

ADDITIONAL ARCHAEOMALACOLOGICAL MATERIAL FROM THE EXCAVATION OF EL-AHWAT, ISRAEL

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Abstract: Additional information is given concerning the shells recovered during the excavation of el-Ahwat in Nahal 'Iron, Israel, by Prof. Adam Zertal. These shells, all from Stratum II, dating to the Late Bronze and Early Iron period, had not been available for study previously (Mienis, 2012). This additional material consisted of 76 samples which contained 17 different species. All the material, also that already discussed by Mienis (2012) from Stratum II, is either of local origin or from the nearby Mediterranean Sea.

Some of the shells were exploited by the inhabitants of el-Ahwat as shell beads and pendants, one of the larger land snails was most probably exploited as food, but the bulk of the material from the Mediterranean Sea had most likely been used as building material. The presence of the freshwater snail *Melanopsis buccinoidea* and the predation carried out on these snails by a freshwater crab, most likely *Potamon potamios*, forms an indication that in the past permanent running water was available in the vicinity of the excavated site.

Key-words: Mollusca, archaeology, origin, exploitation, ornamental use, food, building material, climate, Early Iron period, Israel.

During an archaeological survey of the hills in the Menashe (Manasseh) region carried out by Prof. Adam Zertal remains of an interesting site were found on one of the slopes bordering Nahal 'Iron on 25 November 1992. This site called el-Ahwat, was subsequently excavated by Zertal and his team during seven seasons (1993-2000).

According to the excavator we are dealing here with the remains of a fortified settlement or even town which was inhabited by a mixture of local people and the Shardana, a group belonging to the so-called Sea Peoples, with strong relations with Egypt. The Shardanas arrived in the Near East at the end of the 13th Century BCE and according to Zertal the site was inhabited for about 70 years between 1220 and 1150 BCE (but see Remark 1). Stratum II of the excavation is representing that period.

A first report dealing with the archaeomalacological material i.e. the shells recovered at el-Ahwat has been published in the final report (Mienis, 2012). When this report was already published in an electronic form by the publisher, still 76 additional samples were received from Dr. Liora Kolska Horwitz, who studied the animal bones found at the site. It was too late to add the additional data from that material, all excavated in the 1998 season and representing Stratum II, to the original article. Therefore they are dealt with in this second report. The opportunity is taken to discuss briefly all the shell material from Stratum II at el-Ahwat.

The additional shell finds in Stratum II at el-Ahwat

The codes used for the areas are referring to the following excavated units:

A3 – The Upper Terrace. B – A sounding in the Western City Wall.

C1 – The residential Quarter. D – The Central Quarter. E – A sounding in the Southern Quarter

GASTROPODA

Family Melanopsidae

01-*Melanopsis buccinoidea* (Olivier, 1801) – Figs. 1-2.

Area C1; Locus 2319: one shell with a damaged aperture;

Area D; Locus 4429: one shell with a man-hole behind the lip;

Area D; Locus 6431: one shell with a damaged aperture.

Remarks: The damage to the aperture of the shells is most probably the result of predation by the freshwater crab *Potamon potamios*.

Family Cassidae

02-*Semicassis granulata undulata* (Gmelin, 1791) – Fig. 3

Area C1; Locus 1312: one "Cassid" lip;

Area C1; Locus 5308: one almost smooth "Cassid" lip;

Area E; Locus 6500: one "Cassid" lip.

Remarks: Until recently this species was placed in the genus *Phalium*.

Family Ranellidae

03-*Cymatium parthenopeum* (von Salis, 1793)

Area C1; Locus 6302: one small fragment.

Family Muricidae

04-*Bolinus brandaris* (Linnaeus, 1758)

Area D; Locus 2425: one part of the aperture.

Area A3; Locus 6113: one heavily abraded shell missing the apex and the body whorl;

05-*Hexaplex trunculus* (Linnaeus, 1758)

Area C1; Locus 4312: one heavily abraded body whorl;

Area D; Locus 6425: one small part of the body whorl;

Area E; Locus 6508: one fragment of the penultimate whorl and columella.

06-*Stramonita haemastoma* (Linnaeus, 1758)

Area A3; Locus 6103: one part of the body whorl.

Family Nassariidae

07-*Nassarius circumscriptus* (A. Adams, 1851)

Area D; Locus 6408: one shell.

08-*Nassarius gibbosulus* (Linnaeus, 1758) – Fig. 4.

Area A3; Locus 6114: one shell with a man-made hole behind the lip.

Family Conidae

09-*Conus mediterraneus* Hwass, 1792

Area D; Locus 6431: one small shell.

Family Enidae

10-*Buliminus labrosus labrosus* (Olivier, 1804)

Area C1; Locus 2308: one small, adult shell;

Area D; Locus 6434: one shell with a damaged aperture.

Family Hygromiidae

11-*Monacha syriaca* (Ehrenberg, 1831)

Area D; Locus 6431: one body whorl.

12-*Xeropicta vestalis joppensis* (Schmidt, 1855)

Area D; Locus 6425: one shell;

Area D; Locus 6434: one shell.

Family Helicidae

13-*Helix engaddensis engaddensis* Bourguignat, 1852

Area D; Locus 6408: one small fragment;

Area D; Locus 6434: three fragments of a single (?) shell.

14-*Levantina spiriplana caesareana* (Mousson, 1854) – Fig. 5.

Area A3; Locus 6100: one fragment of the aperture;

Area A3; Locus 6101: one fragment of the aperture;

Area A3; Locus 6103: two fragments of different apertures;

Area A3; Locus 6105: one fragment of the aperture;

Area A3; Locus 6113: two fragments;

Area C1; Locus 1315: one small fragment;

Area D; Locus 3411: one fragment of the aperture;

Area D; Locus 6400: two fragments (one of the aperture);

Area D; Locus 6404: one fragment of the aperture;

Area D; Locus 6407: one shell;

Area D; Locus 6409: two fragments (one of the aperture);

Area D; Locus 6423: one fragment of the aperture;

Area D; Locus 6425: 19 fragments (three of apertures);

Area D; Locus 6428: two shells;

Area D; Locus 6434: seven fragments belonging to at least two shells.

BIVALVIA

Family Glycymerididae

15-*Glycymeris nummaria* (Linnaeus, 1758) – Fig. 6.

Area A3; Locus 6100: two fragments;

Area A3; Locus 6101: two valves heavily damaged towards the margins and one fragment of the ventral margin;

Area A3; Locus 6103: one right valve with a very large man-made hole in the umbo, one small right valve with a natural hole in the umbo, one small right valve with a slightly damaged ventral margin and one fragment;

Area A3; Locus 6104: one umbonal fragment and two other fragments;

Area A3; Locus 6105: one small right valve and one damaged small valve with a tiny natural hole in the umbo;

Area A3; Locus 6106: one part of the ventral margin;

Area A3; Locus 6107: one umbonal fragment with a man-made hole;

Area A3; Locus 6113: one tiny left valve with a natural hole in the umbo, one tiny valve missing the ventral margin and two fragments;

Area A3; Locus 6114: one slightly damaged small left valve;

Area A3; Locus 6116: one small fragment;

Area B; Locus 1215: one umbonal fragment with a hole;

Area C1; Locus 1315: one valve with a tiny natural hole in the umbo and a small fragment of the ventral margin;

Area C1; Locus 2308: one umbonal fragment with a hole and two fragments;

Area C1; Locus 3320: one part of the ventral margin;

Area C1; Locus 4319: one damaged valve and one right valve with a tiny, natural hole in the umbo;

Area C1; Locus 4323: one fragment;

Area C1; Locus 6301: one right valve with a hole in the umbo;

Area C1; Locus 6302: one heavily abraded valve;

Area C1; Locus 6303: one small fragment of the ventral margin;

Area C1; Locus 6306: one valve heavily damaged towards the ventral margin;

Area C1; Locus 6307: one valve;

Area D; Locus 2425: one valve with a tiny natural hole in the umbo and one heavily damaged valve with a hole in the umbo;

Area D; Locus 3411: one small left valve and three fragments;

Area D; Locus 3419: one fragment;

Area D; Locus 3422: one umbonal fragment with a natural hole;

Area D; Locus 3428: one umbonal fragment;

Area D; Locus 3429: two valves with a hole in the umbo one complete valve and four fragments;

Area D; Locus 3437: one fragments;

Area D; Locus 4403: one fragment;

Area D; Locus 4408: one small valve;

Area D; Locus 4426: two valves of which one with a man-made hole in the umbo;

Area D; Locus 4429: one left valve and one fragment;

Area D; Locus 6400: one small left valve, one ventral margin and one fragment;

Area D; Locus 6402: one umbonal fragment;

Area D; Locus 6404: one small left valve;

Area D; Locus 6406: one fragment;

Area D; Locus 6407: one fragment and one small fragment of a ventral margin;

Area D; Locus 6408: one heavily damaged valve with a hole in the umbo, one umbonal fragment with a tiny natural hole and one small fragment;

Area D; Locus 6409: one damaged valve and three fragments;

Area D; Locus 6423: one valve with a tiny natural hole in the umbo;

Area D; Locus 6425: two damaged valves with a hole in the umbo, one valve heavily damaged towards the ventral margin, one small right valve, one small part of the ventral margin and one other fragment;

Area D; Locus 6433: one heavily damaged valve with a hole in the umbo;

Area D; Locus 6434: one half of a valve which had a man-made hole in the umbo;

Area E; Locus 6508: one umbonal fragment with a hole.

Remarks: Until recently this species was better known as *Glycymeris insubrica* (Brocchi, 1814).

Family Pectinidae

16-Pectinid fossil

Area C1; Locus 6309: an impression in a stone of a Pectinid fossil of unknown origin.

Family Cardiidae

17-*Cerastoderma glaucum* (Poiret, 1789)

Area C1; Locus 1315: one umbonal fragment.

Discussion

The discussion is not only dealing with the new material but also with the already published (Mienis, 2012) original material from Stratum II. In Mienis, 2012 all the shell material also from Stratum I: late Roman-Early Byzantine 4-5th Century CE and later and material of doubtful age is reported upon without indication of the possible age of the material. That important information was not available at the time of the writing of the report. The list of loci in Zertal (2012) has solved that problem. The excavation of Stratum II at el-Ahwat has revealed the presence of 20 different mollusc species (Table 1).

Table 1: Shells found at el-Ahwat Stratum II

Species	Mienis, 2012	This report
<i>Melanopsis buccinoidea</i>	—	3
<i>Semicassis granulata undulata</i>	4	3
<i>Cymatium parthenopeum</i>	—	1
<i>Bolinus brandaris</i>	—	1
<i>Hexaplex trunculus</i>	1	4
<i>Stramonita haemastoma</i>	1	1
<i>Nassarius circumcinctus</i>	1	1
<i>Nassarius gibbosulus</i>	3	1
<i>Conus mediterraneus</i>	1	1
<i>Buliminus labrosus labrosus</i>	9	2
<i>Pene sidoniensis</i>	1	—
<i>Monacha crispulata</i>	1	—
<i>Monacha syriaca</i>	1	1
<i>Xeropicta vestalis joppensis</i>	9	2
<i>Helix engaddensis engaddensis</i>	10	2
<i>Levantina spiriplana caesareana</i>	18	34
<i>Glycymeris nummaria</i>	99	85
Pectinid fossil	—	1
<i>Acanthocardia tuberculata</i>	1	—
<i>Cerastoderma glaucum</i>	—	1

Origin of the shell material

From the zoogeographical and ecological point of view the shells reached el-Ahwat from four different areas:

Local landsnails (7 species): *Buliminus labrosus labrosus*, *Pene sidoniensis*, *Monacha crispulata*, *Monacha syriaca*, *Xeropicta vestalis joppensis*, *Helix engaddensis engaddensis* and *Levantina spiriplana caesareana*. All are still living in the vicinity of el-Ahwat and most shells might be of much more recent origin.

Local freshwater snails (1 species): *Melanopsis buccinoidea*. Although this is a common species living in almost every spring and stream in Israel, living populations are at this moment not known from the el-Ahwat region.

It is however possible that Nahal 'Iron during the Early Iron Age was a permanent flowing stream. In that case the climate was different from that of today. Two shells of *Melanopsis buccinoidea* show a damaged aperture, a sign that they were predated upon most probably by the freshwater crab *Potamon potamios* (Fig. 2), which reinforces the opinion that running water was available not far from the site.

Local fossil shells (1 species): a Pectinid imprint of a valve in a stone. The fossil is likely of local origin.

Mediterranean marine molluscs (11 species): *Semicassis granulata undulata*, *Cymatium parthenopeum*, *Bolinus brandaris*, *Hexaplex trunculus*, *Stramonita haemastoma*, *Nassarius circumcinctus*, *Nassarius gibbosulus*, *Conus mediterraneus*, *Glycymeris nummaria*, *Acanthocardia tuberculata* and *Cerastoderma glaucum*.

All are typical Mediterranean species. For centuries *Glycymeris nummaria* is washing ashore in very large numbers.

Exploitation of the molluscs

Only very few shells found at el-Ahwat show signs of human manipulation.

Ornamental use

One shell each of *Melanopsis buccinoidea* (Fig. 1) and *Nassarius circumcinctus* and four shells of *Nassarius gibbosulus* (Fig. 4) show a man-made hole in the body-whorl just behind the lip of the aperture. In this way these shells were turned into shell-beads. A different method had been used to transform a shell of *Conus mediterraneus* into a shell-bead. In that shell the apex of the Cone shell had been rubbed off till a hole appeared in the top of the shell through which it could be strung.

Among the valves of *Glycymeris nummaria* are quite a number which show a hole in the umbo. It is often impossible to decide whether such a hole is a natural or a human-made one. An example of the latter is given in Fig. 6. However in both cases such valves could have been used by the inhabitants of el-Ahwat as shell-pendants.

'Cassid' lips

Seven so-called 'Cassid'-lips were found during the excavation (Fig. 3). A 'Cassid'-lip is formed out of the very strong and heavy developed outer lip of *Semicassis granulata undulata*. They are known from numerous sites all over the Levant but their function (ornamental?) is still unknown (Reese, 1989).

Food

At least two of the species of terrestrial snails found at el-Ahwat are known as edible species: *Helix engaddensis engaddensis* and *Levantina spiriplana caesareana*. Especially during or after rain these snails can be collected in large numbers. At el-Ahwat respectively 12 and 52 shells or fragments were found of these large snails. Of the *Levantina* 19 fragments of the columella and adjoining basal lip (Fig. 5) i.e. the strongest part of the shell, were found (and many more in Stratum I and in unspecified loci). Such fragments are only known from this site. They may form an indication that after breaking off that part of the shell it was easier to extract the snail from the shell in order to consume it either raw or boiled.

Building material

The most commonly found mollusc at el-Ahwat was *Glycymeris nummaria*. Still today it is the most abundant species found on the Mediterranean beach. Throughout history *Glycymeris* valves and fragments have been used as building material. Mixed with tit or clay it was used for filling spaces between the building-stones. At other sites layers of mainly *Glycymeris* valves mixed with shell grit composed of other marine species were found under floors or between walls resulting in a better isolation and reducing humidity. At el-Ahwat we can only guess to their use.

Conclusion

The molluscs found at el-Ahwat are either of local origin (land- and freshwater molluscs and a single fossil) or arrived from the relatively nearby Mediterranean Sea at some 18 km west of the site. Some of the gastropod shells among the *Melanopsis*, *Nassarius* and *Conus* shells showed traces of manipulation and were obviously used as shell-beads, while some of the *Glycymeris* valves with a hole in the umbo served probably as shell-pendants. The purpose of the so-called 'Cassid'-lips remains a riddle.

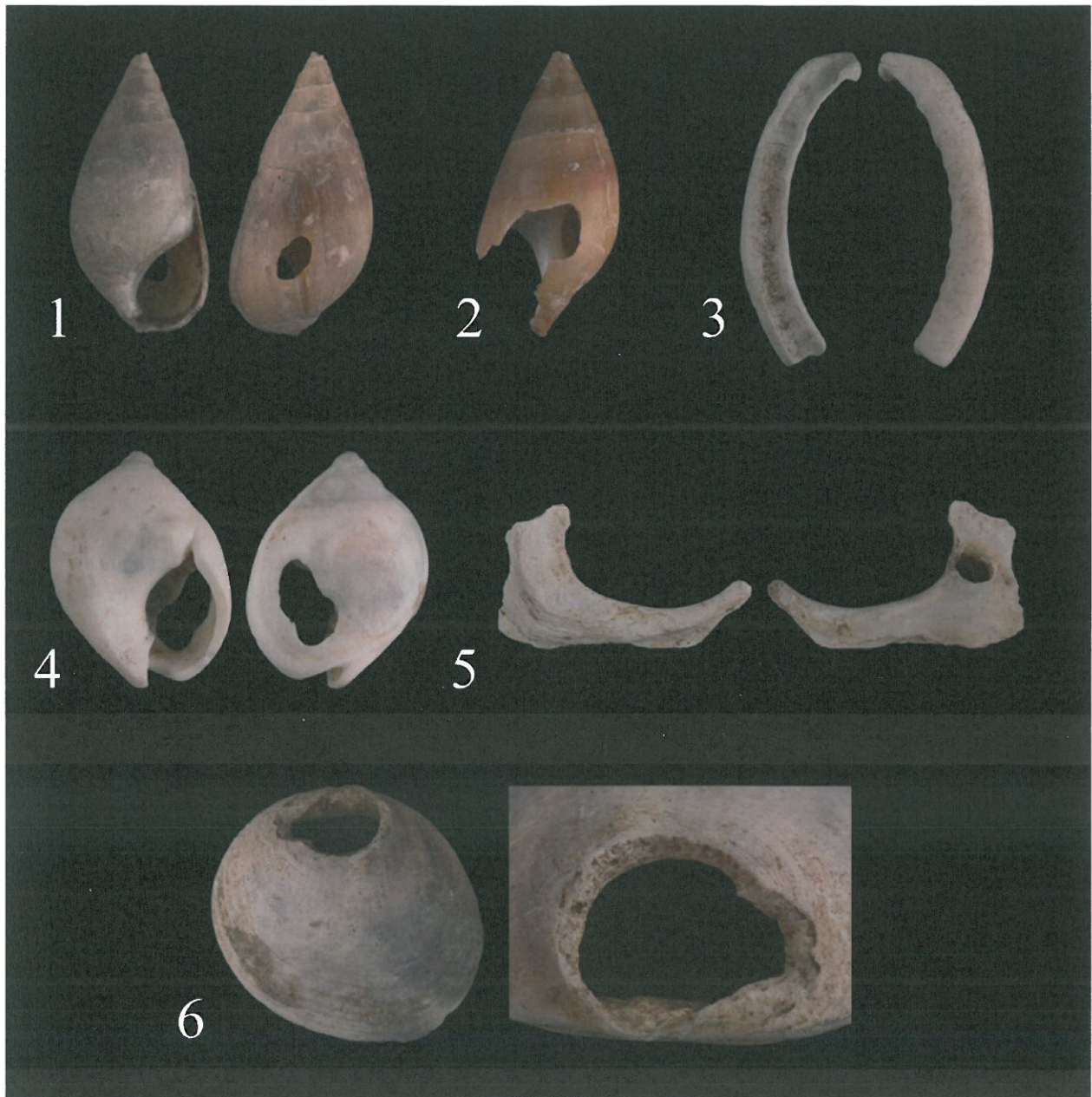


Plate 1: Shells from El-Ahwat. 1-2: *Melanopsis buccinoidea*, 1. with man-made hole (height 21mm) and 2. with signs of predation by a freshwater crab (height 20.4 mm); 3: *Semicassis granulata undulata*, "Cassid" lip (height 38.1 mm); 4: *Nassarius gibbosulus*, with man-made hole (height 14.2 mm); 5 *Levantina spiriplana caesareana*, fragment of the lower part of the columella and the basal lip (length 20.4 mm); 6. *Glycymeris nummaria*: right valve with large man-made hole in the umbo (width 30.4 mm). Photographs Oz Rittner.

There is some indication that the inhabitants of el-Ahwat used one of the large land snails (*Levantina*) as food. The presence of several specimens of *Melanopsis buccinoidea* and damage caused to them most probably by the freshwater crab *Potamon potamios* form strong indications that running water the whole year round was present in the vicinity of the site, most likely in Nahal 'Iron.

Contrary to the finds of many so-called typical Egyptian objects at the site: especially scarabs (Zertal, 2012), the shells do not show any connection with Egypt. Even shells from the Red Sea were not among the material, although two such species: *Monetaria annulus* (Linnaeus, 1758) and *Monetaria moneta* (Linnaeus, 1758), were among the not-classified samples (Mienis, 2012).

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Remark 1.

Some fellow archaeologists in Israel question Zertal's interpretation of the site. Since I am not an archaeologist but a malacologist I do not enter that discussion. The shells discussed in this study were all retrieved from Stratum II. If that layer turns out not to be of Early Iron origin then the age of the shells should be adjusted to the new interpretation.

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