

THE ARCHAEO+MALACOLOGY GROUP NEWSLETTER

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Editorial

The sixth issue of the AMG Newsletter includes two articles on prehistoric shell jewellery, a nomenclatural change, abstracts of papers submitted by contributors, and a conference notice. Thanks are due to everyone who has provided items for this newsletter, and to Kath Szabo of the ICAZ Archaeomalacology Working Group and Aydin Orstan for posting it on their respective websites: <http://triton.anu.edu.au/> and <http://home.earthlink.net/~aydinslibrary/AMGnews.htm>.

The success of any newsletter depends on its content, so please continue to send short articles, research notes, publications, notes and news, and conference notices and reports to me at the above postal or email address (and please make sure that all email contributions are labelled 'AMG Newsletter' – or they may not be opened). The next issue of the AMG Newsletter is due to appear before the end of March 2005. (JRS)

Comments on some elements of shell jewellery from prehistoric Switzerland

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With the kind assistance of Philippe Curdy, Patrick Moinat and Jacques Reinhard

Certain elements of shell jewellery from prehistoric Switzerland have particularly caught my attention, and have prompted me to make some comments about them.

I recall especially the shell ornaments in the Sion Museum, which I was able to examine thanks to the dedication of Philippe Curdy and Jacques Reinhard; I am extremely grateful to them. Among these items, I found some that had already been published (Gallay and Chaix, 1984; Ramseyer, 1995; Rast, 1995; Borrello, 2003). Shells of *Columbella rustica*, perforated opposite to the aperture, or threaded in an axial direction, are represented in large numbers and form several reconstructed necklaces. Their state of preservation is very variable. This is attributed to wear by the action of the sea, as M. Cartonnet has noted in examples collected from a beach at Var (France). It also emphasizes that the configuration of these gastropods is not a chronological marker; the direction of threading was carried out according to the degree of wear of the material when it was first acquired by man (Cartonnet, 1991). He cites, as an example, the five specimens from Petit Chasseur at Sion (Gallay and Chaix, 1984). The necklaces exhibited in the Museum and those in the reserve collection reflect exactly the published illustration: the great variability in condition is shown by entire shells holed opposite to the aperture, shells lacking the spire, and others in which the columella has been exposed, etc. This situation is due solely to the original non-selective collection of shells and not to the poor conservation of archaeological material in the Museum and its reserve store, which is to be generally denounced (Borrello, 2003). The shells are not crumbling to dust and there is no major risk to displaying and handling them in accordance with the usual precautions carried out with archaeological material.

The examination of the shells has allowed me to record superficial damage to the shell surface by marine microorganisms. This type of damage intrigues me because I have previously observed this only on a single example of *Columbella* found at a jewellery-making workshop site at Aude (France) (Pauc and Reinhard, 2002).

These comments on the state of preservation of jewellery components are also valid for sections of *Dentalium sexangulum* which have been more or less rolled by marine action. These Pliocene fossils were collected in the condition in which they exist today because they are identical to specimens collected from Pliocene deposits in Pyrenees-Orientales (France).

At Sion, one fragment of a *Cerastoderma glaucum* shell, which has been rolled by marine action, presents two perforations in the centre and this was published first as a button made from ‘*Cardium edule*’ (Rast, 1995) and then as an ‘*Achantocardia*’ pendant (Borrello, 2003).

Another example concerns some tubular jewellery elements which have been identified as serpulids (Borrello, 2003). Looking at these pieces, one is inclined to interpret them as fragments of vermetids. These last are included among the components of a necklace from Tomb 1 at the necropolis of Chamblandes (displayed in the Lausanne Museum). They are accompanied by pendants in the form of an axe, perforated disks and cylindrical beads of white marble, disks of lignite and globular beads of *Lithospermum* (reproduced in an educational CD-ROM by P. Moinat, P. Pauc and J. Reinhard: ‘Fashion in the 4th millennium BC. The necklace of the Lady of Chamblandes.’ Workshop-Gallery O’local, CH – Estavayer-le-Lac). The vermetid tubes have a diameter of 4 mm which corresponds to the diameter of the other components and the height of the suspension element of the pendants. This confers to the whole assemblage, as it has been reconstructed, a delicate and high quality aspect with well-matched components which suggests that it was of considerable value. It is my pleasure to thank Patrick Moinat, without whom this work could not have been carried out successfully.

A final comment will be made on the state of wear of a perforation in a *Cerithium vulgatum* shell from Beaume du Four, Neuchatel. At first sight this suggests “an irregularity of natural origin caused by marine erosion” (Borrello, 2003). Photographic examination shows more clearly that the wear on the edge of this perforation has been caused by its having been strung, after comparison with a similar shell from a necklace made experimentally (Pauc and Reinhard, 2002; educational CD-ROM: ‘Some examples of prehistoric Swiss jewellery.’ Workshop-Gallery O’local, CH – Estavayer-le-Lac).

I dedicate these few lines to young Cyril Cavin, in the hope that he is old enough to appreciate the archaeological riches of Switzerland.

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Shell beads made from opercula of land snails belonging to the family Pomatiidae

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In the past I have paid some attention to shell beads made of the opercula of the land snail *Pomatias olivieri* (de Charpentier, 1848), family Pomatiidae (formerly Pomatiasidae), found during the excavation of a Neolithic site (9500-6000 BP) in Nahal Oren, Mount Carmel, Israel (Mienis, 1990a and b). In the meantime similar beads have been found during the excavation of the Late Roman-Byzantine site (about 300-600 CE) of Horvat Raqit, in the same mountain range (Mienis, 2003).

These finds of similar shell beads (opercula with a man-made hole in the centre) during two completely different periods in the history of mankind on Mount Carmel did not come as a surprise. Throughout history man has made beads and pendants of shells. In most cases the manufacture of such beads was a complicated and time-consuming activity. However, in the case of the firm, chalky opercula of *Pomatias* they were dealing more-or-less with prefabricated shell disks lacking only the holes.

Species belonging to the family Pomatiidae are widely distributed in Europe (*Pomatias*, with additional genera in the Iberian Peninsula: *Tudorella* and *Leonia*), the Middle East (*Pomatias*), North Africa (*Pomatias* and *Leonia*), the Arabian Peninsula and the west coast of India (*Socotora*), East Africa especially on the offshore islands (*Revoilia*, *Socotora* and *Tropidophora*) and in the Neotropical region (*Tudora* and *Choanopoma*), to give only some general examples. All species belonging to these genera are in the possession of a firm, chalky operculum. Yet no other case of the exploitation of such opercula in other regions was known to me until recently.

A few days ago I received a request from Dr Assefa Zelalem to look at similar perforated pieces of shell material found by him during the excavation of a late Pleistocene cave in Ethiopia. I recognized these opercula, each adorned with a rather characteristic elevated, spirally coiled rim, almost immediately as belonging to *Revoilia (Socotora) guillainopsis* (Bourguignat, 1882), one of the two species of pomatiid land snails reported so far from Ethiopia (Verdcourt, 1960; Crowley and Pain, 1978). The second species, *Revoilia (Socotora) guillaini* (Petit de la Saussaye, 1850), has a similar operculum, but the spiral rim is much less elevated.

This means that the exploitation of pomatiid opercula for the manufacture of shell beads was not restricted to Israel, but occurred also in Ethiopia and might have happened elsewhere within the distribution range of the Pomatiidae. Therefore more attention should be paid to this form of exploitation of terrestrial snails among archaeomalacological remains recovered in areas where pomatiid species occur.

I sincerely hope that Dr Assefa Zelalem will describe in full the details of this important find in Ethiopia.

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The Nile mussel *Aspatharia rubens* has got a new name: *Chambardia rubens arcuata*

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A few years ago J. Daget (1998) finally published his revision of the nomenclature of the freshwater bivalves of Africa. This long overdue work is hardly known among archaeo-malacologists in the Middle East. This is a great pity because it contains an important change in the nomenclature of a large freshwater mussel from the Nile, which has been reported either as *Aspatharia rubens* or as *Aspatharia rubens niloticus* from numerous sites in the Levant.

According to this specialist of African freshwater mussels, this well-known species now has to be called *Chambardia rubens arcuata* (Cailliaud, 1823), because:

- the anatomy of the *rubens*-group differs to such a degree from those species still retained in *Aspatharia* that it can not be maintained in that genus (Daget, 1961 and 1962);
- the generic name *Spathopsis* Stimpson, 1900 which was proposed to include the *rubens*-group (Daget, 1961) turned out to be a junior synonym of *Chambardia* Servain, 1890 (Daget, 1998);
- the specific name *rubens* Lamarck, 1819 was based on specimens originating from Senegal and the nominal subspecies (*rubens rubens*) is confined in its distribution to Senegal, Niger and Chari-Tchad (Daget, 1998);
- the oldest name for the subspecies of *rubens* inhabiting the Nile, Lake Victoria and Lake Tana was described as *Anodonta arcuata* Cailliaud, 1823 (Daget, 1998).

This means that the proper name for the large valves of the Nilotic freshwater mussel so often encountered during excavations of archaeological sites throughout the Middle East has to be: *Chambardia rubens arcuata* (Cailliaud, 1823), family Mutelidae. It will take some time to get accustomed to this name change, but if we all start to use it from now on, then we can shorten that process considerably.

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Land snails and the prehistoric diet in the Mediterranean region

Inspired by the suggestion that 'land snails were the first domesticated animals', and subsequent to his request for information in the AMG Newsletter, No.4: 2 (2003), David Lubell of the University of Alberta, Canada, has recently published two papers on the use and significance of land snails as a food resource by early populations in the Mediterranean region.

The first paper is entitled 'Prehistoric edible land snails in the circum-Mediterranean: the archaeological evidence'. Beginning in the Maghreb, northwest Africa, and working clockwise around the Mediterranean, Lubell assesses the evidence for land snail consumption at Late Pleistocene and Early and Mid Holocene sites. The numerous Capsian (c.10,000-6000 BP) 'escargotieres' in the Maghreb contain abundant land snails, and a similar pattern is found in Mesolithic sites in the Pyrenean region and southern France, and also in the northeastern Adriatic region. Other sites dating from the Mesolithic and Neolithic are known from Italy, Romania, Greece, Cyprus, the Levant and southwest Asia. In the Zagros Mountains of Iraq, deposits of land snails that are interpreted as food debris have been found at a number of sites dating just before the appearance of an agricultural economy. Lubell argues that environmental conditions throughout the Mediterranean region between 15,000 and 6000 years ago were conducive to sustained increases in land snail populations and that this abundant food source is reflected in the archaeological record, especially in the Maghreb where successful foraging may have delayed the introduction of food producing economies.

In the second paper, 'Are land snails a signature for the Mesolithic-Neolithic transition?', Lubell takes his argument that snails formed a significant part of the prehistoric diet a step further. Evidence is presented to show that many large land shell middens were anthropogenic and do indeed represent food debris. However, the nutritive value of land snails shows that they could not have been a major source of animal protein, and it is suggested instead that they formed part of a broad spectrum subsistence base. Land snail biology and ecology are discussed to show that, under prehistoric conditions without overgrazing, both the diversity and abundance of land snails would have been sufficient to enable extensive, and at times intensive, collection without seriously compromising the survival of natural snail populations as a predictable food source. There would have been no need for snail farming as such.

Lubell concludes that early prehistoric sites with abundant land snail dietary evidence 'must have something to do with the changes that were taking place as human groups underwent the transition from foraging to food production'. The full text of these two papers is available at: <http://www.ualberta.ca/~dlubell/Antibes.pdf> and <http://www.ualberta.ca/~dlubell/Ljubljana.pdf>, respectively.

Dating problems with freshwater snails

Recent attempts to radiocarbon date freshwater mollusc shells from abandoned Roman and later irrigation systems in southern Israel have given anomalous results. In the Arava Valley north of Eilat, shells of *Melanopsis* sp. from an irrigation pool which had ceased to function during the Early Islamic period gave a radiocarbon date of 6575±90 BP, some 5000 years older than expected. Similarly, *M. buccinoidea* from a pool near Tel Goded in the Judean lowlands, which was known from coin evidence to have been constructed in the mid 4th century AD, gave a date

of 5615±60 BP, which is about 4000 years too old. These anomalies may be explained by the incorporation of older material into its shell by *Melanopsis* as it scrapes algae from submerged limestone rocks and other materials in its aquatic environment. The quantity and age of such material will vary from place to place. Unless some means of calibrating radiocarbon dates from freshwater shells can be developed, this dating technique remains unreliable in this context. (From an article by Henk Mienis, 'Problems with dating freshwater snails from extinct populations in Israel', *Ellipsaria* (2004), 6 (2): 12-13.)

Man and snails in western Turkey: recent papers by Aydin Orstan

Orstan, A., 2004. Cemeteries as refuges for native land snails in Istanbul, Turkey. *Tentacle*, No. 12: 11-12.

Abstract: Istanbul has numerous cemeteries which represent enclaves of natural habitat that have permitted the survival of endemic land snails within the confines of an urban environment. The original topography and natural vegetation within these cemeteries has been little disturbed. In August 2000, the Muslim cemetery on the island of Heybeliada yielded eight species of land snails, including six endemics, and in August 2002 a Greek cemetery on the European side of the Bosphorus also yielded eight species with six endemics plus some unidentified clausiliids. The common use of marble in cemeteries increases their suitability as snail habitats.

Orstan, A., 2004. Possible human-assisted dispersal of *Levantina spiriplana* (Pulmonata: Helicidae) in western Turkey. *Triton*, No. 9: 27-28.

Abstract: Three new disjunctive records of *Levantina spiriplana* are given from central western Turkey: this species did not occur at intermediate locations. The northernmost site was close to the ancient city of Colophon, south of the modern town of Degirmendere. *L. spiriplana* was collected at three sites along the south shore of Lake Bafa, which was open to the sea in antiquity. It was also found in the ruins of the Carian city of Euromus. This distribution pattern suggests that *L. spiriplana* was introduced to these localities by human agency, either deliberately as a food resource, or inadvertently on building stone.

Archaeomalacology in Israel

The Hebrew University of Jerusalem houses the National Mollusc Collections which are curated by Henk Mienis, the author of numerous reports on shells from archaeological sites in Israel. Archaeomalacological activities in the National Mollusc Collections are described briefly by Henk in *Haasiana* (2004), No. 2: 20. Some of his recent reports (in site chronological order) include:

Mienis, H.K., 2004. When shells begin to talk. Archaeomalacology: an important tool for the archaeologist with examples from the excavation of Mallaha, Hula Valley, Israel. In: Ozturk, B. and Salman, A. (eds), Proceedings 1st National Malacology Congress, Izmir, Turkey, 1-3 September 2004. *Turkish Journal of Aquatic Life*, 2 (2): 111-116.

Abstract: The importance of shell studies for archaeological interpretation is emphasized in this review of the shells recovered from the Natufian (Mesolithic) site of Mallaha. Other finds at this site indicated the exclusive exploitation of local resources; the shell evidence alone showed that the people living at Mallaha maintained connections with the Mediterranean, the Red Sea, the Nile Valley and the Orontes region on the Turkish-Syrian border. The interpretation of the

molluscan assemblage from Mallaha in terms of imported species, environmental indicators, food resources and ornaments is discussed.

Mienis, H.K., 2004. Shells from the excavation of the Neolithic site of Munhatta, Jordan Valley, Israel. *Triton*, No. 9: 33.

Abstract: Small fragments of *Glycymeris insubrica* and *Ostrea edulis* were recovered from the Pre-Pottery Neolithic B site of Munhatta (c.7500-6500 BC), which is about 60 km away from the Mediterranean coast.

Mienis, H.K., 2004. Molluscs from two test pits at a Pottery Neolithic site near Hazorea, Yizre'el Valley, Israel. *Triton*, No. 9: 34-35.

Abstract: These two pits yielded 13 shells representing eight different species. Four are local: the land snail *Helix engaddensis* and three freshwater species, *Melanopsis buccinoidea*, *Unio mancus eucirrus* and *U. terminalis terminalis*. Four marine species from the Mediterranean were present as singletons: an *Erosaria spurca* had been made into a bead by the removal of the dorsum; *Phalium granulatum undulatum* was represented by a 'cassid lip'; a man-made hole in the body whorl had made a possible pendant from a *Hexaplex trunculus* shell; the *Glycymeris insubrica* valve was unmodified.

Mienis, H.K., 2003. Molluscs from the excavation of Tel Kabri (with an appendix dealing with crustaceans found at that site). *Triton*, No. 7: 28-37.

Abstract: The excavation of Tel Kabri in 1986-1993, which dates from the Late Neolithic to Iron Age II periods (c.5000-700 BC), yielded 329 shells representing at least 35 species and subspecies. 61% (301) of the shells consisted of local land and freshwater molluscs which were dominated by *Helix engaddensis* and *Melanopsis buccinoidea*, respectively. Eleven freshwater bivalves were imported, including a single *Chambardia rubens arcuata* from the Nile. 34.9% (115) of the shells were marine shells from the eastern Mediterranean; some (*Patella* spp.) represent food, whereas many of the other species (together with freshwater mussels) were probably used for ornamental purposes. Evidence for the use of large land snails (*H. engaddensis* and possibly *Levantina spiriplana caesareana*) as food is discussed.

Mienis, H.K., 2004. Shells from the excavation of a Chalcolithic site near the Shoqet Junction, Negev. *Triton*, No. 9: 31-32.

Abstract: The excavation of this site yielded four species of molluscs. The sample included two local land snails, *Xerocrassa seetzenii seetzenii* (6) and *Helix engaddensis* (7); the Mediterranean bivalve *Glycymeris insubrica* (4 valves), which had been used as pendants; and an imported Nilotic freshwater mussel, *Chambardia rubens arcuata* (3 fragments).

Mienis, H.K., 2003. An Iron Age pendant found at Tel Malhata made from a 75 million years old fossil. *Triton*, No. 8: 35.

Abstract: A complete Upper Cretaceous pectinid fossil, *Neithea dutrugi*, which had been drilled through from either side just below the umbonal area to convert it into a pendant, is described from this site in the Negev.

Mienis, H.K. and Hadas, G., 2003. Archaeomalacological finds in the vicinity of 'En Gedi. 3. molluscs from an ancient aqueduct in Nahal Arugot. *Triton*, No. 8: 33-34.

Abstract: A sediment sample taken from a Roman aqueduct which irrigated agricultural terraces in the 'En Gedi oasis until the end of the Byzantine period, yielded 13 species of land and freshwater molluscs. Nine of these species are still living in the area today; the four others,

including the northern Palaearctic species *Vallonia pulchella*, showed that the aqueduct created a microenvironment which allowed more moisture-loving species to gain a foothold in an otherwise arid area.

Mienis, H.K., 2003. Molluscs from the excavation of Horvat Raqit, Carmel. In: Dar, S. (ed.), *Raqit - Marinius Estate on the Carmel, Israel*, pp. 53-56. Tel Aviv, Eretz-Geographic Research and Publications and The Israel Exploration Society.

Abstract: Ten species (n=84) of molluscs were recovered from the excavation of this Late Roman/Byzantine farmhouse in 1997-2001: two land snails (*Pomatias olivieri* (11) and *Helix engaddensis* (7)) and eight marine species (*Phalium undulatum* (1), *Charonia tritonis variegata* (1), *Columbella rustica* (2), *Nassarius circumcinctus* (1), *Conus mediterraneus* (2), *Antalis inaequicostatum* (1), *Chamelea gallina* (2) and *Glycymeris insubrica* (56)). Five of the latter are holed at the umbo and may have served as pendants, but in only one shell is the hole man-made. The rest of the marine shells, with the exception of the better-preserved triton fragment, were worn and fragmentary and may have been used in the manufacture of mortar. Further specimens were recovered from the site in 2002: seven species of land snails (n=60), two species of *Glycymeris* (n=31), five valves of which were holed, and a fossil gastropod, *Actaeonella* sp.

Mienis, H.K., 2003. A triton shell from the large Byzantine structure in Area XV. In: Mazar, E. (ed.), *The Temple Mount excavations in Jerusalem 1968-1978* directed by Benjamin Mazar. Final reports. Volume II: The Byzantine and Early Islamic periods. *Qedem, Monographs of the Institute of Archaeology*, 43: 159-160. Jerusalem.

Abstract: An apical fragment of *Charonia tritonis variegata* forma *seguenzae* was found in the collapse on the floor of a room in this structure. The apex is imperforate so the shell did not function as a trumpet; it may have been a votive container.

Mienis, H.K., 2003. Some surface finds in the Old Cemetery near the Mamluk tower of Ramla. *Triton*, No. 7: 38-39.

Abstract: Surface finds from an ancient Muslim cemetery dating to the Early Arab-Mamluk period in Ramla, Israel, yielded seven species of marine shells, four from the Mediterranean (*Columbella rustica*, *Nassarius circumcinctus*, *Conus mediterraneus* and *Glycymeris insubrica*) and three from the Red Sea (*Engina mendicaria*, *Conus parvatus sharmiensis* and *C. taeniatus*). Most of these had been worked to form beads and pendants. The single land snail, *Levantina spiriplana wernerii*, was well outside its natural range and may have been imported as food.

Henk's contact details may be found with his articles on pages 3 and 4 of this Newsletter.

VIII International Congress on Medical and Applied Malacology

The Eighth International Congress on Medical and Applied Malacology will take place at the Palacio de Minería, Mexico City, Mexico, from 10-13 November 2004. This will include a special session on 'Archaeology and molluscs', which is being organised by Adrian Velazquez from the Instituto de Antropología e Historia (INAH). Details (in English) are available at: <http://www.ibiologia.unam.mx> under 'Congresos'.
