

## BIR UMM FAWAKHIR

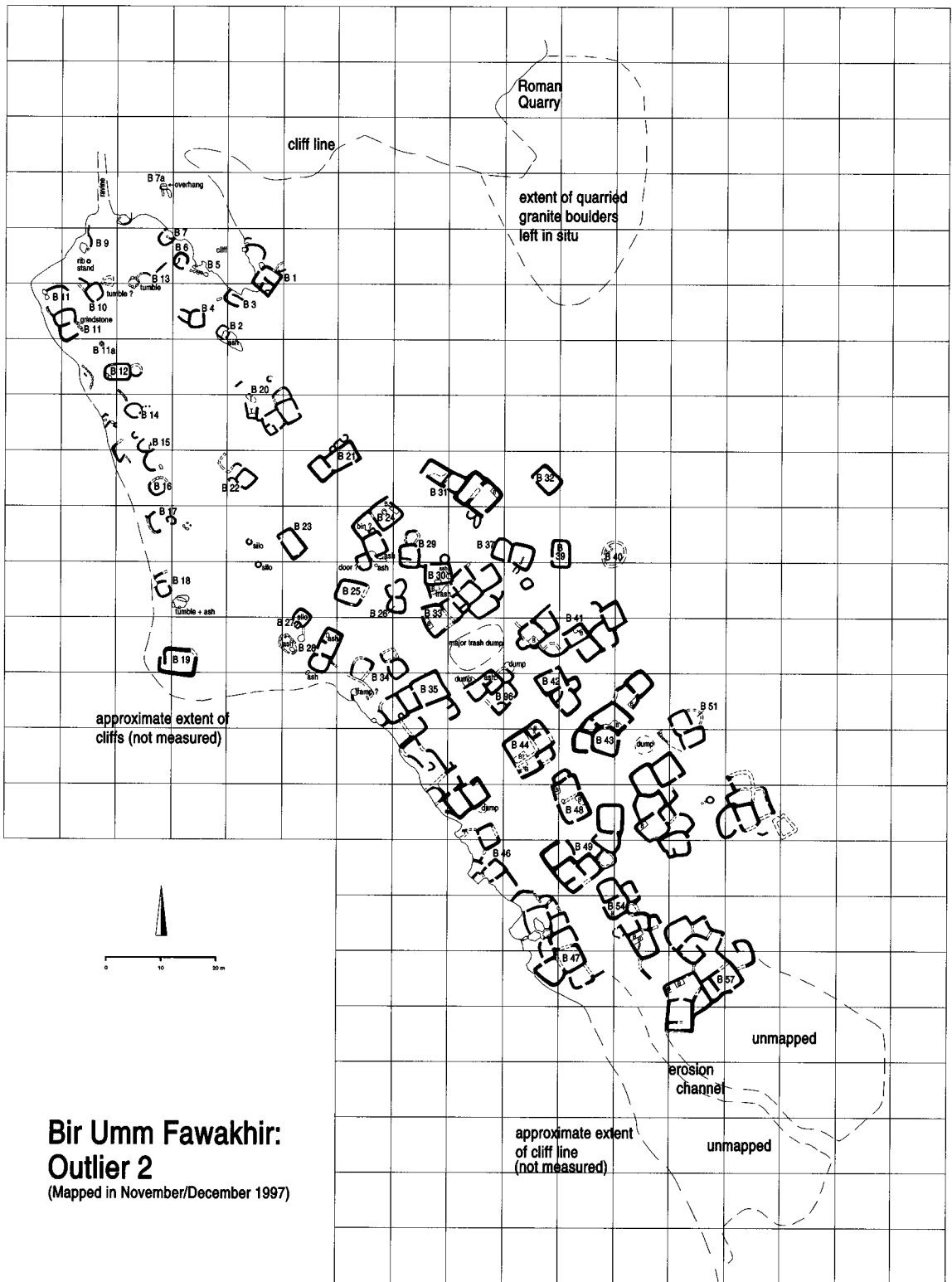
Carol Meyer

The Bir Umm Fawakhir Project's sixth field season was a short study season to complete the documentation of the finds from the 1999 excavations and to study the animal bones and plant remains. The team consisted of myself as field director and draftsman, Henry Cowherd, our photographer for four out of six seasons, Salima Ikram of American University in Cairo as faunal analyst, and Wendy Smith of the English Heritage as archaeobotanist. The two specialists' reports are included below. Our inspector, Abd el-Regal Abu Bakr, could not have been more helpful, and we truly appreciated the support from Chief Inspector Hussein Afyouni and all the inspectors of the Qena office of the Supreme Council of Antiquities (SCA). Thanks are due as ever to Dr. Gaballa Ali Gaballa, Secretary General of the SCA, and to Mme Amira Khattab at American Research Center in Egypt for handling paperwork in Cairo so smoothly. The work was carried out from 17 to 27 March in the antiquities magazine in Quft, and far from being the security problem it might have been, Quft and the Quftis were most accommodating, especially our ra'is Seif Shard Mohammed and his family. Sitt Suad's excellent and generous lunches were a mainstay. Finally, we owe thanks to the Epigraphic Survey, especially to Tina di Cerbo and Ray Johnson, for permitting us to store equipment between seasons and for help with supplies and some much-appreciated lunches at the end of the season.

During the first four seasons at Bir Umm Fawakhir (central Eastern Desert of Egypt, at 26° N and 36° 36'–37' E, or halfway between the Nile at Quft and the Red Sea at Quseir) we mapped all 237 buildings in the main settlement, identified fourteen outlying clusters of ruins of the same date, and mapped most of Outlier 2 (fig. 1). Pottery studies carried out primarily by Lisa Heidorn gave us a fifth–sixth century Coptic/Byzantine date for the main settlement, though there are traces of earlier Roman, Ptolemaic, Late Period, and late New Kingdom activity at or near Bir Umm Fawakhir. Geological studies by Mohamed Badr el-Din Mohamed and Bryan Earl support the identification of the site as a gold-mining town. Our first and only chance to excavate was in 1999, and we sampled two houses, Buildings 93 and 177, two dumps adjacent to B93 that turned out to cover kitchen areas, and one outbuilding, Building 181. (See the 1991/92, 1992/93, 1995/96, 1997/98, and 1998/99 *Annual Reports* for summaries of previous seasons.)

One of the goals of the 2001 season was to complete the documentation of the 1999 finds, to draw that which had been photographed and photograph that which had been drawn. In particular we documented all six coins (fig. 2a–b: RN99/237), which although badly corroded may still help refine the dating of the site, all sixteen of the Coptic stamped sherds, fifty-six out of sixty-four Greek wine jar labels (fig. 3a: Dipinto 28, RN99/223, small, upside down, under amphora handle; fig. 3b: Dipinto 52, RN99/225, large, scrawly, on front of amphora), which might help trace the source of the jars and presumably the wine, and all the “incense burners.” We now have at least four examples of the latter ranging in crudeness from small oblongs hacked out of extremely friable stone to an elegant one with ornamental arches on the sides and legs carved like little columns (fig. 4, RN99/227). All have a shallow depression on the top, but none show any sign of burning. More of the glass corpus was documented; it is surprisingly small, but it is consistent with a fifth–sixth century date, plus some earlier Roman material. Judging from the fabric of the glass, much of it appears to be Egyptian and the rest is probably Syro-Palestinian. Other items recorded this season include little soapstone (steatite) beads and pendants, a fragment of a faience bowl, worked sherd “game pieces,” a stone pestle, clay jar plugs, a fine orange plate with

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**Bir Umm Fawakhir:  
Outlier 2**  
(Mapped in November/December 1997)

Figure 1. Outlier 2. Bir Umm Fawakhir

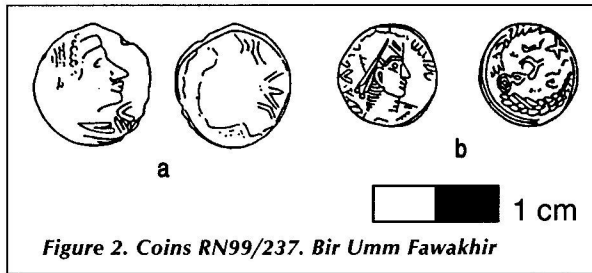


Figure 2. Coins RN99/237. Bir Umm Fawakhir

stamped Coptic design, an unusual painted jar, the only lead artifact recovered (a lead ring), an iron wedge (fig. 5, RN99/241), and the last of the metal artifacts.

In addition to the work in the *Quft* magazine, we visited the site itself one Friday. The main settlement appears unchanged — in particular there seems to have been no further looting — but Outlier 2 on the ancient Roman road had some surprises. The project mapped most of this area in 1997 because it was exceptionally well preserved; for Clemens Reichel's newly-completed map, see figure 1. Some of the houses appeared to stand to their original height, and there were a couple of installations believed to be grain silos made of mud and cobbles, features noted nowhere else on the main site or the outliers. Bedouin had camped at the northwestern end of Outlier 2 quite recently, something not noted in twenty years of intermittent visits to the site. They used some of the ancient houses as animal pens and built a connecting wall through one of the silos to fully enclose another (fig. 6). Sheep and goat droppings lay thick on the ground inside and outside the houses. On the one hand it is fortunate that this is exactly the area we mapped in detail in 1997, and on the other, it raises some interesting questions about Bedouin camps and occasional re-use of the ancient ruins.

Analysis of archaeological data can continue as long as time, funds, and scientific imagination will permit, and surely more surprises await us as we prepare the final reports. The 2001 season did, however, give us the last of the basic documentation of the finds and our first analyses of the animal bones and plant remains. Questions about the site remain; in particular a sample of three out of 237 buildings, not counting the hundreds in the outliers, is too small to permit much generalization. No further work is now planned, however. Partly, we have completed the detailed map of the main settlement and a survey of the immediate area and have answered many of the initial questions we had about the site in 1992. It is time to write the final reports and make those data available to other researchers. Also, excavations are difficult to under-

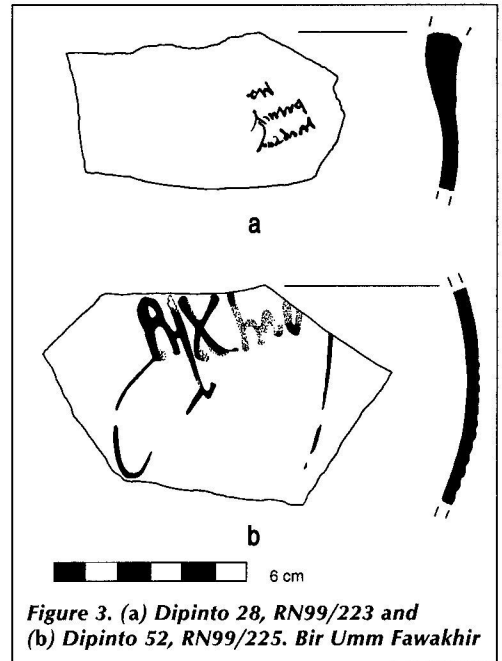


Figure 3. (a) Dipinto 28, RN99/223 and (b) Dipinto 52, RN99/225. Bir Umm Fawakhir



Figure 4. Incense burner RN99/227. Bir Umm Fawakhir

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Figure 5. Iron wedge RN99/241.  
Bir Umm Fawakhir

take in the central Eastern Desert under the present conditions. Surface surveys have on the other hand their own limitations, but they are rewarding and cost efficient in this part of the world. The 2001 field season did succeed in completing the basic documentation of the data on hand — and there will always be outstanding questions — but we can now proceed to the final publication of the last four seasons with more confidence.

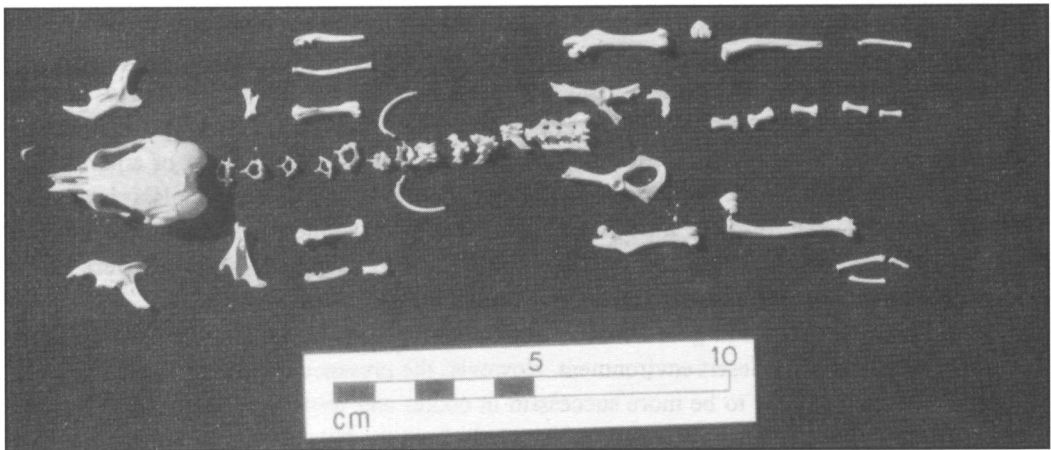
### Preliminary Zooarchaeological Report (Salima Ikram)

During the 2001 Bir Umm Fawakhir study season all the animal bones excavated during the 1999 season were studied, totaling 4,200. The bones came from three main contexts: Building 93 and its two associated middens and tabuns (clay ovens), Building 177, and Building 181.

The range of fauna was similar throughout all three contexts. The most common type of animal, as might be expected, was goat (*Capra hircus*), closely followed by sheep (*Ovis aries*). The next most common bone recovered from the site was, surprisingly, cattle (*Bos taurus*). A few possible camel bones (*Camelus dromedarius*) were found. During a site visit a few more camel bones were found lying on and near midden areas, at surface level. Four ulna portions have been tentatively identified as belonging to pigs (*Sus scrofa*). No donkey (*Equus asinus*) or horse (*Equus caballus*) bones were found amongst the samples. Wild animals were represented by a few gazelle (*Gazella* sp.) bones and several ibex (*Capra ibex nubiana*) bones. A possible distal radius of a juvenile Barbary Sheep (*Ammotragus lervia ornatus*) was also identified. Both gazelles and ibex remain common to the region today, though Barbary Sheep are not now known in the area. Only one fish bone was found during sieving of soil samples from Building 181. As it was a fragmentary vertebra measuring 1.5 mm, it is impossible to identify the species. Two



Figure 6. Ancient house and silo used as animal pen. Bir Umm Fawakhir



**Figure 7. Intact silky jird skeleton**

fragmentary bird bones were also found. The fragments are from wild birds and are unfortunately not diagnostic.

As only three limited areas of this vast site were excavated, it is difficult to reconstruct the ancient diet or range of fauna with total confidence. As mentioned above, a site visit on our day off showed scatters of camel bone, as well as donkey bone. This clearly indicates that although the excavated remains provided a good sample, further work should be carried out, especially in the very rich midden areas, if one is to get a more representative assemblage. However, the bones that were examined provided some surprising results.

The bones were relatively well preserved, albeit eroded from their exposure to heat and sun (or even due to cooking?) and their subsequent interment in dry sand. The preservation was so good that in several instances fragments of cartilage, bits of meat, hide, and hair were still adhering to the bones. Some bones had been burned, and might have been used as fuel. There was surprisingly little gnawing on the other bones. Only a few bones bore gnaw marks, and only three of these were from rodents; the others seemed to be the result of carnivore activity.

The residents of Bir Umm Fawakhir were raising goats, sheep, and cattle. All portions of these animals are found well represented in the excavated sample, which argues convincingly against the importation of special cuts from the Nile Valley. It can be safely assumed that all these animals were used as meat, a conclusion that is supported by the butchery marks found on several of the bones. There was a notable abundance of metapodials, carpals, tarsals, and phalanges, elements that are often discarded during the course of butchery. This also suggests that the inhabitants of the site were well provided with meat, as in meat-poor areas the flesh from the metapodials is used, and the bones can also be used for soup. The good preservation of the bones and relative absence of gnaw marks on the bones suggests that there might have been a minimal canine population at the site. Quite possibly the dogs present on the site (a few canid bones have been found) were well cared for and acted as herd dogs for the flocks of sheep and goats.

The cattle, sheep, and goats could also be used for their dairy products. Pottery finds also support a dairy industry (note the “cheese factory” excavated in 1999). In fact, cheese would be a good way to extend the life of milk in the heat of the desert. Due to the stresses of a desert environment animals such as sheep and cattle would probably not provide as much milk as they would in the Nile Valley. Goats are more adaptable and would be more useful as a stable milk/dairy source, as can be seen today in Bedouin camps in the Eastern Desert.

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The intact rodent skeleton (fig. 7) found in the baulk near the “cheese factory” has been identified as a silky jird (*Merioines crassus*), thanks to M. Carleton.

Wool and hair from the sheep and goats was used for weaving, just as it is today. Perhaps weaving was either a domestic activity, or even a secondary economic activity at the site? Certainly the residents’ own textile needs could be more than met by the number of animals they seem to have at their disposal. Further excavation might reveal some weaving tools. It is possible that the ancient Fawakhiris also traded their cloth, although as yet there is no textual or archaeological evidence to support this theory. Cowhide, of which fragments were recovered from middens together with goatskin, could have also been used for leather products.

The presence of sheep and goat bones is not surprising as these animals, especially goats, flourish in the rather stark desert environment. However, the presence of cattle at the site is unexpected. These animals tend to be more successful in cooler and wetter environments. The question of fodder is also a problem. Was fodder brought in from the Nile Valley for these animals, or was the area much greener in antiquity, or were the animals marched in and slaughtered fairly quickly? Cattle are ill adapted to desert life, so it is surprising that they appear in such numbers in the zooarchaeological record at Bir Umm Fawakhir. In general, and especially in the desert, they are not effective as pack animals, although they can be used to drag wagons, etc. However, there is little evidence of solid pathways at the site, and the ancient Quseir to Nile road has none of the animal lines prominent on the more northerly Qena road that serviced the quarries.

The abundance of cattle bones contrasts oddly with the paucity of camel bones; camels are much better suited to the desert and like cattle can provide meat and milk, as well as being used as draft animals. The dearth of camel bones suggests that these animals were used primarily for transport, rather than for meat or milk. No doubt they were used to transport the gold ore from the site to the Nile Valley and bring in whatever was needed for the residents of the town. However, as the site visit showed, there might be more camel bones at Bir Umm Fawakhir than hitherto suspected, which might alter the current reading of the material and activities at the site. The total absence of donkey bones in the assemblage studied is surprising. These animals are quite hardy, and very useful as pack animals, especially in the hilly environment surrounding the town. The houses that lie a kilometer or so from the wells would have needed water in some volume, which donkeys could have hauled more easily than people. Furthermore, the miners might have used pack animals to carry ore from the mines. Further research may reveal donkey bones (one was seen during the site visit) at Bir Umm Fawakhir. It is also possible that a few camels were kept on-site to carry water. Camels would be less effective than donkeys for carrying ore, however, as they do not move over rocky slopes as handily as donkeys.

Hunting was also an activity that the inhabitants of the site carried out, albeit infrequently. This was done no doubt for sport and recreation as well as for food. Gazelles and ibex frequent the hills and wadis of the Eastern Desert and were probably attracted to the water source at the site in antiquity, just as they are today. Although their remains are not overwhelming, they do make up a significant part of the assemblage.

Unlike other Eastern Desert sites such as Mons Claudianus or Mons Porphyrites, almost no fish from either the Nile or the Red Sea were found. If desiccated (salted) fish were brought in, then the bones might have been eaten or destroyed during cooking; certainly they do not appear in the faunal assemblage from the limited excavations carried out at the site thus far. Only one tiny, fragmentary vertebra was found during sieving a soil sample from Building 181. Sadly, it is unidentifiable to species. The only bird remains are fragmentary, of small wild birds.

Thus, from the evidence currently available, it seems that the diet of the residents of Bir Umm Fawakhir was rich in meat from cattle, sheep, and goats, as well as being well supplied

with dairy products. It is more than possible that the inhabitants of the site were consuming more meat-based protein than the peasants in the Nile Valley. The fact that they were successfully raising the animals at the site would argue for a plentiful water supply and a possible secondary economic activity in the form of weaving. It would be rewarding to excavate further at the site in order to determine the types of draft animals that might have been used, as well as identify the areas where the cattle might have been penned.

### **Plant Remains from Bir Umm Fawakhir (Wendy Smith)**

Archaeobotanical sampling was carried out during the 1999 excavations at Bir Umm Fawakhir in order to establish:

1. What was the nature of diet at Bir Umm Fawakhir?
2. Where were foodstuffs acquired? From the Nile Valley? From the Red Sea? From both areas?
3. What wild foodstuffs, fodder, or fuel were collected from the immediate area?
4. What fuels were in use?
5. Could certain crops have been grown immediately at the site?

### **Method**

Archaeobotanical sampling was undertaken without consulting a specialist and without following a particular sampling strategy. As a result, there is a clear bias in the areas sampled for archaeobotanical material, with the majority of such samples collected from Building 93, Dump 1 and 2. In addition, the volume of soil sampled was usually 1 liter or less (in several cases < 100 ml) in volume, which meant that in most cases the sampling size was too small to produce results of interpretable value.

Samples were dry sieved over a 500 micrometer mesh sieve, and the > 500 micrometer fraction was sorted for plant remains. Both the unsorted < 500 micrometer fraction and the sorted > 500 micrometer fraction were retained. Identifications were made using a low-power binocular microscope at magnifications between  $\times 10$  and  $\times 50$ . All of the taxa were identified without consultation to a reference collection, however, modern reference material was acquired to confirm identifications of certain material (especially material which the author had not encountered archaeologically before — i.e., dom palm fruit kernels). In the vast majority of cases, the plant remains identified were well-known, commonly encountered crops and weeds from Late Antique Egypt, which did not require reference material to identify.

### **Results**

During the 1999 field season fifty-eight samples of handpicked items identified as seeds, four contexts where seeds were included with other collected material (i.e., animal bone, wood, or charcoal), and twenty-three soil samples were collected for analysis. Nomenclature for plant remains follows Zohary and Hopf (1994) for economic plants and Tackholm (1974) for indigenous plants

In total, 1,297 identifications of plant remains have been made, noting the proportion of crops, wood/scrub, and other weed/wild plants identified for the entire assemblage.

Food plants identified in the assemblage include barley (*Hordeum* sp.), bottle gourd (*Lagenaria siceraria*), date (*Phoenix dactylifera*), dom palm (*Hyphaene thebaica*), grape (*Vitis vinifera*), olive (*Olea europea*), and wheat (*Triticum* sp.). In addition, unidentified large pulses

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(*Acacia* sp./*Vicia* sp./*Pisum* sp.) and pod fragments and seeds of Nile acacia (*Acacia nilotica*), both of which were most likely used for animal fodder, were also recovered. All of these plants are typical crops of the Nile Valley. The remainder of the assemblage is made up of seeds of weed/wild plants, many of which are typical of the vegetation (especially scrub) in the Bir Umm Fawakhir wadi today.

The Bir Umm Fawakhir assemblage is not as rich or diverse as other Eastern Desert/Red Sea sites, such as Mons Claudianus or Berenike/Shenshef. However, the plant remains recovered at Bir Umm Fawakhir have also been identified at these sites.

### Discussion

Because of the limited nature of sampling, as well as the small sampling size, it is not possible to draw further comparisons. The assemblage from the soil samples is clearly biased toward charred plant remains. Not only are the majority of samples associated with oven installations, but also the majority of identifications from Building 93 and Building 177 are of charred seeds of scrub/trees. The most likely interpretation is that this assemblage is dominated by material that was used as fuel on-site.

In general, the assemblage recovered from the 1999 excavations at Bir Umm Fawakhir is not particularly rich or varied. In addition, the majority of samples analyzed are not suitably rich to be of interpretable value. Despite this, there are some results from the sampling program, that are worth discussion. In particular, the pattern of preservation (especially in terms of material recovered from the soil samples) and evidence for fuel use at Bir Umm Fawakhir are particularly worth further consideration.

The majority of the plant remains recovered from soil samples are charred. Desiccated plant remains are not only scarce in the Bir Umm Fawakhir samples, but when desiccated material is recovered it usually is quite poorly preserved. The handpicked plant remains, however, do not appear to follow this pattern. The majority of handpicked material collected was desiccated (preservation varied from good to poor).

One possible explanation for the recovery of so much desiccated material in handpicked samples may be the robust nature of date stones, which dominate the handpicked plant remains recovered (i.e., 200 date stones were identified out of a total of 210 identified handpicked plant remains). Another explanation for the marked absence of desiccated material may be the direct result of the haphazard nature of sampling during the 1999 excavations. For example, soil samples were not collected from several areas of the excavation (i.e., no samples were collected from B93 Corridor A and Room D and Building 177 Rooms, B, C East, C West and D West). Since the majority of samples collected are from B93, Dump 1 and 2 and in close proximity to oven installations, it is, perhaps, understandable that charred plant remains dominate the assemblages. However, at other Late Antique period sites in Egypt, such as Kom el-Nana, both charred and desiccated plant remains have been found in association with oven contexts. As a result, it may be possible that the desiccated plant remains do not survive in the area for some currently unknown taphonomic reason. Certainly at Quseir, Wetterstrom observed that Roman period desiccated plant remains were badly damaged by salt deposits and it may be possible that similar problems of salinization may be affecting the desiccated plant remains at Bir Umm Fawakhir.

On the basis of current information, it is not clear whether a potential bias in the areas sampled or underlying taphonomic conditions are responsible for the paucity of desiccated plant remains from the Bir Umm Fawakhir archaeobotanical samples. This question will only be answered through further archaeobotanical sampling from a wider range of contexts at the site.



The richest samples recovered from the Bir Umm Fawakhir 1999 sampling program are all in association with fuel use. Only two samples (both from Building 93 Dump 1 — Locus 2 and Locus 12) were sufficiently rich to be of interpretable value. In both cases, seeds belonging to low-growing bushes, which typically form the scrub in the wadi today, dominated the assemblages. In most of the ash/oven contexts, mixtures of plant remains (often indicative of scrub), charred/desiccated twigs, charcoal and charred/desiccated dung were recovered.

It seems likely that the fuel supply for the Byzantine occupants of Bir Umm Fawakhir was a combination of such materials — all of which are fairly easily available in an environment with limited, or possibly no, trees. Although a soil sample was not collected from B93 Dump 1 Locus 2 (inside Tabun 2) for archaeobotanical analysis, a large sample of charred camel dung from the base of this oven was retrieved. In general the charred dung contained highly broken down plant matter, which was not identifiable, but a few small grass seeds and tamarisk (*Tamarix* sp.) leaves were identified from a small sub-sample of ten camel droppings.

During a visit to the site in the 2001 study season, we observed that such mixtures of dung, wood, and non-wood fuels are still in use, immediately on-site, by the local Bedouins. This does present a very real problem in terms of ascertaining whether the material sampled is securely Byzantine or is perhaps much more recent. The use and re-working of standing archaeological sites is well known in modern Egypt (i.e., *sebakh* digging at Nile Valley sites). The collection of ancient charcoal from archaeological sites by Bedouin for use as fuel has also been recently documented in the Eastern Desert.

The majority of samples collected for archaeobotanical analysis were not from particularly well-sealed deposits (most were immediately below the surface or beneath windblown sand/gravel). The zoo-archaeological assemblage, however, does contain obvious indications for Byzantine date and suggests that some deposits are most likely securely Byzantine (personal communication Salima Ikram). However, securely Byzantine contexts, such as sub-floors, were not sampled for archaeobotanical material and, therefore, the antiquity of the archaeobotanical assemblage presented here remains in some doubt.

## Conclusions

It was not possible to fully address any of the aims for archaeobotanical analysis on the basis of the samples collected from the 1999 field season. In particular, the small sampling size has severely curtailed the interpretable value of the majority of samples studied. Nevertheless, it is clear that plant remains recovered are not atypical of sites dating to this period. The Bir Umm Fawakhir assemblage does provide good evidence for the regular use of mixtures of animal dung, wood, and non-wood fuels. The antiquity of this assemblage, however, must remain in some doubt.

It is clear that many questions remain unanswered at Bir Umm Fawakhir, and it is therefore recommended that, should further excavations be carried out at Bir Umm Fawakhir, much larger samples (a minimum of 20 liters in volume) and a much more intensive sampling strategy should be implemented. Ideally, a trained environmental officer or archaeobotanist should be on-site during the course of excavations to carry out sampling. A priority for future excavations is to determine if desiccated material does survive at Bir Umm Fawakhir. In addition, the antiquity of plant remains is in need of clarification. It is recommended that the full range of contexts encountered is sampled and that archaeobotanical sampling should be integrated with zoo-archaeological sampling by retaining the soil from on-site dry sieving for archaeobotanical analysis.