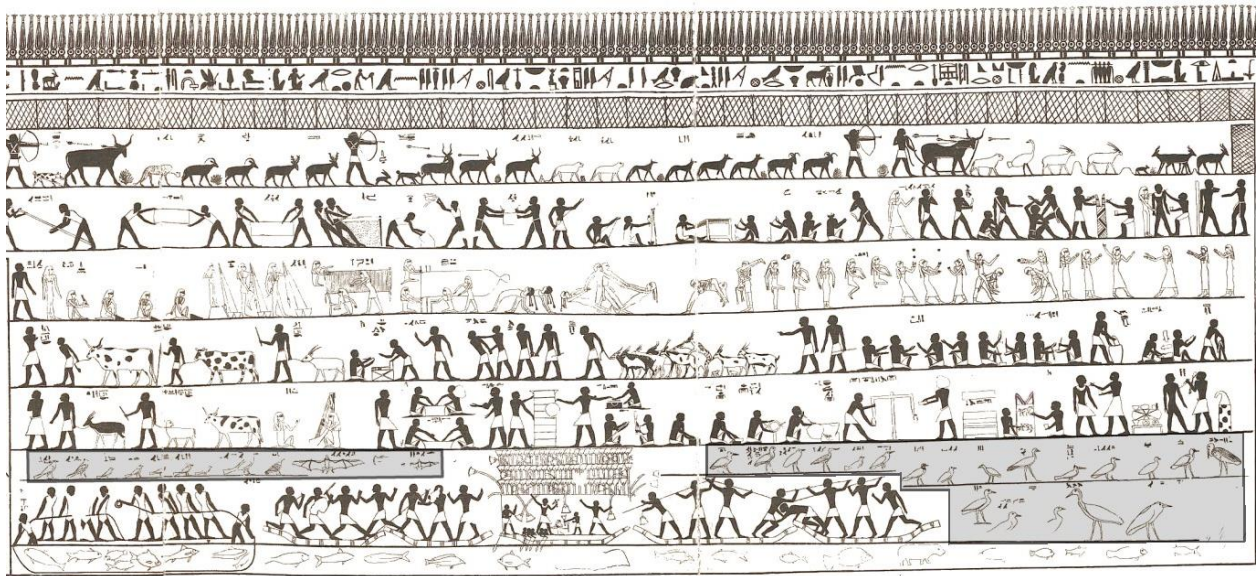


B.



Figure 20. (A) Detail of the tree netting scene in the tomb of *Nfr-hr-n-Pth*, Saqqara. The black markings of the *gnw*-birds, identified as the golden oriole, can still be seen around the eyes, on the wings and tail of the birds being crated (©osirisnet.net); (B) Male Eurasian golden oriole (*Oriolus oriolus*) (©iStock.com/KrankMcC)

A.



B.



Figure 21. Bird vignettes in the Middle Kingdom tomb of *B3kt* III in Beni Hassan: (A) Rows of birds and bats represented in the midst of activities in the marshes, shown here in the grey shaded area (From Newberry 1893b, pl. 4); (B) Line drawings of several of the birds from the tomb of *B3kt*, with the colors observed by members of the Franco-Tuscan expedition in 1828 (From Rosellini 1834, pl. 10)

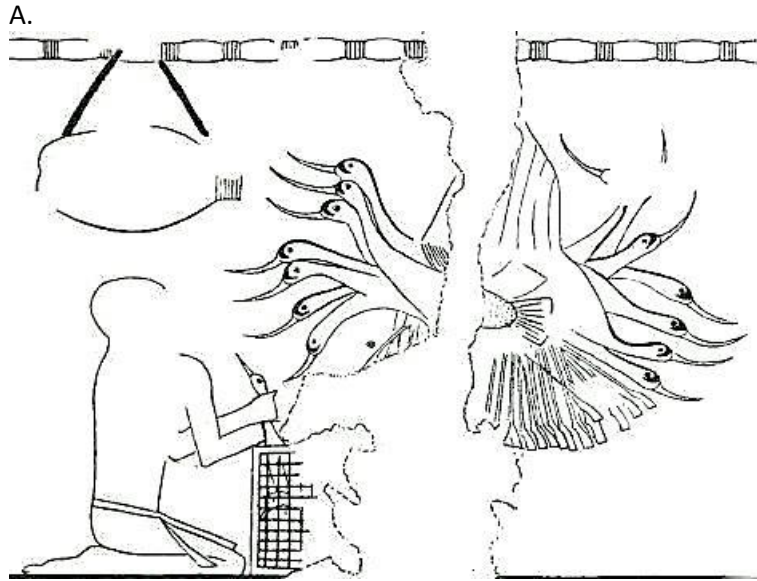
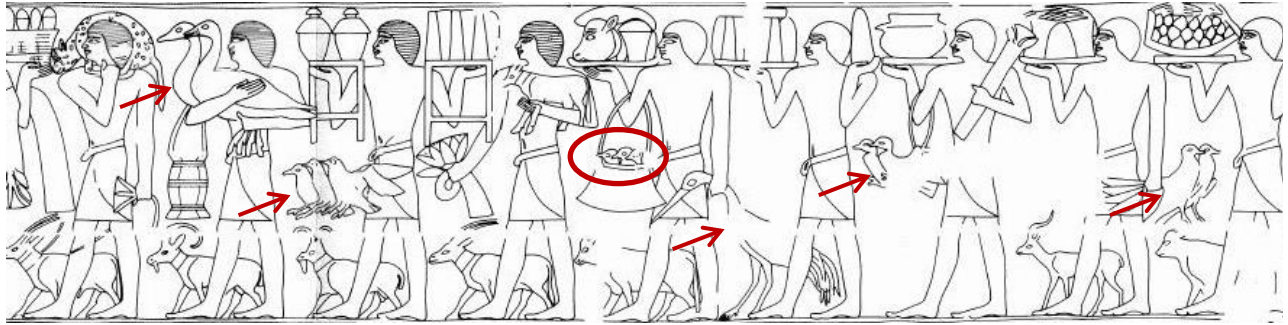


Figure 22. Trapping of pied avocets (*Recurvirostra avosetta*): (A) Pied avocets tied together by the wings and hanging from a roof beam. Tomb of *Dḥwtj-ḥtp*, Dayr el-Barshā (From Newberry 1893-94, pl. 23); (B) Pied avocet (*Recurvirostra avosetta*) (©iStock.com/aaprophoto).



Figure 23. Use of spring traps: (A) Perching birds, including a blue and green European roller (*Coracias garrulus*), and a black and gold oriole, flying around a tree near which a spring trap is open. Tomb of *B3kt* III in Beni Hassan (From Kanawati and Woods 2010, photo 197); (B) Line drawing (From Newberry 1893b, pl. 6).

A.



B.



Figure 24. Representations of offering bearers bringing various types of birds for the cult of the tomb owner: (A) Geese, a crane, and perching birds, some of which are carried in a basket, are gathered for the benefit of *Ny-k3.w-Izzi* (From Kanawati and Abder-Raziq 2000, pl. 61); (B) Waterfowl (geese held by the funerary priest, and ducks in crates at their feet) ready to be sacrificed to the *k3* of *Mrrw-k3.i* (From Duell 1938, pl. 60)

A.



B.



Figure 25. (A) Offering of a turtle dove, with its caption *mnw.t*, painted on the coffin of *Dḥwty-Nḥt* (Boston MFA 20.1822; from Reed *et al.* 2009, p. 106); (B) Turtle dove (*Streptopelia turtur*) (©iStock.com/MikeLane45)

A.



B.



Figure 26. (A) Offering of birds to the harvest goddess Renenutet in the tomb of *Nht* (TT 52). Quails and possibly corncrakes, in the center, tied to sheaves of vegetation (From Davies 1917, pl. 20); (B) Corncrake (*Crex crex*) (©iStock.com/MikeLane45).

A.

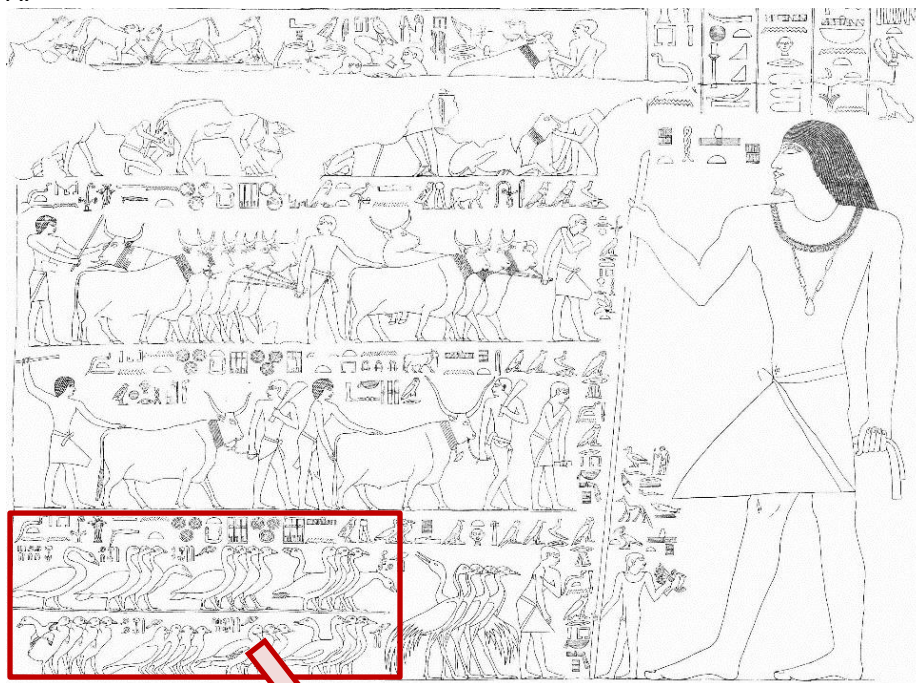


B.



Figure 27. (A) Offering of a rooster in tomb of *P3-di-Wsir* at Tuna el-Gebel (From Cherpion *et al.* 2007, p. 145); (B) Red junglefowl (*Gallus gallus*) (©iStock.com/ibaki).

A.



B.

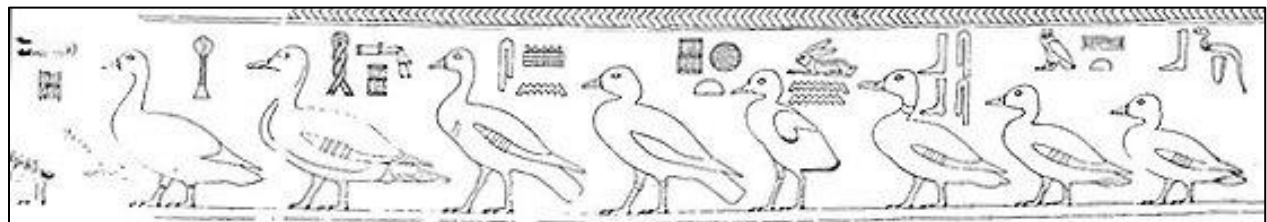


Figure 28. Processions of birds presented before the tomb owner: (A) Flocks of various types of fowl led by the overseer of the house *Khp*. Tomb of *Pth-hp* II, Saqqara (From Harpur and Scremin 2008, context drawing 10, photo 277); (B) Row of birds in the tomb of *Htp-k3*, Saqqara. The birds present here are, from left to right: *t(r)p*, *hd*, *hp*, *smn*, *pht*, *wnn*, *bsbs*, *mšt*, *bd(3)* (From Martin 1979, pl. 17)



Figure 29. Flock presentations before *Hnm-ḥtp* II, in Beni Hassan (Photo and line drawing from Kanawati and Evans 2014, pls. 51 a, 125)

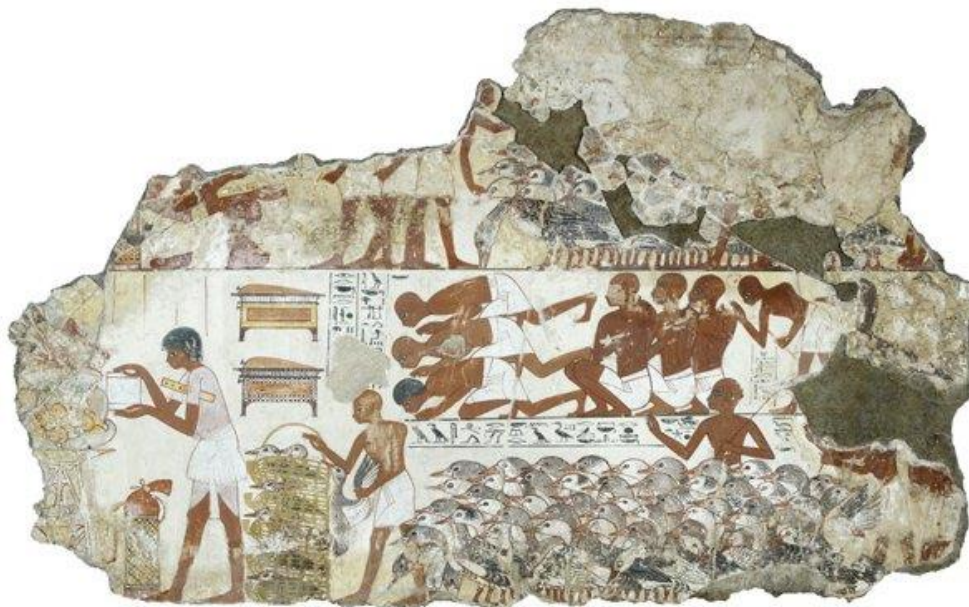


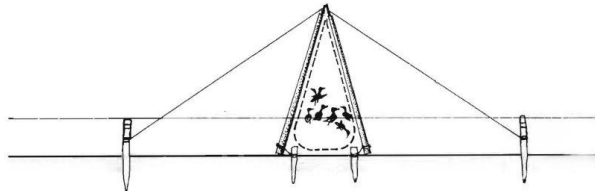
Figure 30. Presentation of domestic geese (*Anser anser domesticus*) as recorded in the tomb of *Nb-Imn* (British Museum EA37978; from Parkinson 2008, p. 95, fig. 103)

Clap-netting of wild fowl:

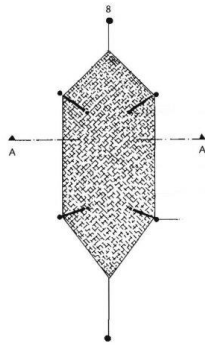
A.



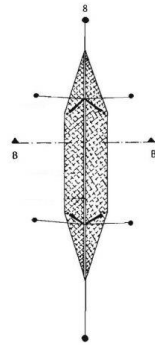
a. Coupe A-A. Filet en position ouverte.



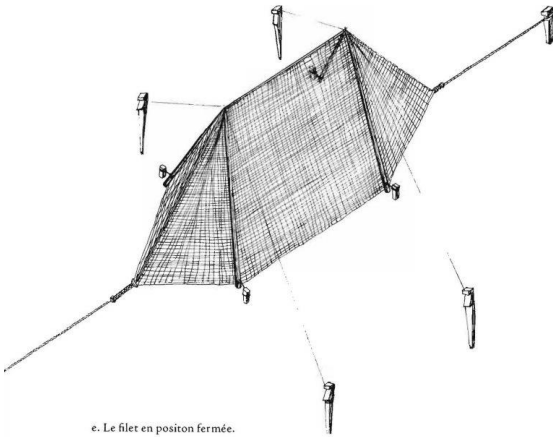
b. Coupe B-B. Filet en position fermée.



c. Plan du filet en position ouverte.

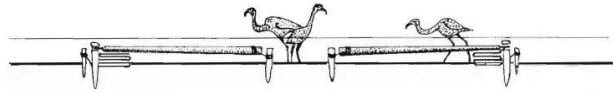


d. Plan du filet en position fermée.

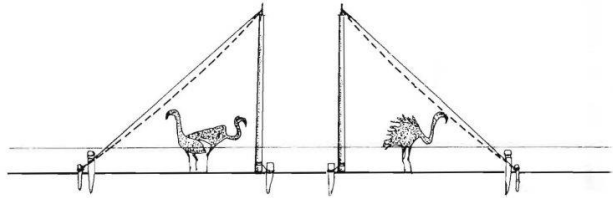


e. Le filet en position fermée.

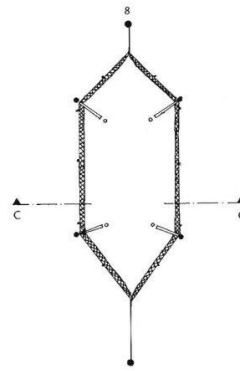
B.



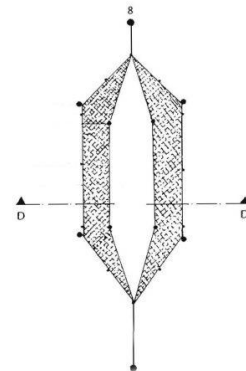
a. Coupe C-C filet en position ouverte.



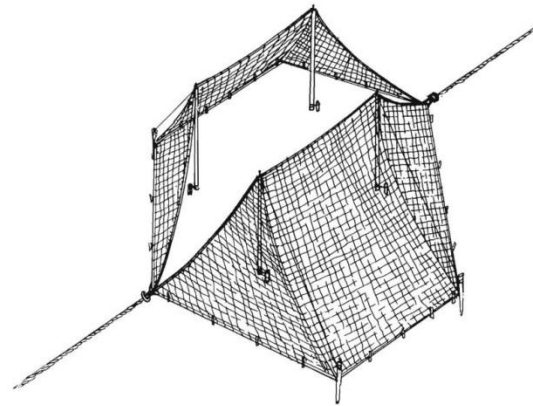
b. Coupe D-D filet en position fermée.



c. Plan du filet en position ouverte.

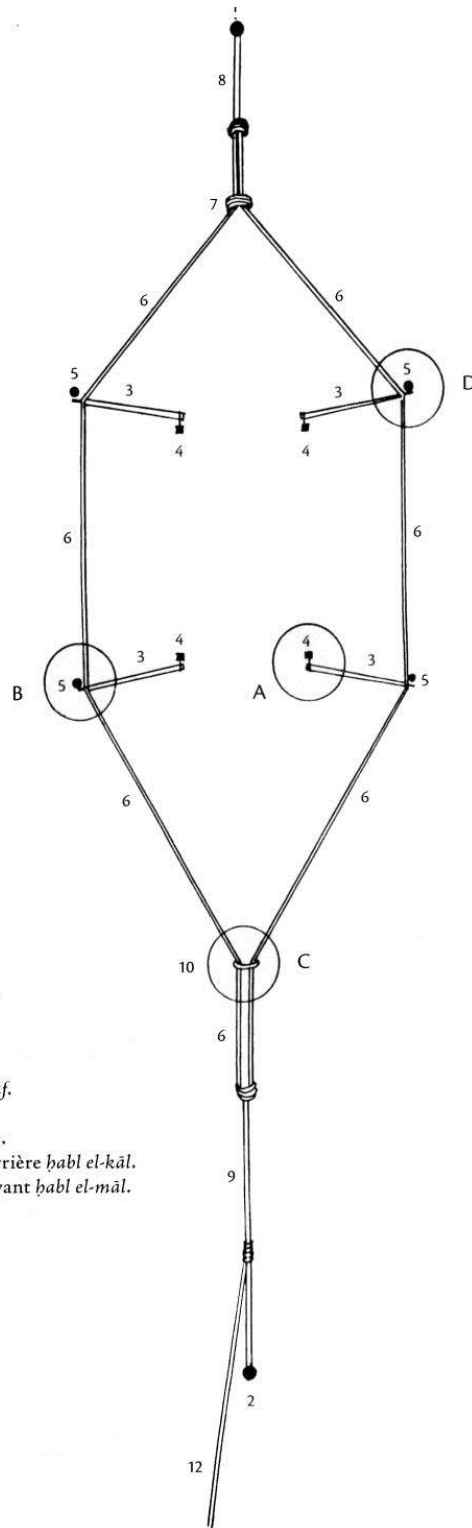


d. Plan du filet en position fermée.



e. Le filet en position fermée.

Figure 31. Hexagonal clap-nets used in the Lake Manzala region: (A) Net used for dabbling and diving waterfowl, or *filet avec fond* (from Henein 2010, pp. 274-275, fig. 132); (B) Net used for larger wading birds such as flamingoes, or *filet sans fond* (from Henein 2010, pp. 278-279, fig. 133)



1. Gros piquet d'amarrage arrière *kāl*.
2. Gros piquet d'amarrage avant *māl*.
3. Perches *maḍrab* ou *ṣārī*.
4. Piquets intérieurs *qa'r*.
5. Piquets extérieurs de retenue *metrāf*.
6. Ralingues *kafāfa*.
7. Boucle de serrage *ḥartūm* ou *ḥazma*.
8. Corde du gros piquet d'amarrage arrière *ḥabl el-kāl*.
9. Corde du gros piquet d'amarrage avant *ḥabl el-māl*.
10. Anneau *ḥālaqa*.
11. Boucle *ḥers*.
12. Câble de traction *līḥ*.
13. Cordelette *meknān*.
14. Corde *tōdyā*.

Figure 32. Major components of an hexagonal clap-net, as observed in the Lake Manzala region (From Henein 2010, p. 272, fig. 131)

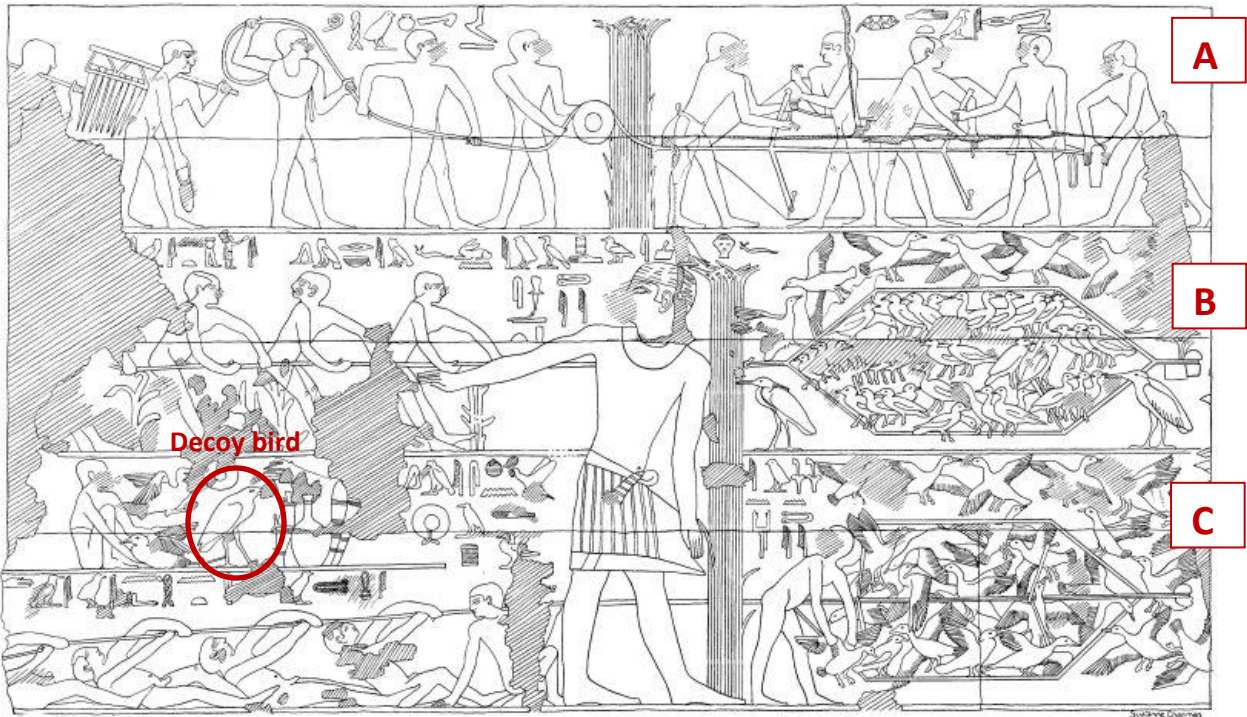


Figure 33. Scene of clap-netting in the tomb of *Ty*, in Saqqara (From Dunham 1937, p. 51 after Steindorff 1913, pl. 117)

A.



B.



Figure 34. Grey herons (*Ardea cinerea*) used as decoy accompanying fowlers, as represented in Old Kingdom tombs: (A) *Mtjy*, Le Louvre E 25508 (From Ziegler 1990, p. 128); (B) *K3wꜥb*, MFA Boston 34.59 (From <http://www.mfa.org/collections/object/relief-from-the-tomb-of-prince-kawab-147582>. Last accessed April 6th, 2016)



Figure 35. Fowling with a throwstick in the tomb of *Mmn3*, TT 69 (From Bailleul-LeSuer 2012, p. 151)



Figure 36. Wooden throwstick, OIM E370 (Photo by Anna Ressman)

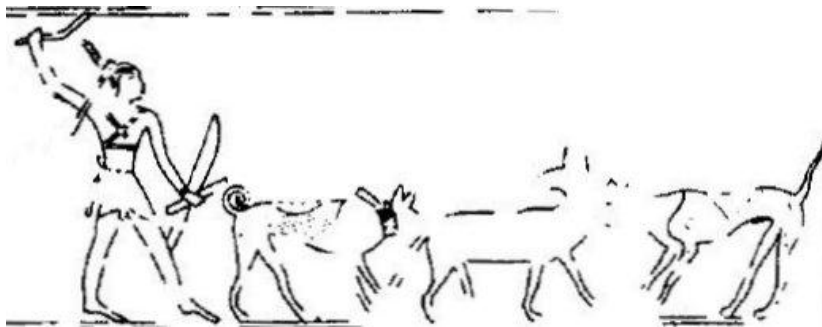


Figure 37. Hunter in a desert scene. Late First Intermediate Period tomb of *It(=i)-ib(=i)-iḳr* in Asyut (From El-Khadragy 2007, p. 125, fig. 5)



Figure 38. Representation of a man chasing three ostriches (Naqada II) (Manchester Palette Inv. Nr. 5476; from Crompton 1918, pl. 7)

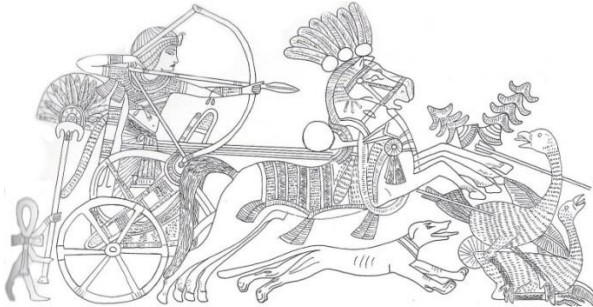


Figure 39. King Tutankhamun hunting ostriches, as represented on the base of a gilded fan (Cairo JE 62001; line drawing from Edwards 1972, Cat. 23)



Figure 40. Representation of the king shooting arrows at waterfowl. Golden shrine from the tomb of Tutankhamun (Cairo JE 61481; from Eaton-Krauss and Graefe 1985)

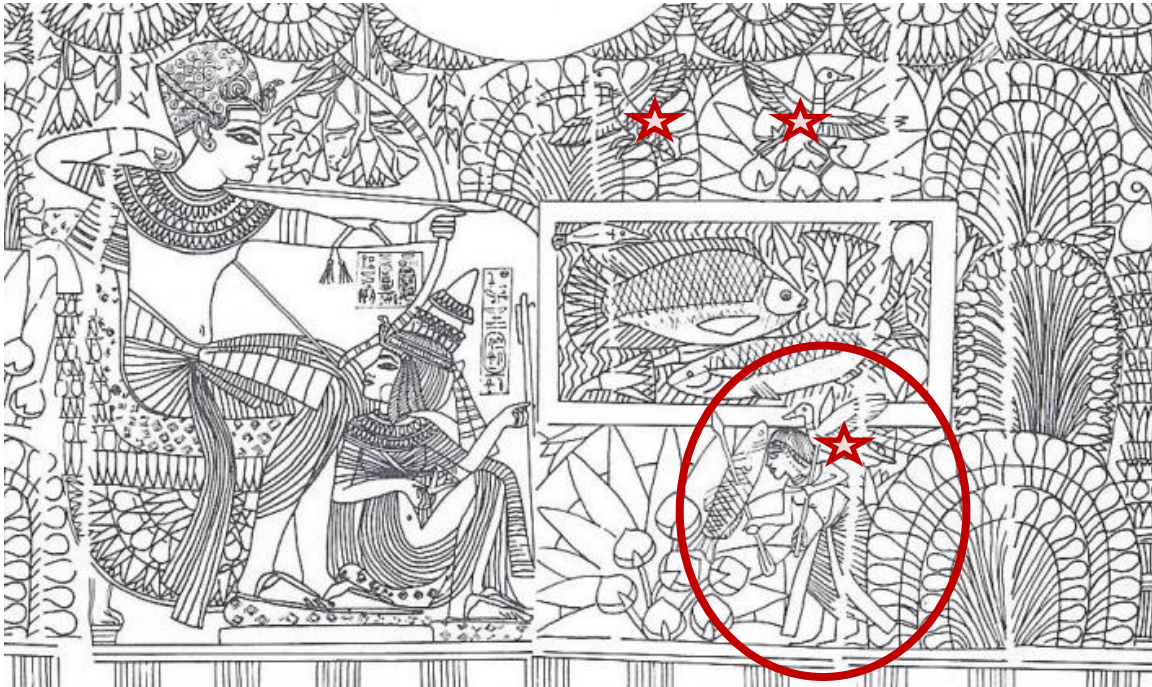
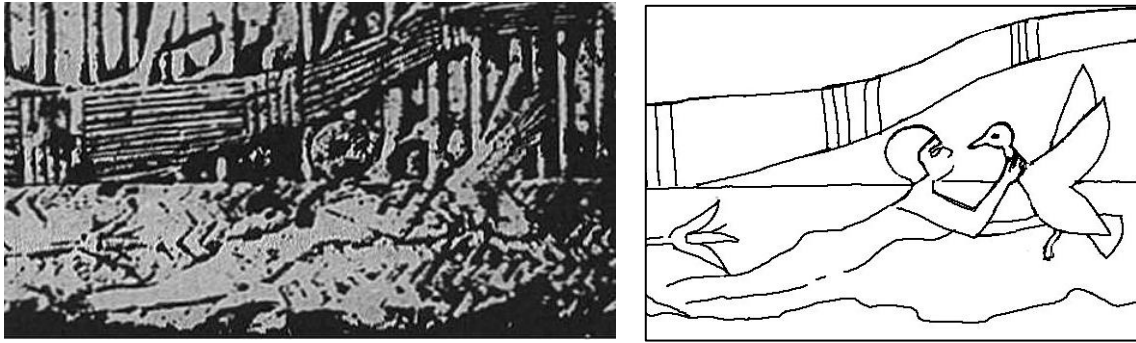


Figure 41. Representation of the king shooting arrows at birds, indicated by a star, near a pond. An attendant, here encircled, is shown gathering the fallen prey. Ornamental casket from the tomb of Tutankhamun (Cairo JE 61477; line drawing from Edwards 1972, Cat. 21)

A.



B.



Figure 42. Capturing birds by hand: (A) Relief fragment showing a swimming woman grabbing a waterfowl's neck. Late Period (Cairo JE 37913; from Montagno Leahy 1988, pp. 556-560, pl. 39; line drawing by R. Bailleul-LeSuer); (B) Wood and ivory spoon in the form of a duck being held by a swimming maiden (Louvre E 218; from Kozloff and Bryan 1992, pl. 39)

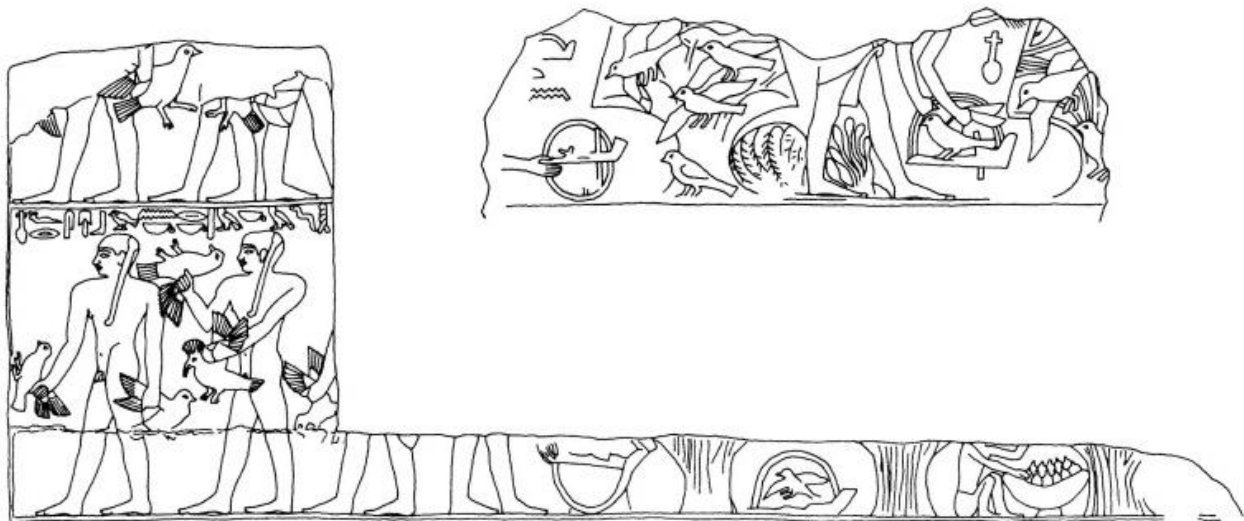


Figure 43. Trapping of song birds in the tomb of *Mrrw-k3.i* (From Harpur 1985, p. 35, fig. 5)



A



B

Figure 44. Trapping of song birds from the Middle Kingdom tomb of *Hty* in Beni Hassan (From Kanawati and Woods 2010, photos 200-201)

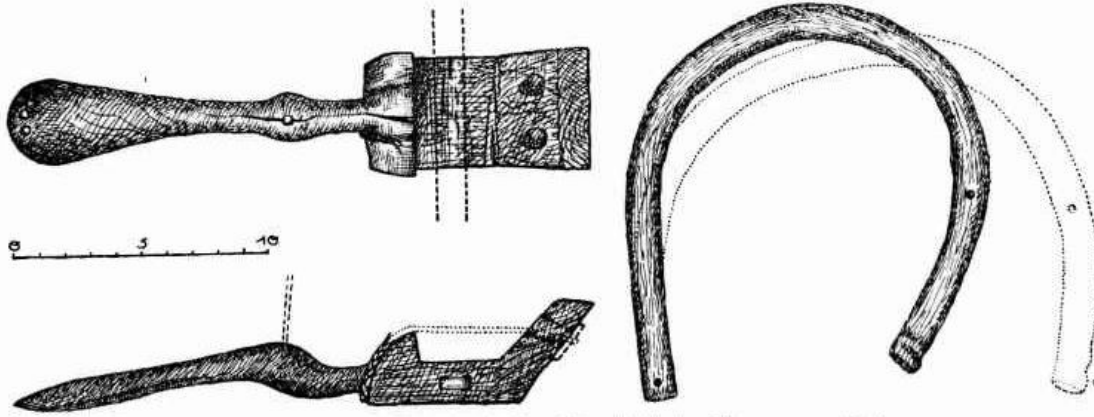


Abb. 2. Teile einer altägyptischen Bügelfalle im Museum zu Kairo.

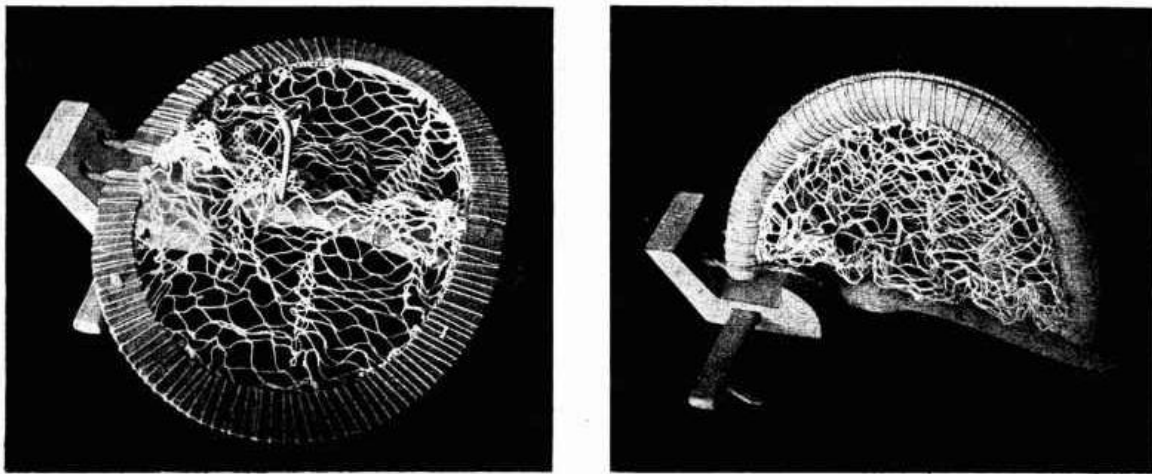
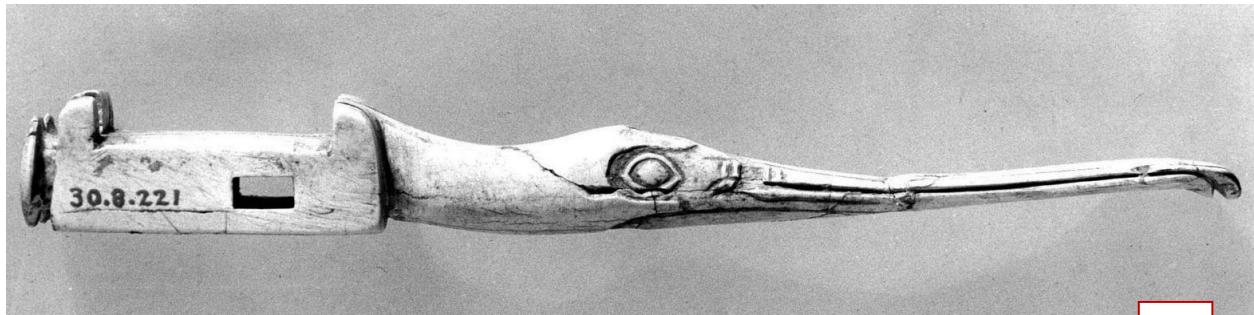
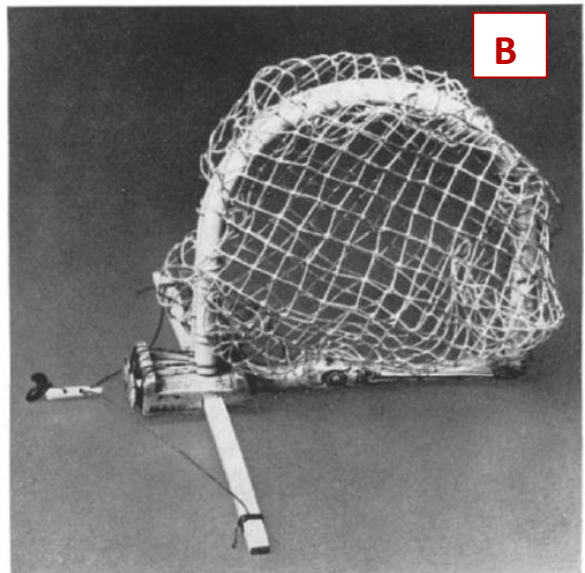
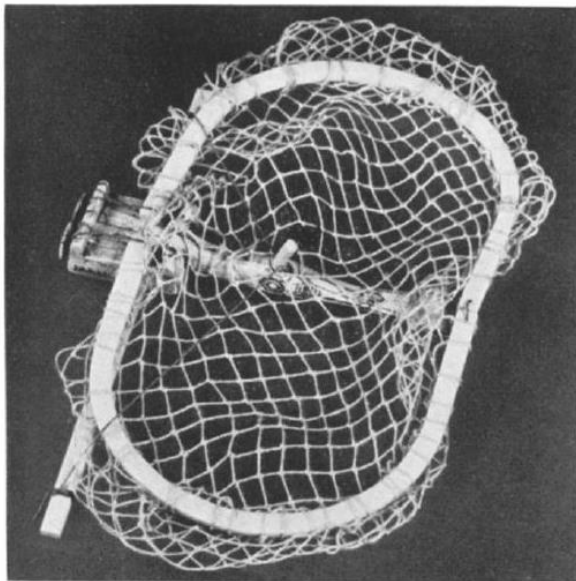
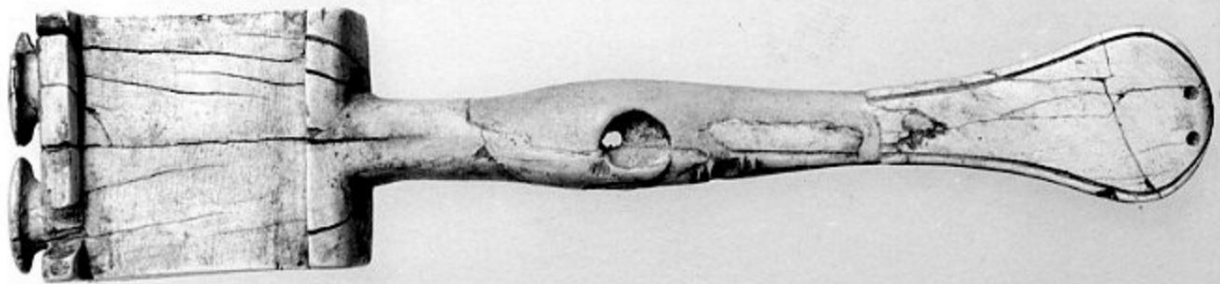


Abb. 3. Rekonstruktion der altägyptischen Bügelfalle.

Figure 45. Proposed reconstruction of an ancient Egyptian spring trap (From Grdseloff 1938a, p. 53, figs. 2-3)



A



B

Figure 46. (A) Central portion of an Egyptian spring trap, New York MMA 30.8.221 (From <http://www.metmuseum.org/art/collection/search/554466>. Last accessed April 6th, 2016); (B) Proposed reconstruction of the trap (From Scott 1940, p. 163, figs. 1-2)

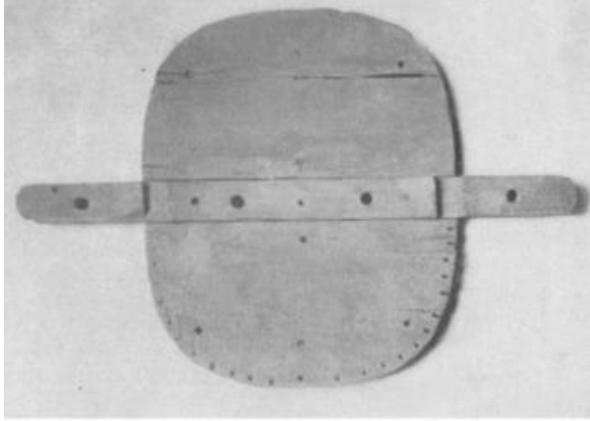


Abb. 98

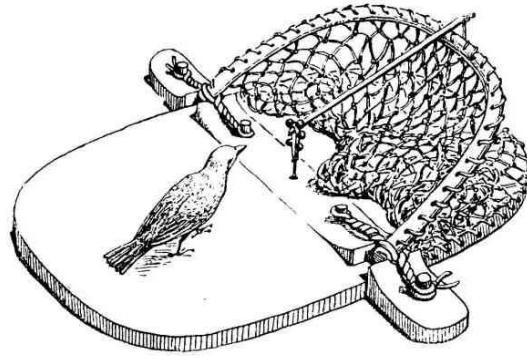


Abb. 100

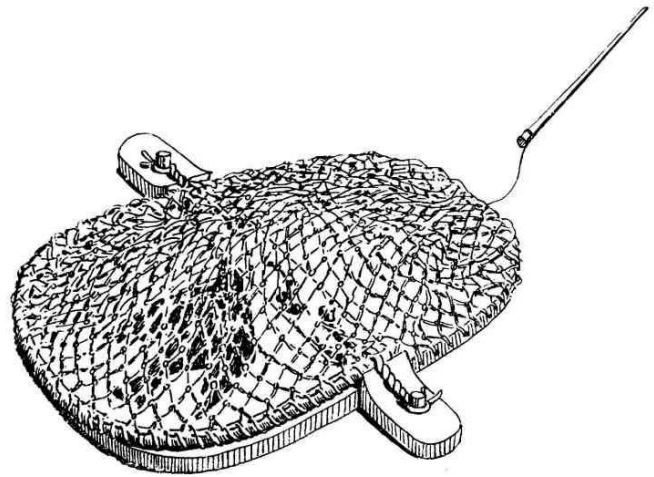
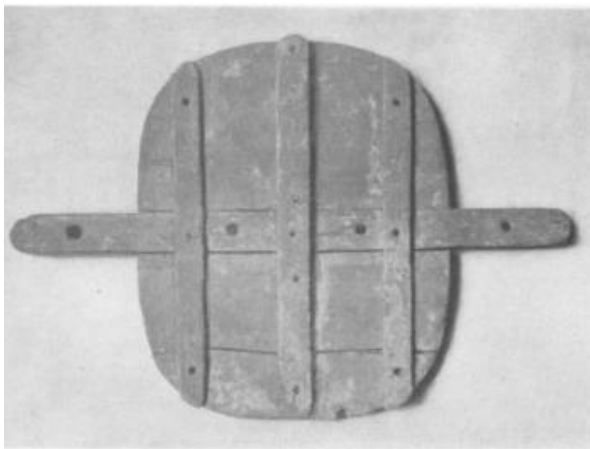


Figure 47. Ancient Egyptian spring trap, with reconstruction proposed by H. Schäfer (1919, pp. 178-179)

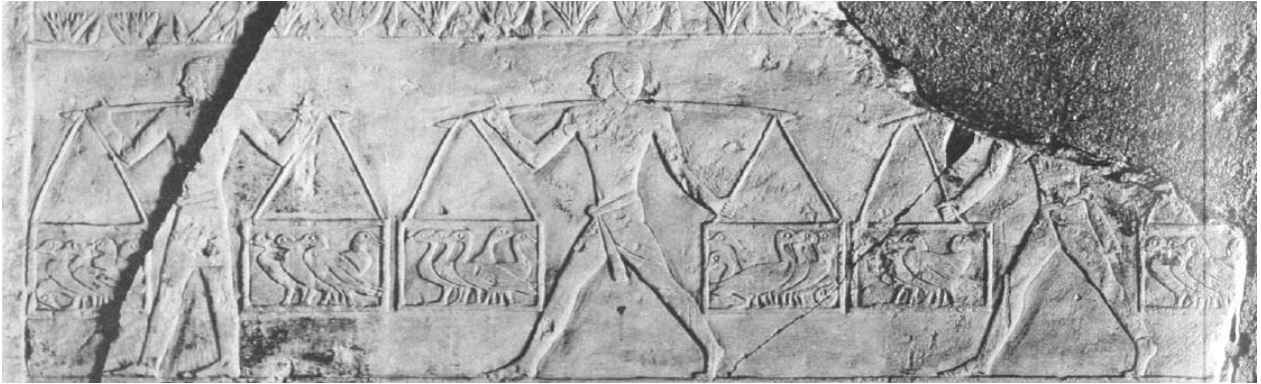


Figure 48. Gebel Uweinat. Ostrich caught in a trap (From Riemer 2009, p. 183, fig. 8)

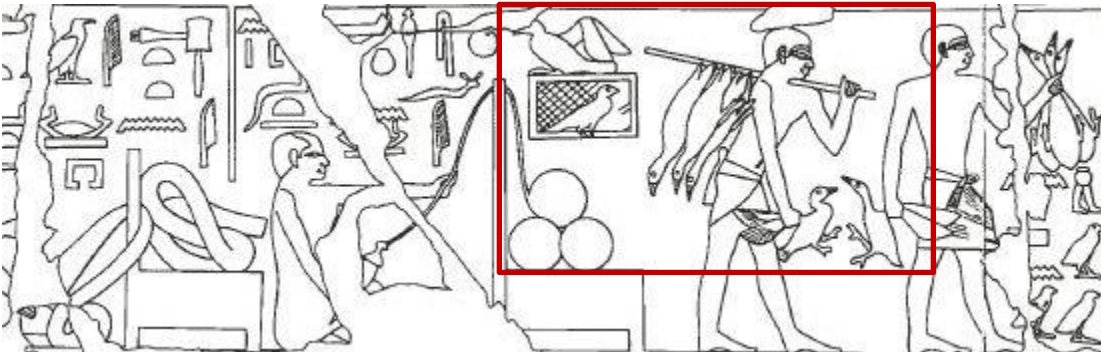
Part 2 – Maintenance and Care of Birds in Captivity in Dynastic Egypt

Transportation of Live Birds

A.



B.



C.

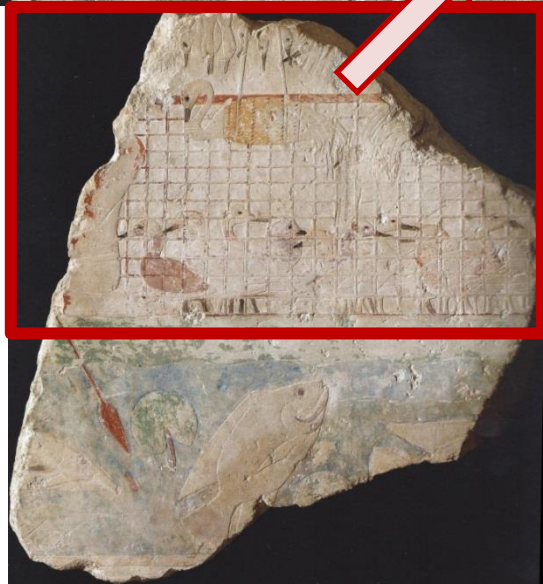


Figure 49. Representations of birds held by workers and transported in crates or by means of a yoke: (A) mastaba of *Mrrw-k3.i* (From Duell 1938, pl. 20); (B) mastaba of *Ny-ḥḥ-Hnm* and *Hnm-ḥtp* (From Moussa and Altenmüller 1977, pl. 12); (C) tomb of *K3-ḥ3.i* (From Lashien 2013, pls. 16a-b).



Figure 50. Processing birds after a fowling expedition. Mastaba of *Nfr-hr-ny-Pth* (From http://www.osirisnet.net/mastabas/neferherentah/e_neferherentah_02.htm)

A.



B.



Figure 51. (A) Captured birds transported by skiff. Fragment from the 12th Dynasty tomb of *W3h-k3* in Kaw el-Kebir (Louvre E 11247 A; from Couton-Perche 2013, pp. 308-309); (B) Weighing sling used by bird handlers to prevent the crane from moving when undergoing health checks. The bird's wings and body are restrained by a cloth sling, a scheme not unlike what the ancient Egyptians used to maintain cranes captives (here marked by a star) (From Ellis *et al.* 1996, p. 40, fig. 5).



Figure 52. Talatats with representation of aviary on board a boat (From Vergnieux 1999, pl. 81)

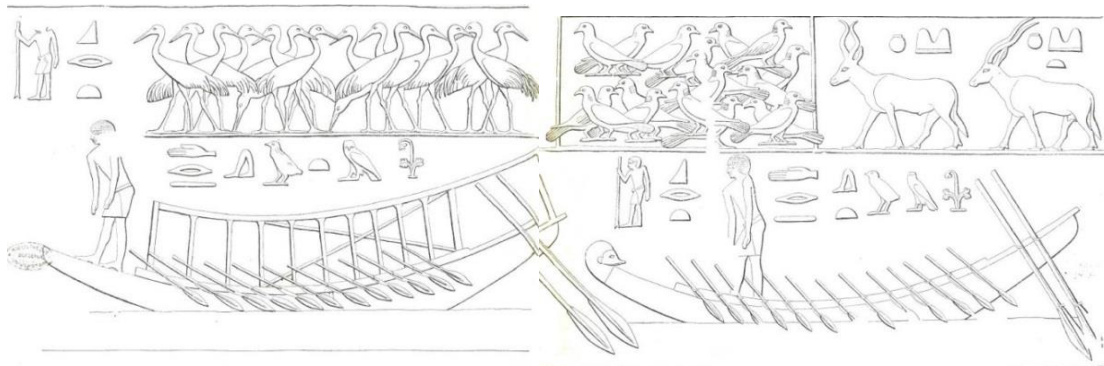


Figure 53. Flocks of captive birds on the banks of the river, in the mastaba of *Ty* (From Épron and Daumas 1939, pl. 24)

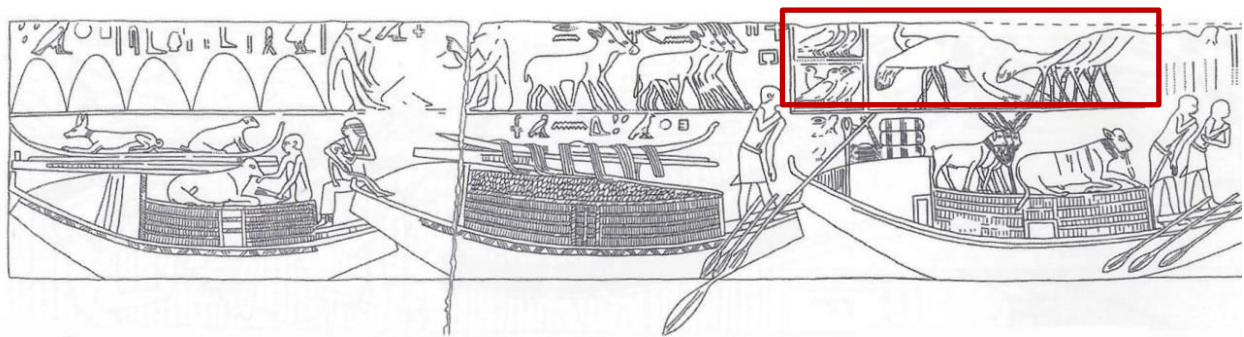


Figure 54. Flock of cranes and crates of birds beside moored boats, in the tomb of *K3-gm-ni* (From Harpur and Scremin 2006, p. 492, fig. 4)

Poultry-Yards and Aviaries

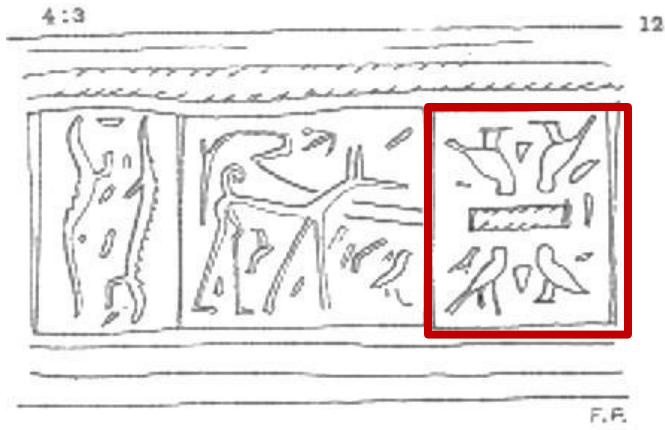


Figure 55. Early representation of an aviary (?) (1st Dynasty; from Petrie 1903, pl. 16.12)

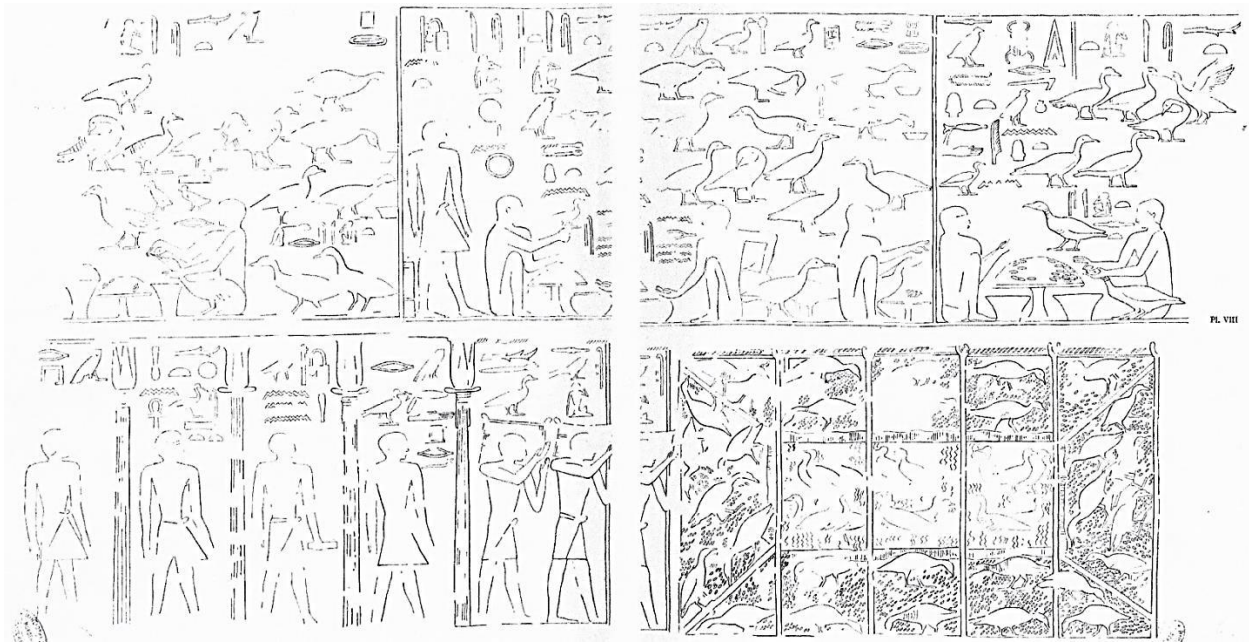


Figure 56. View of the *hr.t-mw* and *štb.w* in poultry-yard #1 in the tomb of *Ty* – Part 1 (From Épron and Daumas 1939, pl. 7)

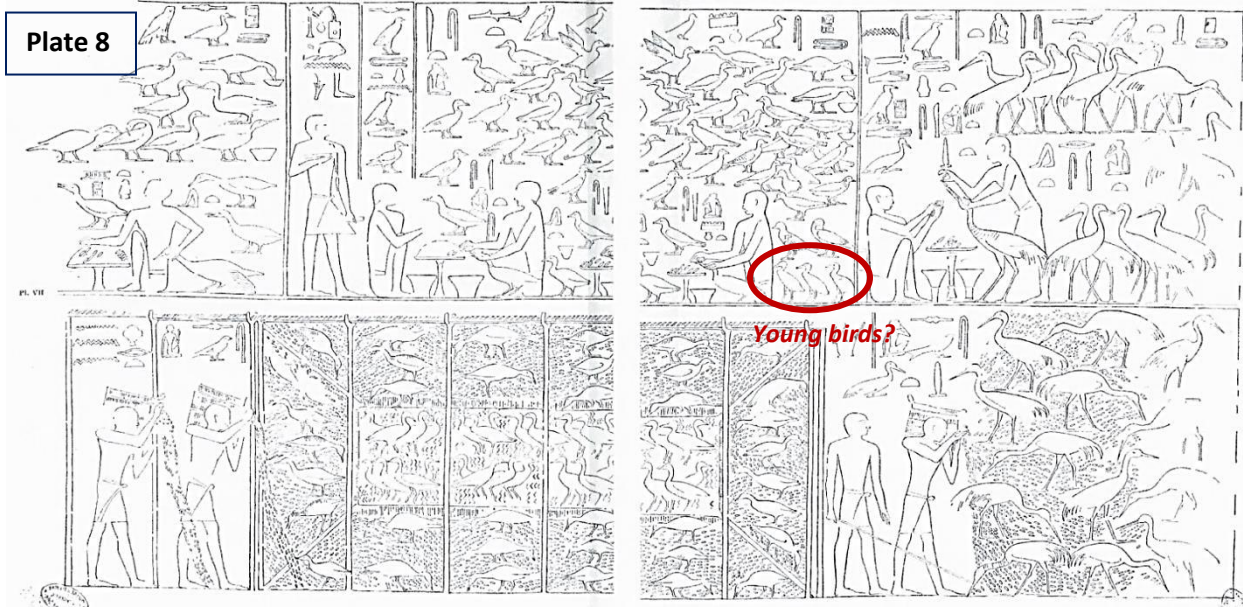


Figure 57. View of the *hr.t-mw* and *štb.w* in poultry-yard #1 in the tomb of *Ty* – Part 2 (From *Ibid.*, pl. 8)

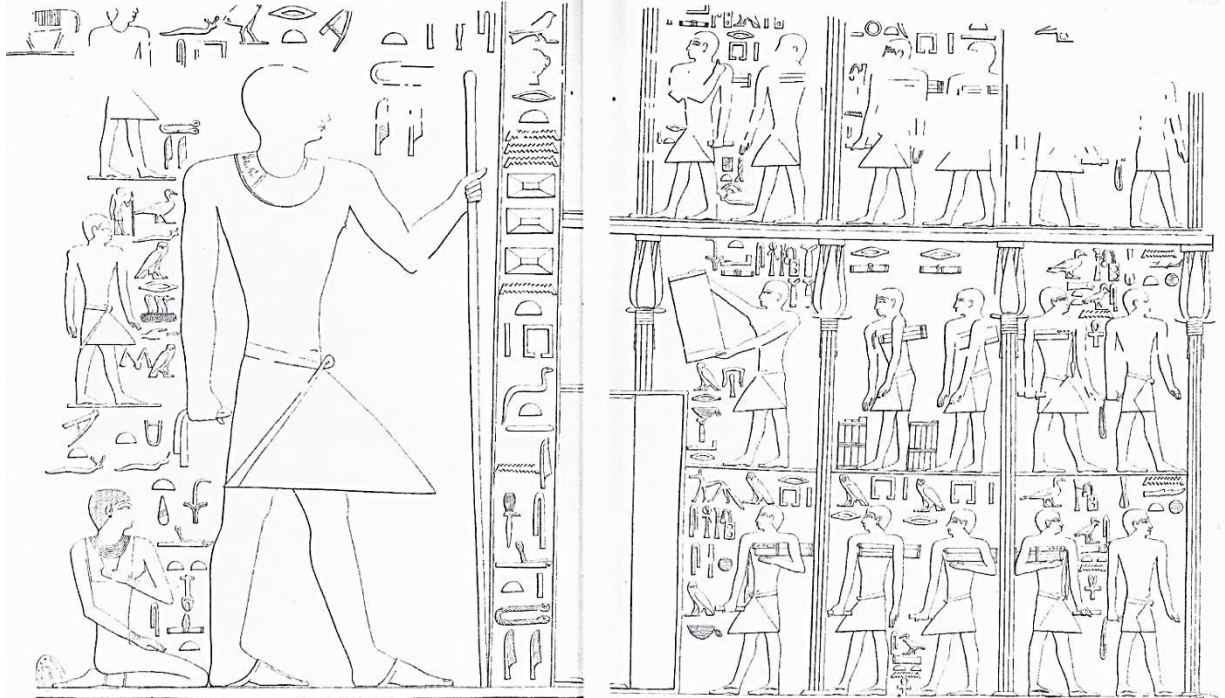


Figure 58. Administrative buildings connected to poultry-yard #2 in the tomb of *Ty* (From *Ibid.*, pl. 27)

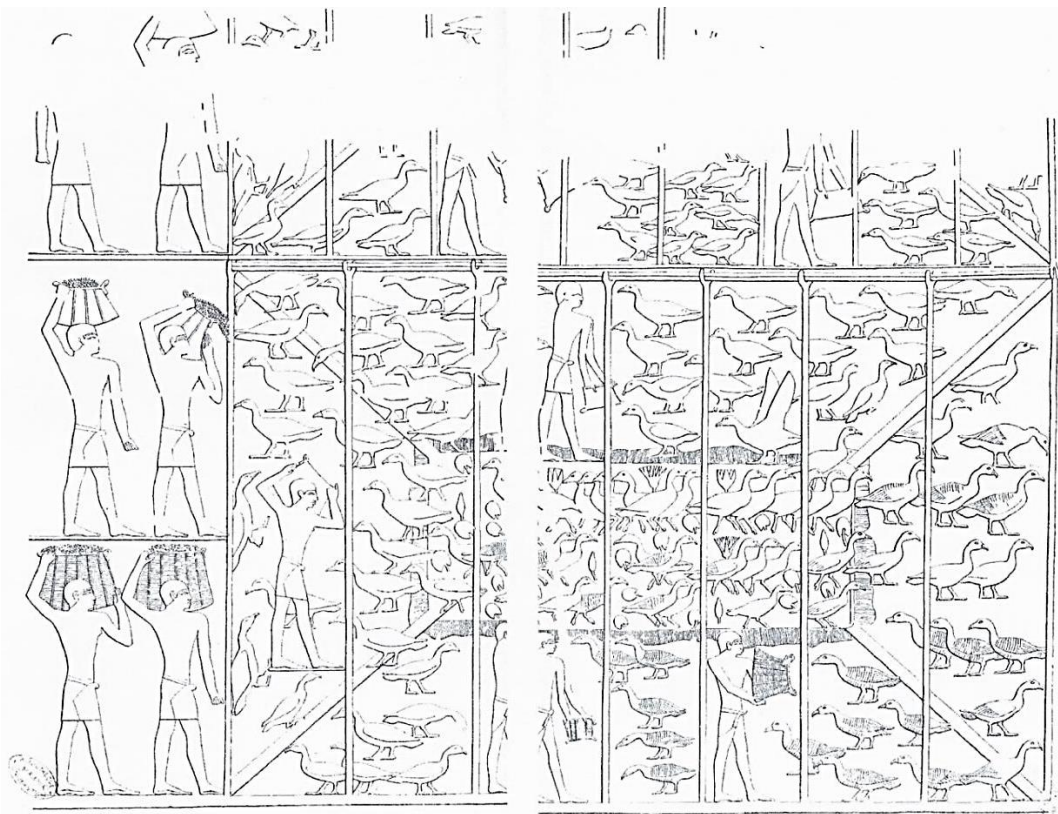


Figure 59. *Hr.t-mw* facility connected to poultry-yard #2 in the tomb of *Ty* (From *Ibid.*, pl. 28)

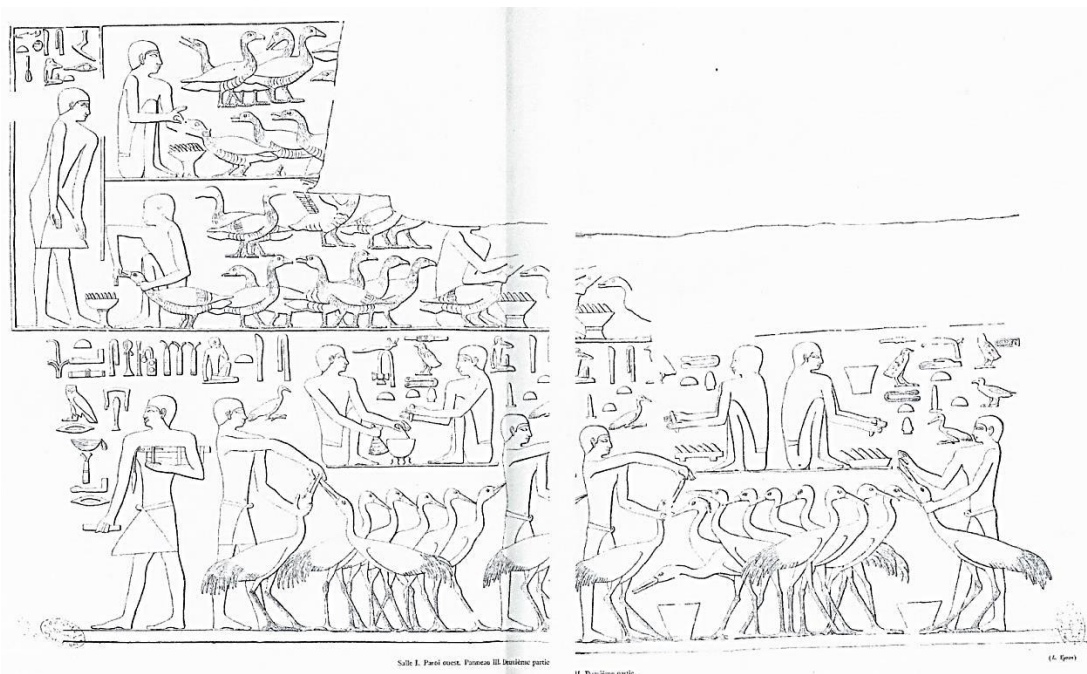


Figure 60. Closer view at the *štb* facility connected to poultry-yard #2 in the tomb of *Ty* (From *Ibid.*, pl. 33)

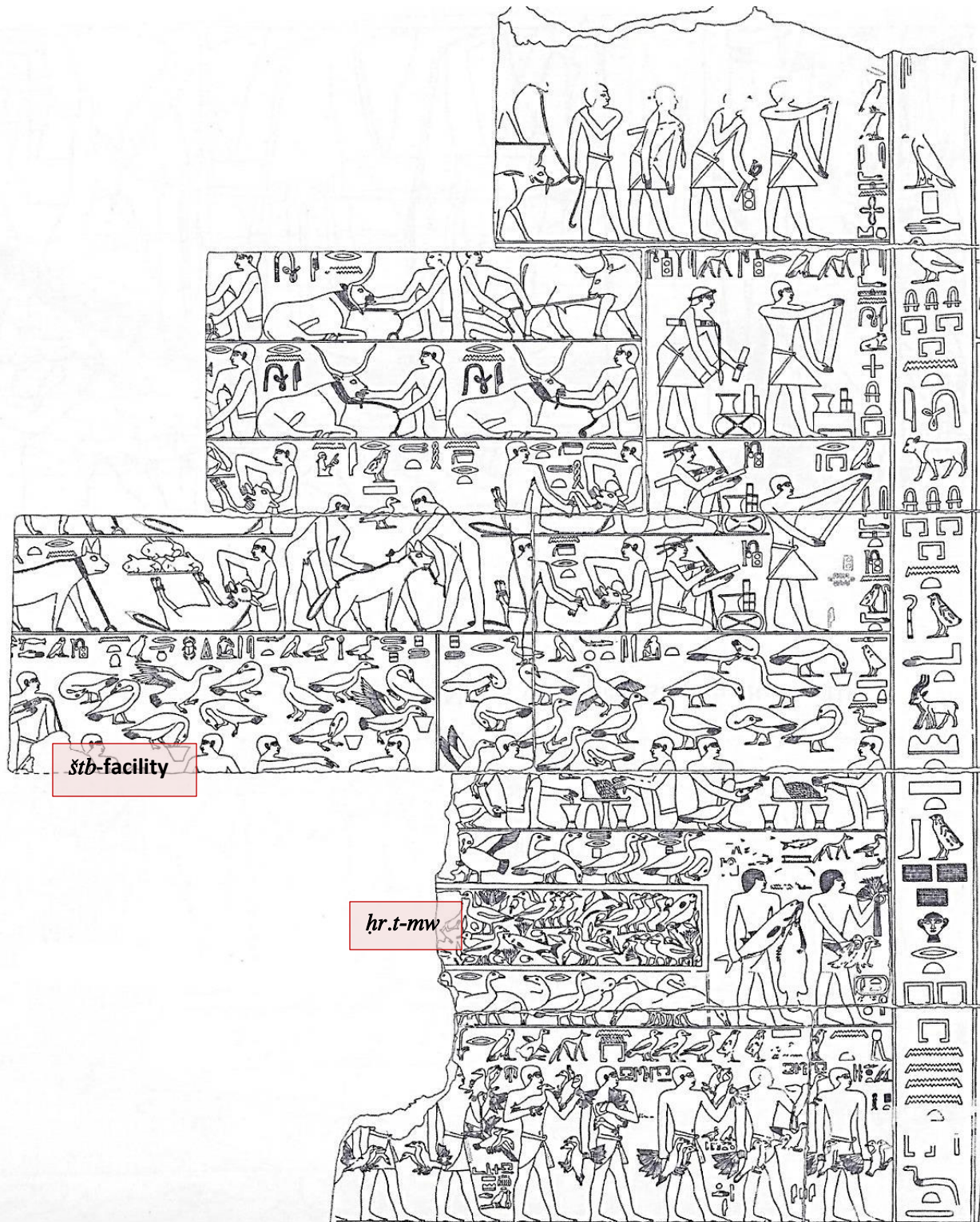


Figure 61. View of the *hr.t-mw* and *stb.w* in the poultry-yard represented in the tomb of K3-gm-ni (From Harpur and Scremin 2006, p. 496)

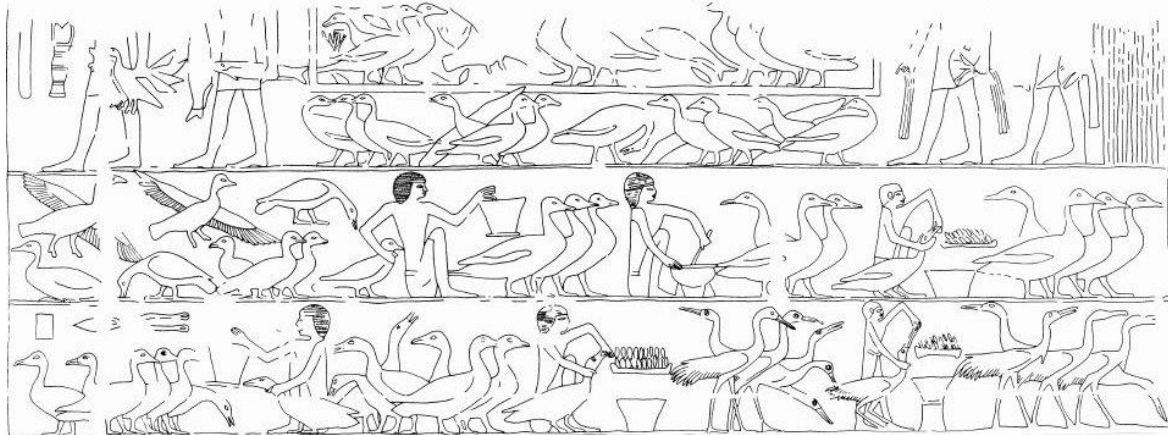


Figure 62. Bird facilities in the tomb of *Nfr-sšm-Pth* (From Lloyd *et al.* 2008, pl. 15)

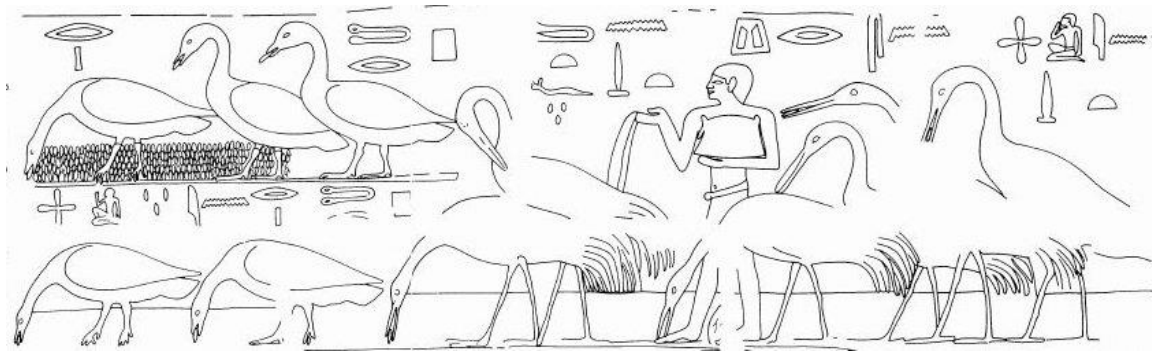


Figure 63. Feeding birds in the tomb of *Ny-K3w-Izzi* (From Kanawati and Abder Raziq 2000, pl. 49)



Figure 64. Demoiselle crane (*Anthropoides virgo*) kept as a pet in Pakistan. Note the shaved off flight feathers (From Archibald and Lewis 1996, p. 20 fig. I.16)

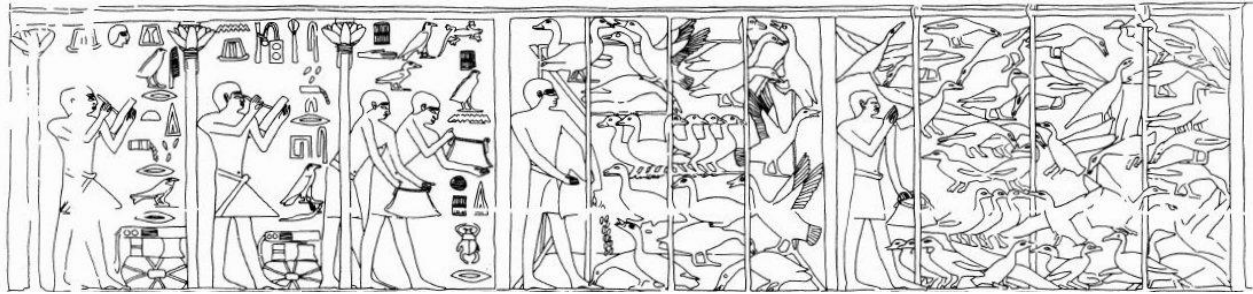


Figure 65. Bird farm in the tomb of *Nfr-sšm-Pth* (From Lloyd et al. 2008, pl. 16)

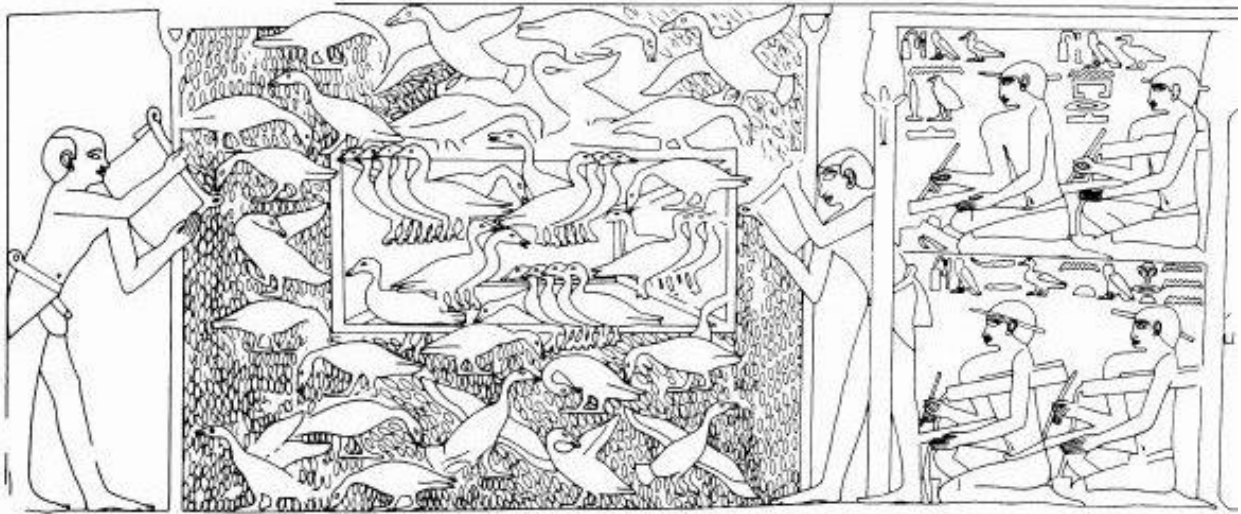


Figure 66. *Hr.t-mw* in the tomb of *Hzi* (From Kanawati and Abder Raziq 1999, pl. 56)

Representations from the Middle Kingdom

- Fowling and bird herding in the tomb of *Hnm-htp* II in Beni Hassan.

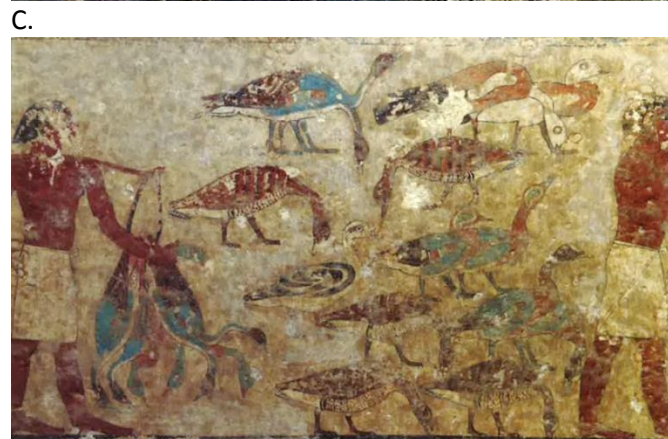
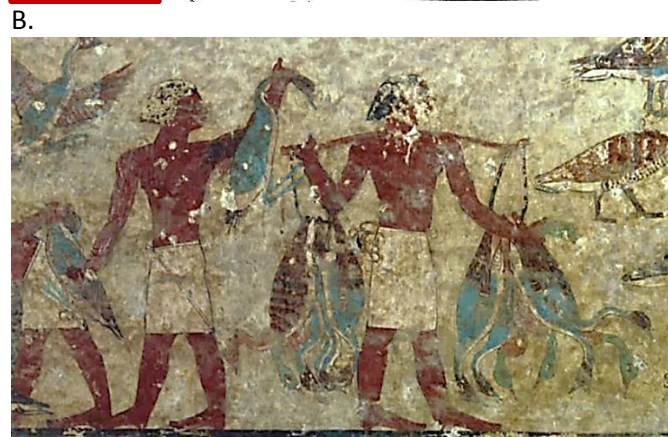
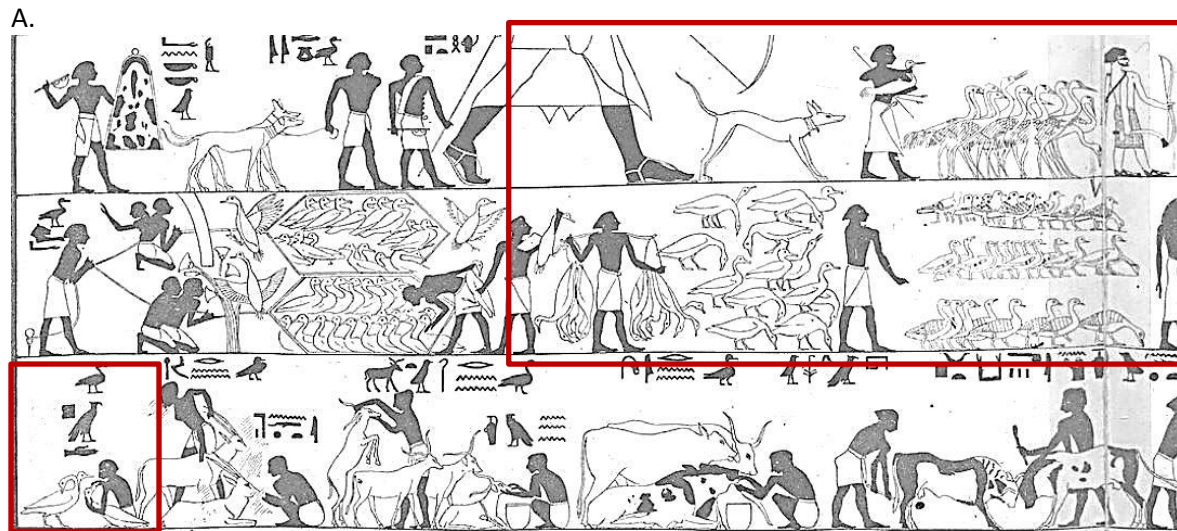


Figure 67. (A) Overview of the scene (From Newberry 1893a, pl. 30); (B) Gathering birds from the fowling net (From Kanawati and Evans 2014, pl. 52b); (C) From the fowling location to the farm yard (*Ibid.*, pl. 52a).

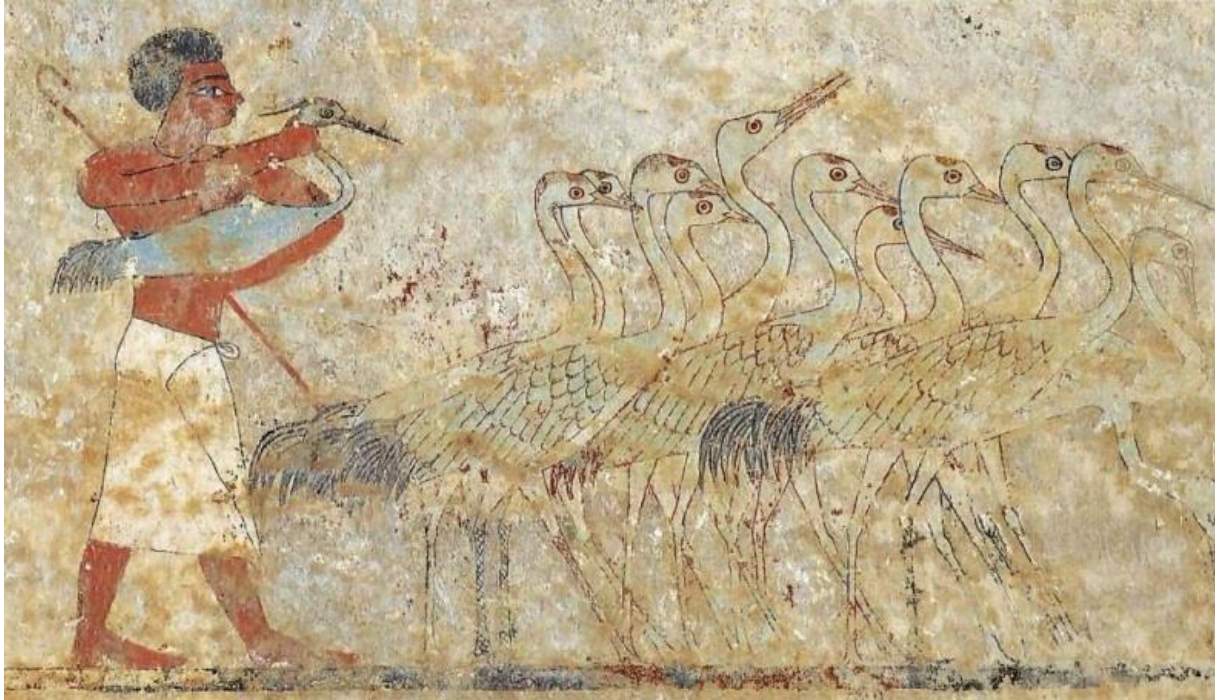


Figure 68. Detailed view of the guardian of cranes (From Shedid 1994, p. 92, fig. 148)

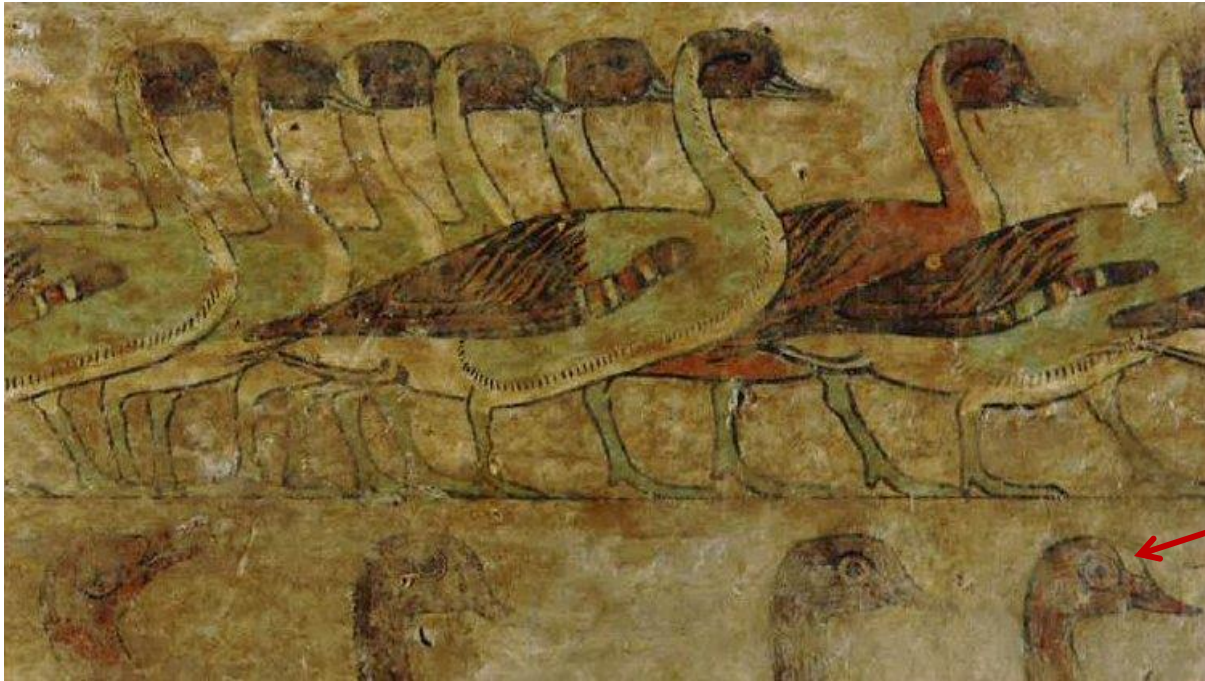


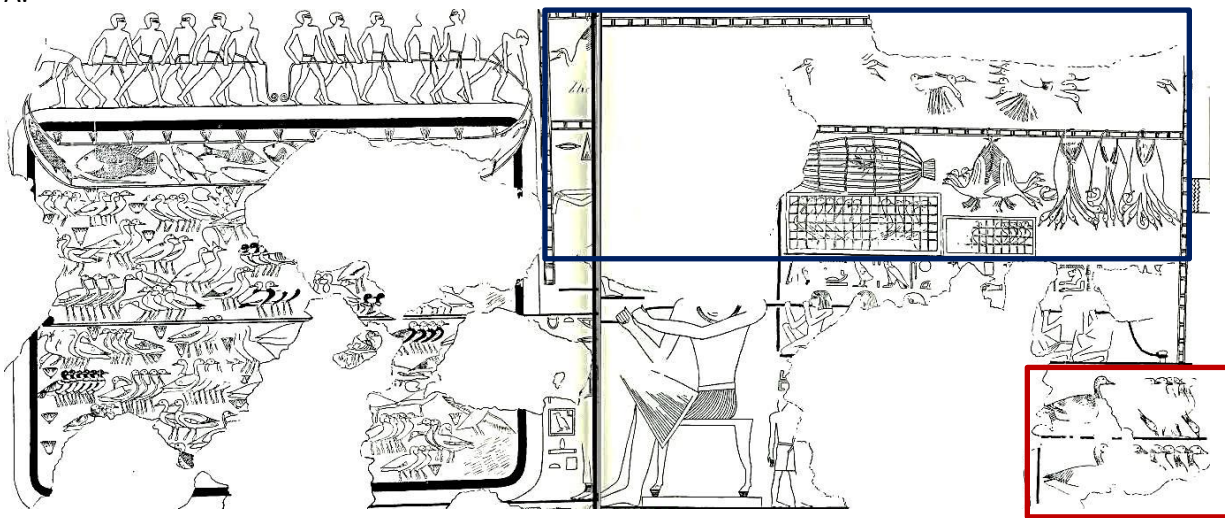
Figure 69. Detailed view of the flock of pintail ducks. The head of several geese can also be seen, including a white-fronted goose (*Anser albifrons*) (See Figure 28 for the complete vignette. From Kanawati and Evans 2014, pl. 51b)



Figure 70. Force feeding of two geese and a duck with a green head (mallard?) (*Anas platyrhynchos*) (From Kanawati and Evans 2014, pls. 58a, 125)

- Fowling and bird herding in the tomb of *Dḥwtj-ḥtp* in Dayr al-Barshā.

A.



B.

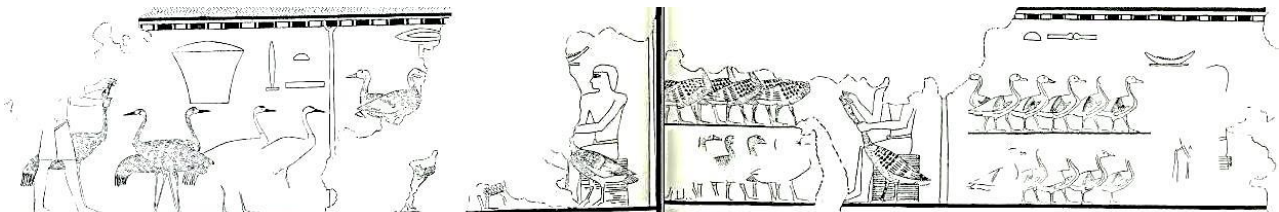


Figure 71. (A) At the top, birds awaiting in crates or gathered as bundles; at the bottom, flock of geese driven from the fowling location (From Newberry 1893-94, pl. 17); (B) Force feeding of a variety of fowl (From *Ibid.*, pl. 22).

Representations from the New Kingdom

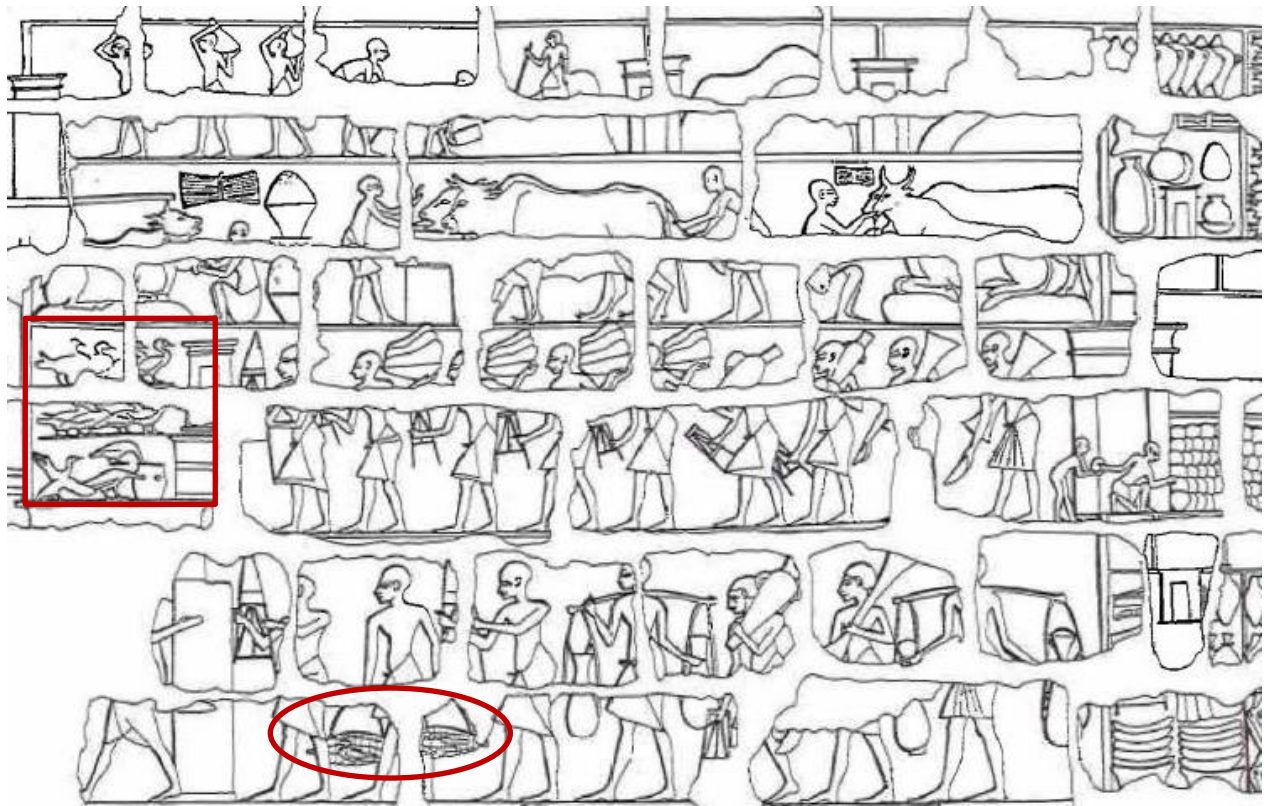


Figure 72. Poultry-yard scene in the Aten temple at Karnak (Luxor J. 223) (From Klug 2006, p. 81)

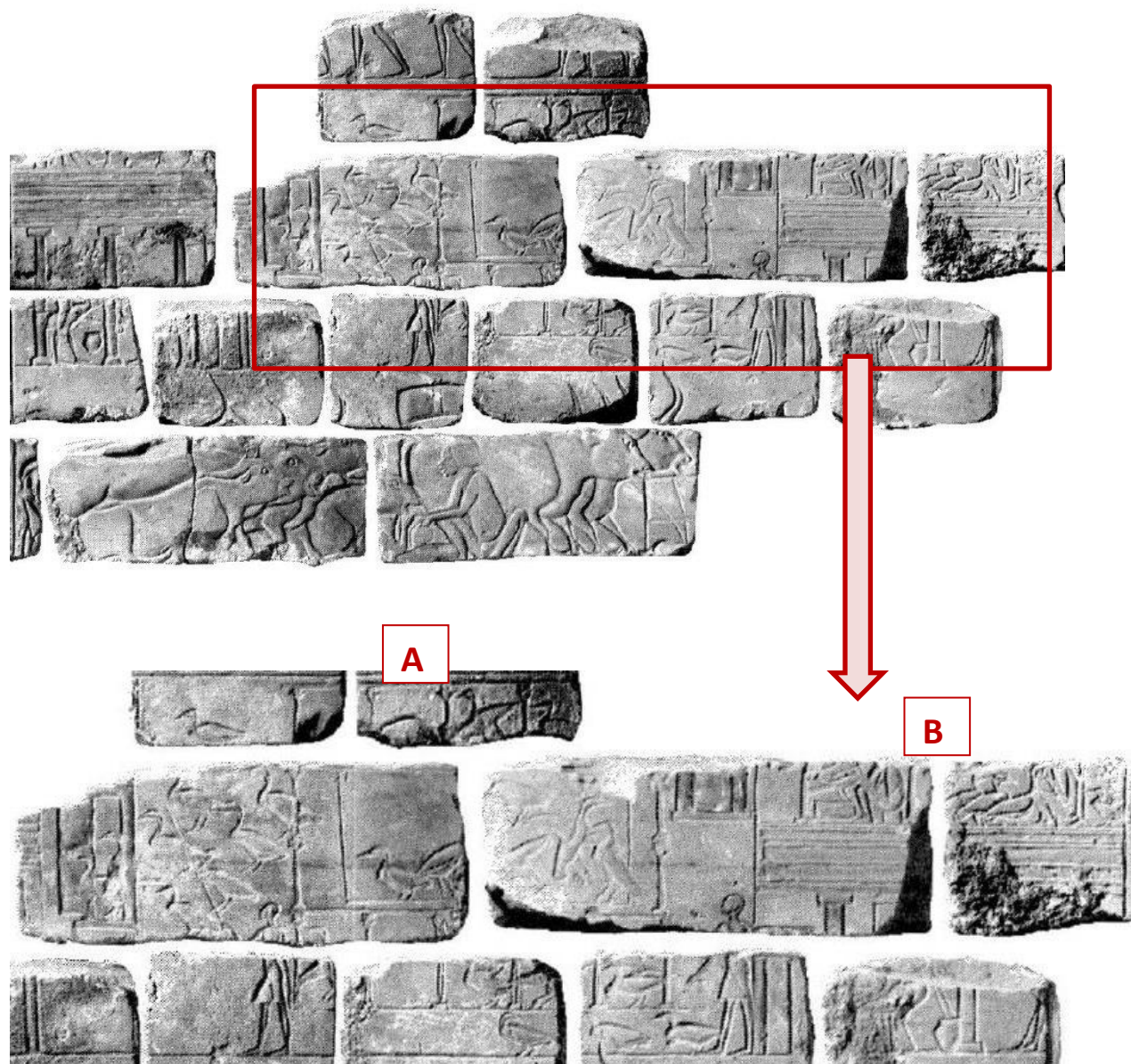


Figure 73. Talatat wall with poultry-yard scene from the temple of Karnak. (A) Free range enclosure; (B) Force feeding facility (From Vergniew 1999, pl. 57).

A.

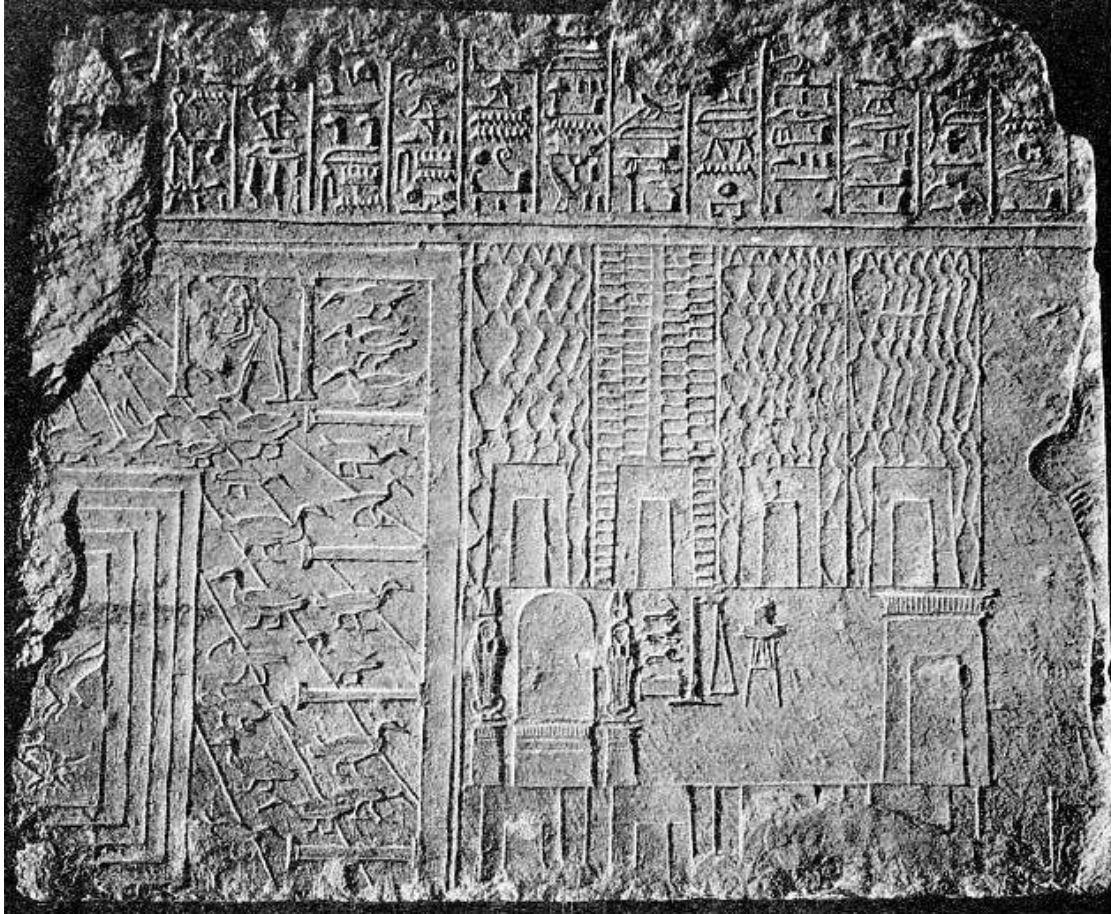


B.



Figure 74. Captive birds at the North Palace of Amarna. (A) Facsimiles of wall painting fragments from the north east court (From Frankfort 1929, pl. 10); (B) Colored rendering of a greylag goose, duck (?), and crane (?) (From *Ibid.*, pl. 11)

A.



B.



Figure 75. Relief fragments depicting a bird farm and several magazines. Late 18th-early 19th Dynasty. (A) Free range enclosure with central pool filled with variety of water birds (Florence Inv. Nr. 5412; from Wresz. I, pl. 395); (B) Representation of an official reporting on the state of the farm (Museum of the University of Strasburg Inv. Nr. 2540A; from Roccati and Vittozzi 2002, p. 137)



Figure 76. Scenes of bird exploitation in the tomb of *Ty-mi-sb3*, Naga el-Mashayikh (From Ockinga 1990, pl. 55)

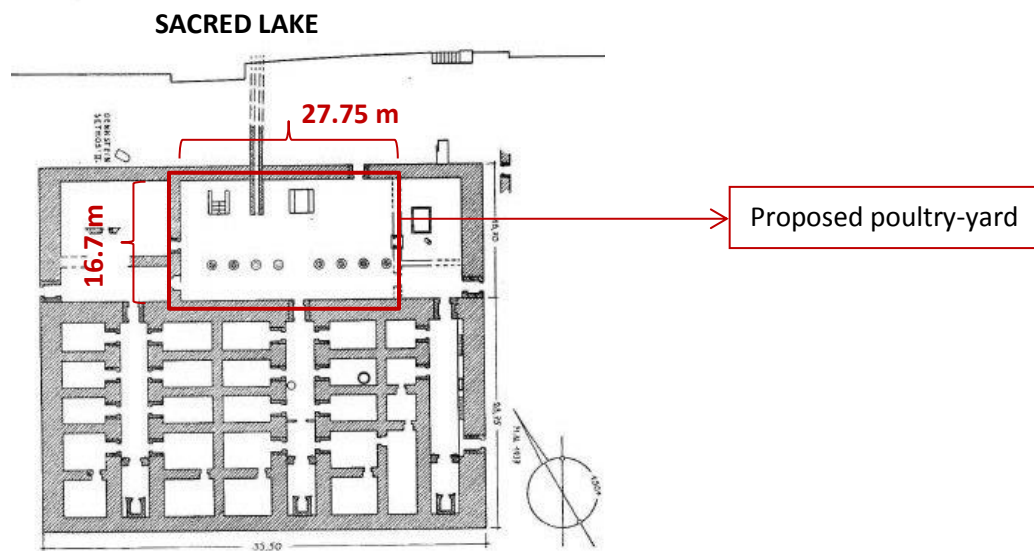


Figure 77. Plan of the *šnꜥ ʿwꜥb* in Karnak (From Ricke 1937, p. 129, fig. 3)

Composition of the Flocks Kept in Captivity



Figure 78. Flock of domestic geese on the move in Poland (From Buckland and Guy 2002, p. 12, fig. 9)

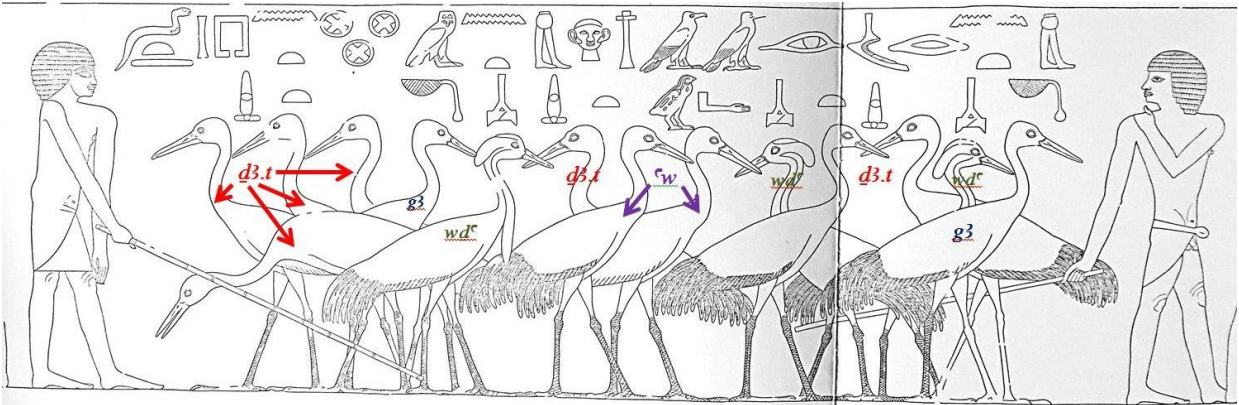


Figure 79. Procession of a variety of cranes in the tomb of Ty (From Wild 1966, pl. 169)



Figure 80. Pair of Eurasian cranes (*Grus grus*) followed by a juvenile (©Neil Bowman, www.flpa-images.co.uk)

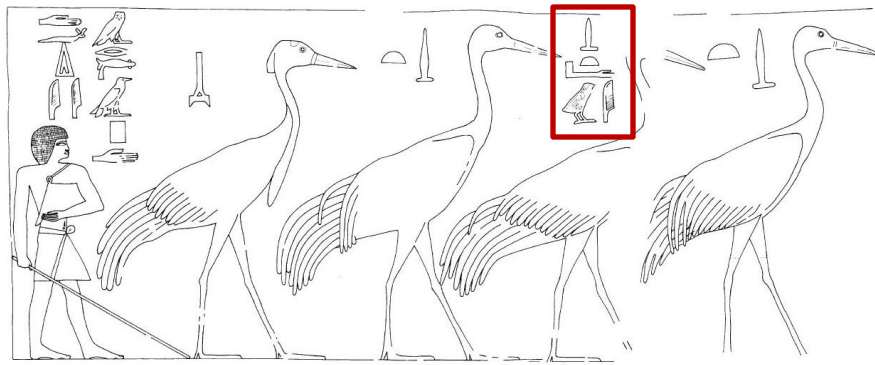


Figure 81. Cranes in the tomb of *Pth-špss* in Abusir (From Verner 1977, pl. 39)

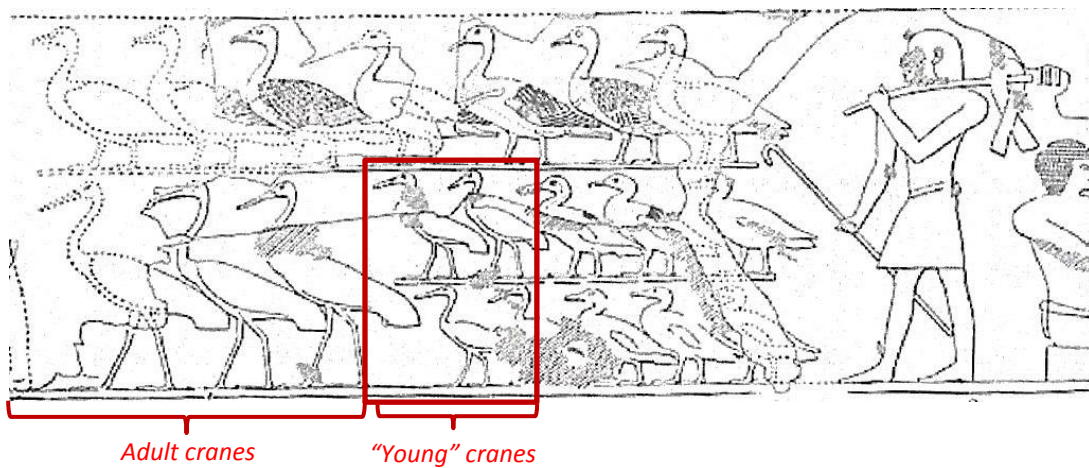


Figure 82. Procession of birds in the tomb of *Pwy-m-R^c* (TT 39; from Davies 1922 part I, pl. 12)



Figure 83. Detailed relief of captive *ht^c3*-geese in the tomb of *Ty* (From Épron and Daumas 1939, pl. 25)



Figure 84. Small gaggle of greylag geese (*Anser anser*) (©iStock.com/dickysingh)



Figure 85. Representations of the *r3*- and *sr*-geese in the tomb of *Ny-ḥnh-Hnm* and *Hnm-ḥtp* (From Harpur and Scremin 2010, pp. 495-497, respectively details (A) 548; (B) 550, (C) 552)



Figure 86. White-fronted goose (*Anser albifrons*) (©iStock.com/MikeLane45)

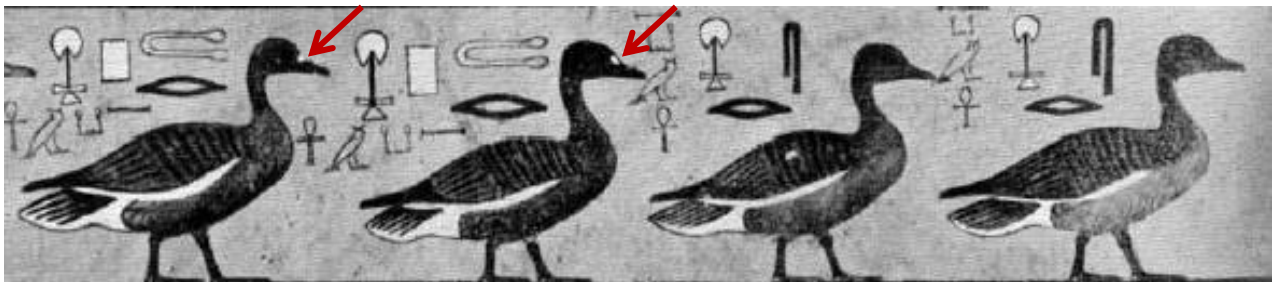


Figure 87. *sr*- and *trp*- geese in the procession of birds from the tomb of *K3.i-m-ḥnh* in Giza. The white spot on the forehead of the *trp* is indicated by an arrow (From Junker 1940, pl. 7)



Figure 88. Painted hieroglyphs on a Middle Kingdom coffin in the Cairo Museum (From Davies and Gardiner 1936 part I, pl. 6). Note the colors of the goose sign for the *gb*-bilateral.

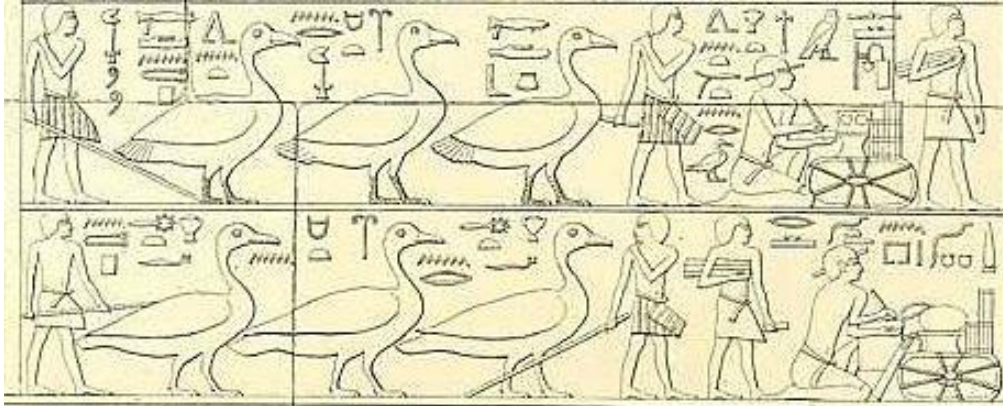
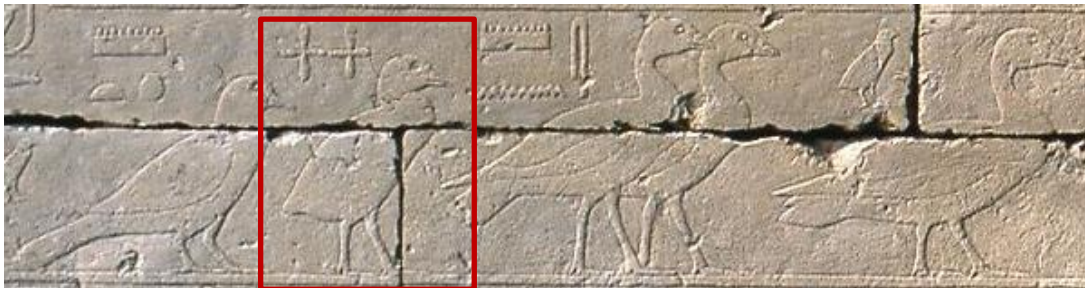


Figure 89. Procession of birds in the tomb of *R^c-špss*, Saqqara (From LD II 61b)

A.



B.



C.

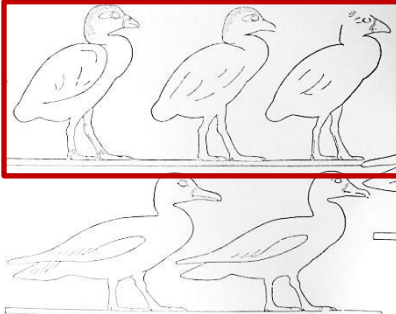


Figure 90. Goslings being presented to the tomb owner. Examples from Old Kingdom tombs: (A) *Pth-htp* [II] (From Harpur and Scremin 2008, p. 197); (B) *R^c-m-k3i* (MMA 08.201.1f; from <http://www.metmuseum.org/art/collection/search/577371>. Last accessed April 6th, 2016); (C) *Ty* (From Wild 1966, pl. 169)

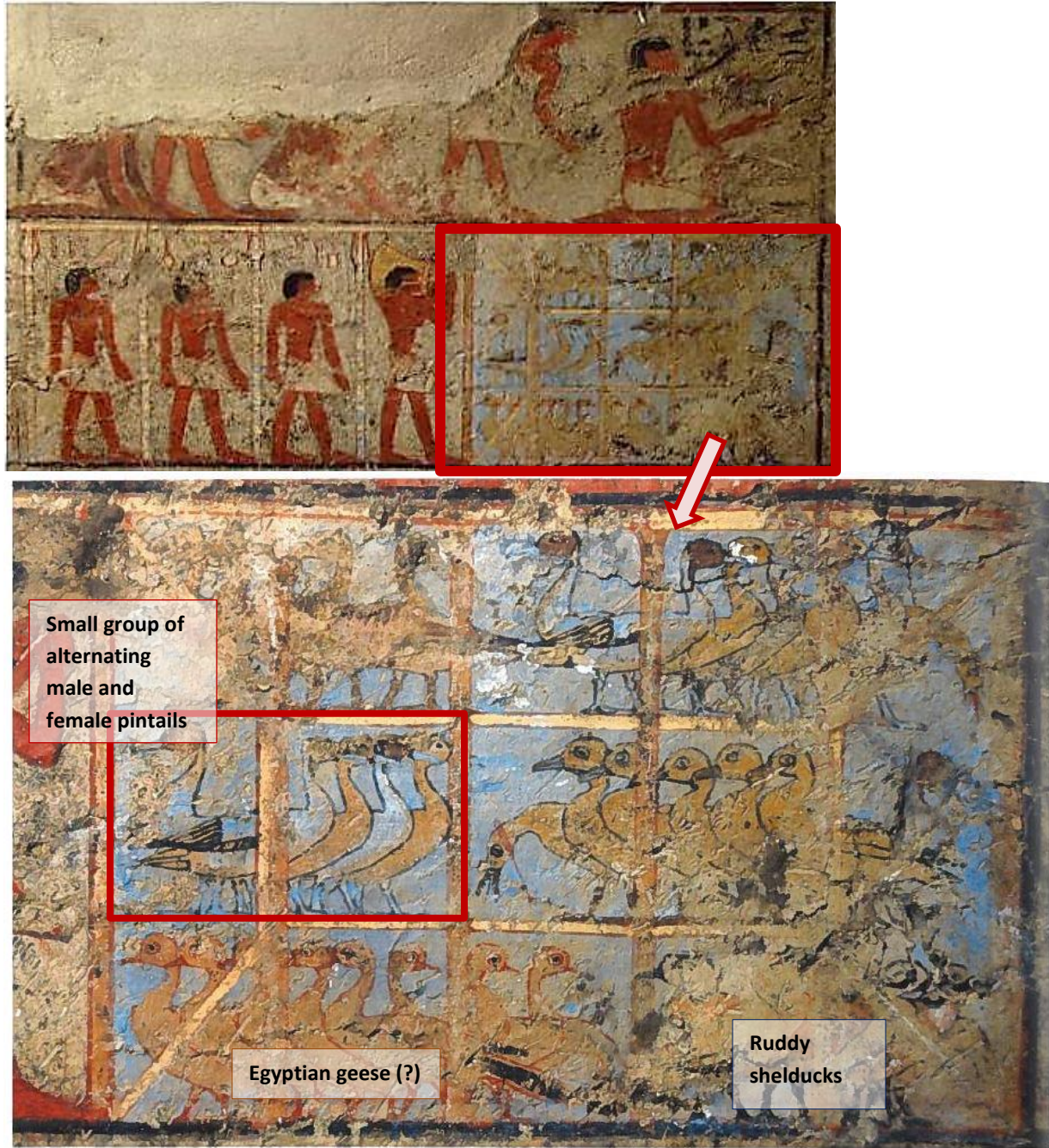


Figure 91. *Hr.t-mw* facility in tomb of *Rmni*, Saqqara (From Kanawati 2009, pls. 17(a)-18(a))



Figure 92. Male Eurasian teal (*Anas crecca*) (©iStock.com/Nicola Destefano)

A.



B.

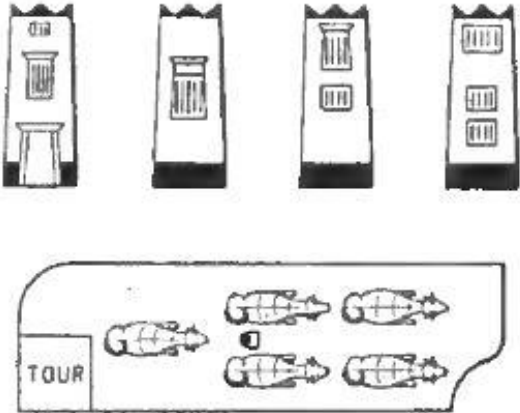


Figure 93. Wooden model of a pigeon tower from the Middle Kingdom tomb of *Imn-m-ḥ3.t*, Dayr al-Barshā. (A) Cairo JE 34293; (B) Sketch of the tower (From Kamal 1901, p. 31 fig. 7)

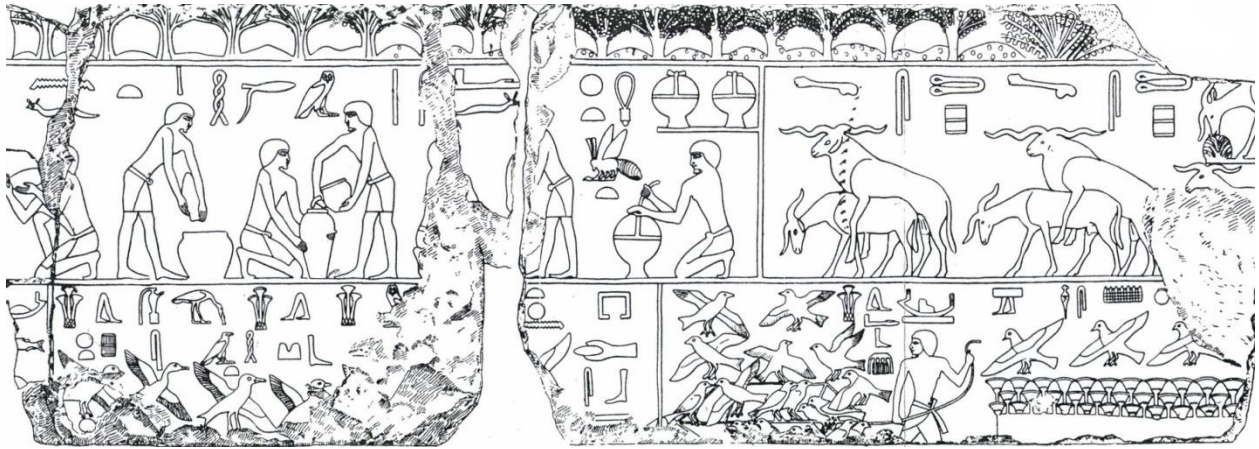


Figure 94. Fragment #255 from the Chamber of Seasons in the Sun Temple of Niuserra. Arrival and capture of *ḥb3*- and *šzmt*-birds (From Von Bissing 1955, pl. 13a)

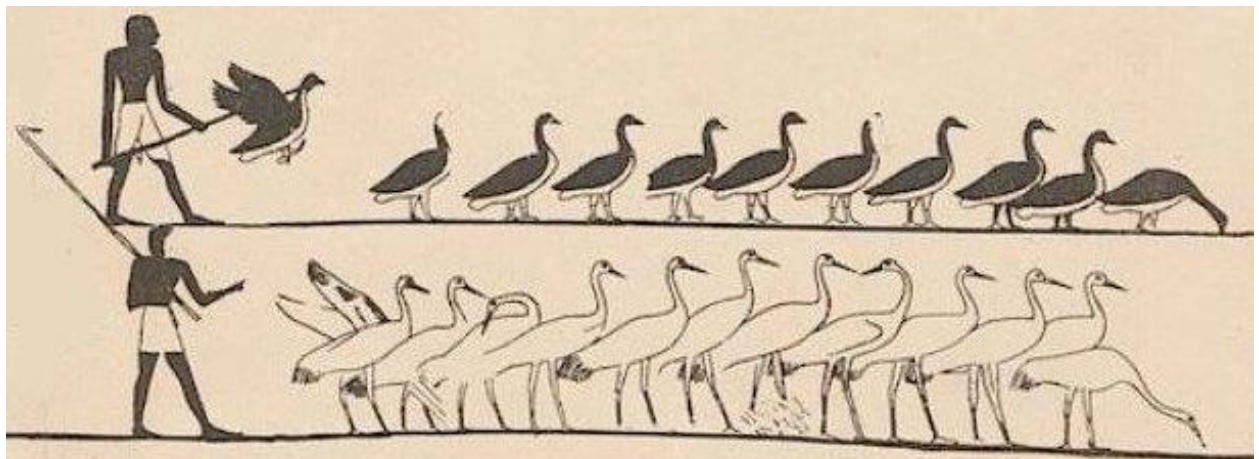


Figure 95. Guardians of birds in the Middle Kingdom tomb of *Hty*, Beni Hassan (From Newberry 1893b, pl. 14)

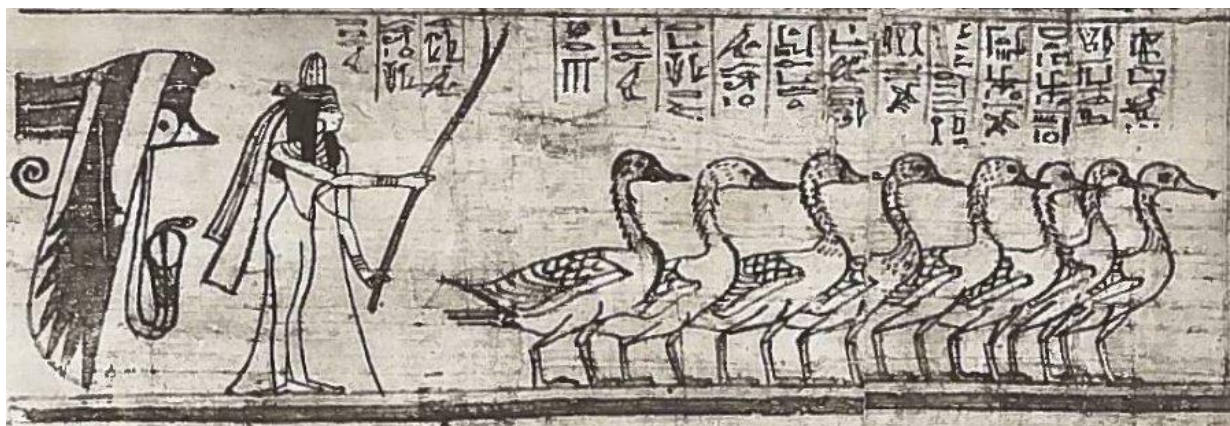


Figure 96. Vignette from the funerary papyrus of *T3-Wd3-Rc* (From Piankoff and Rambova 1957, pl. 15)

Household Poultry Farming – Ethnographic Study

A.



B.



Figure 97. Household poultry farming in Egypt today. (A) Chicken, geese, and ducks roaming in the streets of villages of Middle Egypt, near Dayr al-Barshā (Photos by A. Hallmann); (B) Animal husbandry in the center of Aswan. Chickens (marked by arrows) are raised with a flock of sheep in an abandoned house (Photo by R. Bailleul-LeSuer).

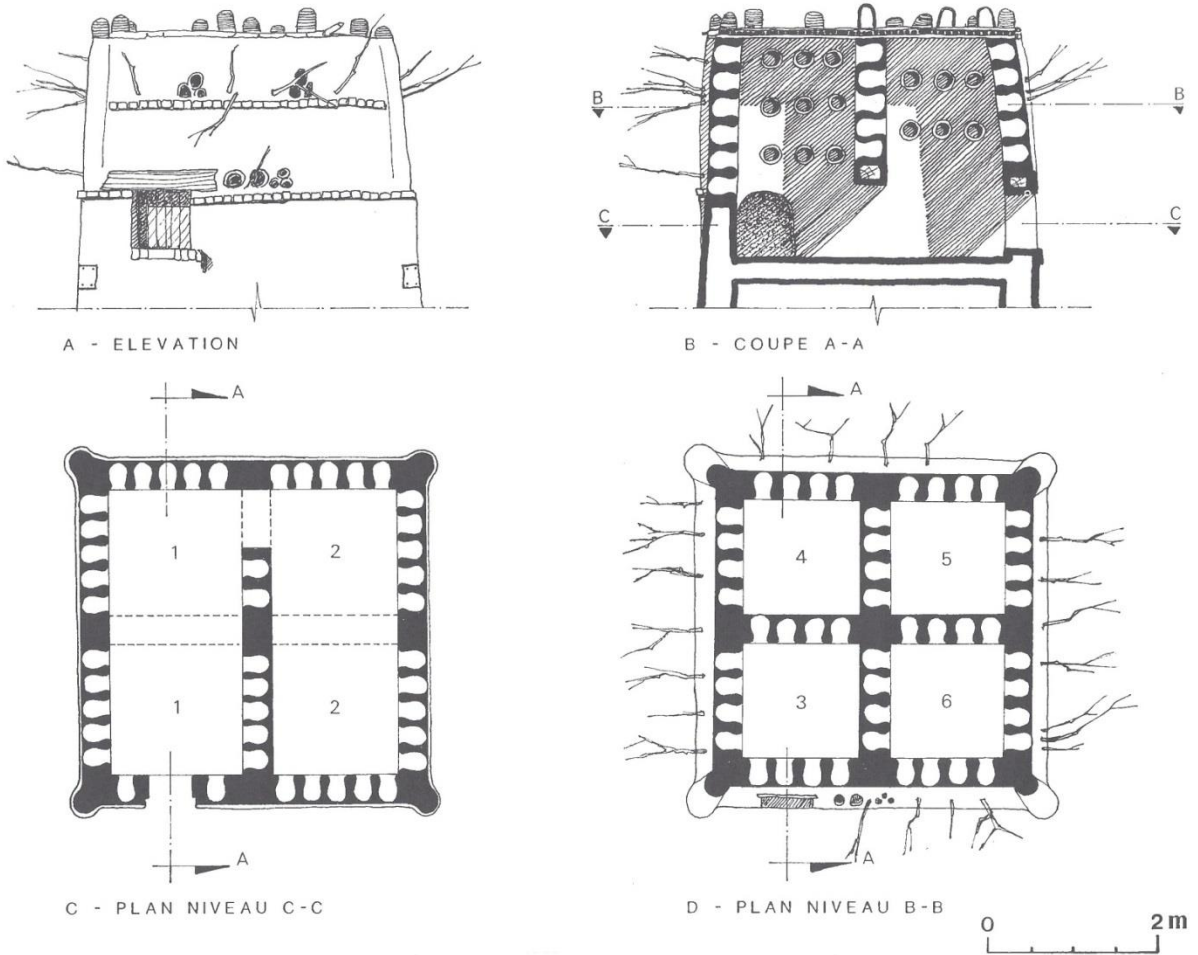


Figure 98. Poultry trader in 19th century Egypt (From Tupper Scrapbooks Collection, Volume 26, Boston Public Library; https://www.flickr.com/photos/boston_public_library/2469126420/in/album-72157604899605802/. Last consulted January 7th, 2016)



Figure 99. Women at work in the courtyard of their house in Mārī Girgis (From Henein 1988, pl. 38a)

A.



B.

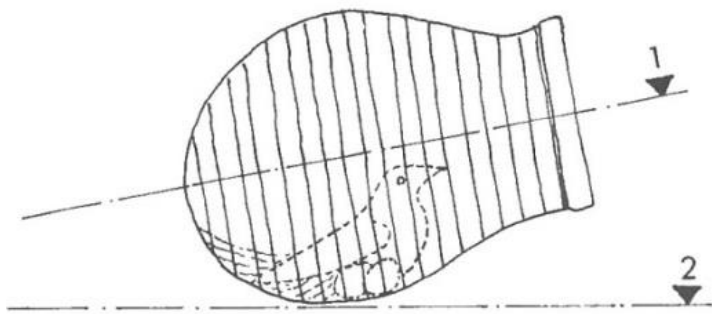


Figure 100. Dovecotes in Mārī Girgis (From Henein 1988, pp. 16-17). (A) Line drawings and plans of a dovecote; (B) Positioning of the nesting pots in the walls' masonry



Figure 101. Cages to raise chicks on the banks of the Baḥr el-Baqar canal, near Lake Manzala (From Henein 2010, p. 402, photo 99)



Figure 102. *qoqa* pot, used as chicken coop in Upper Egypt (From Ikram 2002, p. 168)

Part 3 – Epilogue: Bird Exploitation in Greco-Roman Egypt (332 BC-AD 395)

Representations of Domestic Fowl (*Gallus gallus domesticus*) during the Dynastic and Early Ptolemaic Periods

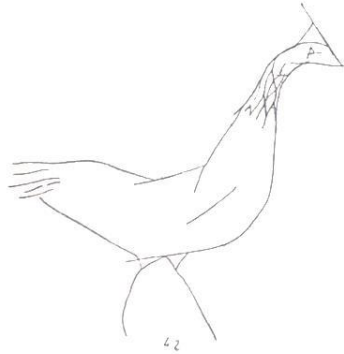


Figure 103. Representation of a domestic fowl (?). Graffito from the temple of Medamud, early 13th Dynasty (From Cottevaille-Giraudet 1931, fig. 42)



Figure 104. Ostrakon with painted sketch of a rooster, Ramesside period (British Museum EA68539; from http://www.britishmuseum.org/research/collection_online. Last accessed April 6th, 2016)



Figure 105. Silver bowl from Tell Basta, decorated with the representation of a rooster and a few hens, early 3rd intermediate Period, (New York, MMA 07.228.20; from <http://www.metmuseum.org/art/collection/search/544698>. Last accessed April 6th, 2016)

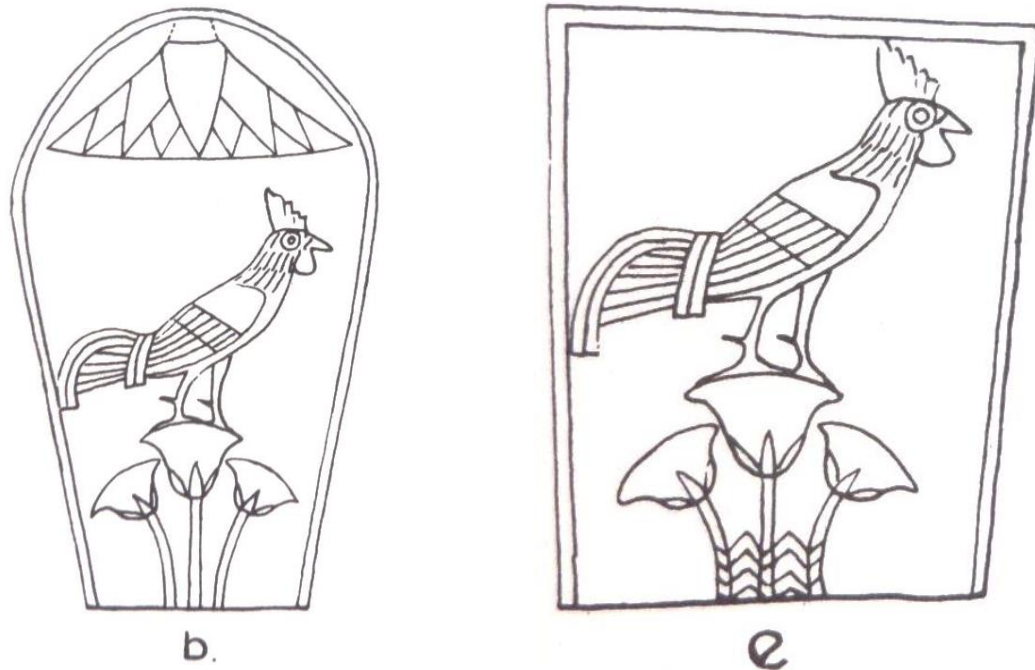


Figure 106. Roosters carved on ivory fragments discovered in the tomb of Queen Yeturow at Nuri, mid-7th century BC (From Dunham 1955, p. 37, figs. 22 b and e)

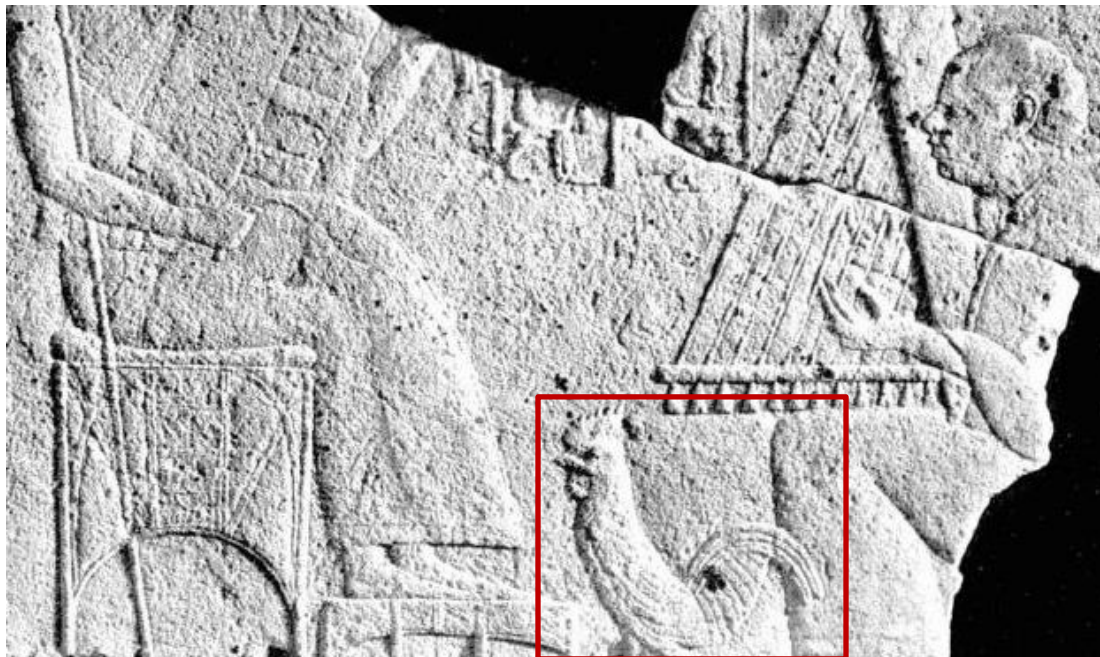


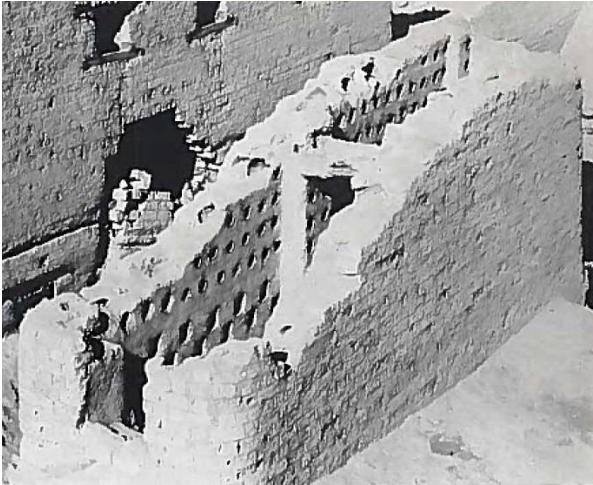
Figure 107. Fragmentary relief from the 30th Dynasty tomb of *Hp-iy-w*, now in Berlin (ÄM 23001; from Scharf 1938, pl. 3)



S
Figure 108. Rooster held by offering bearer in the tomb of *P3-di-Wsir*, ca. 320 BC (From Cherpion *et al.* 2007, p. 116)

Egyptian Dovecotes of the Greco-Roman Period

A.

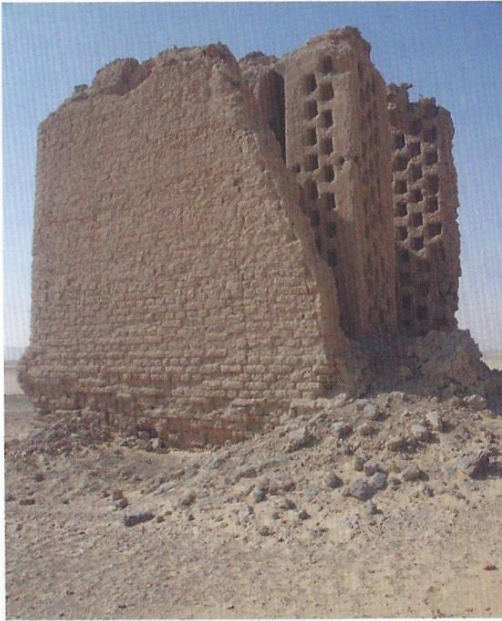


B.



Figure 109. Remains of dovecotes at the Faiyum site of Karanis: (A) dovecote in the courtyard of house C65 (From Boak and Peterson 1931, pl. 33, fig. 65); (B) cross-section of wall and front view of pots in dovecote C37 (From *Ibid.*, pl. 32, fig. 64)

A.



B.

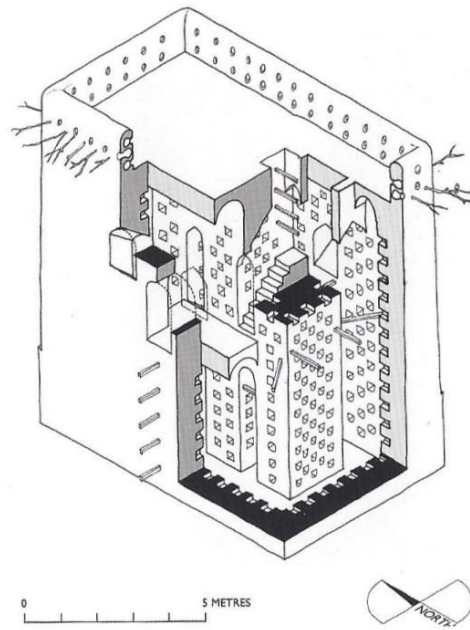


Figure 110. Pigeon tower at the site of Ain al-Dabashiya, Kharga Oasis (From Ikram and Warner 2012, p. 3, figs 2-3). (A) View from the North-East showing the collapsed North wall; (B) cutaway axiometric of the reconstructed tower showing external access and high-level bridge.

Sacred Ibis Cults



Figure 111. Wall painting depicting a flock of sacred ibises and their attendants in the cenotaph of Alexander the Great at Medinet Madi (From Bresciani 1980, pl. 17)