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THE MOLLUSCS OF THE EXCAVATION OF THE EARLY ARABIC SITE OF YOTVATA, ARAVA VALLEY, ISRAEL

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SUMMARY

The excavation of the Early Arabic site of Yotvata produced few remains of molluscs. Most of the material originated from the Red Sea. A single shell came from the Mediterranean Sea. The presence of several specimens of *Melanoides tuberculata* and *Melanopsis praemorsa buccinoidea* is of local faunistic importance. It indicates that 'En Yotvata was most probably populated by both freshwater snails. Today the nearest spring where these snails still abound, is situated some 120 km to the north. Except for the single Mediterranean *Bolinus brandaris* none of the shells shows any trace of manipulation.

The excavation of the 8th Century AD Early Arabic site of Yotvata in the southern part of the Arava Valley, Israel, carried out by Dr. Z. MESHEL intermittently from 1975-1985, produced quite a number of arhaeo-zoological remains. While the vertebrates among them have been studied by Dr .S. HELLVING, the molluscs are discussed in this report.

MATERIAL AND METHODS

According to size and number of specimens, the molluscs material was apparently handpicked during the various seasons of the excavation.

The material is generally in a good condition and the identification of it caused no particular problems. In a few cases we used the extensive molluscs collection present in the Zoological Museum of the Hebrew University of Jerusalem as a reference tool.

In the nomenclature of the marine molluscs we followed mainly Abbott & Dance (1982), Sharabati (1984) and Tornaritis (1987), because these works are rather up-to-date and moreover easily available also to the layman. For the freshwater molluscs we used the nomenclature as proposed by Mienis (1986).

SYSTEMATIC PART

GASTROPODA

Family Patellidae

1. *Cellana rota* (Gmelin, 1791)
   Locus no. 117, basket no. 534: one complete specimen.
   Remarks: This is a common limpet living abundantly on rocks in the intertidal zone all over the Red Sea. It is an edible species.

Family Neritidae

1. *Nerita polita orbignyana* (Récluz, 1841)
   Locus no. 1013, basket no. 1051: one complete specimen.
   Remarks: It is a very common species living high in the littoral zone everywhere in the Red Sea.

Family Thiaridae

3. Melanoides tuberculata (Müller, 1774)
   Locus no. 1006, basket no. 1026: six complete specimens.
   Remarks: It is a local freshwater species, which was once abundantly living in 'En Yotvata and other springs in the vicinity.
   Today it is extinct in the Yotvata area.

4. Melanopsis praemorsa buccinoidea (Olivier, 1801)
   Locus no. 1013, basket no. 1051: four specimens, one with a broken top.
   Remarks: Like the preceding species it is a local freshwater snail, which has become extinct in the area during historic times.

Family Strombidae

5. *Strombus tricornis* (Lightfoot, 1786)
   Locus no. 126, basket no. 598: one topfragment.
   Remarks: It is a common sanddwelling species from the Red Sea. The snail's meat is edible.

6. *Lambis truncata sebae* (Kiener, 1843)
   Locus no. 119, basket no. 593: one piece of the columella;
   Locus no. 164, basket no. 802: one piece of the lower part of the columella.
   Remarks: It is a common species living in sandy areas in shallow waters throughout the Red Sea. It is an edible species.

Family Naticidae

7. *Polinices tumidus* (Swainson, 1840)
   Locus no. 147, basket no. 743: one complete specimen.
   Remarks: It is a common sanddwelling species from the Red Sea.

Family Muricidae

8. *Bolinus brandaris* (Linnaeus, 1758)
   Locus no. 119, basket no. 525: one specimen with a man-made hole in the bodywhorl.
   Remarks: It is a common Mediterranean species.

Family Conidae

9. *Conus parvatus* (Walls, 1979)
   Locus no. 1013, basket no. 1051: one specimen.
   Remarks: This little Cone is commonly encountered in the Red Sea.

BIVALVIA

Family Ostreidae

10. „Ostreid" species
    Locus no. –, basket no. –: one valve.
    Remarks: It is a fossil species and originates most probably from Cenomanian outcrops in the vicinity of Yotvata.

Family Pteriidae

11. *Pinctada margaritifera* (Linnaeus, 1758)
    Locus no. 103, basket no. 530: one small fragment.
    Remarks: This is a fragment of the common Pearl Oyster: the „Mother-of-Pearl", from the Red Sea.

Family Tridacnidae

12. *Tridacna maxima* (Röding, 1798)
    Locus no 151, basket no. 693: one fragment.
    Remarks: This is the Elongated Giant clam from the Red Sea. Its meat is edible.
13. *Tridacna squamosa* (Lamarck, 1819)
    Locus no. 166-168, basket no. 775: one umbonal fragment.
    Remarks: The Fluted Giant clam is also an edible species from the Red Sea.

DISCUSSION

The 22 molluscs recovered during the excavation belong to 13 different taxa. They had their origin in the following areas:

Local freshwater springs (2)	Melanoides tuberculata
	Melanopsis praemorsa buccinoidea
Local Cenomanian outcrops (1)	„Ostereid" species

Red Sea (9)	Cellana rota
	Nerita polita orbignyana
	Strombus tricornis
	Lambis truncata sebae
	Polinices tumidus
	Conus parvatus
	Pinctada margaritifera
	Tridacna maxima
	Tridacna squamosa
Mediterranean Sea (1)	Bolinus brandaris

Clearly dominating is the material of Erythraean origin. This may be explained by the fact that Yotvada is situated at a distance of only 40 km from the nearest point in the Gulf of Aqaba.

The freshwater snails: *Melanoides tuberculata* and *Melanopsis praemorsa buccinoidea*, originated without doubt from nearby 'En Yotvata. Excavations by Dr. U. AVNER of the Early Arabic site of Avrona, some 24 km south of 'En Yotvata, has produced also large numbers of *Melanoides* and *Melanopsis*. Both species do not live today in 'En Yotvata and 'En Avrona. The nearest kliving populations are to be found near Ne'ot HaKikkar, some 124 km to the north of Yotvata.

Remarkably enough the single representative from the Mediterranean Sea among the material, is the only one showing traces of manipulation i.e. it has a man-made hole in the bodywhorl. All other shell material is either still in a natural state (both freshwater species and the Erythraean Cellana, Nerita, Polinices and Conus), or is broken up in small pieces without showing any traces of manipulation (*Strombus, Lambis, Pincdata* and both *Tridacna* species).

CONCLUSION

The small number of molluscs remains and the almost complete absence of any form of manipulation of the shell material shows that the Early Arabic population of Yotvata was not particularly interested in shells. This confirms a similar situation encountered at the 7-8th Century AD Early Arabic site of Sde Boqer (Nevo, 1985). There Heller & Bar-Yosef (1985) and Mienis (1986) were able to report also on very few specimens and hardly any manipulated shells.

The finds of *Melanoides* and *Melanopsis* are of local faunistic importance. They show that the hydrobiological conditions of 'En Yotvata and other springs in the vicinity (eg 'En Avrona) were different from today in the 8th Century AD.

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ÖSSZEFOGLALÁS

A korai arab időkből származó Yotvata régészeti lelőhely ásatása során néhány puhatestű héja is előkerült. Az anyag legnagyobb része a Vörös-tengerből származik, a Földközi-tenger faunáját egyetlen csigaház képviseli. A *Melanoides tuberculata* és a *Melanopsis praemorsa buccinoidea* több példányának felbukkanása faunisztikai fontosságú. Azt jelzi, hogy a területen korábban nagy valószínűséggel mindkét faj előfordult. A legközelebbi forrás, ahol ezek ma is élnek, 120 km-re Északra található. A földközi-tengeri *Bolinus brandaris*-t kivéve, a többi héjon nem találtunk emberi beavatkozásra utaló nyomot.

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