

## Recent Melanopsines of the Aegean.

By

HARTWIG SCHÜTT,  
Düsseldorf-Benrath.

&

FIKRET HAKKI BILGIN,  
Bornova-Izmir.

With 6 illustrations.

The large abundance of taxa, which were introduced in the last century, principally by BOURGUIGNAT (1884: 1-168) has proved to be an obstacle to the further study of fresh water thiarides of the Eastern Mediterranean. Although shortly afterwards their systematic value was considered by WESTERLUND (1886: 102-131), this work was not critical, and even today there is a lack of adequate criteria for the definition of the different types and species in this area. More recently STARMÜHLNER (1957, 1961, 1965) has made valuable contributions to the clarification of the types which are found in Persia.

The purpose of this work is to describe and systematically evaluate a well defined species of the genus *Fagotia* and a subspecies of the genus *Melanopsis* which is conspicuous because of its unusual size, both of which were discovered by one of us (BILGIN). A new, well defined geographical race of *Microcolpia*, belonging to the genus *Fagotia*, which was recognized by the other one of us (SCHÜTT), is also discussed.

FÉRUSAC (1823: 160) described *Melanopsis esperi* from Laybach (= Ljubljana) and BOURGUIGNAT (1884: 30) established the genus *Fagotia* for all the forms which were known to him. In this connection he introduced 6 taxa belonging to *Fagotia* for the Sapança gölü near Izmit in NW-Anatolia, namely *anceyana*, *locardiana*, *ascania*, *gravida*, *gallandi* and *anatolica*. Collections by BILGIN from this lake have enabled us to establish that all 6 of these taxa fall within the range of variability of *esperi*, and are synonymous with this species.

The *esperi* are to be found in SE-Europe from Carniola and Croatia to Montenegro, Serbia, Slovakia, Hungary, Rumania, Bulgaria as far as NW-Anatolia and to the north of the Black Sea as far as the region of Dnjester, Bug and Dnjeper (cf. among others the distribution chart by SHADIN 1952: 114). The quaternary occurrences are essentially in agreement with the recent ones. In the same area, as well in the Caucasus, *esperi* is known from pliocene deposits. The middle-pliocene form *Fagotia esperi* var. *covurluensis* COBALCESCU 1883 from the levantine paludine layers of Tziglina at Galatz (Jud. Covurlui) in Rumania seems to be closely related to the *esperi*.

Within this district the type is mostly uniform and the taxa which have otherwise become known cannot even be said to be subspecies. It is not necessary to list them in this connection, because in the water catchment area of the lower Danube the species *esperi* varies only within the known limits.

***Fagotia (Fagotia) sangarica* n. sp.**

Fig. 1-3, 4.

**Diagnosis:** A relatively small species of the genus *Fagotia* BOURGUIGNAT 1884, whose shell is distinguished by clear sculpturing and characteristic, pronged transversal design.

**Description:** Shell moderately large, stretched egg-shaped form, moderately firm shell, apex pointed but corroded, winding towered; the mouth measures less than half the height of the shell; 5-7 whorls are slightly convex, increase regularly in size and are separated by a scarcely incised suture. The body whorl measures nearly  $\frac{2}{3}$  of the length of the shell. The surface of the whorls is modified by about 15 knotted ribs on the penultimate whorl, each of which has a stronger, slightly separated knot just under the suture; under these sub-sutural knots are 5 rows of further tubercles resulting from spiral and longitudinal sculpture elements; these sculpture elements weaken below the periphery of the whorls. The aperture is rather small, acute angled at the top, with a thin parietal callus and a thin columella covering the umbilicus; the columella which is cut off underneath is not turned. A slightly S-shaped pronged red-brown design has the same frequency as the ribs.

Operculum corneous, paucispiral with a very slender central part lying on the inner side and a very eccentric nucleus close to the base and spindle; colour red-brown with a lighter side part; on the back, delicate undulatory traverse ribs beginning at the nucleus;  $3.2 \times 2.3$  mm.

The animal has a dark brown head with tentacles and at the front a blunt proboscis of the same colour, and black eyes. The under part of the foot is light greyish coloured with irregular melanin pigment spots. The mouth is vertical and slitlike, and has on both sides about 1 mm long jaws. The stomach is relatively large, middle and final intestine wide. The radula is taenoglassate and consists of 130-140 rows each with 5 teeth, and is about 300  $\mu$ m wide. The rhachis is trapezoid with two side wings and a little inflexed edge with a strong mesocone and 2 denticles on each side. Lateral, inner and outer marginal teeth have also about 5 strong denticles.

The mantle cavity is even at the front, relatively voluminous with a large gill consisting of about 50 small gill leaflets. The osphradium is narrow and inconspicuous, the hypobranchial gland is likewise inconspicuous.

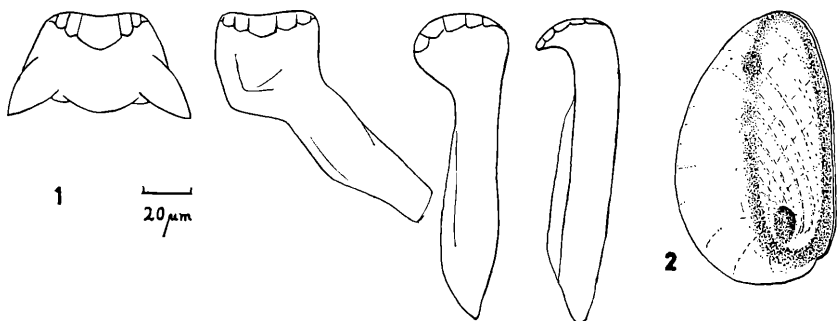
This new species is heterosexual, the sexes cannot be distinguished by the form of the shell, and females predominate.

**Size of type** (in mm): A = 14.0; D = 7.0; aperture about 6.0:4.5.

**Locus typicus** and so far only known locality: Sakarya başı, main spring of Sakarya river near village Çifteler, 60 km SE Eskişehir, 160 km WSW of Ankara. The Latin name of this river was in classical times Sangarius fluvius; from this we derived the name of the new species.

**Material** Holotype SMF 232008; Paratypes in Ege Üniversitesi, Fen Fakültesi, Genel Zooloji, Bornova-Izmir; SMF 232009/5; coll. SCHÜTT.

**Relations:** None of the large number of Melanopsines in Anterior Asia has a comparable sculpture consisting of ribs and spiral elements, and none has such a pronged transversal design. Anatomical factors point to the relationship to the *Fagotia*. The new species is clearly different from *F. esperi* in sculpture and design.



Figs. 1-2. *Fagotia (Fagotia) sangarica* n. sp. — 1) Radula teeth; 2) Operculum.

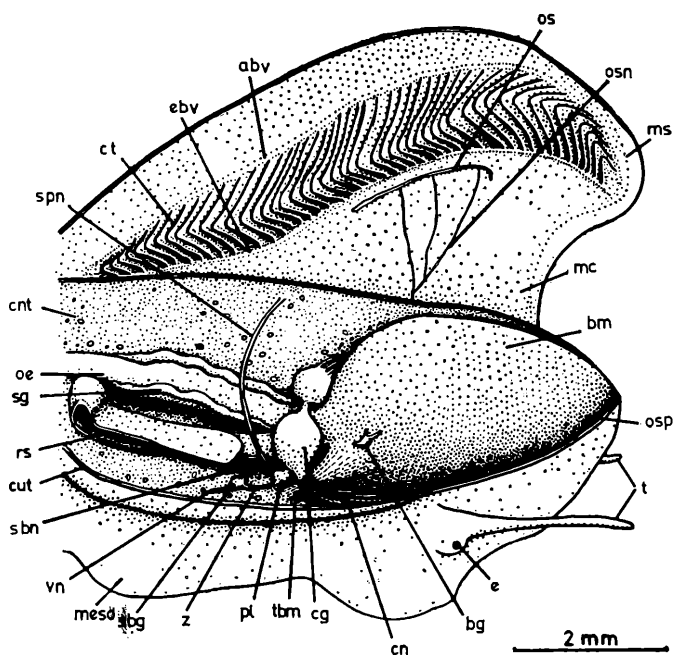


Fig. 3. *Fagotia (Fagotia) sangarica* n. sp. — Dissection of head from the right side; the mantle skirt is reflected to the left. — *abv* afferent branchial vessel, *bg* buccal ganglion, *bm* buccal mass, *cg* cerebral ganglion, *cn* nerve from cerebral ganglion, *cnt* connective tissue, *ct* ctenidium, *cut* cut edge of body wall, *e* eye, *ebv* efferent branchial vessel, *mc* mantle cavity, *meso* mesopodium, *ms* mantle skirt, *oe* oesophagus, *os* osphradium, *osn* osphradial nerve, *osp* oral sphincter, *pl* right pleural ganglion, *rs* radular sac, *sbg* sub-oesophageal ganglion, *sbv* sub-oesophageal nerve, *sg* salivary gland, *son* supra-oesophageal nerve, *t* tentacle, *tbm* tensor muscles of buccal mass, *vn* visceral nerve, *zn* zygoneury.

The variability of the species *Fagotia (Microcolpia) acicularis* FÉRUSSAC 1823 is likewise not very great. The pontian spread of it is by and large the same as of *F. esperi*: both live only in fluvial systems draining into the Black Sea basin. In non-marine interglacial deposits, *acicularis* is spread as far as the Netherlands. Both species also occur together in Sapança gölü. A new, until now apparently unknown form from Greece with a pronounced band marking was able on account of its geographical isolation to differentiate itself, and we should therefore like to regard it as a separate geographical race.

In our work on this new race, we noticed, that O. BOETTGER, who got the specimens apparently from STUSSINER in about 1885, had already separated them under the name *stussineri*, but without having published this name. Considering this fact, we name the race:

***Fagotia (Microcolpia) acicularis stussineri* n. subsp.**

Fig. 5.

**Diagnosis:** A subspecies of *Fagotia acicularis* FÉRUSSAC 1823, which differs from the type species by a broader shell, different colour markings and the lack of any spirals such as are found in the type species.

**Description:** Shell elongate-conoidal, rather thick-walled, smooth with little imprinted growth lines, light to medium brown with a dark brown spiral band markings below the periphery; aperture ovate with dark brown columella; parietal callus weak. Other characteristics like *acicularis* s. str.

Size of type (in mm): A = 17.8; D = 6.9; aperture about  $7.4 \times 4.0$ .

**Locus typicus:** River Pinios in Thessalia, Greece, between Larissa and Tempe valley.

**Material:** Holotype SMF 111523a; Paratypes SMF 111523b/3, 111524/3, 111525/19; Ege Üniversitesi, Fen Fakültesi, Genel Zooloji, Bornova-Izmir; coll. SCHÜTT.

The opinion today is that all forms of the genus *Melanopsis* FÉRUSSAC 1807 inhabiting Anatolia belong to the species *praemorsa* LINNAEUS (SCHÜTT 1965:

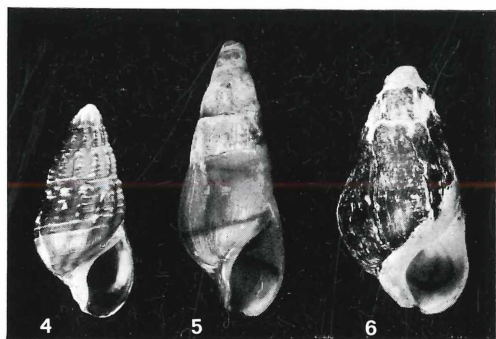


Fig. 4. *Fagotia (Fagotia) sangarica* n. subsp., 2:1. — Holotype SMF 232008.

Fig. 5. *Fagotia (Microcolpia) acicularis stussineri* n. sp., 2:1. — Holotype SMF 111523a.

Fig. 6. *Melanopsis praemorsa maximalis* n. subsp., 1:1. — Holotype SMF 232011.

68). A fairly complete list of synonyms of this region is given by GERMAIN (1936: 345-354). We are dealing with a new form of this species which is above all remarkable for its extreme size, having no analogue among the recent *Melanopsides* of the Eastern Mediterranean.

***Melanopsis praemorsa maximalis* n. subsp.**

Fig. 6.

**Diagnosis:** A subspecies of *Melanopsis praemorsa* (LINNAEUS 1758), which is distinguished by particular size, width and thickness of the shell.

**Description:** Shell prolonged egg-shaped with predominant body whorl and normally corroded protoconch; thick-walled, with 5-6 (up to 7?) whorls, the last whorl as much as  $\frac{4}{5}$  of the total height of the shell. The whorls are somewhat concave at the top and convex underneath with scarcely impressed suture. The aperture is oblique oval, pointed on both sides: in the upper part with a very long narrow slit and below with a short canal; the peristome is thin and sharp and connected by a thick columella callus which also covers the umbilicus very extensively, and above them a very thick white parietal callus; the columella is strongly turned but somewhat variable. The surface of the shell is rather smooth, with flat plains only on the last whorl, which become irregular in the subsutural region.

**Size of type (in mm):** A = 33; D = 17; aperture without slit: 13 × 9.

**Locus typicus** and so far only known locality: Sakarya başı, main spring of Sakarya river near village Çifteler, 60 km SE of Eskişehir, 160 km WSW of Ankara. The place, called Kayadibi, is about 200 m far from the type locality of *F. sangarica* and the habitat has fine sands and organic detritus.

**Material** Holotype SMF 232011; Paratypes in Ege Üniversitesi, Fen Fakültesi, Genel Zooloji, Bornova-Izmir, n. 391; SMF 232012/2; coll. SCHÜTT.

**Relations:** We are not sure whether the classification of this new form is in accordance with the genetic relationship. It is also possible, that the form in question is an independent species, which is congenetic with *praemorsa*. All the structure elements, which are known from the *praemorsa*, are to be found also in this new subspecies, but they are much larger and stronger, with a more compressed winding. This is the largest recent *Melanopsis* of the Eastern Mediterranean and possibly of the whole Mediterranean region.

References.

- BILGIN, F. H. (1973): Bati anadoluda tespit edilen bazı prosobranch türlerinde görülen anatomik özellikler. — IV. Bilim Kongresi 5-8 Kasım 1973 Ankara.
- BOURGUIGNAT, J. R. (1884): Histoire des Mélaniens du Système Européen. — Ann. Malacol., 2 (1884-1886): 1-168.
- GERMAIN, L. (1936): Mollusques terrestres et fluviatiles d'Asie-Mineure. Voyage zoologique d'Henri Gadeau de Kerville en Asie-Mineure. 1-492. Paris.
- SCHÜTT, H. (1965): Zur Systematik und Ökologie türkischer Süßwasserprosobranchier. — Zool. Mededel. Leiden, 41: 43-72.

- STARMÜHLNER, F. (1961): Eine kleine Molluskenausbeute aus Nord- und Ostiran. — S.-Ber. österr. Akad. Wiss. Wien; math.-nat. Kl., 170: 89-99.
- — — (1965): Ein weiterer Beitrag zur Wassermolluskenfauna des Iran. — S.-Ber. österr. Akad. Wiss. Wien; math.-nat. Kl., 174: 171-184.
- STARMÜHLNER, F. & EDLAUER, A. (1957): Ergebnisse der Österreichischen Iran-Expedition 1949/50. Beiträge zur Kenntnis der Molluskenfauna des Iran. — S.-Ber. österr. Akad. Wiss. Wien; math.-nat. Kl., 166: 435-494.
- STUSSINGER, J. & BOETTGER, O. (1885, 1886): Malakologische Ergebnisse auf Streifzügen in Thessalien. — Jb. dtsh. malakozool. Ges., 12 (1885): 128-200; 13 (1886): 42-73.
- WESTERLUND, C. A. (1886): Fauna der in der paläarktischen Region lebenden Binnenconchylien, 6: 1-156. Lund.
- ZHADIN, V. I. (1952): Molluski presnykh i solonovatykh vod SSSR. 1-358. Moskva-Leningrad.

# ZOBODAT - [www.zobodat.at](http://www.zobodat.at)

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Archiv für Molluskenkunde](#)

Jahr/Year: 1974

Band/Volume: [104](#)

Autor(en)/Author(s): Schütt Hartwig, Bilgin F.H.

Artikel/Article: [Recent Melanopsines of the Aegean. 59-64](#)