

**On *Idyla pelobsoleta* spec. nov.  
(Mollusca: Gastropoda Pulmonata: Clausiliidae),  
and insularity in the molluscan fauna of the highest parts of  
the Parnon Oros, Peloponnisos, Greece**

E. Gittenberger

Gittenberger, E. On *Idyla pelobsoleta* spec. nov. (Mollusca: Gastropoda Pulmonata: Clausiliidae), and insularity in the molluscan fauna of the highest parts of the Parnon Oros, Peloponnisos, Greece.

Zool. Med. Leiden 67 (20), 30.vii.1993: 321-329, figs. 1-6.— ISSN 0024-0672.

Key words: Clausiliidae; *Idyla*; taxonomy; new species; biogeography; Greece.

An annotated check-list concerning the molluscan fauna of the two highest peaks in the Parnon Oros, Peloponnisos, Greece, is provided, with emphasis on distributional data. The localities reported upon are situated only 15 km apart. Nevertheless, they are quite different in species composition. From one of these isolated peaks and from a second locality in another mountain range, *Idyla pelobsoleta* spec. nov., is described. The insular character of the two Parnon peaks, especially with regard to their clausiliid species, is emphasized.

E. Gittenberger, Nationaal Natuurhistorisch Museum, Postbus 9517, NL-2300 RA Leiden, The Netherlands.

### Introduction

The molluscan fauna of the Parnon Oros in the southeastern part of the Peloponnisos, Greece, was investigated during yearly excursions of some weeks in July and/or August 1985-1988. Probably, the barren peaks of these mountains had never before been studied malacologically. Near the northern end of the mountain chain, where it reaches its highest altitude, a distinct alpine molluscan fauna was found, which proved to be quite different from that of a high peak situated only 15 km more to the south. The present paper deals with the gastropod species occurring in these two areas, illustrating the ecological and biogeographical insularity of the mountain peaks with respect to terrestrial snails.

An annotated check-list of the various species that were recorded above c. 1600 m altitude, with reference to illustrations of their shells in the recent literature, is given below. A few species that are occasionally found at higher elevations NW of Kosmas, but much more commonly at lower altitudes, are not reported upon.

For collections the following abbreviations are used: Hau = B. Hausdorf, Stein; Maa = W.J.M. Maassen, Duivendrecht; Men = H.P.M.G. Menkhorst, Krimpen aan de IJssel; NMW = Naturhistorisches Museum, Wien; Nor = H. Nordsieck, Villingen-Schwenningen; RMNH = Nationaal Natuurhistorisch Museum, Leiden; SMF = Senckenberg Museum, Frankfurt am Main; Sub = P. Subai, Aachen.

### The research area

Seen from the Arkadhan coast the Parnon summit, sometimes called Kronion or

Megala Tourlos, has a symmetrical triple profile. The middle peak (1935 m) is the highest one. The accompanying subcrown are only slightly lower. The three eroded, barren peaks, covered with numerous limestone rocks and a low vegetation, rise with some considerably lower knobs from a montane meadow, which extends as a plateau without any trees at c. 1650 m altitude. This plateau is surrounded at lower elevations by a pine-forest, interrupted by a few steep limestone screes that may act as ecological passageways for certain faunal elements.

About 15 km south of the Parnon summit and separated from it by a valley going down to less than 1500 m, an altitude of 1839 m is reached about 10 km NW of the village of Kosmas. There is a more gradual change from forested area to the barren peaks here.

#### Annotated check-list

##### *Gittenbergia sororcula* (Benoit, 1859) (figs. 1, 2)

*Planogyra sororcula*; Kerney & Cameron, 1979: 98, figs. Kerney, Cameron & Jungbluth, 1983: 132, figs.  
*Gittenbergia sororcula*; Giusti & Manganelli, 1986: 160, figs. 1, 4A-C, 6.

Notes.— Recently the systematic position of *Gittenbergia sororcula* was clarified by Giusti & Manganelli (1986), who kindly introduced a monotypic genus for this species.

*G. sororcula* was rediscovered c. 25 years ago (Gittenberger, 1967: 70 "Spelaeodiscus (Spelaeodiscus) astoma") and proved to have a surprisingly wide range. The species was first reported from Greece by Velkovrh (1972: 123), from the Olymp, at 2100 m altitude. High in the mountains of the Peloponnisos it was found by the present author, in the province of Akhaia, 9 km E of Kalavrita on the rocky northern slope of the Aroania Ori, at 1650-1800 m altitude (UTM: FH01). In the Kronion area of the Parnon Oros the species was recorded between 1700 and 1930 m altitude, most commonly in the saddle between the middle and the northern knob of the Kronion, at an isolated, relatively humid, N-exposed place, with some deep crevices and growths of mosses.

The species was not recorded near the southern peak. It may occur very locally, however, and it can easily be overlooked therefore.

Recently this species was discovered by the present author in Crete, at 2000 m altitude in the Idhi Oros, the southeast-ernmost record so far (see fig. 2). It has not (yet) been reported from high altitudes in southern Asia Minor. For biogeographic reasons it would not be surprising if *G. sororcula* proved to occur there as well.

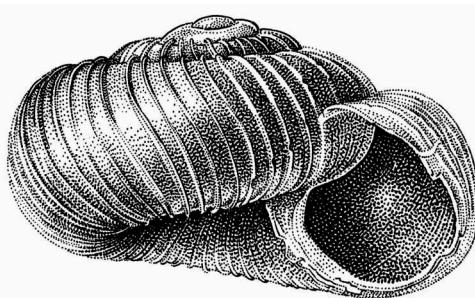


Fig. 1. *Gittenbergia sororcula* (Benoit). Greece, Peloponnisos, Parnon Oros, northern slope of the Kronion, 8.5 km SE of Ayios Petros, 1800-1930 m altitude (UTM: FG4227); actual width 2.4 mm.

Mrs. I.M. van Noortwijk del.

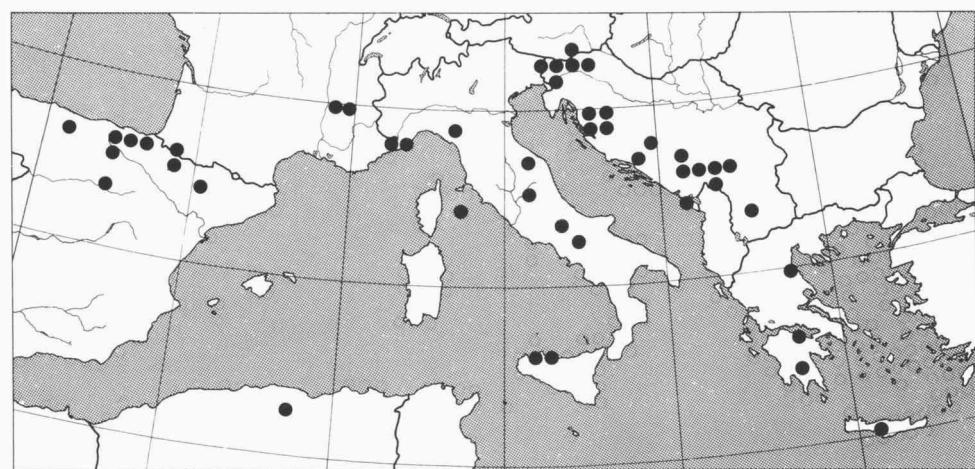


Fig. 2. Records of *G. sororcula*, after distribution maps published by Gittenberger (1977: 193, fig. 1) and Giusti & Manganelli (1984: 86, fig. 9), and additional data published by Boato et al. (1985: 284), Gittenberger et al. (1980: 12), Giusti & Manganelli (1986: 169), Prieto et al. (1986), Raven (1980: 54) and Velkovrh (1972: fig. 1).

The animals live well hidden in fissures and below rocks. Usually only their empty shells are found, suggesting that the migratory capacities of the species are not well developed. Because of its wide range and the distributional pattern with many prominent disjunctions, *G. sororcula* is considered an old fauna element. In cold periods of the Pleistocene it might have been less disjunctly distributed, but the main distributional gaps can neither have been bridged nor substantially narrowed in those periods with a lowering of the vegetational zones by global cooling. It remains obscure how the actual distribution of the species originated, if we take its actual ecological requirements and selective regime for constant.

#### *Mastus emarginatus* (Deshayes, 1835)

Notes.— The systematics of the genus *Mastus* is poorly known and will remain so as long as many forms have not been studied anatomically. The shells have hardly any characters except for general shape and dimensions. This implies that the various taxa cannot yet be used in biogeographic studies.

The present species was identified by Dr R.A. Bank (Amsterdam), who communicated that it has a wider range in the Peloponnisos. It was only found under stones near the Kronion.

#### *Jaminia* spec.

Notes.— The Greek representatives of the genus *Jaminia* Risso, 1826, are poorly known. Therefore, it is still unclear to what species some specimens belong that were found at 1650 m altitude under stones on the plateau near the Kronion. The same

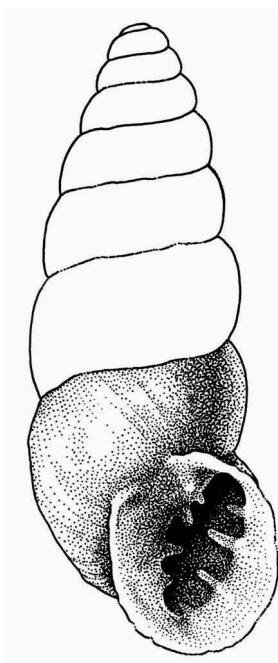


Fig. 3. *Chondrina clienta* (Westerlund). Greece, Peloponnisos, Parnon Oros, 8 km NW of Kosmas, c. 1600 m altitude; actual height 8.0 mm. E.J. Bosch del.

species was recorded 60 km NNW of this locality, in the Oliyirtos Oros, at 1200 m altitude (with *Idyla pelobsoleta* spec. nov.), but not around the nearby southern Parnon peak.

***Chondrina clienta* (Westerlund, 1883)**  
(fig. 3)

*Chondrina clienta*; Kerney & Cameron, 1979: 89, unnumbered fig.  
Kerney, Cameron & Jungbluth, 1983: 117, unnumbered fig.

Notes.—*Chondrina clienta* can only be reported from the southern peak area, where seven empty shells, some of which fresh-looking, were sieved from litter in crevices of some isolated limestone cliffs at c. 1600 m altitude. The species was not found elsewhere at about equally high or lower altitudes in the Parnon Oros.

The shells closely resemble those of the nominal subspecies and would have been identified as such if no locality data were known (see below). They measure 7.1-8.0 mm in height and 2.8-3.1 mm in width. In all specimens the aperture is provided with a very short suprapalatalis, and a much longer palatalis superior and palatalis inferior, both of about the same length, as is usual in the species. The infropalatalis is slightly longer than the suprapalatalis in three, about equally long in two, and not discernible in two specimens.

Geographically nearest are the populations of *C. clienta* from c. 70 km more to the northwest, from the mountains WNW of Tripolis (in RMNH, collected by the present author). The shells from the latter area can be referred to as *C. c. abundans* (Westerlund, 1894), a subspecies provisionally accepted as such by Nordsieck (1970: 260).

The specimens from the Parnon locality are not assigned to a subspecies here. This implies that the record cannot be misused in biogeographic considerations. The Greek subspecies of *C. clienta* in general are still insufficiently known.

***Phenacolimax (Gallandia) annularis* (Studer, 1820)**

*Phenacolimax annularis*; Kerney & Cameron, 1979: 116, pl. 7 fig. 6.

*Phenacolimax (Gallandia) annularis*; Kerney, Cameron & Jungbluth, 1983: 156, pl. 7 fig. 6. Gittenberger, 1992: 164, figs. 2, 6.

Notes.—This is a wide-spread species, known from the Pyrenees eastward to Iran (Zilch, 1979: 86, 87). It is usually found under alpine conditions at moderately humid to rather dry sites, occurring e.g. in Austria between 600 and 2800 m altitude (Kerney et al., 1983: 157). In the Parnon Oros it was found under stones on the plateau at 1650 m near the Kronion, as well as at up to 1800 m altitude nearby. In the Peloponnisos by

far the lowest locality at which this species was recorded by the present author is in the Oliyirtos Oros, at 1200 m altitude (with *Idyla pelobsoleta* spec. nov.).

There is an unpublished record for Crete, where this species was found in the Idhi Oros between Ideon Antron and the summit, at 2160 m altitude, by W. Welter-Schultes (in litt., 24.ix.1992). This material is kept in the Haus der Natur, Cismar, F.R. Germany.

### **Zonites parnonensis Riedel, 1985**

*Zonites parnonensis* Riedel, 1985: 19 ("Monemvasia").

*Z. parnonensis* occurs in the entire Parnon Oros from little above sea level up to few meters below the highest summits.

### **Doraegopis parnonicus Riedel, 1982**

*Doraegopis parnonicus* Riedel, 1982: 21 ("Parnon-Gebirge: südlich von Petros, 700-1000 m ü. NN, Kalkfelsen, Phrygana-Gebüsch").

Notes.— This species was described by Riedel (1982: 21) after material collected on a rainy day by prof. dr A. Wiktor. The present author looked for it in vain at the type locality, along the road 2 km ESE of Ayios Petros, near a broad U-turn, at ca. 900 m altitude (in the original description this site is indicated more vaguely).

*D. parnonicus* was found at 1750-1930 m altitude around the northernmost knob and in the saddle between the middle and the northern knob of the Kronion. The species was also found at 720 m altitude, well hidden in crevices, in a narrow limestone gorge with a rich vegetation, 0.5 km SE of Kastanitsa. This locality might be connected with the much higher localities in the Kronion area via rocky screes.

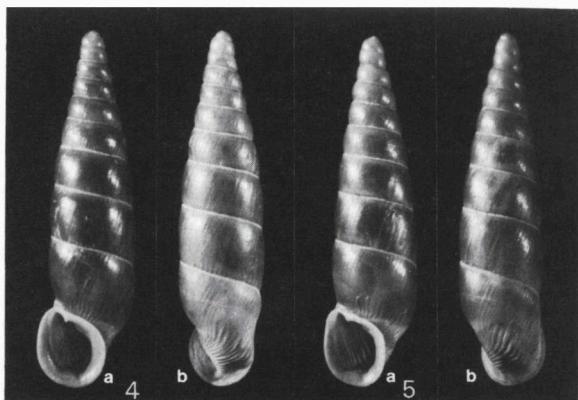
*D. parnonicus* is known now from three localities in the northern part of the Parnon Oros.

### ***Idyla pelobsoleta* spec. nov. (figs. 4-6)**

Material.— Greece, Peloponnisos. Arkadhia: Parnon Oros, 8 km SE of Ayios Petros, northern slope of the Kronion, 1700-1800 m alt., UTM FG4228 (Hau/3 paratypes; Maa/3 paratypes; Men/3 paratypes; NMW/3 paratypes; RMNH 56777/ holotype, 56778/33 paratypes, 56779/76 paratypes; Nor/3 paratypes; SMF/3 paratypes; Sub/3 paratypes); idem, around the Kronion, 1800-1930 m alt., UTM FG4227 (RMNH 56780/27 paratypes); Oliyirtos Oros, 2.5 km NNE of Kandhila, 1200 m alt., UTM FG2383 (RMNH 56781/22 paratypes).

Diagnosis.— Shell club-shaped; protoconch and teleoconch, except for the body whorl, with obsolete growth lines only; basal and dorsal keel not very prominent.

Description.— Shell club-shaped; with  $8\frac{3}{4}$ - $10\frac{3}{4}$  whorls, the initial ones convex and the following ones increasingly more flattened and separated by a proportionally shallow suture. Fresh, young specimens are dark corneous brown and somewhat



Figs. 4, 5. *Idyla pelobsoleta* spec. nov., holotype (4: RMNH 56777) and paratype (5: RMNH 56778). Greece, Peloponnisos, Parnon Oros, 8 km SE of Ayios Petros, northern slope of the Kronion, 1700-1800 m altitude; actual height of both specimens 14.0 mm. Photos A. 't Hooft.

the ribs are clearly lower; between the dorsal keel and the suture the ribs are more narrowly spaced because additional ribs are developed here. The basal rib-sculpture of the body whorl can be followed sometimes as a narrow zone with ribsegments along the lower suture of an adjoining part of the penultimate whorl.

The aperture is obliquely oval in shape, with the two keels corresponding with notches in the broadly reflected but not flattened apertural lip. Usually there is a small but prominent, often whitish, upper palatal denticle. The parietalis is sharp but low in front; as a more or less obsolete lamella it runs about as far inside as the columellaris approaches the apertural lip. In oblique view, the columellaris clearly protrudes into the aperture; inside it reaches the contact zone of the upper part of the clausilium plate, to continue as a more obsolete short lamella. The subcolumellaris cannot be observed from outside; it forms the free border of the inner wall of the large clausilium niche, ending where that wall contacts the shell basis. In the parietal contact area of the clausilium, there are a short lamella fulcrans and an equally short lamella parallela, grown together and not lamella-like, therefore. Opposite the lamella parallela, on the palatal wall, the uppermost part of the lunella is thickened into a kind of suturalis; between the lamella parallela and the suturalis, the permanent outlet bypassing the clausilium (Christelow, 1992: 111, fig. 4) is extremely narrow. The dorsal, regularly curved lunella is most prominent at both its upper and its lower end; somewhat above the middle it is crossed by a palatalis, which runs over less than  $\frac{1}{8}$  whorl. In frontal view, a whitish line is seen, shining through the wall of the body whorl next to the parietal apertural border. This line corresponds with the attachment of the roof of the clausilium niche to the wall of the body whorl.

Height 12.5-18.0 mm, width 3.3-4.2 mm.

**Notes.**—The variable, polytypic *Idyla bicristata* (Rossmässler, 1839) is sufficiently well known to allow a comparison with *I. pelobsoleta* (see Zilch, 1976). The latter taxon is not classified as one more of its subspecies, because *I. pelobsoleta* (1) occurs at much higher altitudes than *I. bicristata*, (2) differs by the characters mentioned in the diagno-

transparent; weathered older shells have become greyish blue. Protoconch smooth. Except for the body whorl and sometimes a narrow zone along the lower suture of the penultimate whorl, the teleoconch is provided with obsolete growth lines only. The body whorl has two, about equally prominent, relatively broad keels; the dorsal keel reaches from the peristome to mid-dorsal, whereas the basal one can be followed slightly further around the umbilical area. The keels are accentuated by sharp and prominent ribsegments, about 10-17 of which can be counted on the dorsal keel. In between the two keels

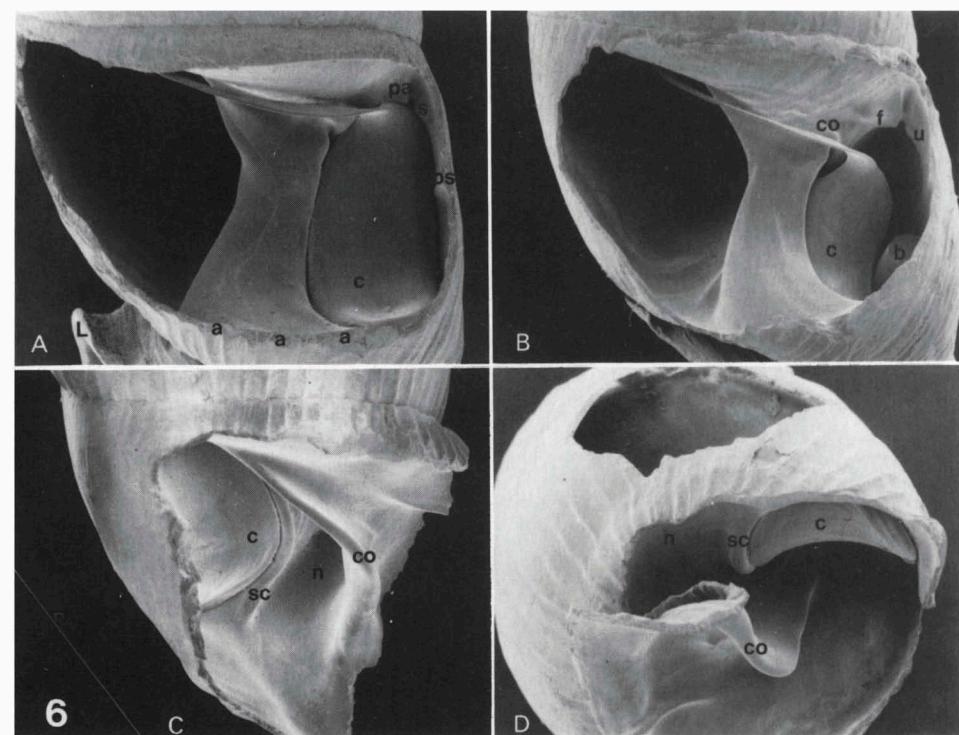


Fig. 6. *Idyla pelobsoleta* spec. nov., prepared specimens from the type locality, showing the inside apertural structures. A, the clausilium (c) in situ, closing the aperture, seen from aside, with only a very narrow outlet between the lamella parallela (pa) and the suturalis (s); the short palatalis (ps) crossing the lunella is discernible, whereas "a" indicates the location of the whitish line of attachment of the roof of the clausilium niche; the protruding apertural lip (L) can be used for orientation. B, shell slightly turned to the left as compared with A; the clausilium (c) is pushed aside with an artificial bar (b), halfway into the clausilium niche, to show the uppermost part of the lunella (u), the lamella fulcrans (f) and the obsolete inner part of the columellaris (co). C, the clausilium (c) in situ, closing the aperture, seen from outside after removal of much of the palatal wall, its border following the curvature of the subcolumellaris (sc), which is in fact the margin of the inner wall of the clausilium niche (n), which is bordered in front by the columellaris (co). D, the clausilium (c) in situ, closing the aperture, seen from below after removal of much of the basal part of the body whorl; while opening the aperture, the clausilium (c) is pushed to the left, between the subcolumellaris (sc) and the columellaris (co) into the large clausilium niche (n). SEM photos, J. Goud.

sis, and (3) shows no morphological similarity with the geographically nearest *I. bicristata bourguignati* (Charpentier, 1852). This strikingly different, lowland subspecies (see Zilch, 1976: pl. 17 figs. 32-34) is known from e.g. Argos, 40 km NNE of the Parnon summit, where it occurs abundantly at the foot of the castle hill that dominates the city.

**Etymology.**—The epithet combines *Peloponnisos* with *obsolet[a]*.

#### *Isabellaria idyllica* Gittenberger, 1987

*Isabellaria idyllica* Gittenberger, 1987: 83, figs. 15-18 ("Peloponnes, Provinz Lakonia, 7 km ssö. Ayios Petros (der Strasse nach Sparti entlang), 1080 m ü. M.").

Notes.— This species is very common everywhere among the limestone rocks in the northern subarea under discussion. It was described from 7 km SSE of Ayios Petros, at 1080 m altitude, on rocks in a narrow valley, which is connected with one of the screes leading down from the research area.

#### **Albinaria grisea immensa (Boettger, 1889)**

*Albinaria grisea immensa*; Zilch, 1977: 317, 352, pl. 25 fig. 7 [lectotype].

Notes.— This subspecies, identified with some doubt, pending a revision of *A. grisea* (Deshayes, 1833), is very common everywhere among the limestone rocks in the southern subarea under discussion. It is the only clausiliid species there.

#### **Chilostoma spec.**

This species, which will be described in the near future by P. Subai (Aachen), is widely distributed in the entire Parnon chain. It occurs from few meters below the Parnon peaks to near sea level.

#### **Helicopsis gittenbergeri Hausdorf, 1990**

*Helicopsis gittenbergeri* Hausdorf, 1990: 58, pl. 1 fig. 1 ("N Arkadias: FG 42, Parnon Oros: N-Hang des Meg. Turla (= Kronio) 8 km SE Ayios Petros, 1700-1850 m").

Notes.— This species is very common in the northern part of the research area, both on the alpine meadow at 1650 m altitude and on the rocky elevations nearby. Empty shells that cannot be distinguished from those of the Kronion area were also found near the southern peak, NW of Kosmas. Most probably this concerns the same species, which has to be confirmed anatomically however, because of the many cases of convergent evolution among the xerophilous Hygromiidae.

#### **Zoogeographical notes**

The molluscan faunas of the two peaks in the Parnon Oros are strikingly dissimilar, despite the fact that they are only 15 km apart. This is most conspicuous for the clausiliid species, which are very common in the area and can hardly be overlooked. *Idyla pelobsoleta* spec. nov. occurs sympatrically with *Isabellaria idyllica* in the Kronion region; the latter species is only known from that area. Both species do not occur NW of Kosmas, where *Albinaria grisea immensa* is found abundantly, without an accompanying clausiliid species. However, *I. pelobsoleta* was found occurring sympatrically with *Isabellaria clandestina subsuturalis* (Westerlund, 1893) and *Albinaria grisea immensa* (rare) in the Oliyirtos Oros, 60 km NNW from the Kronion.

*Helicopsis gittenbergeri* most probably occurs on both peaks and might be a Parnon endemic. The other species that are recorded near only one of the two Parnon

peaks, are not endemic to that mountain chain. These species might have been overlooked in one of the two subranges, because they are less conspicuous and less common than the clausiliids. At least partly, however, they might also be considered illustrative for the impoverished character of the Parnon malacofauna.

### References

- Boato, A., M. Bodon & F. Giusti, 1985. Molluschi terrestri e d'acqua dolce delle Alpi Liguri.—Lavori Soc. Ital. Biogeogr. (n. ser.) 9: 237-371. [Published "Novembre 1985" according to the back cover of the journal].
- Christelow, A.Q., 1992. The morphology and function of the clausilium of *Clausilia bidentata* (Ström) (Gastropoda, Pulmonata, Clausiliidae).—Proc. Ninth Int. Malacol. Congr., Edinburgh, 1986: 107-113. Leiden.
- Gittenberger, E., 1967. Beiträge zur Kenntnis der Molluskenfauna Österreichs.—Basteria 31 (4-5): 70-75.
- Gittenberger, E., 1977. *Planogyra sororcula* (Benoit, 1857) (Pulmonata, Valloniidae), une espèce nouvelle pour la France.—Zool. Meded. Leiden 51 (12): 191-197.
- Gittenberger, E., 1987. Neue Funde der sogenannten Gattung *Isabellaria* (Gastropoda Pulmonata: Clausiliidae) vom Peloponnes.—Basteria 51 (1-3): 79-84.
- Gittenberger, E., 1992. A new, late Pleistocene, vitrinid species (Gastropoda Pulmonata: Vitrinidae) from the islet of Andikithira, Greece.—Basteria 56: 163-167.
- Gittenberger, E., H.P.M.G. Menkhorst & J.G.M. Raven, 1980. New data on four European terrestrial gastropods.—Basteria 44 (1-4): 11-16.
- Giusti, F. & G. Manganello, 1984. Relationships between geological land evolution and present distribution of terrestrial gastropods in the western Mediterranean area. In: A. Solem & A. C. van Bruggen (eds.), World-wide snails: 70-92.—Leiden.
- Giusti, F. & G. Manganello, 1986. Notulae malacologicae, XXXIII. "*Helix*" *sororcula* Benoit 1859 and its relationships to the genera *Vallonia* Risso and *Planogyra* Morse (Pulmonata: Pupilloidea).—Arch. Mollusken. 116 (4-6): 157-181.
- Hausdorf, B., 1990. Zur Kenntnis einiger Arten der Gattung *Helicopsis* Fitzinger aus Griechenland und der Türkei (Gastropoda: Hygromiidae).—Arch. Mollusken. 120 (1-3): 57-71.
- Kerney, M.P. & R.A.D. Cameron, 1979. A field guide to the land snails of Britain and North-west Europe: 1-288.—London.
- Kerney, M.P., R.A.D. Cameron & J.H. Jungbluth, 1983. Die Landschnecken Nord- und Mitteleuropas: 1-384.—Hamburg & Berlin.
- Nordsieck, H., 1970. Die *Chondrina*-Arten der dinarischen Länder.—Arch. Moluskenk. 100 (5-6): 243-261.
- Prieto, C. E., R. Martin, B.J. Gomez & M. Larraz, 1986. Nuevos datos sobre *Acanthinula* Beck 1846, *Planogyra* Morse 1864, y *Acicula* Hartmann 1821 (Molusca, Gastropoda) en la península Iberica.—Iberus 6 (2): 257-264.
- Raven, J.G.M., 1980. Notes on Spanish non-marine molluscs 1. *Planogyra sororcula* (Benoit, 1857) (Gastropoda, Valloniidae) new for the Cantabrian mountains.—Basteria 44 (5-6): 54.
- Riedel, A., 1982. Die Gattungen *Allaeogopsis* Riedel und *Doraeogopsis* gen. n. (Gastropoda, Stylommatophora, Zonitidae).—Malakol. Abh. Dresden 8 (1): 1-28.
- Riedel, A., 1985. Revision der Gattung *Zonites* Montfort (Gastropoda, Zonitidae): griechische Arten.—Ann. Zool. Warszawa 39 (1): 1-67.
- Velkovrh, E., 1972. Priopombe k razsirjenosti dveh vrst rodu *Spelaeodiscus* Brussina 1886 (Gastropoda, Pulmonata).—Biol. Vestnik, Ljubljana 20: 121-126.
- Zilch, A., 1976. Die Typen und Typoide des Natur-Museums Senckenberg, 55: Mollusca: Clausiliidae (3): Mentisoideinae.—Arch. Moll. 106 (4-6): 203-242.
- Zilch, A., 1977. Die Typen und Typoide des Natur-Museums Senckenberg, 57: Mollusca: Clausiliidae (4): Alopiinae (2): Alopiini (1).—Arch. Mollusken. 107 (4-6): 309-363.
- Zilch, A., 1979. Die Typen und Typoide des Natur-Museums Senckenberg, 62: Mollusca: Zonitacea: Vitrinidae.—Arch. Moll. 110 (1-3): 81-101.

Received: 4.iii.1993

Accepted: 11.iv.1993

Edited: J.C. den Hartog