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NEW CLASSIFICATION OF FRESH AND BRAKISH WATER PROSOBRANCHIA FROM THE BALKANS AND ASIA MINOR

by

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Noticed errors

Page	Instead of:	Put:
In the title	brakish	brackish
4: row — 1	Superfammily	Superfamily
„ — 10	bucal	buccal
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5: row — 6	od the »loop«	of the »loop«
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„ — 35	cuspe	cusps
7: row — 46	CHRIDOHAUFFENIA	ORHIDOHAUFFENIA
„ — 49	*sublitocalis*	*sublitoralis*
8: row — 11	*Pseudamnicola*	*Horatia*
9: row — 21	1917	1927
„ — 40	lewel	level
11: row — 31	schlikumi	schlickumi
14: row — 41	od the radula	of the radula
16: row — 10	all this row	*Kirelia carinata* n. sp. Shell ovoid — conical, relatively broad,
„ — 11	length	with
„ — 17	elongate-	elongated-
„ — 42	vith	with
17: row — 39	concpicuous	conspicuous
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„ — 7	ftom	from
20: row — 33	simliar	similar
„ — 41	*Prespolitoralia*	*Prespolitorea*
21: row — 2	opend	opened
„ — 8	*Prespolitoralia*	*Prespolitorea*
22: row — 13	opend	opened
„ — 23	sell	shell
24: row — 26	all this row	Locus typicus: lake Egerdir, Turkey
29: rows 14, 16, 18, 20	Kuščer, I.	Kuščer, L.
„ — 35	Pfeiffer, I.	Pfeiffer, L.
30: row — 27	all this row	Schütt, H. 1959. Zur Höhlenschneckenfauna Montenegros. Arch. Moll. 88, 4/6:
„ — 37	höhlenebewohnender	höhlenbewohnender
„ — 47	podzemaljski	podzemeljski

On the page 9: *tupys generis* of the genus PALADILHIOPSIS is *robičiana* and not *serbica.*

NEW CLASSIFICATION OF FRESH AND BRAKISH WATER PROSOBRANCHIA FROM THE BALKANS AND ASIA MINOR

by

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Faculty of Sciences, Beograd

(31. 5. 1973)

During the preparation of a monograph of Prosobranchia from the Balkan Peninsula, which were up to now usually put into the family *Hydrobiidae*, I arrived long ago to the conclusion that their taxonomy cannot be correct if based on the shell characters only. To be able to discover and trace numerous phylogenetic relationships between so many species, and to give their »natural« classification into genera, families and higher taxa, it was inavoidable to work on the details of their anatomy. After a long time, many thousands of traveled kilometers (I personally collected all my matherial), and countless painstaking dissections, I have accumulated certain interesting results which I wish to present here. New system of genera and species mentioned in this paper was based primarily on the anatomical data, while the shell was used to distinguish the species within the same genus, and very seldom for the separation of related genera (this will be more extensively discussed in the monograph).

The proposed classification is as follows:

SUPERFAMILY	FAMILY	SUBFAMILY
Hydrobioidea	Hydrobiidae	Hydrobiinae Pyrgorientaliinae
	Orientaliidae	Orientaliinae Horatiinae Sadlerianinae Pseudohoratiinae Islamiinae Graecoanatolicinae
	Pyrgulidae	Pyrgulinae Chilopyrgulinae Ohridopyrgulinae
	Micropyrgulidae	
	Turricaspiidae	
	Emmericiidae	
	Lithoglyphidae	
	Bythinellidae	
	Lithoglyphulidae	

The Family *Bythiniidae* does not belong to the superfamily *Hydrobioidea.*

SUPERFAMMILY HYDROBIOIDEA

(1) The same type of the radula in all families: the central tooth usually butterfly-shaped, with or without basal cusps; lateral tooth axe-shaped, with a relatively long »handle«; internal marginal tooth relatively broad, with an elongated, to the left (right, respectively) turned top; outer marginal tooth narrow in the middle, with a widened base and spoon-shaped top.

(2) The stomach with a »crystalline style« on its pyloric end;

(3) The same type of the nervous system: rather forward, behind the pharyngeal mass, the bucal ganglia are located, then cerebral ganglia, usually with, rarely without a ganglionic thickening on the tentacle nerve; with cerebral ganglia, pleural ganglia are connected by short connectives (sometimes without any connective); usually long, rarely shortened, pleuro-supraintestinal connective, and usually shortened, rarely a little longer, pleuro-subintestinal connective is present; sub- and supraintestinal ganglia are connected by long connectives with a single abdominal ganglion, and cerebral and pleural ganglia, by relatively long connectives, in the form of a triangle, with pedal ganglia; propodial ganglia (by shorter connectives) and metapodial ganglia (by longer connectives) are connected with pedal ganglia; metapodial ganglia connected one with another by a long commissure; both (right and left) zygoneuries present;

(4) The male reproductive system: from the seminal gland, located along the upper side of the »liver«, goes a long, very coiled, voluminous vas deferens, which becomes narrower near its end and enters a rather big accessory gland; on the end of this gland the terminal part of the vas deferens continues (usually in zigzag), entering the penis and terminating on its point; penis usually simple, smooth or with outgrowths on its left side, rarely with more (two ot three) branches.

(5) Female reproductive system: from the usually voluminous ovarium, located also along the upper side of the »liver«, goes a thin oviduct, which, after branching a gono-pericardial duct, becomes wide and makes a »loop« (or a »clew«) leaning against the accessory gland (very rarely imbeded in the tissue of the posterior part of this gland); after coming out from the »loop«, the oviduct becomes slightly narrower and goes along the ventral side of the well developed accessory gland, terminating by a goonoporus on its top; this (vaginal) part of the oviduct broadly communicates with the accessory gland, being separated from it only by a longitudinal fold; a genital chamber present (very rarely lost); one or two seminal receptacles also often present, however in some families lost.

Family HYDROBIIDAE

(1) Usualy two basal cusps on the central tooth of the radula;

(2) A characteristic tube-shaped caecal appendix on the oesophageal end of the stomach;

(3) A relatively long pleuro-supraintestinal, and a shortened pleuro-subintestinal connective; all ganglia usually black pigmented;

(4) Two or one seminal receptacle (rs_1, rs_2), topographycally always located on the same places: rs_1 near the angle formed by the genital chamber duct and terminal part of the oviduct, and rs_2 near the end od the »loop«.

(5) The oviduct in »loop« (or in »clew«) slightly to moderately widened, poorly glandulous, always black pigmented.

Spread: brackish waters or fresh waters in the coastal regions of Adriatic and Anatolia (Turkey).

Subfamily **Hydrobiinae**

(1) Usualy two basal cusps on the central tooth of the radula;
(2) One seminal receptacle (rs_1).

HYDROBIA, Hartmann 1821
- *ventrosa* Montagu 1803 *typus generis* (not found in the Adriatic area).
- *spalatiana* n. sp.
- *cissana* n. sp.
- *pontieuxini* n. sp. (syn. **H. ventrosa** in Black Sea).

ADRIOHYDROBIA, n. genus
- *gagatinella* syn. *Paludina g.* Küster 1852, *Hydrobia g.* Radoman 1955, *typus generis.*
- *consociella*, syn. *Hydrobia c.* Frauenfeld, 1963.
- *kutschigi*, syn. *Paludina k.* Küster 1852, *Hydrobia k.* Frauenfeld 1863.

PSEUDAMNICOLA, Paulucci 1878
- *lucensis* Issel 1866, Radoman 1972, *typus generis* (not in the Balkans and Asia Minor)
- *conovula, syn. Amnicola c.* Frauenfeld 1863, Radoman 1972

OBROVIA, Radoman (»Veliger« in print)
- *salaria* Radoman (»Veliger«), *typus generis*
- *testadura* Radoman (»Veliger«)

Subfamily **Pyrgorientaliinae**

(1) Usualy four basal cuspe on the central tooth of the radula;
(2) Two seminal receptacles (rs_1 and rs_2).

PYRGORIENTALIA; Radoman (»Basteria«, in print)
- *zilchi*, syn. *Chilopyrgula z.* Schütt 1964, Radoman (»Basteria«)

KIRELIA n. genus
- *carinata* n. sp., *typus generis*
- *murtici* n. sp.

Family ORIENTALIIDAE

(1) Usually two, sometimes more, basal cusps on the central tooth of the radula;

(2) A tube-shaped caecal appendix not present on the oesophageal end of the stomach;

(3) A rather long pleuro-supraintestinal, and a shorter (but still relatively longer than in *Hydrobia)* pleuro-subintestinal connective;

(4) Two or one seminal receptacle (similar as in *Hydrobiidae)*

(5) The oviduct makes a circular »loop« leaned against the posterior part of the accessory gland.

Spread: fresh calcareous waters — springs, streams, rivers, lakes.

Subfamily **Orientaliinae**

Two seminal receptacles (rs_1 and rs_2), the first discharging in the oviduct near the angle of the genital chamber duct and the oviduct, and the second one at the end of the »loop«.

ORIENTALIA R a d o m a n 1972
curta, syn. *Paludina c.* K ü s t e r 1852, *Pseudamnicola c.* R a d o m a n 1966, *Orientalia c.* R a d o m a n 1972, *typus generis*
germari, syn. *Amnicola germari* F r a u e n f e l d 1863, *Pseudamnicola g.* W e s t e r l u n d 1886
miliaria, syn. *Amnicola* m. F r a u e n f e l d 1863, *Pseudamnicola* m. W e s t e r l u n d 1886
bosniaca n. sp.
listicae n. sp.
mostarensis n. sp.
narentana n. sp.
fatnicensis n. sp.
montana n. sp.
antibarica n. sp.
ulcinica n. sp.
elongata n. sp.
anagastica n. sp.
pivensis n. sp.
limica n. sp.
kicavica n. sp.
janinesis n. sp.
albanica n. sp.
delphica n. sp.
ANAGASTA R a d o m a n (»Zoologischer Anzeiger«, in print)
vidrovani R a d o m a n (»Zool. Anz.), *typus generis*
urbana R a d o m a n (»Zool. Anz.«)
zetaevallis R a d o m a n (»Zool. Anz.«)
scutarica R a d o m a n (»Zool. Anz.«)
gluhodolica R a d o m a n (»Zool. Anz.«)

matjašiči, syn. *Iglica* m. Bole 1961, Radoman (»Zool. Anz.«)
**hadouphylax* syn. *Paladilhiopsis h.* Schütt 1959, syn. *Pseudamnicola* h. Bole 1970
GROSSUANA n. genus (after A. Grossu, Bucureşti).
serbica n. sp. *typus generis*
skupica n. sp.
macedonica n. sp.
remesianae n. sp.
vurliana, syn. *Pseudamnicola* v. Radoman 1966
codreanui, syn. *Paladilhiopsis* c. Grossu 1946, syn. *Pseudamnicola* c. Grossu 1956.
DALMATINELLA n. genus
fluviatilis n. sp.
VINODOLIA n. genus
fiumana n. sp.
ZAVALIA Radoman (»Bulletin... de Marseille«, in print)
vjetrenicae Radoman (»Bull... Marseille«)
NARENTIANA n. genus
albida n. sp.
ANTIBARIA n. genus
notata, syn. *Lithoglyphus n.* Frauenfeld 1865
LITHABITELLA (Boeters 1970), Bole 1971
chilodia, syn. *Bythinella* c. Westerlund 1886
BRACENICA n. genus
spiridoni n. sp.
PRESPOLITOREA n. genus
valvataeformis n. sp. *typus generis*
malaprespensis n. sp.
PRESPIANA n. genus
lacustris n. sp.
MALAPRESPIA n. genus
albanica n. sp.
ALBANIANA n. genus
albanica n. sp.
OHRIDOHORATIA Hadžišče 1956
pygmaea, syn. *Hydrobia p.* Westerlund 1902, *Pseudamnicola sturanyi* Polinski 1929, 1932, *typus generis*
carinata syn. *Pseudamnicola c.* Radoman 1956, syn. *Ohridohoratia komareki* Hadžišče 1956
POLINSKIOLA nom. novum. syn. *Sturanyia* Radoman 1962 ocup. *Wagner* 1905**
sturanyi, syn. *Hydrobia s. Westerlund* 1902, *Pseudamnicola s.* Polinski 1929, 1932, *typus generis*
polinskii, syn. *Pseudamnicola p.* Radoman 1960
CHRIDOHAUFFENIA Hadžišče 1956
depressa, syn. *Pseudamnicola d.* Radoman 1956, *Ohridohoratia gjorgjevići* Hadžišče 1956, *typus generis*
sublitocalis, syn. Pseudamnicola s. Radoman 1962.

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* Not dissected by myself.
** *Wagner, A.*, 1905. Denkschr. Akad. Wiss. Wien, 77, 1, 383.

OHRIGOCEA Hadžišče 1956
samuili Hadžišče 1956, *typus generis*
karevi Hadžišče 1956
KAREVIA Hadžišče 1956
miladinovorum Hadžišče 1956
DOLAPIA n. genus
ornata, syn. *Pseudamnicola o.* Radoman 1956, syn. *Ohrigocea prlitchevi* Hadžišče 1956
ZAUMIA n. genus
kuščeri, syn. *Horatia k.* Hadžišče 1956, *typus generis*
sanctizaumi, syn. *Pseudamnicola st. zaumi* Radoman 1964
OHRIDOSTURANYA n. genus
stankovići, syn. *Horatia s.* Hadžišče 1956
ROTONDIA Radoman 1964
rotonda, syn. *Pseudamnicola r.* Radoman 1964 *typus generis*
drimica, syn. *Pseudamnicola d.* Radoman 1964
minuta, syn. *Pseudamnicola m.* Radoman 1955
NAUMIA n. genus
sanctinaumi, syn. *Pseudamnicola st. naumi* Radoman 1964
TRICHONIA n. genus
kephalovrissonia n. sp., *typus generis*
trichonica n. sp.
DAPHNIOLA n. genus
graeca n. sp.
GRAECORIENTALIA n. genus
vrissiana, syn. *Pseudamnicola v.* Radoman 1966
PSEUDORIENTALIA n. genus
natolica, syn. *Paludina n.* Küster 1852, *Pseudamnicola n.* Schütt 1965
FALSIBELGRANDIELLA n. genus
bunarica n. sp.
TURCORIENTALIA n. genus
anatolica n. sp.

Subfamily **Horatiinae**

One seminal receptacle, homologous to rs1 in *Orientaliinae.*

HORATIA Bourguignat 1887
klecakiana Bourguignat 1887, *typus generis*
novoselensis Radoman 1966
macedonica, syn. *Sadleriana m.* Kuščer 1936 Radoman 1966
LANZAIA Brusina 1906
**vjetrenicae* Kuščer 1933, Bole 1970
**bosnica* Bole 1970

* Not dissected by myself.

SAXURINATOR Schütt 1960
**sketi*, syn. *Lanzaia s.* Bole 1960, 1970, Schütt 1968
**brandti*, Schütt 1968, Bole 1970
**hadžii*, syn. *Lanzaia h.* Bole 1961, 1970
PLAGIGEYERIA Tomlin 1930
***plagiostoma* syn. *Geyeria p.* A. J. Wagner 1914, 1927, *typus generis*
montenegriana Bole 1961
PHREATICA Velkovrh 1970
**bolei* Velkovrh 1970
PALADILHIOPSIS Pavlović 1913
***serbica* Pavlović 1913, *typus generis*
**robičiana*, syn. *Paladilhia r.* Clessin 1882, Bole 1970
PALADILHIA Bourguignat 1865
**pleurotoma* Bourguignat 1865, Boeters 1967, 1971 (not found in the Balkans)
BYTHIOSPEUM Bourguignat 1882
**quenstedti*, syn. *Hydrobia q.* Wiedersheim 1873, Krull 1935 (not in the Balkans)
IGLICA Wagner 1927
***gratulabunda*, syn. *Vitrella g.* Wagner 1910, 1917, *typus generis* (not found in the Balkans)
**pezzolii* Boeters 1971 (not found in the Balkans)
hauffeni Brusina 1886, Radoman (»Zool. Anz.«)
BELGRANDIELLA A. J. Wagner 1927
kuščeri A. J. Wagner 1914, 1927; syn. *Frauenfeldia k.* Bole 1967 *typus generis*
lacheineri, syn. *Paludina l.* Küster 1852, syn. *Frauenfeldia l.* Bole 1967
superior Kuščer 1932, syn. *Fraunefeldia* s. Bole 1967
schleschi, syn. *Pseudamnicola s.* Kuščer 1932, syn. *Frauenfeldia sc.* Bole 1967
krupensis n. sp.
zermanica n. sp.
BOLEANA n. genus (after J. Bole, Ljubljana)
umbilicata, syn. *Belgrandiella u.* Kuščer 1932, *Frauenfeldia u.* Bole 1967

Subfamily **Sadlerianinae**

Two seminal receptacles discharging into the oviduct at the same lewel (approximately by rsi).

SADLERIANA Clessin 1887
fluminensis syn. *Paludina f.* Küster 1852, Radoman 1965

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* Not dissected by myself.
** Anatomical structure not yet known.

robiči, syn. *Bythinella r.* Clessin 1887, Radoman 1965
supercarinata, syn. *Pseudamnicola s.* Schütt 1969
BELGRANDIA Bourguignat 1869
marginata, *Paludina m.* Michaud 1831, Radoman (»Zool. Anz.«) (not found in the Balkans)
**caprai* Giusti 1970 (not found in the Balknas)

Subfamily **Pseudohoratiinae**

Only one seminal receptacle, homologous to rs_2 in *Orientalia*, the second one (rs_1) lost.

PSEUDOHORATIA Radoman 1967
ochridana, syn. *Valvata o.* Polinski 1929, 1932; *Horatia o.* Komarek 1953; syn. *Pseudohoratia o.* Radoman 1967, *typus generis*
brusinae, syn. *Horatia b.* Radoman 1953
lacustris, syn. *Pseudamnicola l.* Radoman 1964
LYHNIDIA Hadžišče 1956
giordjevići Hadžišče 1956, *typus generis*
hadžii Hadžišče 1956
karamani Hadžišče 1956
stankovići Hadžišče 1956
sublitoralis Radoman 1967
STRUGIA n. genus
ohridana n. sp.
HAUFFENIA Pollonera 1898
tellini Pollonera 1898, *typus generis*
wagneri, syn. *Valvata v.* Kuščer 1928
**michleri* Kuščer 1932, Bole 1967

Subfamily **Islamiinae**

Two seminal receptacles at the same level, genital chamber lost.

ISLAMIA Radoman (»Buletin ... de Marseille«, in print)
servaini, syn. *Horatia s.* Bourguignat 1887, *typus generis*
bosniaca Radoman (»Bulettin ... de Marseille«)
zermanica Radoman (»Bulettin . . de Marseille«)
latina Radoman (»Bulettin ... de Marseille«)
graeca n. sp.
pseudorientalica n. sp.
anatolica n. sp.
bunarbasa, syn. *Horatia b.* Schütt 1964

* Not dissected by myself.

Subfamily **Graecoanatolicinae**

One seminal receptacle (rs_1), strongly developed, with a prolongated duct; genital chamber lost.

GRAECOANATOLICA n. genus
vegorriticola syn. *Hydrobia v.* Schütt 1962, *typus generis*
pamphylica syn. *Hydrobia p.* Schütt 1964
lacustristurca n. sp.
tenuis n. sp.
kocapinarica n. sp.
conica n. sp.
brevis n. sp.

Family PYRGULIDAE

(1) Without basal cusps on the central tooth of the radula;
(2) A tube-shaped caecal appendix present on the oesophageal end of the stomach (as in *Hydrobia);*
(3) A long pleuro-supraintestinal, and a shortened pleuro-subintestinal connective;
(4) Without any gennuine seminal receptacle which would be a homologous structure to rs_1 and rs_2 in other groups; this role is played by the delated and glandulous part of the oviduct in »loop«, which is enlarged in the form of a pouch, or is smooth.
Spread: fresh coastal waters of the Adriatic and some macedonian and greek lakes.

Subfamily **Pyrgulinae**

In place of the seminal receptacle (rs_2) a cog-shaped delatation of the oviduct in »loop«.

PYRGULA Christofori et Jan 1832
annulata syn. *Turbo a.* Linnaeus 1767, Radoman 1955
DIANELLA Gude 1913
thiesseana Kobelt 1878, *typus generis*
schlikumi Schütt 1962
PYRGOHYDROBIA Radoman 1955
grochmalickii, syn. *Hydrobia g.* Polinski 1929, 1932, *typus generis*
sanctinaumi, syn. *P. st. naumi* Radoman 1955
jablanicensis Radoman 1955
PRESPOPYRGULA n. genus
prespensis, syn. *Hydrobia p.* Urbanski 1939, *Micromelania* p. Hadžišče 1955, *Pyrgula p.* Radoman 1956

Subfamily Chilopyrgulinae

The »loop« of the oviduct delated in the form of a pouch.

CHILOPYRGULA Brusina 1896
sturanyi Brusina 1896
NEOFOSSARULUS Polinski 1929, 1932
stankovići Polinski 1929, 1932, syn. *Pyrgula polinskii* Radoman 1955
MACEDOPYRGULA nom. novum, syn. *Trachypyrgula* Radoman 1955, ocup. Cossmann 1921*
pavlovići, syn. *Pyrgula p.* Polinski 1929, 1932, *typus generis*
wagneri, syn. *Pyrgula w.* Polinski 1929, 1932
STANKOVIĆIA Polinski 1929, 1932
baicaliiformis Polinski 1929, 1932
TRACHYOCHRIDIA Polinski 1929, 1932
filocincta Polinski 1929, 1932

Subfamily Ochridopyrgulinae

The oviduct in »loop« is wide, voluminous and glandulous, but smooth, without any particular delatation.

OCHRIDOPYRGULA Radoman 1955
macedonica, syn. *Pyrgula m.* Brusina 1896
GINAIA Brusina 1896
munda, syn. *Emmericia m.* Sturany 1894
XESTOPYRGULA Polinski 1929, 1932
dybowskii Polinski 1929, 1932

Family MICROPYRGULIDAE

(1) Without basal cusps on the central tooth of the radula;

(2) Without a caecal appendix on the oesophageal end of the stomach;

(3) Long pleuro-supraintestinal and shortened pleuro-subintestinal connective;

(4) Without any seminal receptacle, with moderately delated and smooth oviduct in »loop«; genital chamber protruding behind the posterior part of the accessory gland, with a relatively short duct discharging into the oviduct at the end of the »loop« and imbeded in the tissue of the accessory gland.

Spread: Ohrid lake, Yugoslavia

MICROPYRGULA Polinski 1929, 1932
stankovići Polinski 1929, 1932

* *Cossmann*, 1921. Essais Paléoconch. comp. 12, 115.

Family TURRICASPIIDAE

(1) Without basal cusps on the central tooth of the radula;
(2) A tube-shaped caecal appendix present on the oesophageal end of the stomach (as in *Hydrobia* and *Pyrgula);*
(3) Long pleuro-supraintestinal, and shortened pleuro-subintestinal connective (as in *Pyrgula);*
(4) One seminal receptacle (homologous to rs1 in *Hydrobia* and *Orientalia)* and a pouch-shaped delatation of the oviduct in »loop«.
Spread: Caspian sea and some turkish lakes.

TURRICASPIA Dybowski et Grochmalicki 1917
andrusovi Dybowski et Grochmalicki 1917
FALSIPYRGULA Radoman (»Basteria«, in print)
pfeiferi, syn. *Pyrgula p.* Weber 1927, *typus generis*
beysehirana Schütt 1965

Family EMMERICIIDAE

(1) Without basal cusps on the central tooth of the radula;
(2) Without tube-shaped caecal appendix on the oesophageal end of the stomach;
(3) The nervous system with conciderably concentrated main ganglia (shortened pleuro-supraintestinal connective); a ganglionic thickening on the tentacle nerve absent;
(4) In the place of the »loop«, the middle part of the oviduct forms a »clew« of several whorls; one seminal receptacle is present (rs1), which, together with genital chamber, is situated entirely inside the tissue of the posterior part of the accessory gland;
(5) Penis with three branches; through the right one the vas deferens drains, through the central one a duct of a gland which is situated in the penis itself, and through the left one the zigzag final part of the long duct of the prolongated gland situated in the body cavity, above the oesophagus.
Spread: fresh waters of Adriatic area (absent in the Black sea drainage area).

EMMERICIA Brusina 1870
patula Brumati 1838, Radoman 1967, *typus generis*
narentana Bourguignat 1880
expansilabris Bourguignat 1880
ventricosa Brusina 1870

Family LITHOGLYPHIDAE

(1) Basal cusps on the central tooth of the radula present;
(2) Without a caecal appendix on the oesophageal end of the stomach;
(3) The nervous system with conciderably concentrated main ganglia (shortened pleuro-supraintestinal connective); without a gan-

glionic thickening on the tentacle nerve (nervous system similar to that in *Emmericia);*

(4) One seminal receptacle (rs_1) which is, together with the genital chamber, entirely imbeded in the accessory gland wall (as in *Emmericia);*

(5) Penis simple, without any outgrowth.

Spread: Europe (I have not found any representative of this family in the Adriatic, Aegean and Ionian drainage area nor in Asia Minor).

LITHOGLYPHUS Hartmann 1821
naticoides C. Pfeiffer 1828, Radoman 1966, *typus generis*
apertus Küster 1852
fuscus Pfeiffer 1828

Family BYTHINELLIDAE

(1) Basal cusps on the central tooth of the radula present;

(2) A tube-shaped caecal appendix on the oesophageal end of the stomach absent;

(3) The nervous system slightly more concentrated than in *Hydrobia:* pleural and subintestinal ganglia are usually grown together, in a few specimens it is possible to see a »strait« in the middle, by which one sees that this is a »double«, large ganglion; pleuro-supraintestinal connective rather long, but relatively shorter than in *Hydrobia,* so that the supraintestinal ganglion often lies at the right side of the oesophagus, over which only nerves cross; a ganglionic thickening on the tentacle nerve present;

(4) One seminal receptacle (rs_1) present;

(5) Penis with two branches: through the right one the vas deferens drains, and through the left one the final part of the duct of the elongated gland situated usually in the body cavity, above the oesophagus (as in *Emmericia);* rarely this gland is situated below the penis itself and does not get to the body cavity.

Spread: Europe and Asia Minor.

BYTHINELLA Moquin-Tandon 1855
(many species in the Balkans and Asia Minor)
PARABYTHINELLA n. genus
macedonica, syn. *Belgrandia m.* Hadžišče 1958, *typus generis,* and syn. *Bythinella lacustris* Hadžišče 1958
malaprespensis n. sp.

Family LITHOGLYPHULIDAE

(1) Without basal cusps on the central tooth od the radula;

(2) Withouth a caecal appendix on the oesophageal end of the stomach;

(3) Shortened but clearly visible pleuro-subintestinal, and very long pleuro-supraintestinal connective; a ganglionic thickening present on the tentacle nerve;

(4) Two seminal receptacles present (rs_1 and rs_2), the second one (rs_2) very strongly developed, so that it is turned toward the fore end of the animal, below the genital chamber;

(5) Penis simple, but very elongated.

Spread: the only representative of this family found in the upper course of Zrmanja river (fresh water).

LITHOGLYPHULUS Schlickum et Schütt 1971
tedanicus Schlickum et Schütt 1971

SHORT DIAGNOSIS OF NEW SPECIES AND GENERA

Hydrobia spalatiana n. sp. Shell elongated, conical, with a moderately pointed apex; tumid whorls $\left(\text{about } 5\frac{1}{2}\right)$ regularely expanding in width, though a little more at the begining than later, so that the shell has a slightly oval form; the aperture ovoid, cosiderably narrower at the top; margins of the aperture thin, including the columelar one also, which applies to the last whorl, so that the peristome is discontinuous; umbilicus barely slitlike.

Measurements in mm: shell length 3,1—3,9; width 1,5—1,8 aperture length 1,1—1,3; width 0,8—1,0

number of whorls $5—5\frac{3}{4}$

Locus typicus: brackish spring Pontana, about 20 km, west from the town Split, Dalmatia.

Hydrobia cissana n. sp. (Cissa — island Pag). Shell elongated, moderately pointed; tumid whorls (6—7) separated by a rather deep suture, very regularly expanding in width; aperture regular, eggshaped, with rather thin margins, the outer one being gently curved, peristome continuous; umbilicus broadly slitlike. By the shell form similar to *H. ventrosa*, but a little smaller, although with more whorls. Compared with *H. spalatiana*, *H. cissana* is a little bigger, with less oval shell, relatively lower aperture, continuous columelar edge (peristome), larger umbilicus.

Measurements in mm: shell length 3,2—4,2; width 1,6—1,9 aperture length 1,0—1,3; width 0,9—1,1

Locus typicus: brackish water in Zrće, island Pag.

Hydrobia pontieuxini n. sp. Conchologically similar to *H. ventrosa* but differing by more elongated and developed penis and by practically lost ganglionic thickening on the lateral pedal nerve. My sample derived from the coastal zone of Black Sea, in Mangalia.

Obrovia salaria (Radoman, »Veliger«). Shell regularly conical, with moderately pointed apex, tumid whorls and deep suture;

shells show sexual dimorphism: the females are bigger than the males.

Locus typicus: the brackish part of Zrmanja river, near the town of Obrovac, Yugoslavia.

Obrovia testadura (R a d o m a n, »Veliger«). Shell thick, very hard, smaller than in females of the genus type; although conical, the shell is slightly ovoid in outline, by which it is distinguished from the genus type.

Locus typicus: as for the genus type.

Kirelia murtici n. sp. Shell elongate-ovoid, very variable in length slightly tumid whorls; a keel, starting on 2. or 3. whorl, at the begining flows above the suture and subsequently moves toward the middle of the last whorl; aperture egg-shaped, usually angular at the top; umbilicus slitlike; the central tooth of the radula with 8 basal cusps, four at both sides.

Locus typicus: Beyshehir lake, Turkey.

Kirelia murtici n. sp. Shell elongate-ovoid, very variable lenght (2,5—4,2 mm); whorls moderately tumid, aperture ovoid, rounded at the top; umbilicus broadly slitlike; shell without any keel.

Locus typicus: big spring Murtici, near the main road (Antalya-) Manavgat-Konya, about 40 km north from Manavgat, Turkey.

Orientalia bosniaca n. sp. Shell much smaller than in genus type *(O. curta)*, hard, with a completely closed umbilicus; first whorls poorly and the last one strongly developed, so that the shell is roundish, differing from the genus type, which is considerably elongated; animal highly pigmented.

Locus typicus: spring in the village Miljevci, between Bosanska Krupa and Sanski Most, Bosnia.

Orientalia listicae n. sp. Bigger and more thick-set than the genus type, with a relatively higher aperture in proportion to the shell length; margins of the aperture thicker than in genus type.

Locus typicus: big spring Ličtica, in Mostarsko Blato, Herzegovina.

Orientalia mostarensis n. sp. Considerably bigger than the genus type and also bigger than the neighbouring *O. listicae*, with more tumid whorls and deeper suture, thick margins of the aperture, which is angular at the top and relatively high; umbilicus almost always slitlike.

Locus typicus: spring Aleksin Han, in the middle course of Neretva river, north of Mostar, Herzegovina.

Orientalia narentana n. sp. Considerably bigger than the genus type, by the size similar to *O. mostarensis*, but vith a higher shell and relatively broader aperture, which is to a certain degree rounded at the top. Compared with *O. germari*, this species has a broader base, relatively stronger last whorl, narrower aperture at the top.

Locus typicus: the lower course of the river Buna (near Neretva), Herzegovina.

Orientalia fatnicensis n. sp. Bigger than the genus type, with a relatively stronger last whorl and shorter and less developed first whorls, thicker margins of the aperture, which is relatively higher and narrower at the top than in the genus type. Compared with *O. listicae*, this species is a little smaller, with a broader aperture at the top.

Locus typicus: spring Jastrebarsko, in Fatničko polje, north-west from Bileća, Bosnia.

Orientalia montana n. sp. Shell a little smaller than in the genus type, shortened, round, with a stronger last whorl and weak first whorls, aperture angular at the top, with a thick, on the last whorl leaned columelar edge; umbilicus slitlike; compared with *O. bosniaca*, this species is a little bigger, with a relatively higher and at the top broader aperture; by the shell form reminds to *Antibaria notata*, but is bigger and anatomically different.

Locus typicus: spring near stream Lukavac, about 15 km. (above the main road) north-west from Budva, Crna Gora.

Orientalia antibarica n. sp. Shell round, shortened, with weakly developed first whorls and strong last one; umbilicus almost semi-opened, aperture broad, at the top often round; although similar to *O. montana*, this species is considerably bigger, with a broader aperture.

Locus typicus: spring Škurca, Dobra Voda, between Bar and Ulcinj, Crna Gora.

Orientalia ulcinica n. sp. By the shell form similar to the genus type, but with less tumid whorls, shallower suture and thinner margins of the aperture.

Locus typicus: Begov Mlin, a spring in the village Klezna, north of Ulcinj, Crna Gora.

Orientalia elongata n. sp. Relatively the slenderest and the most elongated of all up to now known repesentatives of this genus; tumid whorls are separated by a relatively deep suture; thin, shining shell, ovoid aperture, with thin margins.

Locus typicus: spring near monastery Vranjina, near Virpazar, Crna Gora.

Orientalia anagastica n. sp. Compared with the genus type, shell round, thick, shortened, with a strong, concpicuous last whorl, more tumid whorls and deeper suture, broader and higher aperture, with much thicker margins; compared with *O. antibarica*, to which it is most similar, the shell of *O. anagastica* is longer, that is — the first whorls in proportion to the last one are more developed; compared with *O. fatnicensis*, *O. anagastica* has a little broader base, broader umbilicus, higher and at the top more rounded aperture;

Locus typicus: spring by monastery Morača, north of Titograd, Crna Gora.

Orientalia pivensis n. sp. A little bigger then the genus type, with a considerably broader base and higher aperture, relatively thinner margins, usually semi-opened umbilicus; compared with neig bouring *O. anagastcia,* this species has more developed first whorls, higher aperture, much thinner margins of the aperture and broader umbilicus.

Locus typicus: big spring Jezero, near Rudo, west ftom the town Priboj, Bosnia.

Orientalia limica n. sp. A big form, vith a high and broad shell and relatively low aperture; compared with *O. pivensis,* this species has a bigger shell, lower aperture and narrower, usually closed umbilicus.

Locus typicus: source of the river Lim from Plavsko jezero (lake), Crna Gora.

Orientalia kicavica n. sp. (Kicavis — Kičevo town). Compared with the genus type, bigger shell, with a broader base, thiner margins of the aperture; compared with *O. pivensis,* thinner margins and narrower umbilicus.

Locus typicus: Izvor, big spring about 16 km from Kičevo, Macedonia.

Orientalia janinensis n. sp. Considerably smaller than the genus type, with a broader base and more tumid whorls; compared with the neighbouring *O. kicavica,* also considerably smaller shell, with broader base, thicker walls of the shell, thicker margins of the aperture; compared with *O. montana,* relatively longer shell, with much more developed first whorls, at the top broader aperture and broader umbilicus.

Locus typicus: spring in Lukovo, on the road Struga—Debar, Macedonia.

Orientalia albanica n. sp. Compared with the genus type, a little narrower base of the shell, less tumid whorls, at the top narrower (almost angular) aperture, with thicker margins; compared with *O. janinensis,* relatively narrower and considerably more elongated shell, with a relatively lower aperture; by the shell form, this species is most similar to *O. ulcinica,* but it is relatively bigger, with at the top narrower aperture, having thicker margins.

Locus typicus: spring Golobarda, near Korča, Albania.

Orientalia delphica n. sp. A small species, considerably smaller than the genus type; by the size, similar to *O. bosniaca,* but this species has considerably more elongated shell, with much more developed first whorls.

Locus typicus: spring in Delphi, by the main road Athens-Mesolongion, Greece.

Anagasta vidrovani (R a d o m a n, »Zoologischer Anzeiger« in print). La coquille conique, avec un bout modérement pointu; les tours très bombés, régulièrement et graduellement augementent en

largeur, séparés par une profonde suture; l'ouverture est rondelet-oviforme, l'ombelic fendu.

Locus typicus: Vidrovan, une vigoureuse source à 9 km. du nord de la ville de Nikšić, Crna Gora.

Anagasta urbana (R a d o m a n, »Zool. Anz.«). En comparation avec le type du genre, la coquille de sette èspece est plus cilyndrique, avec la base relativement plus étroit;

Locus typicus: la source à Rastoci, dans Bara Jefta Pavića, la ville de Nikšić.

Anagasta zetaevallis (R a d o m a n, »Zool. Anz.«). De toutes les èspeces de ce genre citées ici celle-la est la plus petite et elle a la coquille relativement la plus étroite, presque cilyndrique.

Locus typicus: le fleuve Zeta, Crna Gora.

Anagasta scutarica (R a d o m a n, »Zool. Anz.«). Un peu plus petite de la type du genre, avec l'ouverture relativement plus longue et au côte supérieur plus retracie.

Locus typicus: Skadarsko jezero (lac de Skadar), Crna Gora.

Anagasta gluhodolica (R a d o m a n, »Zool. Anz.«). De toutes les aspèces de ce genre citées ici celle-la a la base la plus large et, par rapporte a la hauteur de la cocquille, l'ouverture la plus haute.

Locus typicus: Velje Oko, au dessous du village de Gluhi Do, pres Virpazar, Crna Gora.

Grossuana serbica n. sp. Very small shell, ovoid, with a blunt apex, tumid whorls $\left(3\frac{1}{2}-3\frac{3}{4}\right)$ separated by a deep suture; aperture relatively high (about one half of the shell length), ovoid, at the top round (but sometimes may be angular); columelar edge very thick; operculum reddish; umbilicus regularly closed, rarely barely slitlike; genital chamber relatively big, elongated, eliptic, protruding behind the posterior part of the accessory gland; penis with a double outgrowth on its left side.

Measurements in mm: shell length 1,38—1,90, width 1,13—1,26
aperture length 0,84—0,97, width 0,71—0,26.

Locus typicus: spring zone of the river Raška, near monastery Sopoćani, Serbia.

Grossuana skupica n. sp. Considerably bigger than the genus type, with relatively stronger first whorls.

Locus typicus: big spring Rašče, about 25 km west from Skopje, Macedonia.

Grossuana macedonica n. sp. A little bigger than the genus type but with a relatively shorter, nearly round shell, having first whorls, in proportion to the last one, much less developed; umbilicus semi-opend.

Locus typicus: spring above the village Valandovo, south of the town of Strumica, Macedonia.

Grossuana remesianae n. sp. (Remesiana — Bela Palanka town). The only elongated species among all up to now known in this genus, with a relatively low aperture and thin margins.

Locus typicus: big spring in Bela Palanka, between Niš and Pirot, Serbia.

Dalmatinella fluviatilis n. sp. Shell very small, conical, with a moderately pointed apex and $4\frac{3}{4} - 5$ rather tumid whorls; aperture egg-shaped; penis relatively large, with a very characteristic form, on its left and right side having two symmetrical outgrowths near the top.

Locus typicus: the middle part of the fresh water course of the river Zrmanja, Dalmatia.

Vinodolia fiumana n. sp. Shell mainly conical, slightly ovoid in outline, with a rather blunt apex; whorls $\left(4 - 4\frac{3}{4}\right)$ rather tumid, aperture egg-shaped and rather high, in relation to the shell length; the outer lip of the aperture slightly convex; penis relatively small, narrow and pointed, with a double outgrowth on its left side.

Locus typicus: small spring Glogi, in Bribir, Vinodol, near the local road Selca—Bribir, Dalmatia.

Zavalia vjetrenicae (R a d o m a n, »Bulletin . . . Marseille«). La coquille conique, avec la point obtuse; les tors (5—6) sont bombés, et ils grandissent régulièrment et progressivement en largeur; l'ouverture oviforme, en haut arrondie; l'ombelic fendu jusqu'à être demi-ouvert; la penis est relativement petite, avec une excroissance au milieu de la partie gauch.

Locus typicus: la source au-dessous de la grotte Vjetrenica, près Zavala, sur le bord sud de Popovo polje, Herzegovina.

Narentana albida n. sp. Elongate, conical, white shining shell and poorly pigmented animal; whorls moderately tumid and ovoid aperture.

Locus typicus: rather big spring by the north coast of Baćina lake, Dalmacia.

Bracenica spiridoni n. sp. Conchologically simliar with species of the genus *Hauffenia*, but anatomically different from them: this species (and genus) has two seminal receptacles (rs_2 and rs_2) and elongated, cylindrical, peaked penis, with an outgrowth at its left side.

Locus typicus: Špirov izvor (Spiridon R a d o m a n, my relative, thence the species name), Podmeret, near Braćeni (my native place, thence the genus name) not far from Virpazar, Crna Gora.

Prespolitoralia valvataeformis n. sp. Shell valvatoid, with a very developed and tumid last whorl but poorly developed, low first whorls; aperture broad, irregularly round (with slightly narrowed upper side); columelar edge thickened in the base and leaned against

the last whorl with its top, so that the peristome is discontinuous; outer lip very curved, umbilicus semi-opend; genital chamber protruding behind the posterior part of the accessory gland; rs_2 is much better developed than rs_1, penis broad, flat, strongly developed, having a narrowed, to the left turned point.

Locus typicus: stony, south-west coast of Prespa lake, on the stones in the shallow coastal zone.

Prespolitoralia malaprespensis n. sp. Conchologically and anatomically similar to the previous species, the genus type, but with a smaller and relatively (in proportion to its width) higher shell.

Locus typicus: Malo prespansko jezero (Small Prespa lake), on the coastal stones in the small bay belonging to Albania.

Prespiana lacustris n. sp. Shell whitish, regularly conical, with a rather blunt apex, very tumid whorls, separated by a deep suture; aperture egg-shaped, with a curved outer lip; umbilicus slitlike; penis simple (not »biceps«, as in *Bythinella* and *Parabythinella*, also not with any »Drüsenrute«, as said for *Belgrandia macedonica* and *Bythinella lacustris* by Hadžišče 1958), with a double outgrowth on its left side.

Locus typicus: Stenje, stony south-west coast of Prespa lake, Macedonia.

Malaprespia albanica n. sp. Shell whitish, regularly conical, with a blunt apex and proportionally broad base (stronger last whorl); whorls tumid, relatively fast expanding in width; aperture nearly round, oblique (its lower part moved backwards), with thin margins, outer one being very curved; umbilicus rather open; penis with an outgrowth on its left side.

Locus typicus: Malo Prespansko jezero (Small Prespa lake), in the coastal zone of the small bay, Albania.

Albaniana albanica n. sp. Shell relatively small (less than two mm), regularly conical, with a moderately pointed apex, very tumid whorls separated by a deep suture; aperture nearly quadrangular (outer lip being vertical), umbilicus slitlike; relatively strongly developed genital chamber and rs_2, but rs_1 very poorly; penis of proportionally enormous dimensions, flat, without any outgrowth, with a narrowed, elongated point.

Locus typicus: spring Ventroko, near the canal flowing from Malo Prespansko jezero, in Albania.

Trichonia kephalovrissonia n. sp. Shell very variable, from a regularly conical, elongated — when its whorls gradually expand in width, to ovoid-conical — when the whorls relatively fast expand in width and the last whorl is strongly developed; whorls moderately tumid, separated by a moderately deep suture; aperture very regularly ovoid but relatively narrowed at the top; columelar edge thick; umbilicus slitlike; relatively big genital chamber protrudes behind the posterior part of the accessory gland; penis relatively long, with a double outgrowth on its left side; in few specimens it is pos-

sible to find a »double penis«, when, besides the normal one, at the right side of it, one sees an »outgrowth« in the form of the normal penis, but without vas deferens and any other duct inside.

Locus typicus: spring Kephalovrisson, on the main road Mesolongion—Agrinion, Greece.

Trichonia trichonica n. sp. Shell elongated, regularly conical. considerably longer than in previous, the genus type; aperture of the same form as in the genus type but, in proportion to shell length, considerably lower.

Locus typicus: stony south coast of Trichonis lake, Greece.

Daphniola graeca n. sp. Shell valvatoid, with a strongly developed last whorl; round aperture with rather thin margins and continuous peristome; umbilicus semi-opend; operculum without any outgrowth on its interior side; relatively big, round genital chamber protruds behind the posterior part of the accessory gland; penis rather narrow, long, pointed, with a slender, rather elongated outgrowth on its left side.

Locus typicus: spring Daphne, about 30 km north of Larissa, Greece.

Falsibelgrandiella bunarica n sp. Shell white and transparent, as in subterraneous forms, very small, hard, elongated, with a blunt apex; whorls $\left(3\frac{3}{4}-4\right)$ moderately tumid, expanding in width so that the sell shows somewhat eliptic form; aperture irregularly egg-shaped, usually rounded (rarely angular) at the top, with an oblique and thickened columelar edge and a curved outer lip; umbilicus completely closed; shell form reminds to *Belgrandiella lacheineri* but this turkish species is anatomically essentially different (having features of subfamily *Orientalinae);* penis pointed, with a small wart-shaped outgrowth on its left side.

Locus typicus: strong spring Pinar Basa. near Gemlik, about one km above the main road Yalova—Bursa, Turkey.

Turkorientalia anatolica n. sp. Shell small, in shape similar to species from the genus *Orientalia,* but smaller than any of them; whorls considerably tumid, the last of them strongly developed, the first few taking smaller part of the shell; aperture relatively high, sometimes taking one half of the shell, regularly ovoid, narrowed and rounded at the top (in the small number of specimens it may be angular); margins of the aperture thick, especially the columelar one; umbilicus semi-open, more rarely slitlike; a relatively big, broad, oblong genital chamber, lies completely behind the posterior part of the accessory gland, being barely smaller than the gland itself; seminal receptacles poorly developed, especially rs_2; penis relatively small, broad, but pointed, with a scanty double outgrowth on the middle of its left side.

Locus typicus: small spring in Yarcey, near the lake of the same name, above the road Yesilova—Burdur, Turkey.

Belgrandiella krupensis n. sp. Shell whitish, conical, slightly eliptic in outline; whorls $\left(4\frac{1}{4}-4\frac{1}{2}\right)$ tumid, separated by a rather deep suture; aperture more eliptic than ovoid, barely narrower at the top than at the base; columelar edge thickened, outer lip curved; umbilicus closed; compared with *B. kuščeri*, this species is smaller and considerably narrower, with an aperture broader at the top.

Locus typicus: spring of small river Krupa, the right tributary of Zrmanja river (a subterranean form).

Belgrandiella zermanica n. sp. Shell very small, whitish, in form similar to *B. krupensis* but considerably smaller, at the upper end slightly broader, so that it is nearly cylindrical; compared with *B. lacheineri*, this species is smaller (*B. zermanica* is the smallest species of this genus up to now known), with the last whorl relatively broader, and relatively wider aperture at the top; in spite of the whitish shell, this is a species of opened waters and not a subterranean one.

Locus typicus: the middle course of Zrmanja river, Dalmatia.

Islamia bosniaca (R a d o m a n, »Bulletin ... de Marseille«). Plus petite que le type de genre, plus basse, toujours plus large que haute.

Locus typicus: petite source Podgaj, sur praire abrupt, dans l'herbe, au-dessus de la route Doboj—Zenica, environ 11 km de Doboj, Bosnie.

Islamia latina (R a d o m a n, »Bulletin ... de Marseille«). Encore plus petite que le précédante, relativement plus basse.

Locus typicus: source Mirača, aux environs du village Islam latinski, environ à 20 km. au nord de Zadar, Dalmatia.

Islamia zermanica (R a d o m a n, »Bulletin ... du Marseille«). Plus petite et plus basse gue le précedante, avec la pointe et les premiers tours moins avancés; ombelic large.

Locus typicus: Zrmanja, cours centrale de la partie de l'eau douce, Dalmacia.

Islamia graeca n. sp. Shell similar to that of the genus type, small, roundish, valvatoid, with a strong and tumid last whorl and poorly developed first whorls; aperture with thin margins, round in the base and narrowed at the top, »inclined« to the left and leaned against the last whorl; umbilicus rather broad.

Locus typicus: coastal stones on the west side of Amvrakia lake, near the bridge on the main road, Greece.

Islamia pseudorientalica n. sp. By shell form simillar to species from the genus *Orientalia* (although considerably smaller than all of them), always considerably higher than wide, but anatomically the same as the other species of the genus *Islamia.*

Locus typicus: small lake Kirkgöez, about 30 km north of Antalya, Turkey.

Islamia anatolica n. sp. Shell very small, valvatoid, nearly the same length and width.

Locus typicus: the same as that of the previous species.

Islamia bunarbasa, syn. *Horatia b.* S c h ü t t 1964. Although by the shell form similar to previous species, this one is considerably bigger and always considerably higher than wide.

Locus typicus: the same as that of previous two, with this one sympatric species.

species	shell		aperture		number of whorls
	length	width	length	width	
Islamia pseudorientalica	1,34—1,72	1,05—1,30	0,55—0,67	0,55—0,76	3½—4
Islamia anatolica	1,30—1,72	1,22—1,72	0,63—0,76	0,59—0,76	3½—4
Islamia bunarbasa	1,60—1,89	1,43—1,64	0,71—0,84	0,71—0,80	3½—4

Graecoanatolica n. genus. Diagnosis of genus: shell elongated, (rarely shortened), conical; whorls moderately tumid; aperture egg-shaped, but narrowed, angular at the top; the outer lip thin, curved; columelar edge slightly thickened; the central tooth of the radula with 6 basal cusps, three at both sides; penis narrow, very elongated, without any outgrowth (smooth); genital chamber lost but in some specimens it is possible to se a »fag-end« on the place where the duct of this chamber terminates; only one seminal receptacle (rs1), but very developed, large, protruding behind the posterior part of the accessory gland, charged with sperm so that it instantaneously falls into eyes by its pearly shine, discharging into oviduct through an elongated duct. Typus generis: *Hydrobia vegorriticolla* S c h ü t t 1962, locus typicus: Ostrovsko jezero (Vegorritis lake), Greece (See table 2, page 26).

Graecoanatolica lacustristurca n. sp. By the shell similar to the genus type, but smaller, with a relatively narrower base; animal poorly pigmented.

Locus typicus: lakes Egerdir and Beyshehir, Turkey.

Graecoanatolica tenuis n. sp. Similar to the previous but smaller, with a very narrow base; animal very pigmented.

Locus typicus: big spring in the village Gemich, about 13 km. from Cardak, near the south coast of lake Aci Gölü, Turkey.

Graecoanatolica kocipinarica n. sp. Thick, but elongated, conical form, with less tumid whorls than in previous species, often with a keel on the last whorl.

Locus typicus: big spring Koca—Pinar, Yukari Gökdere, about 25 km south of Egerdir town (by the road to the lake Kavada).

Graecoanatolica conica n. sp. Shell regularly conical, whorls less tumid than in all known species of this genus, very regularly expanding in width.

Locus typicus: a spring below the railway line, between the village Dazkiri and Cardak, near the north coast of the lake Acy Gölü, Turkey.

Graecoanatolica brevis n. sp. Shell shortened, thick-set, the smallest of all up to now known species of this genus.

Locus typicus: big spring Pinar Güzü, near village Dular, by the road Yesilova—Burdur, near south-west coast of Burdur lake.

Strugia ohridana n. sp. Shell valvatoid, similar to the species from the genus *Pseudohoratia* but whithout any outgrowth in the middle of interior side of the operculum and with a bigger genital chamber.

Locus typicus: Cave from which Šum spring comes out, about 4 km. west of town Struga, Macedonia.

Parabythinella n. genus. Diagnosis of genus: Shell similar to certain species of the genus *Bythinella*, but the anatomical structure of new genus is clearly different: the left branch of the penis is much weaker and the gland which drains through this branch is much shorter than in species of the genus *Bythinella*, so that this gland does not get to the body cavity. Typus generis: *Belgrandia macedonica* H a d ž i š č e 1958, syn. *Bythinella lacustris* H a d ž i š č e 1958, locus typicus: south-west stony coast of Prespa lake, Macedonia.

Parabythinella malaprespensis n. sp. Compared with the genus type, this species is smaller, thick-set, with more tumid whorls and less curved outer lip of the aperture.

Locus typicus: Malo Prespansko jezero (Small Prespa lake) in the coastal zone of the small bay in Albania.

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Anatomical and conchological characteristic, geographic distribution and detailed drawings of the main anatomical features of every genus will be given in the monograph which is now in preparation. Determination keys and photographs of every species will also be given. The proposed classification will, of course, be discussed and explained in more detail. Besides, malaco-biogeographic relations of the mentioned regions and phylogenetic relations of the discussed taxa will be revued. A special attention will be devoted to the process of speciation as well as to the other theoretical questions.

If I would have enough matherial on my disposal (a certain amount I already have), I would also try to compare representatives from the Balkans and Asia Minor whith those from Baycal lake and with some from the North America.

Table 2

Species	SHELL					APERTURE		
	Length		Width					
	Amplitude	Mean	Amplitude	Mean	Proportion to lenght	Length	Width	Proportion to shell length
Graecoanatolica vegorriticola	2,10—3,11	2,65	1,13—1,47	1,30	52,60	0,88—1,22	0,75—0,84	39,85
Graecoanatolica lacustristurca	2,02—2,65	2,33	0,88—1,18	1,05	45,86	0,76—0,88	0,55—0,71	35,32
Graecoanatolica tenuis	1,93—2,44	2,23	0,92—1,18	1,01	45,67	0,67—0,80	0,55—0,67	33,62
Graecoanatolica kocapinarica	2,73—3,19	2,86	1,39—1,51	1,43	50,23	1,05—1,13	0,80—0,88	38,80
Graecoanatolica conica	2,06—2,69	2,31	1,09—1,34	1,18	51,56	0,84—0,97	0,67—0,84	37,29
Graecoanatolica brevis	1,85—2,22	2,06	1,13—1,43	1,26	61,07	0,84—1,09	0,71—0,88	45,68
Graecoanatolica pamphylica	3,78—4,79	4,45	1,43—1,64	1,55	35,58	1,13—1,30	0,92—0,97	27,16

REZIME

NOVA KLASIFIKACIJA SLATKOVODNIH I BOČATNIH PROSOBRANCHIA BALKANA I MALE AZIJE

U ovom radu dat je nov sistem velikog broja vrsta i rodova iz grupe *PROSOBRANCHIA* koji naseljavaju slatke i bočatne vode Balkanskog poluostrva i Male Azije. Ovi rodovi i vrste do sada su najčešće uključivani u jednu familiju, *Hydrobiidae*. Takva sistematizacija izvedena je gotovo isključivo na osnovu karakteristika ljušture. Međutim, odavno sam se uverio da su osobine ljušture, kao sistematski karakteri, od ograničenog značaja i mogu poslužiti samo za razlikovanje srodnih vrsta iz okvira istog roda. Za sistematizaciju vrsta u rodove i više taksonomske kategorije neophodno je detaljno upoznati anatomsku građu. Rezultat takvog rada je sistem koji se ovde izlaže.

Dosadašnja familija *Hydrobiidae* podignuta je na rang superfamilije *HYDROBIOIDEA*, koja je zbog značajnih anatomskih razlika odvojena od superfamilije *RISSOACEA*. U okviru superfamilije *HYDROBIOIDEA* izdvojeno je 9 familija, a za svaku od njih date su osnovne anatomske karakteristike, pri čemu su uzeti u obzir svi glavni organski sistemi. Familija *Hydrobiidae* podeljena je na dve potfamilije, familija *Orientaliidae* na 6 potfamilija, a familija *Pyrgulidae* na 3 potfamilije. Za svaku potfamiliju takođe su date osnovne anatomske karakteristike. Pošto je u radu spomenut veliki broj novih vrsta i rodova, date su i njihove kratke dijagnoze.

Detaljnije obrazloženje ove klasifikacije, crteži i slike rodova i vrsta, kao i osvrt na filogenetske odnose ovih grupa i na druga teorijska pitanja biće dati u monografiji koja se priprema.

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