The Turkish Enidae:  
the genus Buliminus Beck (Gastropoda Pulmonata: Pupillacea)

E. GITTENBERGER

Nationaal Natuurhistorisch Museum, P.O. Box 9517, NL 2300 RA Leiden, The Netherlands

& H. P. M. G. MENKHORST

Natuurmuseum Rotterdam, P.O. Box 23452, NL 3001 KL Rotterdam, The Netherlands

The genus Buliminus Beck, 1837, is reported from Turkey with nine species, two of which with two subspecies. Pene Pallary, 1929, is considered a subgenus. B. (B.) akkumensis spec. nov., B. (B.) corpulentus spec. nov. and B. (Pene) coluplicatus spec. nov. are described as new. Our actual knowledge concerning the taxa is summarized in an identification key and distribution maps.

Key words: Gastropoda, Pulmonata, Enidae, Buliminus, Pene, taxonomy, distribution, Turkey.

INTRODUCTION

The non-marine molluscan fauna of Turkey is still poorly known. Only scattered data are found in the literature and even a simple check-list is not available. Therefore, Forcart's (1940) monograph on the Turkish Enidae is highly exceptional. In this exemplary work the speciose family is dealt with thoroughly. In a series of papers, our knowledge concerning the Turkish Enidae should be brought up to date again, without repeating the wealth of valuable information contained in Forcart's monograph, which will remain an indispensable base for future research. Only amendments are discussed and the literature on the subject that was published after 1940 is reviewed. All the species and subspecies distinguished by Forcart are dealt with, but synonymy lists are not repeated. Much new material that could be studied, most of which collected by the second author, is reported upon. See Gittenberger & Menkhorst (in press) for another paper in the series on Enidae, dealing with the genus Turanena Lindholm, 1922.

A revised key to identify the species and subspecies of Buliminus after conchological characters has been composed and the various taxa are shortly characterized. The aberrant "Buliminus" lycicus Pfeiffer, 1846, is not dealt with. All the available distribution data are presented on UTM 10 km square distribution maps, as recommended by the committee of the European Invertebrate Survey. For various reasons, not all the localities mentioned in the literature, or on labels, could be located in such a way that their UTM codes could be established. An indication like "20 km E. of" is less vague than simply "E. of", or "near", but still problematic, as long as it remains unclear whether the distance has been measured along the road (mainly convenient
CONCHOLOGICAL IDENTIFICATION KEY

1. Apex dome-shaped; parietal interruption of the apertural lip and columellar lip about equally long ........................................... (Buliminus s.s.) 2
   — Apex conical; parietal interruption of the apertural lip much shorter than the columellar lip ........................................... (Pene) 8
2. Over 12 mm broad ................................................................................. 3
   — Less than 12 mm broad ...................................................................... 5
3. Over 18 mm broad .............................................................................. corpulentus
   — Less than 18 mm broad .................................................................... (labrosus) 4
4. Spindle-shaped .................................................................................. labrosus egregius
   — Slender ovoid .................................................................................. labrosus s.s.
5. All whorls increasing regularly in width .......................................... exquisitus
   — Different ........................................................................................... 6
6. Less than 6 mm broad ........................................................................ akkumensis
   — Over 6 mm broad ............................................................................ 7
7. Apertural height 40-50% of total height ............................................. alepensis
   — Apertural height less than 40% of total height .................................. carneus
8. With a (very) prominent columellar lamella ...................................... coluplicatus
   — Without a prominent columellar lamella ......................................... 9
9. Over 6 mm broad ........................................ (kotschyi) 10
— Less than 6 mm broad ...................................... sidoniensis edessanus
10. Less than 8.3 mm broad; upper half of spire conical ............ kotschyi s.s.
— Over 8.3 mm broad; spire predominantly cylindrical ............ kotschyi naegelei

SYSTEMATIC REVIEW

*Buliminus* Beck, 1837

Heller (1974: 259) considered *Pene* Pallary, 1929, a separate genus and not a subgenus of *Buliminus* because of (1) constant differences in the shape of the protoconch and initial teleoconch whors and (2) the sympatric occurrence of *Pene* and *Buliminus* species, whereas in *Pene* and *Buliminus* the species are generally allo- or parapatric. In addition, both taxa can be distinguished conchologically by the form of the apertural lip, but it remains subjective how to interpret this taxonomically. After all, subgenera should have diagnostic characters. Anatomical differences are not obvious. Several molluscan taxa which are generally considered subgenera should be raised to genera if Heller's reasoning would be followed. Also, the nomenclature would lose its present informative content concerning a close (probably sister-group) relationship. The advantages of changing the generic name of several species remain unclear in this case. Therefore we prefer to follow both Forcart (1940) and Zilch (1959: 190) in giving subgeneric status to *Pene*.

The shells of the Turkish *Buliminus* species, including the protoconch, are not provided with any (micro)sculpture apart from inconspicuous growth-lines. Usually they are creamy or light corneous to whitish. Few species have violet-brown shells, which is then mentioned in the description. The umbilicus is inconspicuous or closed completely.

*Buliminus* s.s.

*Buliminus* (B.) akkumensis spec. nov.
(figs. 7, 19, 29)

Material (holotype and paratypes). — Icel: high rocks near the bay 2 km W. of Akcum, 24 km NE. of Silifke, 0-50 alt., XF03 (MEN/23; NNM 56515/holotype, 56516/4); Narlikuyu Mağarasi, c. 20 km NE. of Silifke, XF03 (MEN/2). Not in fig. 29 (added in proof): Kocaşlı, 8 km NW. of Ovaçık, WF50 (NEU/1); 1 km N. of Silifke, WF82 (NEU/3).

Diagnosis. — A species of *Buliminus* s. str., differentiated conchologically by its slender sub-cylindrical shape and small size, being less than 6 mm broad with seven to nine whors.

Shell (figs. 7, 19). — Shell very slender sub-cylindrical, with 7 ¼ to 9 whors, separated by somewhat indented sutures. Initial whors moderately inflated and gradually increasing in width; the final three whors (strongly) flattened and about equally broad. Aperture not broadly rounded below, oblique, narrow elliptical. Apertural height between 1/3 and 1/4 of that of the shell. Parietal callus simple. Columellar ledge simple, in front view clearly narrower than the columellar lip and reaching down to just below its middle.
BULIMINUS spec. 1-7, Buliminus (Pene) spec.; 8, 9, Buliminus (B.) spec.; 1, exquisitus, Içel, 58 km NE. of Mersin (actual height 27.6 mm); 2, 6, carneus, Antalya, 20 km ESE. of Korkuteli (2: actual height 23.3 mm) and Perge (6: actual height 18.2 mm); 3, labrosus egregius, Seyhan, Kozan (actual height 32.5 mm); 4, corpulentus, holotype, Içel, 3 km W. of Aydincik (actual height 41.8 mm); 5, alepensis, Kahramanmaras, 140 km SW. of Malatya (actual height 19.5 mm); 7, akkumensis, paratype, Içel, 2 km W. of Akkum (actual height 16.5 mm); 8, sidoniensis edessanus, Kahramanmaras, 140 km SW. of Malatya (actual height 15.2 mm); 9, k. kotschyi, Içel, 2 km N. of Gülek (actual height 21.2 mm). Mrs. I.M. den Boer-van Noortwijk & F.J.A. Driessen del.
Genitalia. — Unknown.

Range (fig. 29). — The species is only known from a restricted area in the coastal part of the province of Içel. Two records that became known while this paper was in press could not be recorded anymore in fig. 29.
Notes. — This species is not particularly similar to any other Turkish Buliminus. At first sight it recalls a Pene species by its shape and size, but the apical whorls and the apertural lip are typical for Buliminus s.s.

Derivatio nominis. — The epithet akkumensis refers to the type locality, situated near Akkum.

**Buliminus (B.) alepensis** (Pfeiffer, 1841)  
(figs. 5, 20, 29)

**Petraeus (Petraeus) halepensis**; Forcart, 1940: 165, pl. 2 figs. 30, 31.

Material. — Adıyaman: 24 km NE. of Kāhta along the road from Horik to the summit of the Nemrud Dağ, DB69 (NEUB); “Arsameia” and “Nymphaion”, 20 km NNE. of Kāhta, DB69 (MEN); Cendere Köprüsü, 16 km N. of Kāhta, DB69 (MEN). Elâzığ: Harput, EC28 (SCH; SUB). Gaziantep: 1.5 km E. of Yeşilce, 30 km E. of Sakcağözü, CB41 (MEN); 2 km E. of Gaziantep, CB50 (MEN). Hatay: 2 km SW. of Kırıkhan, BA64 (MEN; NNM). Kahramanmaraş: 140 km SW. of Malatya, CB66 (Gittenberger, 1967: 140); Elbistan, 1200 m alt., CC43 (MEN; NNM). Malatya: Malatya, DC44 (F: 167). Mardin: monastery Deir az-Zafaran, 8 km E. of Mardin, FB63 (NEUB). Siirt: Siirt, GC50 (F: 167). Sivas: 17 km SE. of Gürün, CC68 (MEN; NNM). Urfa: Harran (= Altunbasak), DA98 (MEN); Birecik, DB10 (F: 168); 8 km W. of Urfa, DB71 (MEN); 10 km SSE. of Urfa, 500 m alt., DB80 (MEN; NNM); Urfa, DB81 (F: 168; MEN; NNM); 13 km SW. of Hilvan, DB95 (MEN); 10 km NE. of Hilvan, 500 m alt., DB96 (MEN); 50 km E. of Urfa, EB31 (NEUB).

Shell (fig. 5). — Shell elongate-ovoid to nearly subcylindrical, with $6\frac{1}{2}$-$7\frac{1}{2}$ slightly inflated whorls, separated by somewhat indented sutures. The penultimate whorl is hardly narrower than the body whorl; both are somewhat flattened laterally. Aperture broadly rounded below; it accounts for 41-49% of the total shell height. Parietal callus simple. Columellar ledge simple, much narrower than the columellar lip and reaching to below its middle.

H. 15.8-26.2 mm; B. 7.6-10.7 mm.

Genitalia (fig. 20). — A single specimen could be studied. The various segments of the penial appendix are unusually broad. An inconspicuous caecum takes the place of the penial flagellum. The epiphallian flagellum is somewhat shorter than the penis. The diverticulum hardly reaches beyond the spermatheca along the spermoviduct; it does not reach the glandula albuminifera.

Range (fig. 29). — The species is known from southern Turkey between $36^\circ$ and $42^\circ$E.

Notes. — Both conchologically and anatomically this species is most similar to the vicariant B. (B.) carneus, which might be its sister-species. Because intermediate populations are unknown, the two taxa are considered species, mainly to remain in line with the literature.

Following the ICZN (Art. 32), the original spelling alepensis is used.

**Buliminus (B.) carneus** (Pfeiffer, 1846)  
(figs. 2, 6, 21-23, 29)

**Petraeus (Petraeus) carneus carneus**; Forcart, 1940: 168, pl. 2 fig. 33.

**Petraeus (Petraeus) carneus glabratus**; Forcart, 1940: 169, pl. 2 fig. 32.

Material. — Antalya: Yeniçe pass, 20 km ESE. of Korkuteli, 950 m alt., TF79 (F: 168; MEN; NNM; SUB); Termessos, 24 km NW. of Antalya, TF79 (MEN); Antalya, TF98 (F: 170; SUB); 5 km N. of...
Antalya, TF99 (MEN); 9 km N. of Antalya, TF99 (NNM); 2 km W. of Korkuteli, TG50 (MEN); Karain cave, 6 km NW. of Yeniköy, 30 km NNW. of Antalya, TG80 (MEN; NEU; NNM); Lara, 5 km SE. of Antalya, UF08 (NNM); 6 km NE. of Antalya, UF08 (MEN); 8 km E. of Antalya, UF08 (MEN); Perge, UF09 (IZPAN; MEN; NNM); ruins of Sililyon, 24 km NE. of Antalya, 240 m alt., UF19 (NEUB). Burdur: Burdur Gölüş, c. TG57 (NEUB). Içel: Çubukköyaga, 20 km E. of Anamur, WE09 (MEN); Hacişahkili, 29 km WSW. of Taşcu, WF50 (MEN); 15 km W. of Silifke, WF62 (IZPAN); 3 km S. of Uzuncaburç, 20 km N. of Silifke, WF84 (NEUB); Narlıkuyu Mağarası, 20 km NE. of Silifke, XF03 (MEN); Cennet ve Çehennem (= 20 km NE. of Silifke), XF03 (NEUB); Yemiskuma, 7 km SW. of Erdemli, XF14 (MEN; NNM); Arslankoy, XF19 (IZPAN); Limony, 10 km SW. of Mersin, XF36 (MEN). Konya: 35 km W. of Konya, 1000 m alt., VG19 (NNM). Niğde: Bulgar Maden mtn. in the Bulgar Dağ, 1500-1600 m alt., XG34 (F: 170).

Shell (figs. 2, 6). — Shell sub-cylindrical to very slender conical, with a more quickly tapering apical part; with 7-8 3/4 moderately convex whorls, separated by somewhat indented sutures. Especially the body whorl is clearly flattened laterally. The aperture is broadly rounded below; it accounts for (clearly) less than 40% of the total shell height. Parietal callus simple. The columellar ledge is simple, clearly less broad than the columellar lip or even not discernible at all in front view; it may reach downward to c. halfway the columellar border.

H. 16.3-25.1 mm; B. 6.9-9.5 mm.

Genitalia (figs. 21-23). — Three specimens in total, from two localities, could be studied. An obsolete caecum takes the place of the penial flagellum. The epiphallian flagellum is about as long as the penis (figs. 21, 23) or clearly longer (fig. 22). The diverticulum reaches (very) clearly beyond the spermatheca; it reaches the basis of the glandula albuminifera in natural position. The diverticulum may be conspicuously enlarged when it contains a spermatophore (fig. 23).

Range (fig. 29). — The species is known from southern Turkey, between the provinces of Antalya and Burdur in the west and Niğde and Içel in the east.

Notes. — Forcart (1940: 169) argued that B. (B.) carneus can be divided into two subspecies after the dimensions of the shells. With more material available for study now, we cannot share this view. B. (B.) carneus turned out to be one of several Turkish Enidae species that varies conspicuously in dimensions.

Very slender, but otherwise normal specimens (up to 21.8-7.1 mm, with 8 3/4 whorls) have been found 15 km W. of Silifke.

B. (B.) carneus differs from B. (B.) alepensis most clearly by the more slender shape of the shell, which has a relatively lower aperture. Apart from these differences the two species are so similar that a subspecific status should be given serious consideration (see also the notes with B. (B.) alepensis).

**Buliminus (B.) corpulentus** spec. nov.  
(figs. 4, 10, 24, 29)

Material (holotype and paratypes). — Içel: 3 km W. of Aydınçk (= Gilindire), 0-50 m alt., WE 29 (MEN/25; NEU/4; NNM 56517/holotype, 56518/4, alc. 9260/1); 2 km E. of Sipahili, 52 km WSW. of Taşcu, 0-50 m alt., WF40 (MEN/1; NEU/2).

Diagnosis. — A very big *Buliminus* s. str., differing from congeneric species conchologically by the combination of a slender ovoid general shape and a large ovoid aperture with a prominent, curved columellar ledge.
Shell (figs. 4, 10). — Shell very big, slender ovoid, with 5 3/4-6 moderately convex whorls, separated by indented sutures; body whorl somewhat flattened laterally. Apertural lip c. 2 mm broad, white, not flattened, its outer margin clearly reflected backward. Aperture measuring 48-54% of the total height of the shell, ovoid, broadly rounded below. Parietal callus low, but sharply delimited in front. Columellar ledge very prominent, forming a curved pseudolamella, which extends downward to about the middle of the columellar side of the aperture.

H. 37.0-42.0 mm; B. 19.5-21.8 mm.

Genitalia (fig. 24). — One specimen could be studied. Between the penis and the
slightly longer epiphallus there is a penial flagellum, measuring less than half the length of the penis. At its basis, the very slowly tapering epiphallian flagellum is broader than the penis; it is somewhat longer than the epiphallus. The diverticulum reaches clearly beyond the spermatheca; in its natural position it borders the basis of the glandula albuminifera.

Range (fig. 29). — This species is only known from two localities along the coast of the province of Içel.

Notes. — It is rather surprising that this largest of all Buliminus species had been overlooked up till now. B. (B.) l. labrosus is most similar in shell shape and size.

Derivatio nominis. — The epithet corpulentus refers to the size and general shape of the shell.

Buliminus (B.) exquisitus Nägele, 1901
(figs. 1, 29)

Petraeus (Petraeus) exquisitus; Forcart, 1940: 170, pl. 2 fig. 34.
Buliminus (Buliminus) exquisitus; Gittenberger, 1967: 140.

Material. — Hatay: “Cheikli” near Alexandrette (= Iskenderun), c. BA55 (F: 171). Içel: 58 km NE. of Mersin, western slope near the northern entrance to the pass 15 km SW. of Pozantı, 1100-1900 m alt., XG53 (NNM - Gittenberger, 1967: 140); Kolek Boğazi, 8 km N. of Gulek, XG62 (Nägele, 1901: 25).

Shell (fig. 1). — Shell very slender conical to somewhat spindle-shaped, with 8½-9 slightly convex whors, which are separated by moderately indented sutures. Apertural lip broadly reflected. Apertural base somewhat narrowed, not broadly rounded; columellar border simple, straight.

H. 25.7-28.8 mm; B. 8.2-9.5 mm.

Genitalia. — According to Forcart (1940: 171) the genitalia are similar to those of B. (B.) alepensis, but a penial flagellum is lacking completely.

Range (fig. 29). — The species is known from only three localities in Turkey. With Forcart (1940: 171) we doubt its occurrence in Eskişehir; we have not indicated this record in fig. 29.

Buliminus (B.) labrosus egregius Nägele, 1902
(figs. 3, 12, 13, 25, 29)

Petraeus (Petraeus) labrosus egregius; Forcart, 1940: 162, pl. 2 fig. 35.

Material. — Hatay: Sarısckı, 11 km NE. of Iskenderun, BA56 (MEN; NNM). Scyhan: Kozan (= Sis), YG44 (F: 165; IZPAN; NNM); 5 km NNE. of Kozan, YG55 (IZPAN). Siirt: Siirt, GC50 (F: 165).

Shell (figs. 3, 12, 13). — Shell spindle-shaped, with 6½ to 7 moderately convex whors. Aperture broadly rounded below; the columellar ledge reaches to halfway the columellar side or somewhat further down. The aperture measures 41-47% of the total shell height.

H. 28.8-34.8 mm; B. 11.9-16.2 mm.

Genitalia (fig. 25). — A single specimen could be studied. The penial flagellum
measures about half the length of the penis, which is slightly shorter than the epiphallus. The epiphallian flagellum is clearly longer than the epiphallus. The diverticulum reaches far beyond the spermatheca; its end is situated next to the basis of the glandula albuminifera.

Range (fig. 29). — This subspecies is known from the central southern part of Turkey, where it has been recorded in the provinces of Hatay (not in the southernmost part) and Seyhan. Its occurrence further eastward, in the province of Siirt, is unlikely (see the notes).

Notes. — After having studied syntypes, Forcart (1940: 163) considered the var. serrensis Nägele, 1910, from Siirt, a form of this subspecies. He did so with some doubt. In view of the distribution of the nominate subspecies, we prefer to leave this question open for further study.

Bulimus (B.) labrosus labrosus (Olivier, 1804)
(figs. 11, 29)

Bulimus labrosus Olivier, 1804: 222, pl. 31 fig. 10a, b (near Beirut, Lebanon). Syntypes could not be traced (Tillier & Mordan, 1983: 159).

Material. — Gaziantep: 17 km E. of Sakcagözü, CB31 (NEUB); 20 km E. of Sakcagözü, 1000 m alt., CB31 (MEN; NNM); 1.5 km E. of Yeşilce, 30 km E. of Sakcagözü, CB41 (MEN; NNM). Hatay: 6 km NE. of Samandağ, 300 m alt., BV39 (MEN). Urfa: Urfa, DB81 (F: 165).

Shell (fig. 11). — Shell slender ovoid, because the upper whorls increase more quickly in width than they do in the preceding subspecies. Aperture measuring 43-50% of the total shell height.

Range (fig. 29). — This subspecies is known from the southernmost part of the province of Hatay eastward to the province of Urfa.

Notes. — This subspecies was not reported from Turkey by Forcart (1940). For biogeographic reasons we have provisionally listed here a sample reported from Urfa; the material in question was not actually studied by Forcart (1940: 165). See also the notes with the preceding subspecies.

Bulimus, subgenus Pene Pallary, 1929.

Bulimus (Pene) sidoniensis edessanus Kobelt, 1899
(figs. 8, 17, 28, 30)

Petraeus (Pene) sidoniensis edessanus; Forcart, 1940: 175.

Material. — Adiyaman: 10 km N. of Kâhta, DB69 (MEN; NNM). Diyarbakir: Diyarbakir, FB09 (F: 176). Gaziantep: 60 km E. of Bahçe, 1000 m alt., CB31 (MEN; NNM); 17 km E. of Sakcagözü, CB31 (NEUB); 20 km E. of Sakcagözü, 1000 m alt., CB31 (MEN; NNM); 24 km E. of Sakcagözü, 900 m alt., CB41 (MEN); 1.5 km E. of Yeşilce, 30 km E. of Sakcagözü, CB41 (MEN; NNM); 2 km E. of Gaziantep, 850 m alt., CB50 (MEN; NNM). Kahramanmaraş: 140 km SW. of Malatya, CB66 (Gittenberger, 1967: 140). Urfa: Birecik, DA09 (F: 176); 10 km SSE. of Urfa, 500 m alt., DB80 (MEN; NNM); Urfa, DB81 (F: 176; MEN); Siverek, EB27 (F: 176).
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Shell (figs. 8, 17). — Lower half of the shell cylindrical, upper half high conical. Shell with 9¼-10½ whorls, separated by indented sutures, the initial ones clearly more convex than the flattened lower ones. The aperture measures 29-33% of the total shell height.

H. 13.7-18.2 mm; B. 4.5-5.4 mm.

Genitalia (fig. 28). — Three specimens of the same population were studied. The penial flagellum and the penis are about equally long and about half as long as the epiphallus. The epiphallian flagellum is about as long as the epiphallus. The diverticulum reaches far beyond the spermaphera and forms a furrow on most of the glandula albuminifera.

Range (fig. 30). — This (sub)species is known from southeastern Turkey, from the province of Gaziantep eastward to the province of Diyarbakir.

Notes. — According to Heller (1974: 264, 267), the northernmost populations of B. (P.) sidoniensis (Férussac, 1821) cannot be distinguished as a separate subspecies. His view is supported by our data concerning the structure of the genitalia (see Heller, 1974: 270, fig. 10). We have not studied material from near the type locality, Lebanon, Beyrouth, and elsewhere in the wide, southern range of the species and provisionally still follow Forcart’s view.

Bulimus (Pene) kotschi kotschi (Pfeiffer, 1854) (figs. 9, 14, 15, 26, 27, 30)

Petraeus (Pene) sidoniensis kotschi; Forcart, 1940: 173, pl. 2 fig. 37.

Material. — Hatay: 7 km N. of Serinyol (= Bedirge), BA53 (MEN; NNM); Topboğazi, 12 km SE. of Iskenderun, 750 m alt., BA54 (MEN; NNM); gorge at Sarıeki, 11 km NE. of Iskenderun, BA56 (MEN; NNM); castle Bektash, 8 km SW. of Güvenç, BA75 (MEN; NNM); Yenşiç, 4 km S. of Reyhanlı, BA81 (MEN); Hierapolis ruins, 10 km N. of Osmaniye, BB51 (NEUB). Içel: Kizkalesi, 4 km SW. of Coreucus, XF03 (NEUB); 5 km S. of Gözne, 15 km N. of Mersin, XF38 (IZPAN); Gözne (= Giosna), XF39 (F: 175); Taşobas Körü, 18 km N. of Tarsus, XG70 (MEN; NNM); 10 km NE. of Tarsus, XF79 (MEN); Gülek (= Çamalan), XG52 (MEN; NNM); 8 km S. of Gülek, XG52 (MEN); 2 km N. of Gülek (= Çamalan), XG61 (IZPAN). Seyhan: Adana, YF09 (F: 175); Tumlu Kalesi, 12 km NW. of Mercimek, YG31 (MEN; NNM); (W-side of) Kozan, YG44 (F: 175; IZPAN; MEN); Yılanlı Kale, 6 km SW. of Ceyhan, YF49 (MEN).

Shell (figs. 9, 14, 15). — Lower half of the shell cylindrical and apical part conical, with 7¾-9¾ moderately inflated whorls. Aperture elliptical, its axis nearly vertical; measuring 31-37% of the total shell height. Apertural lip broadly reflected all around; with an obsolete angular denticle on the prominent parietal callus.

H. 18.0-23.6 mm; B. 6.3-8.5 mm (5.2-7.5 mm if measured behind the reflected lip). A specimen from Kizkalesi (Neubert leg.) measures 22.6 x 9.0 mm.

Genitalia (figs. 26, 27). — Two specimens were studied. The penial flagellum is tapering towards it end and measures about half the length of the penis. The epiphallus is about four times longer than the penis and the epiphallian flagellum is even somewhat longer than this. The diverticulum reaches far beyond the spermaphera and borders the basis of the glandula albuminifera (fig. 27).

Range (fig. 30). — This subspecies is known from the central southern part of Turkey, from the province of Hatay to the province of Içel.
Notes. — According to the structure of the genitalia, especially the relative lengths of the flagella, this taxon cannot be considered a subspecies of the vicariant *B. (P.) sidoniensis*. Intermediate populations are unknown as well. We consider it a separate species, anatomically similar to *B. (P.) syriacus* (Pfeiffer, 1846) (see Heller, 1974: 261, fig. 2), which might be its sister-species.

The relatively big specimens from Sariseki differ by a more violet-brown colour and a slender spire.
Bulimus (Pene) kotschyi naegelei Boettger, 1898
(figs. 16, 30)

Bulimus (Petraeus) naegelei Boettger, 1898: 25 ("In der Umgebung des Klosters La Trappe in Cheikli bei Alexandrette" [near the monastery La Trappe at Cheikli near Iskenderun]). Kobelt, 1901: 694, pl. 104 figs. 12-15.

Material. — Gaziantep: rocks in the centre of Aydinoğlu, 12 km WSW. of Islahiye, 600 m alt., BA89 (MEN; NNM).

Shell (fig. 16). — The shells differ from those of the nominate subspecies by a relatively shorter conical upper part and by being bigger, especially broader.

H. 22.0-27.6 mm; B. 8.4-9.8 mm.

Genitalia. — Unknown.

Range (fig. 30). — Apart from the type locality, that could not be located exactly, this subspecies is only known from the locality mentioned.

Notes. — This taxon was not mentioned by Forcart (1940). However, it occurs in an area that he did not yet consider Turkish territory.

Bulimus (Pene) coluplicatus spec. nov.
(figs. 18, 30)

Material (holotype and paratypes). — Hatay: 2 km SE. of Antakya Kalesi, BA40 (MEN/4); 1.5 km S. of Harbiye, 8 km S. of Antakya, BA40 (MEN/8; NNM 56520/2); cave of St. Peter, 2 km N. of Antakya, BA41 (MEN/2; NEU/1); 4 km S. of crossroad to Senköy, 20 km S. of Antakya, BV48 (MEN/2); 6.5 km S. of Harbiye, 14 km S. of Antakya, BV49 (MEN/15; NNM 56521/holotype, 56519/3).

Diagnosis. — A Pene species, differing from consubgeneric species by a prominent columellar lamella and a clearly spindle-shaped spire.

Shell (fig. 18). — Shell slender spindle-shaped, with more or less clearly narrowing lower whorls. There are 9-10 whorls, the lowest ones flattened and separated by very shallow sutures. Aperture elliptical, its axis parallel to the columella, measuring 28-34% of the total shell height. Parietal callus prominent, but in the middle often somewhat more obsolete. Apertural lip up to nearly 1 mm broad, reflected and concave (not curved backward). On the columella there is a (very) prominent, nearly horizontal lamella, which may be followed inside the body whorl. Fresh specimens are violet-brown.

H. 16.0-21.1 mm; B. 5.3-6.1 mm.

Genitalia. — Unknown.

Range (fig. 30). — This species is only known from the southernmost part of the province of Hatay.

Notes. — Material from three more localities in the province of Hatay is characterized by a (much) less prominent columellar lamella. These shells are not considered paratypes.

Derivatio nominis. — The epithet coluplicatus refers to the columella that is provided with a lamella.
REFERENCES


