The Prosobranch Snail Family Hydrobiidae (Gastropoda: Rissooidea): Review of Classification and Supraspecific Taxa

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ABSTRACT

Kabat, Alan R., and Robert Hershler. The Prosobranch Snail Family Hydrobiidae (Gastropoda: Rissooidea): Review of Classification and Supraspecific Taxa. *Smithsonian Contributions to Zoology*, number 547, 94 pages, 4 tables, 1993.—A nomenclatural analysis is provided for the 75 family level names and 725 generic-level names in the fresh- and brackish-water prosobranch gastropod family Hydrobiidae. For the 725 generic-level taxa, 405 are nomenclaturally available and in "current usage"; 51 are junior homonyms; 65 are commonly acknowledged junior synonyms; 24 are nomina nuda or otherwise invalid; and 180 are errors or emendations. The Hydrobiidae are redefined and differentiated from other rissooidean families, and a review of the classification of this family is presented.

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Contents

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Alan R. Kabat
and Robert Hershler

Introduction

The prosobranch family Hydrobiidae is a cosmopolitan group of small aquatic[1] snails found in permanent nonmarine habitats (a few taxa occur in brackish coastal waters), ranging from small seeps to large rivers and inland "seas." These snails comprise a major biotic component of inland waters owing to their ubiquity and diversity, which has been critically estimated at over 100 genera (Taylor and Sohl, 1962; Ponder, 1988) and about 1000 Recent species (Boss, 1971). We suspect that the group is larger than this. The Hydrobiidae is one of the largest of the more than 20 families of small-sized, predominantly aquatic snails placed in the superfamily Rissooidea. Hydrobiids have a long fossil record extending to the Early Carboniferous (Knight et al., 1960; Solem and Yochelson, 1979), although Ponder (1988) recently suggested (without justification) that Paleozoic shells attributed to the family instead belong to the Ampullariidae (Ampullarioidea).[2] The higher systematics of the Hydrobiidae is in a confused state as the validity, rank, and relationships of nominal supra-specific taxa remain suspect. Widely divergent classifications for the family have been proposed in recent years, some of which were based on study of local (albeit diverse) subsets of the family seemingly without consideration of extra-limital taxa, and none of which was based on phylogenetic analysis. (The exemplary treatment of rissooidean phylogeny of Ponder (1988) does not extend below the family level.) Monophyly of the family has not been clearly established (see below) and the distinction between hydrobiids and other rissooidean families (such as Pomatiopsidae; Davis et al., 1985) remains uncertain. This unsettled situation is partly due to the high diversity and broad distribution of the group, which has not been revised at the genus level since the compilation of Wenz (1939). Important nomenclatural problems also remain unresolved, including the status of the family name Hydrobiidae Troschel, 1857, which is a junior homonym of Hydrobiidae Mulsant, 1844 (Coleoptera): a submission will have to be made to ICZN (International Commission on Zoological Nomenclature) to remove this homonymy (per *ICZN*, Article 55b; see Newton and Thayer, 1990). (*ICZN*, Opinion 1664 (1992), specified "that HYDROBIIDAE Troschel should remain in use, even though a junior homonym, in the absence of a Commission ruling resolving its homonymy.")

Additionally, progress in revising the family has been slow due to the nature of these snails and difficulties in evaluating their phylogenetic relationships. Hydrobiids generally have smooth, nondescript shells, which offer few characters useful to the systematist other than general form, whose range of variation in the family matches that of the entire Rissooidea (Ponder, 1988, fig. 1). Furthermore, evolutionary convergence in shell form amongst hydrobiid-like (or hydrobioid[3]) gastropods appears to have occurred frequently (Davis, 1979). The implications of this for evaluation of empty shells (fossil or

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[1] *Falniowskia neglectissima* apparently is terrestrial (Falniowski and Steffek, 1989) and at least one species, *Fonscochlea zeidleri*, is amphibious (Ponder et al., 1989).

[2] Ponder's discussion of the earliest appearance of the family focused on supposed late Paleozoic records from Africa and South America. Since then, an additional record from the Upper Permian of China has been postulated (Yu and Zhu, 1990), strengthening the case for a Paleozoic origin for these snails.

[3] An informal, adjectival term for rissooidean snails resembling hydrobiids in general features of head/foot, operculum, genitalia, fecal pellets, and pigmentation (Davis, 1979:7).

otherwise) are obvious and systematic treatment of these (at least at higher taxonomic levels) probably will remain largely conjectural barring a discovery of phylogenetically important information resident in shell structure. Unfortunately, the proliferation of new higher taxa based on shells alone has not abated in recent years.

The dimunitive size of hydrobiids (usually <8 mm standard shell height) renders anatomical study of these animals difficult, and may explain why many Recent taxa still are being described bereft of non-conchological details beyond penis, operculum, and radula. Those who choose to dissect can be frustrated, as hydrobiid anatomy is simple compared to that of larger prosobranchs and yields relatively few characters at the gross morphological level. The numerous minute-sized (<1 mm shell height) hydrobiids (typically found in subterranean waters) usually have a highly reduced morphology relative to larger-sized relatives, creating special problems in interpretation of their affinities. It now is known that convergence in anatomical features is also common in the Rissooidea (Ponder, 1988), and even pertains to characters of female genitalia that have been emphasized in several recent hydrobiid classifications (i.e., Starobogatov, 1970; Radoman, 1973, 1983; Golikov and Starobogatov, 1975). Despite greatly enhanced anatomical study of the Hydrobiidae in the past 25 years, a clear understanding of the phylogeny of this family has not emerged, and the evaluation offered by Thompson (1984:122) remains accurate.

> During recent years, as knowledge about the anatomy of hydrobioid snails progressed, it has become increasingly difficult to define family [group] units...With increasing knowledge about the anatomy of additional genera the distinctions between family units becomes [sic] less clear...The result is that family units are becoming separable by fewer and fewer characteristics, and frequently their definitions include words such as "except," "as in," and "shared with."

Herein we provide a complete catalog and review of nominal supraspecific taxa of Hydrobiidae, which we feel is the necessary first step toward a comprehensive revision of the family.

Given the current state of knowledge of the family, we felt it best to define Hydrobiidae in the broad sense and have included groups such as the Baicaliinae, Benedictiinae, Micromelaniinae, and Pyrgulidae, which some workers have treated as separate families. We also have included the numerous genera (early Tertiary) described in the Bohaispiridae (Youluo, 1978) as they are potentially referrable to the Hydrobiidae. Families historically included in or confused with the Hydrobiidae, but now known to be separable based on anatomical criteria, are excluded. For the reader's convenience, these are listed below, together with features distinguishing them from hydrobiids and citations to reviews of these groups (also useful are the familial diagnoses of Boss (1982), and the overview of rissooidean families of Ponder (1988)):

Assimineidae: Cephalic tentacles rudimentary, snout trunk-like, foot with omniphoric groove, progression step-like, ctenidium rudimentary-absent. Estuarine, freshwater, terrestrial, sometimes amphibious. (Abbott, 1958; Marcus and Marcus, 1965.)

Barleeidae: Shell with inner chitinous layer, foot sometimes with posterior mucous gland, osphradium enlarged, oesophageal pouches sometimes present, penis sometimes with prostatic tissue, oviduct glands with simple histology. Marine. (Ponder, 1983.)

Bithyniidae: Shell often colored, operculum calcareous, neck with nuchal lobe; pallial cavity with epitaenia, food groove, very broad ctenidium, exhalant siphon (all associated with ciliary feeding habit); kidney with large pallial extension, fecal pellets spiral, male sperm dimorphic. Freshwater. (Lilly, 1953; Brown, 1988.)

Hydrococcidae: Operculum circular, pallial tentacle present, ctenidium absent, bursa copulatrix protruding into pallial cavity. Brackish water. (Ponder, 1982b.)

Iravadiidae: Protoconch planorboid-depressed, anterior edge of foot indented, digestive gland without darkened spherules, oviduct without coiled section, ventral wall of capsule gland often broadly open, bursa copulatrix often entirely pallial. Brackish water to marine. (Ponder, 1984.)

Pomatiopsidae: Foot often with suprapedal fold and omniphoric groove, basal cusps of central radular teeth mainly arising from face of teeth. Estuarine, freshwater, amphibious, or terrestrial. (Davis, 1979.)

Rissoidae: Foot sometimes with posterior pedal gland and metapodial tentacle, pallial tentacle(s) sometimes present, osphradium enlarged, penis rarely with prostatic tissue, open penial groove sometimes present, female genitalia with two separated oviduct glands, oviduct glands with simple histology. (Ponder, 1985a.)

Stenothyridae: Shell often ornamented with spirally arranged punctae, shell aperture usually constricted, operculum often reinforced with calcium deposits, posterior pedal tentacle sometimes present, vas deferens sometimes with pallial duct, penis sometimes with terminal calcareous stylet. Brackish, freshwater. (Kosuge, 1969; Davis et al., 1986, 1988.)

Symolopsidae: Shell with numerous whorls, sometimes with spiral columellar folds; central radular teeth without basal cusps, male aphallate. Freshwater. (Cerithioidea; Mandahl-Barth, 1954.)

Truncatellidae: Shell cylindrical, often decollate; snout used in progression, elongate, with oral disk and median groove; central radular tooth triangular, unicuspid; ctenidium reduced, bursa copulatrix with connection to kidney. Supratidal to terrestrial. (Kosuge, 1966.)

Review of Hydrobiid Classification

In Table 1, classifications proposed for hydrobiid snails are summarized with respect to number of higher taxa recognized therein. Reviews of the family not extending to the subfamilial

TABLE 1.—Number of family-level groups to which Hydrobiidae s.l. have been allocated in various proposed classifications. A nominate subfamily is assumed in all cases. (Spf. = superfamily, Fam. = family, Sbf. = subfamily. Works marked with an asterisk only treated certain subsets of the Hydrobiidae.)

Author(s)	Category		
	Spf.	Fam.	Sbf.
Stimpson (1865b)	1	1	1
Tryon (1866)	1	1	4
Fischer (1885b)	1	1	3
Thiele (1925)	1	2	4
Thiele (1929)	1	2	3
Thiele (1931)	1	3	4
Wenz (1939)	1	3	11
Morrison (1949)	1	1	2
*Taylor (1966b)	1	1	11
Starobogatov (1970)	1	12	18
*Radoman (1973a)	1	9	17
*Giusti and Pezzoli (1982)	2	6	9
*Radoman (1983)	1	10	20
Starobogatov and Sitnikova (1983)	5	25	31
Ponder and Warén (1988)	1	3	17
Vaught (1989)	1	4	24

category are excluded (i.e., Taylor and Sohl, 1962; Boss, 1982). We here provide a short history of higher classification (above genus level) of the family. F.C. Baker (1928:77–80) was especially useful in preparing the summary of early work on the family.

Troschel (1857) introduced the Hydrobiidae (as Hydrobiae) as a group of uncertain rank placed in the Taenioglossata: Ctenobranchiata between the Lithoglyphi and Ancyloti. He included in this taxon several currently recognized hydrobiid genera and the assimineid *Paludinella*. His Lithoglyphi (also a new family group) comprised *Lithoglyphus* and two genera now placed in the Assimineidae and Pomatiopsidae. The Amnicolidae was introduced by Martens (1858; as Amnicolae), not by Tryon (1862) as is usually assumed. Gill (1863) diagnosed this group and placed it near the Melaniidae (= Thiaridae). Amnicolidae was used by early (especially American) workers in the same sense as Hydrobiidae and probably reflects unawareness of the availabilty of the latter name. Newton (1891) introduced Paludestrinidae as a replacement name for Hydrobiidae (because of a supposed generic homonymy involving *Hydrobia*): this name was widely used for the family by European workers.

Nineteenth century workers (Stimpson, 1865b; Tryon, 1866; Fischer, 1885b) generally placed hydrobiids in a group (close to (or even within) the Rissoidae) containing diverse freshwater rissooideans: this was understandable given that rissooidean families are not well separated on the basis of characters employed by workers of that period (i.e., shell, operculum, central radular tooth, foot, penis). It is worth noting that only 13 of 75 family-group names proposed for Hydrobiidae were introduced in the 19th century.

A selection of the 20th century classifications of hydrobiid snails is summarized in Tables 2–4. A general trend toward a more finely divided classification is evident, with increasing elevation of rank also characteristic of later work (see Table 1). Early in this century B. Dybowski and Grochmalicki erected a large number of family group names for the Lake Baikal and other hydrobiids: many of these are invalid as they were not based on available generic names (per *ICZN*, Article 11[f][i]). Thiele treated the family on several occasions (1925, 1928, 1929), with the last effort containing his most comprehensive classification. His diagnoses were based largely on shell and radula, with minimum usage of anatomical data: he included within the Hydrobiidae numerous (7) subfamilies now placed elsewhere in the Rissooidea (and even a cerithioidean group). This work, together with that of Wenz (1939), who utilized Thiele's classification with little modification, represents the only comprehensive reviews of the family at the generic level.

Morrison (1949) later divided the group (as Amnicolidae) into subfamilies on the basis of number of male penial ducts (and, to a lesser extent, form of operculum). This single-character classification does not greatly aid recognition of hydrobiid clades as almost all rissooidean snails have a single penial duct (comprising the Hydrobiinae sensu Morrison): in a later paper Morrison (1971) lumped 16 nominal subfamilies (including pomatiopsid taxa) in this group. This system gained some acceptance in the next few decades (Thompson, 1968). Taylor's (1966) treatment employed several more characters

TABLE 2.—Classifications of hydrobiid snails. (Groups marked with an asterisk are not currently placed in the Hydrobiidae.)

Thiele (1929)	Wenz (1939)
Rissoacea	Rissoacea
Hydrobiidae	Hydrobiidae
Hydrobieae	Hydrobiinae
Lyogyreae	Lyogyrinae
Littoridinineae	Littoridininae
Amnicolineae	Amnicolinae
Benedictieae	Benedictiinae
Lithoglypheae	Lithoglyphinae
Emmericieae	*Ekadantinae
*Ekadantinae	Truncatellidae
*Truncatellinae	*Pomatiopsinaee
*Syrnolopsidae	*Tomichiinae
*Hydrococcinae	Pyrgulinae
*Stenothyrinae	*Truncatellinae
*Bithyniinae	*Geomelaniinae
*Iravadiinae	Micromelaniidae
Micromelaniidae	Micromelaniinae
Micromelaniinae	Baicaliinae
?Conocaspiinae	Emmericiinae
*Fairbankiinae [= Iravadiidae]	Caspiinae
Rissoidae	
*Rissoinae	
*Barleeinae	
Hemistomiinae	

TABLE 3.—Classifications of hydrobiid snails.

Taylor (1966b)	Radoman (1983)
Rissoacea	Hydrobioidea
Hydrobiidae	Hydrobiidae
Hydrobiinae	Hydrobiinae
Amnicolinae	Pseudamnicolinae
Cochliopinae	Pyrgorientaliinae
Cochliopini	Orientalinidae
Horatiini	Orientalininae
Clenchiellini	Belgrandiellinae
Fontigentinae	Pseudohoratiinae
Lithoglyphinae	Islamiinae
Littoridininae	Graecoanatolicinae
Lyogyrinae	Pyrgulidae
Nymphophilinae	Pyrgulinae
Unnamed Subfamily?[1]	Chilopyrgulinae
Mexithaumatinae[2]	Ochridopyrgulinae
Paludiscalinae[2]	Micropyrgulidae
	Turricaspiidae
	Turricaspiinae
	Falsipyrgulinae
	Emmericiidae
	Lithoglyphidae
	Lithoglyphulidae
	Bythinellidae
	Bythinellinae
	Parabythinellinae
	Baicaliidae

[1]Suggested for *Emmericiella* and *Pterides*.
[2]Questionably placed in Hydrobiidae.

Table 4.—Classifications of hydrobiid snails. (Groups marked with an asterisk are not currently placed in the Hydrobiidae.)

Sitnikova and Starobogatov (1983)	Ponder and Warén (1988)
Moitessierioidea	Truncatelloidea
Moitessieriidae	Hydrobiidae
Tanousiidae	Hydrobiinae
Bithynioidea	Littoridininae
*Bithyniidae	Lithoglyphinae
*Bithyniinae	Nymphophilinae
*Parafossarulinae	Clenchiellinae
Amnicolidae	Moitessieriinae
Parabythinellidae	Amnicolinae
Kolhyamnicolidae	Fontigentinae
Emmericiidae	Baicaliinae
?Lepyriidae	Emmericiinae
?Mexithaumidae	Tateinae
Hydrobioidea	Orygoceratiinae
Baicaliidae	Pyrgulidae
Pyrgulidae	Pyrgulinae
Pyrgulinae	Conocaspiinae
Turricaspiinae	Micropyrgulinae
Hydrobiidae	Bohaispiridae
Sadlerianidae	
Pseudamnicolinae	
Sadlerianinae	
Pyrgorientaliinae	
Kireliinae	
Islamiidae	
Islamiinae	
Graecoanatolicinae	
Horatiidae	
Orientalininae	
Horatiinae	
Pseudohoratiinae	
Lanzaiidae	
Lithoglyphidae	
Dabrianidae	
Benedictiidae	
?Fluminicolidae	
Tateioidea	
Tateidae	
?Clenchiellidae	
Istrianidae	
Littoridinoidea	
Littoridinidae	
*Stenothyridae	
*?Iravadiidae	
*Triculidae	
Pseudocaspiidae	
*Pomatiopsidae	

than used previously (i.e., cephalic tentacles, pigmentation, and reproduction), but this work only concerned (mostly New World) taxa pertinent to the main subject of the paper, a description of the Cuatro Cienégas fauna of México. As pointed out by Thompson (1968:2–4), many of the 11 subfamilies recognized by Taylor are weakly differentiated and the importance of several "key" characters was overemphasized. In an important but often overlooked monograph, Starobogatov (1970) reviewed the Hydrobiidae and extensively employed, for the first time, details of female genitalia (nature of renal and glandular oviduct, and sperm pouches) in his family group diagnoses, which, for instance, strengthened recognition of units such as the Baicaliidae and Benedictiidae. This, the most recent comprehensive classification for the family that lists genera for each family group (see also the unpublished treatment by Bernasconi (1992)), was essentially followed by Golikov and Starobogatov (1975).

Nordsieck (1972) elevated to superfamily rank the Hydrobioidea, comprised of three hydrobiid groups and the Truncatellidae Gray, 1840 (which parenthetically has priority by 17 years over the Hydrobiidae Troschel, 1857). A similar allocation of hydrobiids to a superfamily separate from other rissooideans has been made by other European workers recently. In a classification of the eastern European fauna, Radoman (1973a, 1983, 1985) employed substantial anatomical data (principally central radular tooth, appendix of stomach, length of neural connectives, female genitalia, penis): as pointed out by Davis (1989) and others, this classification is oversplit and many family groups are not clearly differentiated.

The paper of Ioganzen and Starobogatov (1982) signaled a new level of taxonomic inflation in that hydrobiids now were placed in two (and a third by implication) superfamilies. The newly elevated Littoridinoidea, for instance, was comprised of hydrobiids and two other families in which the female genitalia

features a sperm tube separated from the glandular oviduct (a highly convergent feature in the Rissooidea; Ponder, 1988). In a similar vein, Giusti and Pezzoli (1982) separated hydrobiids into two superfamilies (Hydrobioidea and Pyrguloidea) based on presence/absence of lateral angles and basal cusps on the central radular teeth. Starobogatov and Sitnikova (1983) later offered a highly expanded classification, which achieved record totals for number of superfamilies (5), families (25), and subfamilies (31) to which hydrobiids were allocated.

The most recent classification is that of Ponder and Warén (1988) (that of Vaught (1989) is based entirely on the literature and need not be further discussed), in which hydrobiids are returned to the Rissooidea and placed among only three families. We advocate an even more cautious approach in which only a single family is recognized for these animals and thus would treat the Pyrgulidae and Bohaispiridae as subfamilies in the Hydrobiidae. A few minor changes regarding other subfamilies recognized in this classification are advocated as follows. The group long referred to as Littoridininae now is called Cochliopinae (based on priority; Thompson and Hershler, 1991). The subfamily Fontigentinae is a junior synonym of Emmericiinae (Hershler et al., 1990). Bodon and Giusti (1991) rejected a separate status for the Moitessieridae, whose genera they instead placed in the Hydrobiinae. The subfamily Orygoceratinae probably should be placed in synonymy with Cochliopinae as the anatomy of the single Recent species studied suggests (Hershler and Longley, 1986b); whether fossils placed in this group are closely related to the Recent taxa remains conjectural.

What Is a Hydrobiid?

Ponder (1988, fig. 4) recently provided a phylogeny for the rissooidean families based on cladistic analysis. In this phylogenetic hypothesis the Hydrobiidae comprised a clade of intermediate position: more derived than the predominantly marine lower Rissooidea, but amongst the more ancestral families that have invaded nonmarine habitats.

The difficulty of resolving phylogenetic relationships amongst higher taxa of the Rissooidea is reflected by fact that many of the character-state transformations defining branches and internodes of Ponder's cladogram are reversals and parallelisms, whereas relatively few are unique derived features (synapomorphies). Of the two autapomorphies defining the hydrobiid clade, one is a reversal (loss of metapodial tentacles) that is paralleled in three other cases, and the other (reduction of oesophageal gland) is paralleled in five cases. The two transformations separating hydrobiids from the closest family on the cladogram (Stenothyridae) also are problematic: both are reversals (loss of pallial tentacles; loss of penial glands) that probably also occurred within the evolution of the hydrobiids given that only primitive *Hydrobia* has such tentacles, and many taxa lack penial glands. The above, plus consideration of the enormous morphological variation of hydrobiids (encompassing many of the characters in Ponder's analysis), leads us to conclude that the monophyly and scope of the Hydrobiidae still await confirmation. Nevertheless we opt to retain the family at present, and offer an expanded diagnosis (modified from those of Taylor, 1966; and Boss, 1982) below.

Diagnosis of the Family Hydrobiidae

Shell minute to small, usually 1–10 mm in height (but up to 50 mm), dextrally coiled, planispiral to aciculate, phaneromphalous to cryptomphalous, with about 2–8 whorls. Body whorl often loosened, shell sometimes partially uncoiling to assume a corkscrew or horn-like shape. Shell thin to fairly solid, transparent to white. Periostracum generally thin, rarely elaborated as hair-like or other projections; often colored, usually uniformly but rarely with band-like patterns. Aperture holostomatous, sometimes thickened, sinuous, deflected or flared, but without notches, canals, siphonal grooves, or denticulations. Shell usually smooth except for collaboral growth-lines, but occasionally with sculpture of reticulations, carinae, spines, or cords. Protoconch usually paucipsiral, rarely multispiral, usually dome-like, smooth or with sculpture of wrinkles, pits, or spiral lines.

Operculum usually well-formed, rarely rudimentary, corneous, usually paucispiral, rarely multispiral or conical. Ventral (very rarely dorsal) opercular surface sometimes with elevated corneous or whitened (calcareous?) ridges or pegs.

Head-foot, mantle, and visceral coil often pigmented externally with melanin granules ranging from pale grey to dark purple-black; yellow granules rarely present. Cephalic tentacles sometimes with transverse pigment bars, eyes often ringed with internal patch of yellow hyaline granules. Internal organs and structures variously colored. Subterranean animals often completely unpigmented.

Foot strong, mobile, retractile into shell, truncate anteriorly, rounded behind, with lateral auriculate lobes, without suprapedal fold and omniphoric grooves. Anterior mucous glands discharging through narrow groove across anterior edge of foot; posterior mucous glands absent. Pedal tentacles, lobes, or cirri absent. Movement by ciliary gliding. Cephalic tentacles filiform, with parallel sides and blunt or rounded tips, usually circular in cross-section. Eyes in bases of tentacles, usually in discrete swellings on outer sides. Tentacles usually symmetrical, often with patches or tracts of ciliary tufts (combinations of motile and non-motile) on dorsal and/or ventral surfaces. Head, floor of pallial cavity also sometimes strongly ciliated.

Mantle edge rarely papillate or with a single pallial tentacle. Mantle cavity floor smooth, without ridges. A true monopectinate ctenidium usually present, filling most of length of pallial cavity and consisting of about 10–200 triangular filaments usually extending to near rectum. Osphradium present, usually small relative to length of ctenidial axis. Hypobranchial gland absent to modestly developed, rarely highly thickened or folded. Kidney with slight bulge into pallial cavity, sometimes

with glandular tissue on anterior (pallial) wall.

Buccal mass and associated jaws well developed. Radular sac narrow, with numerous (>50) rows of teeth, fairly short behind buccal mass; oesophagus with pronounced dorsal internal folds, oesophageal glands rudimentary. Paired salivary glands passing over nerve ring. Radula taenioglossate, 2-1-1-1-2. Central tooth usually trapezoidal, with pronounced lateral angles, rarely square; basal cusps usually 1–2, rarely absent, sometimes numerous. Lateral teeth with few to numerous cusps; central cusp often enlarged. Marginal teeth usually with numerous, fine cusps. Stomach with well-differentiated anterior and posterior chambers, posterior appendix absent to large, crystalline style present. Stomach usually with single opening to digestive gland, rarely with two. Rectum usually straight, sometimes bent or coiled, usually overlapping glandular gonoducts; anus opening near mantle edge. Fecal pellets elliptical, circular, or ovoid in section, nonspiral. Animals browsers on fine particulate matter or microorganisms, usually epifaunal.

Nervous system streptoneurus, epiathroid. Circumoesophageal nerve ring positioned slightly behind buccal mass, fairly concentrated. Cerebral ganglia fused or with short connective, cerebral and pleural ganglia fused or with short connectives, left pleural and suboesophageal ganglia fused or with short connective, right pleural and supraoesophageal ganglia with short to long connective, pedal commissure short. Reproduction gonochoristic, very rarely parthenogenic, with internal fertilization. Females usually oviparous, sometimes ovoviviparous, with shelled young (about 1–50) brooded in pallial gonoduct. Eggs laid in capsules, usually singly; capsules sometimes connected by chalazae-like threads. Egg capsules nongelatinous, usually hemispherical, sometimes with dorsal keel, often coated with sand grains. Development usually direct; estuarine taxa sometimes having veliger larvae.

Gonads usually lobate, sometimes complexly so, opening directly to gonoduct or via ventral collecting duct (i.e., for males, vas efferens), variable in length, often overlapping at least posterior stomach. Pallial genital ducts closed, of complex histology (both with few exceptions involving single genera).

Female genital system monaulic or diaulic. Glandular oviduct of distal capsule gland (sometimes differentiated into two or more tissue sections), usually entirely pallial, and proximal albumen gland, partly or completely visceral. Capsule gland opening terminal or subterminal, sometimes reflected or muscularized. Sperm duct either enclosed within capsule gland (ventral channel) or separated as sperm tube with distal end connected to capsule gland or free, extending along entire length of capsule gland or opening just beyond pallial wall. Renal oviduct coiled, usually of a single loop or two pressed against (together with associated sperm pouches) left side of albumen gland, often muscular, rarely pigmented, usually opening into anterior albumen gland. Bursa copulatrix almost always present, typically ovate, of posterior, visceral position, often extending behind albumen gland. Bursal duct sometimes embedded in albumen gland. One or several seminal receptacles usually present (when absent often replaced in function by portion of renal oviduct or swellings thereof), small compared to bursa copulatrix, opening to renal oviduct.

Seminal vesicle of thickened coils sometimes overlapping stomach. Prostate gland usually extending into pallial roof, rarely entirely pallial or visceral. Pallial vas deferens usually simple, rarely coiled or encased in muscular sheath. Males phallate; penis (or verge) of pedal origin, innervated by pleuro-pedal connective, attached to floor of pallial cavity, usually large relative to head. Penis finger- or blade-like, or complex with appendages, lobes, and/or distal bifurcation. Penis often ornamented with surficial (flush with penis surface) or stalked glandular(?) papillae, apocrine glands, or glandular ridges; or internal tubular glands discharging through long ducts and sometimes extending through penial wall into cephalic haemocoel. Penial duct (vas deferens) straight, undulating, or coiling, narrow, discharging at or near penis tip, sometimes through a terminal papilla. Dorsal penis sometimes strongly ciliated. Sperm dimorphism, spermatophores, spermatozeugmata lacking.

Family-group Names

Below we provide a list of family group names applied to hydrobiid snails as recognized herein. Genera originally included in these higher taxa also are listed. Errors and changes required in the classification of Ponder and Warén (1988) are pointed out because their compilation is likely to serve as the primary source of information on prosobranch family group names for years to come.

AMNICOLAE Martens, 1858:192. For *Amnicola*, which Martens used in place of *Hydrobia* sensu Frauenfeld non Hartmann. Included genera not specified, but several species were listed, including the type species of *Amnicola*. Emended to Amnicolidae by Tryon (1862).

BAICALIINAE Fischer, 1885(in 1880–1887):724. For *Baicalia*. As subfamily in Hydrobiidae.

BELGRANDIELLINAE Radoman, 1983:89. Included *Belgrandiella, Boleana, Graziana, Sarajana, Lanzaia, Plagigeyeria, Paladilhiopsis, Iglica, Kerkia, Pontobelgrandiella, Cavernisa*. As subfamily in Orientalinidae. Replacement name for Horatiinae Radoman, 1973. Attributed to Radoman (1973) by Ponder and Warén (1988).

BENEDICTIINAE Clessin, 1880:194. For *Benedictia*. As subfamily in Rissoidae.

BOHAISPIRIDAE Youluo, 1978:101. For *Bohaispira, Bohaispiropsis, Miromphalus, Haihenia, Yonganospira, Nodilirata, Labrosa*. As family placed between Micromelaniidae and Assimineidae.

BUCHARAMNICOLNAE [sic] Izzatullaev, Sitnokova and Starobogatov, 1985:56. For *Bucharamnicola*. As subfamily in Belgrandiellidae.

BYTHINELLIDAE Germain, 1931:601. For *Lithoglyphus, Bythinia, Paladilhia, Lartetia, Paulia, Belgrandia, Bythinella, Pseudamnicola, Paludestrina, Peringia.*

CASPIINAE Wenz, 1939:604. Included *Caspia, Clessiniola, Clathrocaspia, ?Odontohydrobia, Beogradica, Baglivia, Caspiella.* As subfamily in Micromelaniidae.

CHILOPYRGULINAE Radoman, 1973a:12. Included *Chilopyrgula, Neofossarulus, Macedopyrgula, Stankovicia, Trachyochridia.* As subfamily in Pyrgulidae.

CLENCHIELLINI Taylor, 1966b:175,181. For *Clenchiella.* As tribe in Hydrobiidae: Cochliopinae.

COCHLIOPINAE Tryon, 1866:156. For *Cochliopa.* As subfamily in Amnicolidae.

CONOBAICALIINAE B. Dybowski and Grochmalicki, 1913:277. Included *Teratobaicalia, Baicaliella, Baicalia, Parabaicalia, Pseudobaicalia, Trichiobaicalia, Dybowskia, Maackia.* As subfamily in Baicaliidae. Unavailable as not based on included genus. Attributed to Dybowski and Grochmalicki (1914) by Ponder and Warén (1988).

CONOCASPIINAE Thiele, 1928:381. Included *Clessiniola, Nematurella, Caspiella.* As subfamily in Micromelaniidae. Unavailable as not based on included genus.

DABRIANIDAE Starobogatov in Starobogatov and Sitnikova, 1983:21. For *Dabriana.* As family in Hydrobioidea.

EMMERICIINAE Brusina, 1870:936. For *Emmericia.* As subfamily in ?Rissoidae.

FALSIPYRGULINAE Radoman, 1983:156. For *Falsipyrgula.* As subfamily of Turricaspiidae.

FLUMINICOLINAE Clessin, 1880:194. Included *Fluminicola, Lithoglyphus, Gillia, Cochliopa, Somatogyrus, Amnicola.* As subfamily in Rissoidae.

"Fluviopupa tribe" Climo, 1974:255. Included *Opacuincola, Fluviopupa, Beddomena, Petterdiana, Jardinella, Tasmaniella, Valvatasma.* As group in Hydrobiidae: Hydrobiinae.

FONTIGENTINAE Taylor, 1966b:182. For *Fontigens.* As subfamily in Hydrobiidae.

GRAECOANATOLICINAE Radoman, 1973a:11. For *Graecoanatolica.* As subfamily in Orientaliidae.

"Heleobia tribe" Thompson, 1968:19,20. Included *Heleobops, Heleobia, Strombopoma, Rhamphopoma, Brachypyrgulina, Heligmopoma, Lyrodes, Texadina.* As group in Hydrobiinae.

HEMISTOMIINAE Thiele, 1929:168. Included *Tatea, Hemistomia.* As subfamily in Rissoidae.

HORATIINI Taylor, 1966b:175,179. Included *Coahuilix, Gocea, Hadziella, Daudebardiella, Hauffenia, Neohoratia, Lyhnidia, Ohridohoratia, Ohridohauffenia, Ohrigocea, Karevia.* As tribe in Hydrobiidae: Cochliopinae. See also Belgrandiellinae Radoman, 1983.

HYDROBIAE Troschel, 1857:106. Included *Hydrobia, Amnicola, Paludestrina, Paludinella, Subulina.* As group within Taenioglossata. Emended to Hydrobiinae by Stimpson (1865). Elevated to family rank by Fischer (1885).

ISLAMIINAE Radoman, 1973a:10. For *Islamia.* As subfamily in Orientaliidae.

"Istriana tribe" Climo, 1974:255. Included *Catapyrgus, Istriana.* As group in Hydrobiidae: Hydrobiinae. Elevated to family level by Starobogatov in Starobogatov and Sitnikova, 1983. As family in Tateoidea.

KIRELIINAE Starobogatov in Starobogatov and Sitnikova, 1983:21. For *Kirelia.* As subfamily in Sadlerianidae.

KOLHYMAMNICOLIDAE Starobogatov in Starobogatov and Sitnikova, 1983:21. For *Kolhymamnicola.* As family in Bithynoidea.

LANZAIIDAE Starobogatov in Starobogatov and Sitnikova, 1983:21. For *Lanzaia.* As family in Hydrobioidea.

LEACHIAE Martens, 1858:193. For (by implication) *Leachia.*

LEPYRIIDAE Pilsbry and Olsson, 1951:5. For *Lepyrium.* As family in Rissoacea. Diagnosed (as subfamily in Hydrobiidae) by Thompson (1982).

LIOATLANTIINAE B. Dybowski and Grochmalicki, 1920:87. For (by implication) *Lioatlanta.* Included in Hydrobiidae by Ponder and Warén (1988). This taxon clearly belongs in the Epitoniidae as its type species, *Scalaria semidisjuncta* Jeffreys, is placed in *Epitonium* (Bouchet and Warén, 1986).

LIOBAICALIINAE B. Dybowski and Grochmalicki, 1913:277. For *Liobaicalia.* As subfamily in Baicaliidae. Attributed to Dybowski and Grochmalicki (1914) by Ponder and Warén (1988).

LIOCONCHAE B. Dybowski and Grochmalicki, 1920:89. Not based on valid genus name. An invalid adjectival group name (and containing Lioatlantiinae, Liobaicaliinae, Liosarmatiinae). for certain loosely coiled gastropods; *ICZN,* Article 11(f)(ii)(2).

LIOCASPIINAE B. Dybowski and Grochmalicki, 1913:277. As subfamily in Baicaliidae. Unavailable as not based on valid genus name.

LIOSARMATIINAE B. Dybowski and Grochmalicki, 1920:87. As subfamily in Baicaliidae(?). For *Liosarmata, Streptocerella, Baglivia, Corymlina.*

LITHOGLYPHI Troschel, 1857:104. Included *Lithoglyphus, Assiminea, Tomichia.* As group within Taenioglossata. Emended to Lithoglyphinae by Tryon (1866). Diagnosed and reviewed by Thompson (1984).

LITHOGLYPHULIDAE Radoman, 1973a:14. For *Lithoglyphulus.*

LITTORIDINEAE Thiele, 1928:378. Included *Littoridina, Pterides, Idiopyrgus, Potamopyrgus, Indopyrgus, Fluviopupa, Petterdiana, Potamolithus, Lithococcus.* As tribe in Hydrobiidae.

LYOGYRINAE Pilsbry, 1916:84. Included *Lyogyrus,* and (questionably) *Horatia, Emmericia, Lanzaia.* As subfamily (presumably of Hydrobiidae).

MARTENSAMNICOLINAE Izzatullaev, Sitnokova, and Starobogatov, 1985:53. For *Martensamnicola.* As subfamily in Belgrandiellidae.

MEXITHAUMATINAE Taylor, 1966b:204. For *Mexithauma.* As (questionably) subfamily in Hydrobiidae.

MICROCONOMANDSHURINAE B. Dybowski and Grochmalicki, 1913:278. As subfamily in Baicaliidae. Unavailable as not

based on valid genus name.

MICROCONOPALAEINAE B. Dybowski and Grochmalicki, 1913:278. As subfamily in Baicaliidae. Unavailable as not based on valid genus name.

MICROLIOPALAEINAE B. Dybowski and Grochmalicki, 1913:278. As subfamily in Baicaliidae. For *Microliopalaeina.*

MICROMELANIINAE Thiele, 1925:80. Included *Micromelania, Baicalia,* and (questionably) *Fairbankia.* As subfamily in Hydrobiidae.

MICROPYRGULIDAE Radoman, 1973a:12. For *Micropyrgula.*

MICROTURRIMANDSHURINAE B. Dybowski and Grochmalicki, 1913:278. As subfamily in Baicaliidae. Unavailable as not based on valid genus name.

MICROTURRIPALAEINAE B. Dybowski and Grochmalicki, 1913:278. As subfamily in Baicaliidae. Unavailable as not based on valid genus name.

MOHRENSTERNIINAE Korobov, 1955:175. For *Mohrensternia.* As subfamily in Rissoidae.

MOITESSIERIDAE Bourguignat, 1863:435. For *Moitessieria.* As family. Later diagnosed by Boeters (1972, 1973; Boeters and Gittenberger, 1990). Considered junior synonym of Hydrobiidae by Bodon and Giusti (1991). Female genitalic pecularities discussed by Boeters and considered partly diagnostic for family are in error.

NYMPHOPHILINAE Taylor, 1966b:199. For *Nymphophilus.* As subfamily in Hydrobiidae. Diagnosed and reviewed by Thompson (1979).

OCHRIDOPYRGULINAE Radoman, 1973a:12. Included *Ochridopyrgula, Ginaia, Xestopyrgula.* As subfamily in Orientalidae. Misspelled (Ohridopyrgulinae) by Ponder and Warén (1988).

"*Onobops* tribe" Thompson, 1968:19, 28. For *Onobops.* As group in Hydrobiinae.

ORIENTALIIDAE Radoman, 1973a:6. Included six subfamilies and many genera not listed herein. Attributed to Radoman (1972) by Ponder and Warén (1988).

ORIENTALINIDAE Radoman, 1978a:27. Included *Orientalina, Anagastina, Terranigra.* Replacement name for Orientalidae because the genus *Orientalia* was a junior homonym and was replaced by *Orientalina.*

ORYGOCERATIDAE Brusina, 1882:41. For *Orygoceras.* As family of uncertain phylogenetic position. Attributed to Taylor (1966) by Ponder and Warén (1988).

PALUDESTRINIDAE Newton, 1891:226. Included *Paludestrina, Tomichia, Pyrgula, Bythinella, Stenothyra.* Established as replacement name for Hydrobiidae because of the supposed generic homonymy of *Hydrobia* and *Hydrobius* Leach (Coleoptera); in theory not necessary (*ICZN,* Article 55b), except that the family names were spelled the same in this case.

PALUDISCALINAE Taylor, 1966b:207. For *Paludiscala.* As (questionably) subfamily in Hydrobiidae.

PARABYTHINELLIDAE Radoman, 1976:147. For *Parabythinella.* As subfamily of Bythinellidae.

POTAMOPYRGIDAE F.C. Baker, 1928:144. For *Potamopyrgus.* Redescribed (as new taxon) by Boeters (1984e). Attributed to H.B. Baker (1928) by Ponder and Warén (1988).

PSEUDAMNICOLINAE Radoman, 1977:212. For *Pseudamnicola.* As subfamily in Hydrobiidae. Listed in index, but not text of Ponder and Warén (1988).

PSEUDOCASPIIDAE Sitnikova and Starobogatov in Starobogatov and Sitnikova, 1983:22. For *Pseudocaspia.* As family in Littoridinoidea.

PSEUDOHORATIINAE Radoman, 1973a:10. Included *Pseudohoratia, Lyhnidia, Strugia, Hauffenia.* As subfamily in Orientaliidae.

PYRGULAE Martens, 1858:192. For *Pyrgula.* Emended to Pyrgulinae by Brusina (1881).

PYRGORIENTALIINAE Radoman, 1973a:5. Included *Pyrgorientalia, Kirelia.* As subfamily in Hydrobiidae.

SADLERIANINAE Radoman, 1973a:9. Included *Sadleriana, Belgrandia.* As subfamily in Orientalidae.

SEMISALSINAE Giusti and Pezzoli, 1980:26. For *Semisalsa.* As subfamily in Hydrobioidea: Moitessieriidae.

"*Somatogyrus* tribe" Thompson, 1968:20, 99–100. Included *Somatogyrus, Birgella, Notogillia, Spilochlamys, Cincinnatia, Nymphophilus.* As group in Hydrobiinae.

TANOUSIIDAE Starobogatov in Starobogatov and Sitnikova, 1983:21. As family in Moitessieroidea. Established as replacement name for Lithoglyphulidae presumably because *Lithoglyphus* was considered a junior synonym of *Lithoglyphulus* (fide Schlickum, 1974b); in fact Lithoglyphidae remains valid (*ICZN,* Article 40[a]) and its replacement was an incorrect action.

TATEINAE Thiele, 1925:80. Included *Tatea, Hemistomia.* As subfamily in Rissoidae.

TERRESTRIBYTHINELLIDAE Sitnikova, Starobogatov, and Anistratenko, 1992:10. For *Terrestribythinella.* As family in Rissooidea.

TURKMENAMNICOLINAE Izzatullaev, Sitnokova, and Starobogatov, 1985:57. For *Turkmenamnicola.* As subfamily in Sadlerianidae.

TURRIBAICALIINAE B. Dybowski and Grochmalicki, 1913:277. As subfamily in Baicaliidae. Included *Gerstfeldtia, Godlewskia, Trachybaicalia.* Unavailable as not based on included genus.

TURRICASPIINAE B. Dybowski and Grochmalicki, 1913:277. For *Micromelania.* As subfamily in Baicaliidae. Unavailable as not based on included genus. Subfamily redescribed by Dybowski and Grochmalicki (1917), but invalidly so as sole included genus was *Micromelania* (with newly described *Turricaspia* as subgenus). Subsequently validated by Kolesnikov (1947:106ff.).

MATERIALS AND METHODS

Type species are listed following each genus-level entries. The following abbreviations were used: M = monotypy, OD = original designation, SD = subsequent designation. Translation

or modern names of types localities of the type species are provided, as well as (for fossil taxa) updated information for geological ages (if known). In general, only the distribution of the type species is given, although in a few cases where subsequent revisions have covered all species, the broader ranges are listed. Many older taxa have "broad" type localities; we have usually left them as such. The following entities deserve explanation:

Balkan Peninsula.—The countries which formerly comprised Yugoslavia are specified for the genera described from those regions. However, some authors used "Dalmatia,"which today comprises both southern Croatia and western Bosnia and Herzegovina. When a town or river was also mentioned, then we have determined the appropriate political entity; otherwise it was left as Dalmatia. Note that Jovanovic (1991) provided corrected locality data for the numerous taxa described by Radoman from this region.

Ohrid Lake.—This lake is in both Macedonia (formerly Yugoslavia) and Albania. Taxa described from this lake were invariably recorded from Macedonia, but they may well also occur in the Albanian sector.

Prespa Lake.—This lake has the distinction of being in three countries: Macedonia, Albania, and Greece. As for Ohrid Lake, the taxa described from here were usually recorded from Macedonia but may also occur in the other sectors.

Black Sea.—This extension of the Mediterranean (and including the Azov Sea) is bordered by six political entities: Bulgaria, Georgia, Romania, Russia, Turkey, and Ukraine. Unless a shore reference (usually to Ukraine) was specified, then we have not indicated any political source.

Caspian Sea.—This brackish water sea is bordered by five political entities: Azerbaijan, Iran, Kazakhstan, Russia (Dagestan), and Turkmenistan. Because the descriptions of genera and species from the Caspian Sea have rarely indicated any shore references, then we have not indicated any political entities for these genera.

Aral Sea.—This brackish water sea is bordered by Kazakhstan and Uzbekistan. As before, we have not indicated either political entity, unless this was specified in the original publication.

The "Literature Cited"section does not include references to homonyms in other families of hydrobiid generic names, as these can be readily obtained from the various editions of Neave (1939–1940ff.). For the reader's convenience, we include both transliterations and translations of Cyrillic-alphabet publications; these are usually our own renditions unless supplied in the original reference.

Of the 725 generic-level names listed in our compilation, 405 (56%) are nomenclaturally available and in current usage. A further 65 (9%) have been previously synonymized; 51 (7%) are junior homonyms; 24 (3%) are nomina nuda or otherwise invalid; and 180 (25%) are errors or emendations. Finally, 20 genera listed at the end have only recently been transferred out of the Hydrobiidae or were erroneously referred to this family by several recent authors. We provide this supplementary listing for the reader's convenience.

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Genus-group Names

Abeskunus Logvinenko and Starobogatov, 1968:380 (ex Kolesnikov, ms.). *Lithoglyphus exiguus* (Eichwald, 1838) sensu Kolesnikov, 1947 (= *Bithynia sphaerion* Mousson, 1865; fide Logvinenko and Starobogatov, 1968); OD. Recent, freshwater, Caspian Sea. Described as a subgenus of *Pseudamnicola* Paulucci, 1878, which the authors placed in the "family" Lithoglyphidae. Logvinenko and Starobogatov (1968:381) stated that Kolesnikov (ms.) considered the type species to be "*Paludina exigua* Eichwald, 1838," but that this was based upon a misidentification by Kolesnikov (1947). They determined that Kolesnikov's specimens were actually *Lithoglyphus caspius* Clessin and W. Dybowski in W. Dybowski, 1888, which they considered to be a junior synonym of *Bithynia sphaerion* Mousson, 1863 (both species were described from the Caspian Sea). Logvinenko and Starobogatov (1968:381–382) referred three other species (one new) to *Abeskunus;* see also Tadjalli-Pour (1977:107–108).

Acrophlyctis Cossmann, 1888:232. *Bithinia eugenei* Deshayes, 1862; M. Lutetien, Eocene, Chambors and Houdan, France.

Acrostele Wenz, 1925b:126. *Moitessieria acicula* Sandberger, 1873 (ex Braun, ms.); OD. Chattien, Oligocene, southwestern Germany and Alsace, France.

Adriohydrobia Radoman, 1973a:5. *Paludina gagatinella* Küster, 1852; OD. Recent, freshwater, Ljuta Spring, near Kotor, Montenegro. Radoman (1977:211–212) subsequently redescribed this genus and its included species from the Balkan Peninsula.

Adrioinsulana Radoman, 1978b:48–49. *Amnicola conovula* Frauenfeld, 1863; OD. Recent, freshwater, Kokulovo spring, near Pag, Pag Island (Adriatic Sea), Croatia.

Adriolitorea Radoman, 1973d:234. *Islamia zermanica* Radoman, 1973; OD. Recent, freshwater, Zrmanja River, Dalma-

tia. Described as a subgenus of *Islamia* Radoman, 1973.

Aenigmapyrgus Popova, Devjatkin, and Starobogatov, 1970:28. *Aenigmapyrgus martinsoni* Popova, Devjatkin, and Starobogatov, 1970; OD. Kyzylgirskoi deposits, Neogene, Altai Mountians, northwestern Mongolia. Seven other species, all new, were described in this genus which was compared with *Pyrgobaicalia* Starobogatov, 1972 [!] and was tentatively placed in the family Baicaliidae.

Akiyoshia Kuroda and Habe, 1952:108. *Akiyoshia uenoi* Kuroda and Habe, 1952; M. Genus and species are nomina nuda; see *Akiyoshia* Kuroda and Habe, 1954.

Akiyoshia Kuroda and Habe, 1954:71–73. *Akiyoshia uenoi* Kuroda and Habe, 1954; M. Recent, freshwater, pool in "Akiyoshi-do" limestone cave, Yamaguchi Prefecture, Japan. Kuroda and Habe compared this genus with *Bythinella* Moquin-Tandon, 1855. This genus was further discussed by Kuroda and Habe (1958:184–189), who also erected a new subgenus, *Saganoa*. Kuroda (1963:15–16) and Bole and Velkovrh (1986:184–185) listed the phreatic species referrable to these taxa. Zatravkin and Bogatov (1988) referred *Akiyoshia* to the "family" Kolhymamnicolidae and described a new species from Sakhalin. Davis et al. (1992:155–162) discussed two Chinese species previously referred to *Akiyoshia* (*Saganoa*); this generic placement remains in question and further study of the Japanese species is needed. The Chinese species were placed in the new tribe "Pseudobythinellini" (= Erhaiini) of the Pomatiopsidae; for further discussion see under *Pseudobythinella* Liu and Zhang, 1979, in the list of excluded taxa at the end of this catalog.

Albaniana Radoman, 1973a:7, 21. *Albaniana albanica* Radoman, 1973; M. Recent, freshwater, Ventroko spring, Mikra Prespa [smaller Prespa Lake], Albania. Originally described in the Orientaliinae (Orientaliidae).

Alizadella Kabakova, 1966:66–68. *Alizadella aktschagilica* Kabakova, 1966; OD. Akchagylian, Pliocene, Azerbaijan. This monotypic genus was placed in the family "Microtelaniidae" [sic].

Aluta Jekelius, 1932:77. *Pseudamnicola (Aluta) trochiformis* Jekelius, 1932; SD, Jekelius, 1933:65. Dacian, Pliocene, near Brasov, Romania. Described as a subgenus of *Pseudamnicola* Paulucci, 1878. Roshka (1973:136–139) ranked *Aluta* as a subgenus of *Pyrgula* Cristofori and Jan, 1832, and referred two new species from the Maeotian (Miocene) of Ukraine to this taxon.

Alycaeodonta Etheridge, 1879:85 (footnote); nomen nudum. Published in synonymy of *Pseudolacuna* Boettger, 1878. Is a junior synonym of *Toxosoma* Conrad, 1874 (see also Kadolsky, 1980:372).

Alzionella Pezzoli, 1988:32. Error for *Alzoniella* Giusti and Bodon, 1984 (Pezzoli, 1990:195).

Alzoniella Giusti and Bodon, 1984:159–160. *Alzoniella finalina* Giusti and Bodon, 1984; OD. Recent, freshwater, subterranean springs, Piedmont and Liguria, Italy. Giusti and Bodon referred two other new species to *Alzoniella* and noted its possible relationships to a number of other European hydrobiid genera. *Alzionella* Pezzoli, 1988; error.

Amnicola Gould and Haldeman, in Haldeman, 1840a:3 (also, Haldeman, 1840b:3). *Paludina porata* Say, 1821 (= *Paludina limosa* Say, 1817); SD, Herrmannsen, 1846:38. Recent, freshwater, eastern and central North America. The establishment of *Amnicola* in Haldeman's obscure publications was overlooked or ignored by many authors (even by Haldeman, 1845!) who considered the genus to date from Gould, 1841 (pp. 228–229; see also Gould, 1871:292–295).

The convoluted nomenclatural history of this genus, the various species thought to be the type, and the status of *Marstonia* Baker, 1926, was carefully reviewed by Morrison (1947a), Baker (1961), Taylor (1961), Thompson (1974), and Burch (1979a). *ICZN*, Opinion 1108 (1978), established the validity of *Amnicola* and of *Marstonia*, clarified their type species and decisively resolved these nomenclatural problems. As Pilsbry (1943) noted, *Euamnicola* Crosse and Fischer, 1891, is a junior objective synonym of *Amnicola;* it was subsequently placed on the "Official Index of Rejected and Invalid Generic Names in Zoology" (*ICZN*, Opinion 1108). Wenz (1926:2054–2085) provided comprehensive synonymies of the numerous fossil species, both European and American, from the Paleocene to the Pliocene, referred to *Amnicola*. Henderson (1935:193–194) listed the Tertiary North American species placed in *Amnicola*. Thompson (1968:147–162) reviewed the Floridian species of *Amnicola* and used *Lyogyrus* as a subgenus thereof. Hershler and Thompson (1988) described the morphology of *Amnicola limosa* and concluded that the familial relationships of the "Amnicolinae" (i.e., *Amnicola, Bythinella* Moquin-Tandon, 1855, *Parabythinella* Radoman, 1973, and *Marstoniopsis* Altena, 1936) were either with the Hydrobiidae (Emmericiinae) or the Bithyniidae; further study is required to clarify the status of these taxa. Damme (1984:18) noted that the North African species described as *"Amnicola"* were probably referrable to *Pseudamnicola* Paulucci, 1878. Burch (1982:269–270), unaware of the 1978 *ICZN* Opinion, further discussed these problems and suggested that *Lyogyrus* (q.v.) "would become a junior subjective synonym of *Amnicola s.s.* ..." *Euamnicola* Crosse and Fischer, 1891; junior objective synonym.

Anagasta Radoman, 1973a:6–7, 18–19, non Heinrich, 1956 (Lepidoptera); see *Anagastina* Radoman, 1978. *Anagasta vidrovani* Radoman, 1973; OD. Recent, freshwater, springs, Vidrovan, north of Niksic, basin of Lake Skadar [Scutari], Montenegro. Radoman (1973a) referred seven species (five new) to this taxon, which he placed in the Orientaliinae (Orientaliidae). A full description of this taxon was provided by Radoman (1973b).

Anagastina Radoman, 1978a:27. Replacement name for *Anagasta* Radoman, 1973, non Heinrich, 1956. *Anagasta vidrovani* Radoman, 1973; OD (of *Anagasta*). Recent, freshwater, springs, Vidrovan, north of Niksic, basin of Lake

Skadar [Scutari], Montenegro. Bole and Velkovrh (1986:185) listed the three phreatic species of this taxon.

Anatiniana Fagot, 1892:24, 1893:139. *Cyclostoma anatinum* Draparnaud, 1805; M. Recent, freshwater, Salces, France. Described as a group (= subgenus) of *Amnicola* Gould and Haldeman, 1840.

Andesipyrgus Hershler and Velkovrh, 1993:182–183. *Andesipyrgus sketi* Hershler and Velkovrh, 1993; OD. Recent, freshwater, caves in Andes Mountains (several localities), Colombia and Ecuador. This monotypic genus was referred to the Cochliopinae.

Andrussowiella Wenz, 1939:568. Replacement name for *Sandria* Andrusov, 1890, non Brusina, 1885. *Sandria atava* Andrusov, 1890; M (of *Sandria*). Maeotian, Upper Miocene, Crimea, Ukraine. Wenz (1926:2088–2098, 1930:3042) previously used *Sandria* Andrusov as a valid taxon in the Hydrobiidae. Jekelius (1944:120–121) reviewed the nomenclatural history and systematic position of this taxon. Roshka (1973:188–189) ranked *Andrussowiella* as a subgenus of *Pseudamnicola* Paulucci, 1878, in the family Lithoglyphidae.

Angrobia Iredale, 1943:204. *Hydrobia angasi* Smith, 1882; OD. Recent, freshwater, Compasely River, Victoria, Australia. McMichael (1967:132) suggested that *Angrobia* might be a junior synonym of *Tatea* Tenison-Woods, 1879. A junior subjective synonym of *Fluvidona* Iredale, 1937 (fide Ponder and Clark, 1990:509)

Annulifer Cossmann, 1921:97, 119. *Paludina protracta* Eichwald, 1850; OD. Sarmatian, Pliocene, Russia. Described as a section of *Robicia* Brusina, 1897. Cossmann referred three other species from the Pliocene of Slovenia and Croatia to this taxon. Is a junior synonym of *Hydrobia* Hartmann, 1821, s.s. (fide Wenz, 1939:555).

Antibaria Radoman, 1973a:7, 20. *Lithoglyphus notata* Frauenfeld, 1865; M. Recent, freshwater, springs, Buljarica, near Petrovac, Montenegro. Originally placed in the Orientaliinae (Orientaliinae).

Antillobia Altaba, 1993:75–84. *Antillobia margalefi* Altaba, 1993; OD. Recent, brackish water, Lago Enriquillo, Dominican Republic. This monotypic genus was referred to the Littoridininae.

Antrobia Hubricht, 1971:95. *Antrobia culveri* Hubricht, 1971; OD. Recent, freshwater, stream in Tumbling Creek Cave, Taney County, Missouri, U.S.A. Hershler and Thompson (1992:16–18) redescribed this monotypic taxon and referred it to the Cochliopinae.

Antrorbis Hershler and Thompson, 1990:197. *Antrorbis breweri* Hershler and Thompson, 1990; M. Recent, freshwater, Manitou Cave, Little Wills Valley, Coosa River Basin, Fort Payne, DeKalb County, Alabama, U.S.A. Hershler and Thompson (1990:198) placed *Antrorbis*, along with three other North American cave hydrobiid genera, in the Lithoglyphinae, which they redefined on anatomical criteria.

Antroselates Hubricht, 1963:138. *Antroselates spiralis* Hubricht, 1963; OD. Recent, freshwater, streams, springs, and caves, Indiana and Kentucky (various localities), U.S.A. Hubricht compared this genus with *Somatogyrus* Gill, 1863. Taylor (1966b:171) transferred this genus from the Hydrobiidae to the "Micromelaniidae, Emmericiinae"; this group is now considered to belong to the Hydrobiidae. Hershler and Thompson (1992:18–21) redescribed this monotypic taxon and referred it to the Cochliopinae.

Apachecoccus Taylor, 1987:32. *Apachecoccus arizonae* Taylor, 1987; OD. Recent, freshwater, springs, Gila River valley, Graham County, Arizona, U.S.A.

Aphaostracon Thompson, 1968:74–77. *Aphaostracon rhadinus* Thompson, 1968; OD. Recent, freshwater, Fish Creek, Putnam County, Florida, U.S.A. Thompson (1968:78–99) referred nine species (eight new) from peninsular Florida and indicated that several undescribed taxa were also known. Described in the "*Hydrobia* Tribe" (= Hydrobiini) of the Hydrobiinae (Hydrobiidae). Hershler and Thompson (1992:21–24) redescribed this taxon and referred it to the Cochliopinae.

Arganiella Giusti and Pezzoli, 1980:45. *Arganiella pescei* Giusti and Pezzoli, 1980; M. Recent, freshwater, caves, various localities, Abruzzo and Lazio, Rieti, Italy. Giusti and Pezzoli (1981:208–214) provided a lengthier description of this genus, which they compared with *Hauffenia* Pollonera, 1898.

Aristidia Servain, 1884:379. *Aristidia servaini* Servain, 1884 (ex Bourguignat, ms.); M. Recent, freshwater, Bosna River, near Sarajevo, Bosnia and Herzegovina. Genus and species are nomina nuda. Bourguignat (1887:47) renamed this taxon *Horatia* (q.v.) because of a perceived generic homonymy with a plant genus. Not only was this replacement name unnecessary due to the independence of zoological and botanical nomenclature (*ICZN*, Article 1(c)), but also there is no plant generic name spelled the same as *Aristidia*. Bourguignat did not specify the plant taxon: presumably either *Aristida* Linnaeus, 1753, or *Aristidium* Lindley, 1847 (both now placed in the Gramineae) was intended. Because *Aristidia* was never properly validated, the usage of *Horatia* is acceptable.

Aroa H.B. Baker, 1930:33, 35, non Walker, 1855 (Lepidoptera); see *Aroapyrgus* H.B. Baker, 1931. *Potamopyrgus ernesti vivens* Baker, 1930; OD. Recent, freshwater, "pools in brooks and creeks," Boquerón (and elsewhere), Venezuela. Proposed as a subgenus of *Potamopyrgus* Stimpson, 1865.

Aroapyrgus H.B. Baker, 1931:143. Replacement name for *Aroa* H.B. Baker, 1930, non Walker, 1855 (Lepidoptera). *Potamopyrgus ernesti vivens* Baker, 1930; OD (of *Aroa* H.B. Baker, 1930). Recent, freshwater, Venezuela. Proposed as a subgenus of *Potamopyrgus* Stimpson, 1865. Morrison (1946:13) stated that all the Panamanian species of "*Amnicola*" were referrable to *Aroapyrgus*. Taylor (1966b:172–173) reviewed the known Neotropical species and stated that *Aroapyrgus* belonged to the Hydrobiinae. Hershler and Thompson (1992:24–29) redescribed this taxon and referred

it to the Cochliopinae. *Sioliella* Haas, 1949; junior synonym (fide Hershler and Thompson, 1992:29).

Ascorhis Ponder and Clark, 1988:664. *Bythinia victoriae* Tenison-Woods, 1878; OD. Recent, brackish water, Australia (South Australia to Queensland). *Ascorhis occidua* Ponder and Clark, 1988, was described from Western Australia. Ponder (1992a:527) noted that this engimatic genus "has no obvious relationship with any other hydrobiid for which the anatomy has been described."

Austropyrgus Cotton, 1943a:125. *Paludina nigra* Quoy and Gaimard, 1835; OD. Recent, "small freshwater creeks," D'Entrecasteaux Channel, Tasmania, Australia. Cotton also gave the distribution of the genus as "South Australia, Victoria, New South Wales, and Tasmania," and referred numerous species hitherto "placed in various non-Australian genera such as *Hydrobia, Bythinella, Bythinia, Potamopyrgus...*" (see also Cotton, 1943b:144). McMichael (1967:132; also Vaught, 1989:22) considered *Austropyrgus* to be a junior synonym of *Potamopyrgus* Stimpson, 1865. Ponder (1988:284–5) pointed out that the type species was misinterpreted by Cotton and other authors; Ponder's selection of a neotype for *P. nigra* ensured that this taxon is now referrable to *Fluvidona* Iredale, 1937.

Avardaria Andrusov, 1923:240. No species mentioned; genus is a nomen nudum. See *Avardaria* Ali-Zade, 1932.

Avardaria Ali-Zade, 1932:20. *Streptocerella andrussovi* Ali-Zade, 1932; OD. Akchagylian, Pliocene, Caspian Basin, Azerbaijan. The type species was redescribed by Kolesnikov (1950:107–108) and Ali-Zade (1967:217–218). Volkova in Pchelintsev and Korobkov (1960:151) listed *Avardaria* in the Emmericiinae of the Micromelaniidae. This genus was inexplicably referred to the Cardiidae (Bivalvia) by Vokes (1967:268) and Cox et al. (1969: N860, 1971: N1217); this error probably arose because *Avardaria* was mentioned (by Andrusov) on the same page with certain taxa of the Lymnocardiinae.

Avemonia Grossu and Negrea, 1984:47. Error for *Avenionia* Nicolas, 1882.

Aveniona Cossmann, 1900:43. Error for *Avenionia* Nicolas, 1882.

Avenionia Nicolas, 1882:163–165. *Avenionia vayssieri* Nicolas, 1882; SD, Wenz, 1939:561. Recent, freshwater, subterranean springs, Avignon, France. Is equivalent to *Paulia* Bourguignat, 1882 (non Gray, 1841), fide Bolling (1965:34) and Boeters (1967). Because *Paulia* is a junior homonym, *Avenionia* has been used as the valid name (see also Nicolas, 1891:44–45). The type species of *Avenionia* was considered to be a junior synonym of the type of *Paulia* by Boettger (1939:20–22) and Boeters (1967:159). Cossmann (1900:43) stated that *Paludinella bulimoides* was the type species of *Aveniona*" [sic]; however, this was not an originally included species. Placed in the "*Horatia*-group" of the Hydrobiinae by Climo (1977:69). Thompson (1979:47) placed *Avenionia* in the Nymphophilinae. Boeters and Winter (1983) redescribed several French and Belgian taxa of this genus; they combined them into one species with four subspecies. Bole and Velkovrh (1986:186) listed the known phreatic species of this taxon. *Avemonia* Grossu and Negrea, 1984; *Aveniona* Cossmann, 1900, and *Avenonia* Cossmann, 1900; errors.

Avenonia Cossmann, 1900:43. Error for *Avenionia* Nicolas, 1882.

Azeria Kabakova, 1967:15–16. *Azeria labeosa* Kabakova, 1967; OD. Akchagylian, Pliocene, Caspian Basin, Azerbaijan. Described in the subfamily "Gaspiinae" [sic! = Caspiinae] of the Micromelaniidae. Kabakova referred two other new species to this taxon, which was compared with *Celekenia* Andrussov, 1902.

Baglivia Brusina, 1892:145–146. *Baglivia rugosula* Brusina, 1892; SD, Wenz, 1926:2048. Tertiary, Markusevec, Croatia. Wenz (1926:2048–2051) provided comprehensive synonymies for the fossil species (Miocene–Pliocene) of *Baglivia*, which he ranked as a subgenus of *Caspia*. Kuscer (1937:103) extended *Baglivia* to the Recent with the tentative assignment of *karamani* Kuscer, 1937 (groundwater, Vardarebene, near Skoplje, Serbia), to this genus. Bole and Velkovrh (1986:186) listed *tellini* Pollonera, 1898, under both *Baglivia* and *Hauffenia;* the former placement is incorrect because *tellini* is the type species of *Hauffenia* (q.v.).

Baicalcochlea Vaught, 1989:23. Error for *Baicalocochlea* Lindholm, 1927.

Baicalia von Martens, 1876:182. Replacement name for *Limnorea* W. Dybowski, 1875, non Goldfuss, 1826, nec Agassiz, 1846. *Limnorea (Ligea) carinata* W. Dybowski, 1875; SD, Dall, 1877:45. Recent, freshwater, Lake Baikal. Emended to *Baikalia* by Dall, 1877, who also treated this taxon as a subgenus of the North American *Tryonia* Stimpson, 1865. Crosse and Fischer (1879:150–155) redescribed this taxon (as *Baikalia*) and recognized five subgenera: *Baikalia* s.s., *Liobaikalia, Godlewskia, Trachybaikalia,* and *Dybowskia.* Crosse and Fischer (1879:152), Clessin (1880:185, for *Limnorea*), and Lindholm (1909:45) stated that the type species of *Baikalia* was *Hydrobia angarensis* Gerstfeldt, 1859; this postdates Dall's (1877) designation. See *Eubaicalia* Lindholm, 1924, for *Baicalia* (or *Baikalia*) sensu Crosse and Fischer, 1879 (et al.). B. Dybowski (1912:210–213) discussed several species and described two new varieties (= subspecies) in this taxon. Kozhov (1936: 53–124) provided an extensive review of the numerous Baikal species referred to this genus for which he recognized 13 subgeneric taxa. Kozhov (1951) further reviewed the anatomy and systematic relationships of the family Baicaliidae; see also Sitnikova (1991). Martinson (1956:27–30, 1961:261–264) and Popova (1964:166–169) redescribed the fossil species referred to this genus.

Baicaliella B. Dybowski and Grochmalicki, 1923:8, 53. An unnecessary emendation for *Baikaliella* Lindholm 1909.

Baicalineopsis B. Dybowski and Grochmalicki, 1914a:541 (caption to plate 14). *Baicalineopsis mandhurica* B. Dybow-

ski and Grochmalicki, 1914; M. Recent, freshwater, Lake Baikal. Genus and species are nomina nuda.

Baicalinopsis Lindholm, 1927:164. Error for *Baicalineopsis* B. Dybowski and Grochmalicki, 1914.

Baicalocochlea Lindholm, 1927:178. *Paludina baicalensis* Gerstfeldt, 1859; OD. Recent, freshwater, Lake Baikal. Described as a subgenus of *Benedictia* W. Dybowski, 1875 (see also Kozhov, 1936:35). Sitnikova (1987:1469–1471) reviewed this subgenus and its included Baikal species.

Baikalia Dall, 1877:44. An unnecessary emendation for *Baicalia* von Martens, 1876. *Baikalia* Crosse and Fischer, 1879; junior homonym.

Baikalia Crosse and Fischer, 1879:150, non Dall, 1877 (Mollusca); see *Eubaicalia* Lindholm, 1924. *Hydrobia angarensis* Gerstfeldt, 1859; OD. Crosse and Fischer (1879:150, 152) emended *Baicalia* von Martens, 1876, but their usage of "*Baikalia*" was not intended to be equivalent to Dall's (q.v.). Because Crosse and Fischer used *"Trachybaikalia"* for the species of *Baikalia* sensu Dall, then *Baikalia* Crosse and Fischer (and of Nevill, 1885:62) is both a junior homonym and a junior synonym of *Baikalia* Dall, 1877.

Baikaliella Lindholm, 1909:41, 44. *Baikalia (Baikaliella) nana* Lindholm, 1909 (ex Milaschewitsch, ms.); M. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baikalia* Dall, 1877. Kozhov (1936:96–97) redescribed this monotypic genus and recognized a new variety (subspecies). *Baicaliella* B. Dybowski and Grochimalicki, 1923; an unnecessary emendation.

Balcanorbis Davis and McKee, 1989:238. Error for *Balconorbis* Hershler and Longley, 1986.

Balconorbis Hershler and Longley, 1986:152–154. *Balconorbis uvaldensis* Hershler and Longley, 1986; OD. Recent, freshwater, Edwards Aquifer, Uvalde County, Texas, U.S.A. This monotypic genus was referred to the Littoridininae (Cochliopinae, fide Hershler and Thompson, 1992:29–30). *Balcanorbis* Davis and McKee, 1989; error.

Bania Brusina, 1896:130. *Stalioa prototypica* Brusina, 1874; M. Neogene, Rudusa near Sinj, Croatia. Wenz (1926:2092–2094) provided synonymies for the two species referred to this taxon.

Banneina Stache, 1889:152. *Banneina liburnica* Stache, 1889; SD, Cossmann, 1921:130. Tertiary, Slovenia and Istra (Croatia). Originally described in the Assimineidae; transferred to the Hydrobiidae by Cossmann (1921), as a subgenus of *Lapparentia* Berthelin, 1885.

Barassia Jekelius, 1933:65. Replacement name for *Corona* Jekelius, 1932, non Albers, 1850 (Mollusca). *Pseudamnicola (Corona) bithynoides* Jekelius, 1932; OD. Dacian, Pliocene, near Brasov, Romania. Described as a monotypic subgenus of *Pseudamnicola* Paulucci, 1878.

Beddomea Dautzenberg, 1900:72, non *Beddomea* Nevill, 1878 (Mollusca). Error for *Beddomeia* Petterd, 1889.

Beddomeia Petterd, 1889:73. *Amnicola launcestonensis* Johnston, 1879; SD, Iredale 1943:203. *Tasmaniella* Ancey, 1898, was proposed as a replacement name for *Beddomeia* Petterd *"non Beddomea* Nevill, 1878" (Mollusca); the latter name was thought to be a senior homonym. Proposed as a subgenus of *Potamopyrgus* Stimpson, 1865. Recent, freshwater, South Esk, Tasmania, Australia. Petterd (1889:81) suggested that *Amnicola diemense* Frauenfeld, 1863, might be a senior synonym of *A. launcestonensis*. Johnston (1889:88) questioned the validity of this new taxon. McMichael (1967:132, footnote) pointed out that the *Beddomeia* was not a homonym of *Beddomea* Nevill; hence the replacement name (*Tasmaniella*) was unnecessary. The Australian species were listed by Smith (1992:45). Ponder (1992a:526) recognized the *"Beddomeia* radiation" in the Australian Hydrobiidae, comprising *Beddomeia, Phrantela,* and several yet undescribed genera. Ponder in Smith (1992:44, 325–326) listed *Beddomena, Brazieria, Petterdiana, Pseudampullaria, Tasmaniella,* and *Valvatasma* as junior synonyms of *Beddomeia*. *Beddomea* Dautzenberg, 1900; error.

Beddomena Iredale, 1943:202–203. *Beddomeia belli* Petterd, 1889; OD. Recent, freshwater, Heazlewood River, Tasmania, Australia. Iredale (1943) referred two other species, both from Tasmania, to this genus. McMichael (1967:132), without explanation, placed *Beddomena* into synonymy of *Beddomeia* Petterd, 1889; this was followed by Ponder in Smith (1992:44). Placed in the *"Fluviopupa*-tribe" of the Hydrobiinae by Climo (1974:255).

Beogradica Pavlovic, 1927:92 (also, Pavlovic, 1928:53). *Beogradica subdiscerta* Pavlovic, 1927; M. Pontian, Miocene, Karagac and Begaljica, Serbia.

Belbrandiella Bernasconi, 1990:50. Error for *Belgrandiella* Wagner, 1927.

Belgradiellla Pezzoli and Giusti, 1981:321. Error for *Belgrandiella* Wagner, 1927.

Belgrandia Bourguignat, 1869:13–15. *Cyclostoma gibbum* Draparnaud, 1805; SD, Kobelt, 1878:133. Recent, springs, southern France (various localities). Bourguignat (1877:85) stated that this genus was known from springs and streams in Dalmatia, Italy, Spain, and Portugal as well as France. Clessin (1878b, 1882b) reviewed the species and systematic relationships of *Belgrandia*. Tryon (1883:267) listed *"Stalion* [sic] Brusina" as a junior synonym of *Belgrandia;* subsequently Wenz (1939:602) transferred *Stalioa* Brusina, 1870 to the Micromelaniidae (= Hydrobiidae). Clessin (1882:137–138), Westerlund (1902:128), Kennard and Woodward (1926a:23), and Giusti (1970:295) all synonymized *Thermhydrobia* Paulucci, 1878, with *Belgrandia*. Giusti (1970) described the anatomy of a new Italian species of *Belgrandia* and concluded that *Sadleriana* Clessin, 1890, was a junior synonym or at best a subgenus of *Belgrandia*. Giusti and Pezzoli (1972) provided further discussion of this taxon, which they compared with *Pseudamnicola* Paulucci, 1878 (q.v.). Thompson (1979:47) placed *Belgrandia* into the Nymphophilinae. Giusti and Pezzoli (1980:46–52) recognized *Sadleriana* and *Belgrandia* as separate genera in the

Sadlerianinae (Moitessieriidae).

Belgrandiella Wagner, 1927:286–287. *Belgrandia kusceri* Wagner, 1914; OD. Recent, freshwater, springs in Slovenia, northeastern Italy and northern Bulgaria. Proposed as a subgenus of *Belgrandia* Bourguignat, 1869. Starobogatov (1962:48) described two new species of *Belgrandiella,* from caves in the Caucasus. Boeters (1970a:116) treated *Belgrandiella* as a junior synonym of *Microna* Clessin, 1890 (which he considered to be a valid name); however, Zilch (1970a) concluded that *Belgrandiella* was the next available name for *Microna* Clessin, 1890, non Frauenfeld, 1863. Radoman (1975:29–38) reviewed the 15 Balkan species (five new) referred to *Belgrandiella.* Bole (1979:214–218, 233–234) reviewed certain Slovenian taxa of *Belgrandiella.* Giusti and Pezzoli (1980:31–33, 1981) redescribed the Italian species of this taxon, which they placed in the Moitessieriidae. Boeters (1983) reviewed five species (three new) from France and Spain, referred to *Belgrandiella.* Bole and Velkovrh (1986:186–187) listed 28 species referred to this taxon. Boeters (1988:224) suggested that *Maresia* might be a senior synonym of *Belgrandiella* Wagner, 1927 (q.v.), but no explanation was given. Falniowski and Szarowska (1991:122) stated: "Anyway it seems clear that the Belgrandiellinae Radoman, 1983 can not be placed within Hydrobiinae"; this was not supported by any specific observations on the type genera involved. *Microsalpinx* Kuscer, 1932, is a junior synonym (fide Boeters, 1970a:116, of *"Microna"*); *Graziana* is also a junior synonym (fide Zilch, 1970a; Pezzoli and Giusti, 1981). *Belbrandiella* Bernasconi, 1990, *Belgradiella* Pezzoli and Giusti, 1981, *Belgraniella* Radoman, 1983; errors.

Belgraniella Radoman, 1983:97. Error for *Belgrandiella* Wagner, 1927.

Benedicita Kozhov, 1936:37. Error for *Benedictia* W. Dybowski, 1875.

Benedictia W. Dybowski, 1875:1, 4–5. *Benedictia fragilis* W. Dybowski, 1875; SD, Dall, 1877:45. Recent, freshwater, Lake Baikal. W. Dybowski (1875:7–21) provided an extensive description of the anatomy of the type species. Lindholm (1909:31–35) redescribed the genus and provided additional records for several species from Lake Baikal; see also Kozhov (1936:35–36, 38–49). Kozhov (1945, 1950) described the reproductive anatomy of this taxon and compared it with *Kobeltocochlea.* Sitnikova (1987) reviewed the known Baikal species of *Benedictia,* including those in the subgenus *Baicalocochlea* Lindholm, 1909. Dzuban and Matekin (1986) and Matekin et al. (1988) combined morphological and genetic approaches to determine the validity of several Baikal species of *Benedictia. Benedicita* Kozhov, 1936; *Binedictia* Cherepanov, 1969; errors.

Bernicia Cox, 1927:327–328. *Bernicia praecursor* Cox, 1927; M. Scremerston Coal Group (freshwater deposits), late Early Carboniferous, near Scremerston, Northumberland, England, United Kingdom. Cox noted that this was the first pre-Jurassic record of the Hydrobiidae. Cox subsequently (1953:203) described a Permian *"Hydrobia"* from Africa and inexplicably stated that the Hydrobiidae "has not previously been recognized in Palaeozoic rocks"; he had overlooked his earlier description of *Bernicia.* Solem and Yochelson (1979:28) mentioned this taxon in their review of Palaeozoic nonmarine gastropods. Yen and Zhu (1990:61) described a new species of this genus, from the Upper Permian of China.

Bessadrobia Schütt, 1992:169. *Hydrobia enikalensis* Kolesnikov, 1935; OD. Sarmatian, Miocene, between Sinop and Akliman, northern Turkey. Described as a subgenus of *Hydrobia* Hartmann, 1821; one other (new) species was referred to this taxon.

Bicarinatiana Fagot, 1892:28, 1893:143. *Paludina bicarinata* Desmoulins, 1827; OD. Recent, freshwater, Couze river, near Lalinde, Dordogne, France. Described as a group (= subgenus) containing two other species of *Bythinella.* Boeters (1974a:271) considered *Bicarinatiana* to be a junior synonym of *Bythinella* Moquin-Tandon, 1855.

Binedictia Cherpanov, 1969:109. Error for *Benedictia* W. Dybowski, 1875.

Birgella F.C. Baker, 1926:196. *Paludina subglobosa* Say, 1825; OD. Recent, freshwater, central U.S.A. ("Wisconsin, Michigan and Ohio south to Arkansas and Alabama...also occurs in New York..." (Thompson, 1984:138)). Thompson (1979:47, 1984:134–138) placed this monotypic genus in the Nymphophilinae; the supposed relationships with *Somatogyrus* Gill, 1863 (Lithoglyphinae), were rejected.

Bithinella Moquin-Tandon, 1855:515. An alternative spelling for *Bythinella* Moquin-Tandon, 1855 (q.v.).

"Bithinelles" Moquin-Tandon, 1851:239 (footnote). A vernacular name (listed as a section of "Bithinies"); subsequently emended to *Bythinella* Moquin-Tandon, 1855.

Bithiniella Pezant, 1908:224. Error for *Bythinella* Moquin-Tandon, 1855.

Bithiospeum Caziot, 1911:126. Error for *Bythiospeum* Bourguignat, 1882.

Bithynella Kennard and Woodward, 1914:3, 11. Unjustified emendation for *Bythinella* Moquin-Tandon, 1855.

Bitinela Nicodim, 1913:33. Error for *Bythinella* Moquin-Tandon, 1855.

Bohaispira Youluo, 1978:101–102. *Bohaispira granulata* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Youluo established the family Bohaispiridae for this genus and five other new genera (*Bohaispiropsis, Miromphalus, Haihenia, Yonganospira, Nodilirata,* and *Labrosa*). Placed in the Rissooidea, but of uncertain familial relationships (Ponder and Warén, 1988:298). For the reader's convenience, we have indexed the genera of "Bohaispiridae" herein. Huang (1983) described several new bohaispirid species from Chinese Oligocene; he attributed changes in salinity in affecting speciation in this family.

Bohaispirella Huang, 1983:109. *Yonganospira (Bohaispirella) bellula* Huang, 1983; OD. Oligocene, Liao-He River valley,

China. Described as a subgenus of *Yongaospira* Youluo, 1978. Huang referred two other new species to this subgenus.

Bohaispiropsis Youluo, 1978:107–108. *Bohaispiropsis robusta* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Placed in the family "Bohaispiridae"; see also under *Bohaispira*.

Boleana Radoman, 1973a:9. *Belgrandiella umbilicata* Kuscer, 1932; M. Recent, freshwater, Mocilnik, source of Ljubljana River, Slovenia. Originally placed in the Horatiinae (Orientaliidae). Radoman (1975:48–50, 60) redescribed this taxon.

Botryphallus Ponder, 1990:303–304. *Cingula epidaurica* Brusina, 1866; OD. Recent, marine, gravel beaches, Croatia, Gibraltar and Cueta, Mediterranean. Ponder (1990:307) tentatively placed this taxon in the Hydrobiidae (Littoridininae), though its characters did not agree well with this or other possible familial allocations. Hershler and Thompson (1992:129) concluded that this taxon was not referrable to the Cochliopinae (= Littoridininae); the relationship remains uncertain.

Bovillina Dall, 1924a:88 (also Dall, 1924b:113). *Orygoceras corniculum* Brusina, 1893 (= *Creseis fuchsi* Kittl, 1886; fide Wenz (1928:2487)); OD. Pontien, "Pliocene" (Upper Miocene), Austria, Hungary, Croatia and Serbia. Proposed as a section (= subgenus) of *Orygoceras* Brusina, 1882. Dall (1924b) used this subgenus for a species from the Pliocene, Castle Creek, Owyhee County, Idaho, U.S.A. A junior subjective synonym of *Orygoceras* (fide Wenz, 1928:2484).

Bracenica Radoman, 1973a:7, 20. *Bracenica spiridoni* Radoman, 1973; M. Recent, freshwater, Spirov izvor spring, Podmeret, Braceni, near Virpazar, Montenegro. Originally placed in the Orientaliinae (Orientaliidae).

Brachypirgulina Vaught, 1989:21. Error for *Brachypyrgulina* Haas, 1955.

Brachypyrgula Polinski, 1929:133, 153–154. *Paludina bicarinata* Desmoulins, 1827; OD. Recent, freshwater, Couze river, near Lalinde, Dordogne, France. Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Is an objective junior synonym of *Bicarinatiana* Fagot, 1892 (q.v.); both taxa are subjective junior synonyms of *Bythinella* Moquin-Tandon, 1855 (fide Boeters, 1974a).

Brachypyrgulina Haas, 1955:301. *Brachypyrgulina carinifera* Haas, 1955; OD. Recent, freshwater, Lake Titicaca, South America. Hubendick (1955:325) briefly described the anatomy of this genus. Taylor (1966b:182, 184) placed this genus in the Littoridininae. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992). *Brachypirgulina* Vaught, 1989; error.

Brannerillus Hannibal, 1912:191. *Brannerillus physispira* Hannibal, 1912; OD. Pliocene, Kettleman Hills (freshwater deposits), California, U.S.A. Pilsbry (1935:561–565) reviewed this genus and its possible relationships with *Probythinella* Thiele, 1928; see also Henderson (1935:201). Taylor (1966a:123–124, 131) transferred *Brannerillus* to the Planorbidae (Pulmonata: Basommatophora); he interpreted the "usually dextral shell" as actually hyperstrophic and the rarer sinistral shells as "occasional orthostrophic individuals."

Brartia Schlickum, 1961:60. Error for *Briardia* Munier-Chalmas, 1884.

Brazieria Petterd, 1889:76, non *Brazieria* Ancey, 1887 (Mollusca); see *Petterdiana* Brazier, 1896, and *Pseudampullaria* Ancey, 1898. *Ampullaria tasmanica* Tenison-Woods, 1876; M. Recent, freshwater, "small tributary of the Arthur River, west of Mount Bischoff," Tasmania, Australia. Is a junior synonym of *Beddomeia* Petterd, 1889 (fide Ponder in Smith, 1992:44).

Brevisiana Fagot, 1892:26; 1893:141. Nomen nudum. Described as a group for two species of *Bythinella* from the Pyrenees (France).

Briardia Munier-Chalmas, 1884:324, caption to pl. 7. *Briardia velaini* Munier-Chalmas, 1884; M. Eocene, Mons, France. Genus and species are nomina nuda (see also Schlickum, 1968a:39).

Briartia Fischer, 1885:732. *Briartia velaini* Fischer, 1885 (ex Munier-Chalmas, 1884); M. Eocene, Mons, France. An emendation and validation for *Briardia* Munier-Chalmas, 1884. Cossmann (1921:146, 156) transferred *Briartia* to the subfamily Stenothyrinae (of the Bithinidae); both are now considered to be separate families. *Brartia* Schlickum, 1961, and *Briartia* Fischer, 1885; errors.

Brusiniana Bourguignat, 1880:6, 14. Type species not indicated in original; presumably *Emmericia (Brusiniana) brusinae* Bourguignat, 1880 (ex Letourneux, ms.); "tautonymy." Recent, freshwater, near Ervac and Ribaric, Dalmatia. Described as a "séries" (= subgenus) of *Emmericia* Brusina, 1870; Bourguignat referred eight species to this new taxon.

Bucharamnicola Izzatullaev, Sitnikova, and Starobogatov, 1985:56. *Pseudamnicola bucharica* Shadin, 1952; OD. Recent, springs, Hissar mountain range, Tajikistan. Placed in the new subfamily Bucharamnicolnae [sic] of the "family" Belgrandiellidae Radoman, 1983.

Bugesia Paladilhe, 1866:54–55 [1–2]. *Bugesia bourguignati* Paladilhe; M. Recent, freshwater, Lez, near Montpellier, France. Originally described in the "Melanidae" (Cerithioidea); see also Bourguignat (1877:87–88). Dubrueil (1869:105) questioned the value of this genus, as the type specimens were merely indeterminate juveniles of a larger-sized species; he suggested that this might belong with *Pyrgula*. Wenz (1939:584) listed this taxon as possibly in the Pyrgulinae.

Bythinela Nicodim, 1913:33. Error for *Bythinella* Moquin-Tandon, 1855.

Bythinella Moquin-Tandon, 1855:515, 516. Emendation for "Bithinelles" Moquin-Tandon, 1851. *Bulimus viridis* Poiret, 1801; SD, Stimpson, 1865b:44. Recent, freshwater, Chartreuve near Chéry-Chartreuve, Aisne, France.

Proposed as a subgenus of "*Bythinie*" (= *Bithynia* Leach,

1818, now placed in the Bithyniidae); subsequently retained in the Hydrobiidae by Fischer (1878:156). Also spelled as *"Bithinella"* Moquin-Tandon, 1855:515. Wenz (1926:2017–2035) provided comprehensive synonymies of the numerous fossil species referred to *Bythinella;* they ranged from the Paleocene to the Pliocene. Kuroda and Habe (1958:189–191) erected the subgenus *Moria* for the Japanese species hitherto referred to this genus. Boeters (1974a) redescribed the type species and two other French species referred to *Bythinella* and determined the junior synonyms of this taxon. Radoman (1976) discussed the Balkan radiation of this genus and redefined the family Bythinellidae. Giusti and Pezzoli (1978) reviewed the Italian species referred to this genus and concluded that the numerous names all represented a single species (possibly even conspecific with the type species). Boeters (1981b) reviewed the (west) German species of *Bythinella;* five such were recognized. Bole and Velkovrh (1986:188, 197) listed the phreatic species referred to *Bythinella;* they ranked *Moria* as a full genus.

Bithiniella Pezant, 1908; *Bithynella* Kennard and Woodward, 1914; *Bitinela* Nicodim, 1913; *Bythinela* Nicodim, 1913; *Bythynella* Clessin, 1890; *Bytinella* Pavlovic, 1903; and *Bytninella* Liu et al., 1991; errors. *Microna* Frauenfeld, 1863, is a junior objective synonym (fide Stimpson, 1865, and Zilch, 1970a). Kennard and Woodward (1926a:24) also listed *Frauenfeldia* Clessin, 1878, and *Pannonia* Lörenthey, 1902, as synonyms. *Leachia* Risso, 1826 (non Lesueur, 1821), is a synonym of *Bythinella* (fide Clessin, 1890). *Bicarinatiana* Fagot, 1892, *Brachypyrgula* Polinski, 1929, and *Pyrgobythinella* Germain, 1931; junior synonyms (fide Boeters, 1974a:271).

Bythiopsis Clessin, 1885:161. Error for *Bythiospeum* Bourguignat, 1882.

Bythiospaeum Fischer, 1885:39. Error for *Bythiospeum* Bourguignat, 1882.

Bythiospeum Bourguignat, 1882:3. *Paludina pellucida* Seckendorf, 1846 (ex Benz, ms.); SD (for *Vitrella* Clessin, 1877), Westerlund, 1902:128. Recent, springs in caves, southern and central Europe. A replacement name for *Vitrella* Clessin, 1877, non Swainson, 1840. Zilch (1970b:320–321) analyzed the complex nomenclatural history of this genus and its type species; he rejected the designation of *Hydrobia quenstedti* Wiedersheim, 1873, as type species (by Dollfus, 1912:219; see also Bolling, 1960:154) because the designation must be based on that of *Vitrella* Clessin. Seckendorf (1846:42) actually published *"pellucida"* in synonymy of *Paludina nitida* Férussac; it was first validated by Wiedersheim, 1873. Boettger (1905:115) thought that *Lartetia* Bourguignat, 1869, was a senior synonym of *Bythiospeum;* Zilch (1970b) maintained the separate identities of these two genera. Bolling (1965:31) indicated that Boettger's usage of *Lartetia* was not the same as of Bourguignat's; Bolling also provided an extensive review of these taxa (see also Boeters, 1968, 1984a; Dobat, 1962a–c, 1975). Jaeckel (1967:92) ranked *Bythiospeum* as a subgenus of *Paladilhia;* this usage has not been followed by subsequent authors. Boeters (1984c) redefined this taxon and selected a neotype for the type species, in order to stabilize the generic nomenclature. Bole and Velkovrh (1986:188–189) listed the known cave species of this genus. Falniowski and Szarowska (1991), based upon observations of the shell microstructure, tentatively reintrepreted the phylogenetic relationships of *Bythiospeum. Lartetia sensu* Boettger, 1905, non Bourguignat, 1869, is a junior synonym. *Bithiospeum* Caziot, 1911; *Bythiopsis* Clessin, 1885; *Bythiospaeum* Fischer, 1885; and *Bythiospum* Bernasconi, 1990a; errors.

Bythiospum Bernasconi, 1990a:40. Error for *Bythiospeum* Bourguignat, 1882.

Bythynella Clessin, 1890:667. Error for *Bythinella* Moquin-Tandon, 1855.

Bytinella Pavlovic, 1903:138. Error for *Bythinella* Moquin-Tandon, 1855.

Bytninella Liu et al., 1991:3. Error for *Bythinella* Moquin-Tandon, 1855.

Calipyrgula Pilsbry, 1934:15. *Calipyrgula carinifera* Pilsbry, 1934; OD. Pliocene, basal Tulare Formation, Kettleman Hills, California, U.S.A. Pilsbry subsequently (1935:556–558) provided a fuller description of this genus and its included species; see also Henderson (1935:200). Leonard and Franzen (1946) reviewed this genus with regard to four species described from the Pliocene of Oklahoma, U.S.A. Is a junior synonym of *Tryonia* Stimpson, 1865 (fide Hershler and Thompson, 1992:107).

Carasia Jekelius, 1944:83. *Carasia carasiensis* Jekelius, 1944; original desgination. Sarmatian, Late Miocene, near Soceni, Romania. The systematic position of this new taxon was uncertain; Jekelius placed *Carasia* between *Cerithium* (Cerithiidae) and *Moesia* (? Hydrobiidae; q.v.). Jekelius also noted the similarity of *Carasia* to *Melanella* (*Eulima*) (Eulimidae). Roshka (1973:178–179) ranked *Carasia* as a subgenus of *Caspia* Clessin and W. Dybowski, 1888, and described a new species from the Maeotian (Miocene) of Ukraine.

Carinorbis Yen, 1946a:46, non Conrad, 1862 (Mollusca), nec Mandahl-Barth, 1954 (Mollusca); see *Carinulorbis* Yen, 1949. *Carinorbis planospiralis* Yen, 1946; M. Paleocene, Wasatch Formation, Sheridan County, Wyoming, U.S.A. Originally placed in the Planorbidae (Pulmonata). Taylor (1966b:181) transferred this taxon to the Hydrobiidae, as a synonym of *Clenchiella* Abbott, 1948.

Carinulorbis Yen, 1949:573. Replacement name for *Carinorbis* Yen, 1946, non Conrad, 1862. *Carinorbis planospiralis* Yen, 1946; M (of *Carinorbis*). Paleocene, Wasatch Formation, Sheridan County, Wyoming, U.S.A. Zilch (1959:111) discussed this genus in the Planorbidae (Pulmonata). Taylor (1966b:181) transferred *Carinulorbis* to the Hydrobiidae, as a junior synonym of the Recent (Asia) *Clenchiella* Abbott,

1948. Taylor (1966b:181, 1975:385–390) listed the Paleocene North American (Montana-Wyoming) taxa hitherto placed in *Carinulorbis* as well as the Recent Asian species of *Clenchiella*. In consideration of the geographic and temporal separation of *Carinulorbis* and *Clenchiella*, we tentatively consider both taxa to be valid.

Casiohydrobia Edwards, 1981:xv, 297. Error for *Caspiohydrobia* Starobogatov, 1970.

Caspia Clessin and W. Dybowski in W. Dybowski, 1888:34–35. *Caspia baeri* Clessin and W. Dybowski in W. Dybowski, 1888; SD, Wenz, 1926:2043. Recent, freshwater, Caspian Sea. Wenz (1926:2043–2048) provided comprehensive synonymies for the fossil species referred to this genus. Golikov and Starobogatov (1966:353–355) recorded five species of *Caspia* from the Azov-Black Sea region; they ranked this taxon as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Logvinenko and Starobogatov (1968:350, 377–379) discussed six species (two new) from the Caspian Sea which they referred to this taxon; see also Tadjalli-Pour (1977:107). Golikov and Starobogatov (1972:98–100) ranked *Caspia* as a full genus and redescribed the hitherto known species of this taxon. Alekseenko and Starobogatov (1987) reviewed the species from the Azov and Black Sea Basins, which were referred to the subgenus *Clathrocaspia*. Anistratenko and Prisyazhniuk (1992) recognized three species (two new) of *Caspia* (*Clathrocaspia*) from the Holocene of Odessa (Ukraine).

Caspiella Thiele, 1928:353, 381. *Rissoa conus* Eichwald, 1838; OD. Recent, freshwater, Caspian Sea. Thiele was uncertain as to whether this genus was in the Hydrobiidae or Micromelaniidae (Conocaspiinae); subsequently he (Thiele, 1929:159) placed this in the Micromelaniidae. Golikov and Starobogatov (1966:357–358) ranked *Caspiella* as a subgenus of *Pyrgula* Cristofori and Jan, 1832, and described six species (five new) from the Azov-Black sea region, which they referred to this taxon. Logvinenko and Starobogatov (1968:355, 370–375) described 10 species (five new) from the Caspian Sea of *Caspiella;* see also Tadjalli-Pour (1977:105–106). Alekseenko and Starobogatov (1987) ranked *Caspiella* as a subgenus of *Turricaspia* B. Dybowski and Grochmalicki, 1917.

Caspiohoratia Logvinenko and Starobogatov, 1968:382. *Horatia (Caspiohoratia) marina* Logvinenko and Starobogatov, 1968; OD. Described as a subgenus of *Horatia* Bourguignat, 1887. Recent, freshwater, Caspian Sea. Logvinenko and Starobogatov referred this monotypic genus to the "family" Lithoglyphidae.

Caspiohydrobia Starobogatov, 1970:31, 279. *Pyrgohydrobia eichwaldiana* Golikov and Starobogatov, 1966; OD. Recent, freshwater, Azov-Black Sea basin. The type species was a replacement name for *Paludina pusilla* Eichwald, 1830, non Basterot, 1825 (= *Hydrobia ventrosa evanescens* Kolesnikov, 1947, non *H. evanescens* Guerne, 1880). In fact, Gude (1913) had already proposed the replacement name *Paludestrina newtoni*, which must be used as the name for the type species. Starobogatov stated that this new genus was also known from the Caspian and Aral seas, as well as unspecified saline lakes in Kazakhstan (i.e., the "Ponto-Caspian Basin"). In reality, no species from these latter localities were then mentioned by Starobogatov. Golikov and Starobogatov (1972:97, 98) provided further discussion and referred a second species (also from the Azov-Black Sea basin) to *Caspiohydrobia*. Starobogatov (1974:256–257) referred two species (one new) from the Aral Sea to *Caspiohydrobia*. Starobogatov and Izzatulaev (1974) described six new species, from Lyaur, Dungarin district, Tajikistan, which they placed in *Caspiohydrobia*. Chukhchin (1976a) discussed this taxon and considered it to be a junior synonym of *Hydrobia* Hartmann, 1821. Starobogatov and Andreeva (1981) described eight new species from the Aral Sea and stated that 29 species were now known for *Caspiohydrobia*. Andreeva and Frolova (1989) maintained the validity of *Caspiohydrobia*, which they referred to the family Pyrgulidae; two species from Kazakhstan were described. *Casiohydrobia* Edwards, 1981; *Casprohydrobia* Starobogatov and Izzatullaev, 1974; and *Gaspiohydrobia* Starobogatov and Andreeva, 1981; errors.

Caspiopyrgula Logvinenko and Starobogatov, 1968:354, 366. *Turricaspia nossovi* Kolesnikov, 1947; OD. Recent, freshwater, Caspian Sea. This monotypic taxon was described as a section (= subgenus) of *Pyrgula* Cristofori and Jan, 1832.

Casprohydrobia Starobogatov and Izzatullaev, 1974:935. Error for *Caspiohydrobia* Starobogatov, 1970.

Catapyrgus Climo, 1974:267. *Catapyrgus spelaeus* Climo, 1974; M. Recent, caves, Nelson and elsewhere, North Island, New Zealand. Placed in the *"Istriana*-tribe" of the Hydrobiinae by Climo (1974:255).

Cavernisa Radoman, 1978a:31. *Belgrandiella zaschevi* Angelov, 1959; OD. Recent, freshwater, springs near Iskrec River, Iskrec, Bulgaria. Originally described in the Horatiinae (Orientaliidae).

Celekenia Andrusov, 1902:68–69, 74–75. *Celekenia ivanovi* Andrusov, 1902; M. Dacian, Pliocene, Celeken Island, Caspian Basin. Dollfus (1912:227–228) doubted that *Celekenia* was hydrobiid; but he could not classify them with either Viviparidae ("Paludines") or Thiaridae ("Mélanies"). Wenz (1939:591) ranked *Celekenia* as a subgenus of *Bulimus* (= *Bithynia*, family Bithyniidae). Kolesnikov (1950:222–224) redescribed this taxon and its two Neogene Caspian Basin species. Logvinenko and Starobogatov (1968:351, 375) described a new species from the Caspian Sea which they referred to *Celekenia* (as a subgenus of *Pyrgula* Cristofori and Jan, 1832). Roshka (1973:139–141) redescribed *C. purpurina* (Andrusov, 1890) from the Maeotian (Miocene) of Ukraine.

Characebia Stache, 1889:151. *Bythinella (Characebia) lagynophorae* Stache, 1889; M. Tertiary (Upper Cretaceous?), "Characeen-Kalksteins," Slovenia and Istra (Croatia). Proposed as a subgenus of *Bythinella* Moquin-Tandon, 1855.

Cossmann (1921:129) listed *Characebia* as a synonym of *Lapparentia* Berthelin, 1885.

Charydrobia Stache, 1889:147–148. *Hydrobia characearum* Stache, 1880; SD, White, 1895:58. Tertiary (or Upper Cretaceous), "Chareceen-Kalksteins," Slovenia and Istra (Croatia). Boeters (1971b:177) maintained the separate identities of *Charydrobia* and *Pseudamnicola* (q.v.).

Chazarella Ali-Zade, 1967:213. *Chazarella chazarica* Ali-Zade, 1967; OD. Akchagylian, Pliocene, Caspian Basin, Turkmenistan. This monotypic genus was classified in the Hydrobiidae between *Celekenia* and *Micromelania*.

Cherusciola Huckriede, 1967:213–214. *Cherusciola nitida* Huckriede, 1967; OD. Kimmeridgean, Upper Jurassic, southeast of Sülfeld, Halberstadt region, Germany. Originally described with unknown familial placement; the shells resemble "hydrobioids"; we tentatively list it herein pending further research.

Chilopyrgula Brusina, 1896:369. *Chilopyrgula sturanyi* Brusina, 1896; OD. Recent, freshwater, Lake Ohrid (and springs near Ohrid), Macedonia. Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. The type species was a replacement name for *Pyrgula annulata* "L." var. Sturany, 1894, non *Pyrgula annulata* (Linnaeus, 1758) (as *Turbo;* Brusina considered Sturany's usage of *"annulata"* as not conspecific with Linnaeus' species.) Schütt (1965:61) ranked this taxon as a full genus in the Micromelaniidae. Radoman (1973a:12) estabished the subfamily Chilopyrgulinae (Pyrgulidae) for this taxon and four other genera (*Neofossarulus, Macedopyrgula, Stankovicia,* and *Trachyochrida*). Radoman (1978b: 45–47) briefly discussed this taxon and described a second Lake Ohrid species.

Choerina Brusina, 1882:37, 38 (footnote). *Emmericia candida* Neumayr, 1875; SD, Cossmann, 1921:135. Pontian, Miocene, Slovenia and Romania. Wenz (1926:2194) and Cossmann (1921:134) listed this as a junior synonym of *Emmericia* Brusina, 1870.

Cilgia Schütt, 1968:109. *Saxurinator dalmaticus* Schütt, 1961; OD. Recent, freshwater, springs near Sopot, south bank of Svitavsoko (and elsewhere), Dalmatia.

Cincinnatia Pilsbry, 1891:327 (footnote). *Paludina cincinnatiensis* Anthony, 1841 (= *Paludina integra* Say, 1821 (fide Thompson, 1968:116)); OD. Recent, freshwater, near Cincinnati, Ohio, U.S.A. Proposed as a section (= subgenus) of *Amnicola* Gould and Haldemann, 1840. Hannibal (1912: 190–191) briefly discussed this genus and its two included species, and proposed a replacement name for the second species which is now placed in *Probythinella* Thiele, 1928 (q.v.). Thompson (1968:116–147) described 10 species (seven new) from peninsular Florida and placed *Cincinnatia* in the *"Somatogyrus* Tribe" of the Hydrobiinae (Hydrobiidae). Thompson (1979:47) placed *Cincinnatia* into the Nymphophilinae; Davis and Mazurkiewicz (1985) provided further discussion and differentiated *Cincinnatia* from *Marstonia* F.C. Baker, 1926 (Hydrobiini).

Cirsomphalus Cossmann, 1907:43. *Stalioia tunioti* Cossmann, 1902; OD. Spamacian, Lower Eocene, Pourcy, Marne, France. Described as a section (= subgenus) of *"Stalioia"* Brusina, 1870. Wenz (1926:2192–2194) reviewed the three fossil species (all Sparnacian) referred to *Cirsomphalus;* Schlickum (1961:60; 1969) provided further discussion of this taxon.

Clameia Boeters and Gittenberger, 1990:125–128. *Clameia brooki* Boeters and Gittenberger, 1990; M. Recent, freshwater, upstream of Mantoudi, Kirefs River, Évvoia, Greece. Boeters and Gittenberger (1990:123–124) referred *Clameia* to the family Moitessieriidae, which they redefined and differentiated from the Hydrobiidae.

Clappia Walker, 1909:89. *Clappia clappi* Walker, 1909 (= *Somatogyrus umbilicatus* Walker, 1904, fide Goodrich, 1944:10); OD. Recent, Coosa River, Chilton County, Alabama, U.S.A. Morrison (1940a:126–127) referred two additional species to *Clappia* and compared this genus with *Somatogyrus* Gill, 1863. Thompson (1984:114–115, 128) reviewed this genus, which he restricted to two species (both from the Coosa and Cahaba rivers, Alabama, and probably extinct), and compared with other genera of the Lithoglyphinae. Vaught (1989:21) inexplicably listed *Clappia* as a subgenus of *Lithoglyphus* Hartmann, 1821.

Clathrocaspia Lindholm, 1929a:313 (footnote 4). *Caspia pallasi* Clessin and W. Dybowski in W. Dybowski, 1888; OD. Recent, freshwater, Caspian Sea. Proposed as a subgenus of *Caspia* W. Dybowski, 1888. Kolesnikov (1947:106, 111) placed *Clathrocaspia* in the Conocaspiinae (Micromelaniidae). Alekseenko and Starobogatov (1988:38) claimed that "all the Ponto-Azovian *Caspia* species belong to the subgenus *Clathrocaspia"*; see also Anistratenko and Prisyazhniuk (1992).

Clenchiella Abbott, 1948:76. *Clenchiella victoriae* Abbott, 1948; M. Recent, San Joaquin River and estuary southeast of Abuyog, eastern Leyte Island, Philippines. Placed in the subfamily Hydrobiinae by Abbott. Taylor (1966b:181) transferred the North American Paleocene *Carulinorbis* Yen, 1949 (= *Carinorbis* Yen, 1946) from the Planorbidae (Pulmonata) to the Hydrobiidae, as a junior synonym of *Clenchiella.* Taylor (1966b:181; 1975:386–390) also enumerated the species, both Recent (India to New Guinea and the Philippines) and Paleocene (Montana and Wyoming, U.S.A.), which he combined under *Clenchiella.* The tribe Clenchiellini in the Cochliopinae was established by Taylor (1966b:175); this was subsequently elevated to a full family, Clenchiellidae, in the "Tateoidea" by Ioganzen and Starobogatov (1982:1145). Brandt (1974:69–70) described the single southeast Asian species of this taxon.

Clessinia Clessin and W. Dybowski in W. Dybowski, 1888:41, non Döring, 1874 (Mollusca), nec Piaget, 1913 (Mollusca); see *Clessiniola* Lindholm, 1924. *Paludina variabilis* Eichwald, 1841; SD, Wenz, 1926:2051. Recent, freshwater, Caspian Sea. Cossmann (1921:141) erroneously stated the

type species to be *Paludina nuttalliana* Lea (from Oregon and California); he had inadvertently listed *Clessinia* under the North American *Fluminicola* Stimpson, 1865.

Clessiniola Lindholm, 1924a:32, 34. Replacement name for *Clessinia* Clessin and W. Dybowski, 1888, non Döring, 1874. *Paludina variabilis* Eichwald, 1841; SD (of *Clessinia*), Wenz, 1939:604. Recent, freshwater, Caspian Sea. Wenz (1926:2051–2052) enumerated the fossil taxa (Pliocene) questionably allocated to this genus (as *Clessinia*). Kolesnikov (1950:101–105, 219–222) described the Neogene radiation of *Clessiniola* in the pan-Caspian basin. Golikov and Starobogatov (1966:357) ranked *Clessiniola* as a subgenus of *Pyrgula* Cristofori and Jan, 1832, and discussed three species from the Azov-Black sea region that they referred to this taxon. Logvinenko and Starobogatov (1968:375–377) reviewed the two Caspian Sea species of *Clessiniola;* see also Tadjalli-Pour (1977:106). Roshka (1973:164–165) ranked *Clessiniola* as a subgenus of *Turricaspia* B. Dybowski and Grochmalicki, 1917, and described a new species from the Maeotian (Miocene) of Ukraine. *Clessinola* Strand, 1928; junior synonym.

Clessinola Strand, 1928:68. Replacement name for *Clessinia* Clessin and W. Dybowski, 1888, non Döring, 1874. A junior synonym of *Clessiniola* Lindholm, 1924.

Coahuilix Taylor, 1966b:180. *Coahuilix hubbsi* Taylor, 1966; OD. Recent, freshwater (possibly subterranean), Cuatro Ciénagas Basin, Coahuila, Mexico. Taylor (1966b:175) placed this genus in the tribe Horatiini (Cochliopinae). Hershler (1985:53–58) referred this genus to the Littoridininae (Cochliopinae, fide Hershler and Thompson, 1992:31–33) and described a second species also from the Cuatro Ciénagas Basin.

Cobeltocochlea Kozhov, 1928:82, 97. Error (or unnecessary emendation) for *Kobeltocochlea* Lindholm, 1909.

Cochliopa Stimpson, 1865a:52. *Amnicola rowelli* Tryon, 1863; OD. Recent, freshwater, Rio Matasnillo, Panama City, Panama. Stimpson (1865b:50–51) briefly described the anatomy of the type species. Morrison (1946:27) restricted *Cochliopa* to the type species and two new species. See *Subcochliopa* and *Cochliopina,* both of Morrison, 1946, for the other Central American species of *"Cochliopa."* Taylor (1966b:173) established the "new subfamily" Cochliopinae; in fact, this name dates to Tryon, 1866. Taylor (1966b:175) recognized three tribes within this subfamily: Cochliopini, Horatiini (see under *Horatia*) and Clenchiellini (see under *Clenchiella*). The Cochliopini included six genera, all tropical to warm-temperate America. Taylor (1966b:176) restricted *Cochliopa* to three species, "all from the Pacific drainage, in the Isthmus of Panamá and the Pearl Islands, Panamá." Hershler and Thompson (1992) reviewed the 31 genera which they referred to the subfamily Cochliopinae (= Littoridinae); they also redescribed *Cochliopa* (1992:33–36).

Cochliopina Morrison, 1946:18. *Cochliopa riograndensis* Pilsbry and Ferriss, 1906; OD. Recent, freshwater, Rio San Felipe, near Rio Grande, Val Verde County, Texas. Morrison (1946:19–25) referred 18 species (seven new; the remainder mostly originally described as *"Cochliopa"*) to this genus. Taylor (1966b:176–178) also enumerated the known species, including one new species from Coahuila, Mexico, and placed this genus in the tribe Cochliopini (Cochliopinae). Hershler (1985:65–72) referred *Cochliopina* to the Littoridininae (Cochliopinae, fide Hershler and Thompson, 1992) and redescribed the type and one other species (both known from the Cuatro Ciénagas Basin of Mexico). The 19 known species, from southern Texas to northwestern Ecuador, were tabulated by Hershler and Thompson (1992:36–40).

Coelacanthia Andrusov, 1890:295. *Coelacanthia qua[d]rispinosa* Andrusov, 1890; M. Maeotian, Pannonian, Upper Miocene, Chongelek, Nova Karantinom and Pavlovskii, Russia. Brusina (1897:15, 39–40) referred a new species from Neogene of Zagreb (Croatia) to this taxon; in the "Supplément" Brusina established the taxon *Lisinskia* (q.v.) for the Croatian species. Wenz (1926:2154–2155) expressed uncertainty as to the systematic placement of this monotypic genus; subsequently (1939:597) he referred it questionably to the Micromelaniidae (Micromelaniinae). Starobogatov (1970:31) tentatively referred *Coelacanthia* to the Pyrgulidae. Badzoshvili (1986:22–27) provided an extensive discussion of this genus and considered that it might belong to the Rissoidae. *Coelacanthis* Cossmann, 1921; error.

Coelacanthis Cossmann, 1921:117. Error for *Coelacanthia* Andrusov, 1890.

Conradia Wenz, 1925a:125, non A. Adams, 1865 (Mollusca), nec Hall, 1872 (Brachiopoda). A replacement name for *Isaea* Conrad, 1871, non Milne-Edwards, 1830 (Crustacea). *Mesalia ortoni* Gabb, 1869; SD, Wenz, 1926:1970 (of *Isaea* Conrad). Wenz (1926:1970–1971) provided comprehensive synonymies of the six fossil species referred to *Conradia* (as a subgenus of *Hydrobia*); all were limited to the Neogene of Peru and Brasil. Wenz (1930:3041–3042) subsequently used *Dyris* Conrad, 1871, in place of *Conradia.* A junior synonym of *Tryonia* Stimpson, 1865.

Corona Jekelius, 1932:72, non Albers, 1850 (Mollusca); see *Barassia* Jekelius, 1933. *Pseudamnicola (Corona) bithynoides* Jekelius, 1932; SD, Jekelius, 1933:65 (of *Barassia* Jekelius, 1933). Pliocene, Dacian, near Brasov, Romania. Described as a subgenus of *Pseudamnicola* Paulucci, 1878.

Corosella Bernasconi, 1990a:50. Error for *Corrosella* Boeters, 1970.

Corrosella Boeters, 1970b:63. *Corrosella falkneri* Boeters, 1970; OD. Recent, freshwater, springs (or pools), Cerro de la Virgen, Granada, Spain. Boeters (1970b:63–64) referred several other European species (all from the Mediterranean region of Spain and France) to this taxon. Boeters (1984d, 1988:202–206) subsequently ranked *Corrosella* as a subge-

nus of *Pseudamnicola* Paulucci, 1878. *Corosella* Bernasconi, 1990; error.

Costellina Kuscer, 1933a:64 (1933b:140). *Costellina turrita* Kuscer, 1933; M. Recent, freshwater, Jadro spring, near Sinj [Split], Croatia. Vaught (1989:21) treated *Costellina* as a junior synonym of *Lanzaia* Brusina, 1906; but Bole and Velkovrh (1986:189) listed this taxon as a valid monotypic genus.

Ctyrokya Schlickum, 1965:100. *Euchilus hoelzli* Schlickum, 1964; OD. Miocene, Helvetian, Niederbayern, Loderham near Triftern (and elsewhere), Germany. Schlickum classified *Ctyrokya* with *Euchilus* in the Emmericiinae. Zilch (1983: 93–94) provided synonymies for the species referred to *Ctyrokya*.

Cyclocheila Conrad, 1874:32. *Cyclocheila pebasana* Conrad, 1874; M. Pliocene, Pebas, Peru. Wenz (1926:2230) listed this taxon, known only from the original description, under "Hydrobiidae incertae sedis."

Cylindrica Clessin, 1882b:151, non Simpson, 1900 (Mollusca: Unionidae). Type species never designated (?); four originally included species: *Belgrandia cylindricea* Paladilhe; *B. bourguignati* Saint-Simon; *B. sequanica* Bourguignat, and *B. nana* Sandberger. Recent, freshwater, springs near St. Martin, Aube, France. Described as a section (= subgenus) of *Belgrandia* Bourguignat, 1864. Clessin (1882b:151) referred three other species (one fossil) to this taxon.

Cyrniacana Fagot, 1892:23, 1893:138. Nomen nudum. Described as "des groupes des *cyrniacana*" for a Mediterranean species (*Amnicola lanceolata* Paladilhe, 1869). See *Mercuria* Boeters, 1971.

Dabriana Radoman, 1974b:81. *Dabriana bosnica* Radoman, 1974; OD. Recent, freshwater, Dabarska Cave, near source of Dabar River, south of Sanski Most, Bosnia and Herzegovina. Radoman (1974b:84) placed this monotypic taxon in the Lithoglyphulidae, an hitherto monogeneric family (Radoman, 1973a:14–15).

Dalainoria Lindholm, 1927:178. *Paludina limnaeoides* Schrenck, 1867; OD. Recent, freshwater, Lake Baikal. Described as a subgenus of *Benedictia* W. Dybowski, 1875 (see also Kozhov, 1936:35).

Dalmatella Velkovrh, 1970:97, 103. *Dalmatella sketi* Velkovrh, 1970; OD. Recent, freshwater, springs near the Krka River (downstream from the Skradinskim Bukom electric works), Sibenik, Dalmatia, Bosnia and Herzegovina.

Dalmatinella Radoman, 1973a:7, 20. *Dalmatinella fluviatilis* Radoman, 1973; M. Recent, freshwater, Zrmanja River, Croatia. Originally placed in the Orientaliinae (family Orientaliidae). Radoman (1974c:41–42) provided a more extensive description of this taxon. *Dolmatinella* Radoman, 1983; error.

Daphniola Radoman, 1973a:8, 22. *Daphniola graeca* Radoman, 1973; M. Recent, freshwater, Daphne spring, north of Larissa, Greece. Described in the Orientaliinae (Orientaliidae). Schütt (1980) erroneously thought the genus and species to be nomina nuda; see *Daphniola* Schütt, 1980.

Daphniola Schütt, 1980:139, non Radoman, 1973 (Mollusca: Hydrobiidae). *Valvata exigua* Schmidt, 1856; M. Recent, freshwater, springs near Tempetal, Thessaloniki, Greece. Described as a subgenus of *Horatia* Bourguignat, 1887. Schütt (1980) stated that *"Daphniola" graeca* Radoman, 1973, was a junior synonym of *Horatia (Daphniola) exigua* (Schmidt, 1856). Is a junior homonym and junior objective synonym of *Daphniola* Radoman, 1973.

Dasyscias Thompson and Hershler, 1991a:55–57. *Dasyscias franzi* Thompson and Hershler, 1991; OD. Recent, freshwater, Blue Spring Cave, Washington County, Florida, U.S.A. This monotypic genus was referred to the Amnicolinae.

Daudebardiella Boettger, 1905:119–121. *Daudebardiella naegelei* Boettger, 1905; SD, Wenz, 1939:570 (as "Monotypus," but there were two originally included species). Recent, freshwater, Seyhan Nehri [Sarus River], near Adana, south-central Turkey. Haas (1930) discussed this taxon and ranked it as a subgenus of *Horatia* Bourguignat, 1887. Taylor (1966b:175) placed this (as a subgenus of *Horatia*) into the tribe Horatiini (Cochliopinae).

Diana Clessin, 1878c:128, non Risso, 1826 (Pisces), nec Laporte and Gory, 1837 (Coleoptera), nec Simon, 1864 (Arachnida), nec Trouessant, 1878 (Mammalia); see *Dianella* Gude, 1913. *Pyrgula (Diana) thiesseana* Clessin, 1878; M. Recent, freshwater, Mesolóngion, Greece. Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832.

Dianella Gude, 1913:292. Replacement name for *Diana* Clessin, 1878, non Risso, 1826 (et al.); Gude recognized *Diana* as a full genus. *Pyrgula (Diana) thiesseana* Clessin, 1878; M (of *Diana* Clessin). Recent, freshwater, Mesolóngion, Greece. Wenz (1926:2119–2124) provided comprehensive synonymies for the fossil species referred to this genus (as *"Diana"*; see also Brusina, 1881:284–292).

Dieretostoma Cossmann, 1888:225. *Bithinia dissita* Deshayes, 1862; M. Lutetian, Eocene, Paris Basin, France. Described as a section (= subgenus) of *Bythinella* Moquin-Tandon, 1855.

Diretrostoma Dollfus, 1912:220. Error for *Dierotostoma* Cossmann, 1888.

Dolapia Radoman, 1973a:8. *Pseudamnicola ovata* Radoman, 1956; OD. Recent, freshwater, Lake Ohrid, Macedonia. Originally placed in the Orientaliinae (Orientaliidae).

Dolmatinella Radoman, 1983:216. Error for *Dalmatinella* Radoman, 1973.

Dryis Vaught, 1989:21. Error for *Dyris* Conrad, 1871.

Ducya Pezant, 1908:224 (ex Munier-Chalmas, ms.). *Ducya ducyensis* Pezant, 1908 (ex Munier-Chalmas, ms.); M. Genus and species are nomina nuda; published in synonymy of *"Paludina" [Hydrobia] pyramidalis* Deshayes, 1825.

Durangonella Morrison, 1945:18. *Hydrobia seemani* Frauenfeld, 1863; OD. Recent and Pleistocene, Durango (and elsewhere), Mexico. Compared with *Tryonia* and *Lyrodes* by Morrison, who included four Mexican species in his new

genus. Taylor (1966b:182, 184–186) placed *Durangonella* in the Littoridininae and described a new species, also Mexican (see also Hershler, 1985:78–87). Hershler and Thompson (1992:40–42) redescribed this taxon and referred it to the Cochliopinae.

Dybowskia Dall, 1877:46, non Waagen and Pichl, 1885 (Bryozoa), nec Oustalet, 1892 (Aves), nec Garjajeff, 1901 (Crustacea), nec Wedekind, 1927 (Coelenterata). *Limnorea (Ligea) ciliata* W. Dybowski, 1875; OD. Recent, freshwater, Lake Baikal. Dall ranked *Dybowskia* as a subgenus of the North American *Tryonia* Stimpson, 1865. Crosse and Fischer (1879:152–153) and Nevill (1885:63) ranked *Dybowskia* as a subgenus of *Baicalia* (= *Baikalia*) von Martens, 1876. Lindholm (1909:60–61) provided additional records for the type species; he considered *Dybowskia* to be a monotypic subgenus of *Baikalia* Dall, 1877; see also Kozhov (1936: 100–102). B. Dybowski and Grochmalicki (1923) redescribed this taxon, described several new "varieties" (subspecies) from Lake Baikal, and established the subfamily "Conobaicaliinae" for this genus. See *Dybowskiola* Lindholm, 1913; an unnecessary replacement name.

Dybowskiella Kobelt, 1913:198, non Waagen and Wentzel, 1886 (Bryozoa). Error for *Dybowskiola* Lindholm, 1913.

Dybowskiola Lindholm, 1913b:167. An unnecessary replacement name for *Dybowskia* Dall, 1877, "non" *Dybowskyia* Jakolev, 1876 (Hemiptera). Lindholm erroneously thought Jakolev's name to be spelled *"Dybowskia"*; hence the new name. *Dybowskiella* Kobelt, 1913; error.

Dyris Conrad, 1871:195. *Dyris gracilis* Conrad, 1871; M. Pliocene, Pichua [Pichana], Loreto province, Peru. Taylor (1966b:196) treated *Dyris* as a junior synonym of *Tryonia* Stimpson, 1865. Nuttall (1990:186–202) redescribed *Dyris* and its Neogene species from northwestern South America (see also Parodiz, 1969:118–119, 1982:40–41). *Isaea* Conrad, 1871 (non Milne-Edwards, 1830) and *Conradia* Wenz, 1925 (non A. Adams, 1860); junior synonyms (fide Wenz, 1930:3041–3042; Parodiz, 1969:118; Nuttall, 1990:186; Hershler and Thompson, 1992:129). *Dryis* Vaught, 1989; error.

Ebora Conrad, 1871:194, non Walker, 1867 (Hemiptera); see *Eubora* Kadolsky, 1980. *Ebora crassilabra* Conrad, 1871; M. Pliocene, Pebas Formation, Pichana, Peru. The varied familial allocations of *Ebora* were reviewed by Kadolsky (1980:366–368); the assigment (Wenz, 1939) to the Lacunidae was rejected in favor of the Hydrobiidae.

Ecpomastrum Haas, 1957:137. *Ecpomastrum mirum* Haas, 1957; OD. Recent, freshwater, Lake Titicaca, South America. Haas (1957:139) noted the conchological similarities of *Ecpomastrum* to certain loosely coiled hydrobiid taxa from ancient lakes in Europe. Taylor (1966b:182, 186) placed this monotypic genus in the Littoridininae. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Ecrobia Stimpson, 1865b:42. *Turbo minuta* Totten, 1834, non Brown, 1818 (et al.); OD. Recent, marine, Massachusetts southwards to Maryland, U.S.A. Pilsbry (1911:553) placed *Ecrobia* as a junior synonym of *Paludestrina* d'Orbigny, 1840 (= *Hydrobia* Hartmann, 1821); Morrison (1954) agreed with the synonymy of these genera. As the type species was a junior homonym, Morrison (1954) renamed it *Hydrobia totteni*. However, Davis et al. (1988; 1989) concluded that *Paludestrina truncata* Vanatta, 1924, was a synonym of *minutus* and hence the next available name (because *truncata* antedated *totteni*). Mienis (1974) briefly differentiated *totteni* from several European brackish water species of *Hydrobia*. See also *Ventrosia* Radoman, 1977. *Ecrobia* Cossmann, 1888; junior homonym.

Ecrobia sensu Cossmann, 1888:217, "non" Stimpson, 1865; see *Parhydrobia* Cossmann, 1913. Cossmann (1913b:126) erroneously thought that Stimpson's *Ecrobia* was actually a synonym of *Cingula* (Rissoidae); hence he proposed the replacement name *Parhydrobia* for *Ecrobia sensu* Cossmann non Stimpson. A junior homonym of *Ecrobia* Stimpson, 1865.

Eldaria Kolesnikov, 1950:106. *Micromelania (Eldaria) eldarica* Kolesnikov, 1950; OD. Neogene, Caspian Basin. The monotypic taxon was described as a subgenus of *Micromelania* Brusina, 1874.

Emiricia Papp, 1951:116. Error for *Emmericia* Brusina, 1870.

Emmericia Brusina, 1870:925. *Paludina patula* Brumati, 1838; SD, Clessin, 1880:182. Recent, freshwater, northeastern Italy, Croatia and Dalmatia. Brusina (1870:936) established the monogeneric subfamily Emmericiinae (in the Rissoidae) because he could not place this genus into the other "subfamilies" (e.g., Bythiniinae, Rissoinae, Hydrobiinae). Brusina (1874:56–59) provided further discussion of this genus. Bourguignat (1877:88–89) placed *Emmericia* into the Melanidae (= Thiaridae, Cerithioidea). Bourguignat (1880) established three new "séries" (= subgenera), viz. *Brusiniana, Patuliana,* and *Tacitiana* (q.v.). Wenz (1926:2194–2201) provided comprehensive synonymies of the fossil species (Pontien, Miocene to Astien, Pliocene) referred to *Emmericia*. Radoman (1967a, 1968, 1970) reviewed this genus and its included species; he thought this taxon to be anatomically most similar to *Lithoglyphus* Hartmann, 1821. Giusti and Pezzoli (1980:63–64) and Mouthon (1986) redescribed the genus and its type species, which was referred to the Emmericiidae (Pyrguloidea). *Choerina* Brusina, 1882, is a junior synonym (fide Wenz, 1926:2194); *Patuliana* Bourguignat, 1880, is a junior objective synonym. *Emiricia* Papp, 1951; error.

Emmericiella Pilsbry, 1909:46. *Emmericia (Emmericiella) novimundi* Pilsbry, 1909; OD. Recent, freshwater, Choy River, San Luis Potosi, Mexico. Described as a subgenus of *Emmericia* Brusina, 1870. Pilsbry referred one other new species, from the same locality, to this subgenus. Taylor (1966b:202–203) suggested that *Emmericiella* and *Pterides* Pilsbry, 1909, might belong to a new subfamily in the

Hydrobiidae. Taylor (1988:569 and table 6) suggested that *Emmericiella* and the European *Emmericia* represented a biogeographical trans-Atlantic track. Hershler and Thompson (1992:42–45) redescribed this taxon (as a full genus) and referred it to the Cochliopinae; they rejected Taylor's suggested affinities with *Emmericia*.

Erythropomatiana Radoman, 1978a:35. *Valvata erythropomatia* Hauffen, 1856; OD. Recent, freshwater, Babja Lukna Cave, Goricane, northwest of Ljubljana, Slovenia. Radoman (1978a:36) referred one other species (new) to this taxon, which was placed in the Pseudohoratiinae (Orientaliidae).

Euamnicola Crosse and Fischer, 1891:262. *Paludina lustrica* Say, 1821; OD. Recent, freshwater, eastern North America. Described as a section (= subgenus) of *Amnicola* Gould and Haldeman, 1840. Pilsbry (1943) noted that Crosse and Fischer thought the type species of *Amnicola* to be *P. porata* Say, 1821 (rather than *lustrica*). Furthermore, Crosse and Fischer gave the diagnosis of *Euamnicola* as "ou *Amnicola sensu strictu.*" Hence, Pilsbry concluded that *Euamnicola* was a junior objective synonym of *Amnicola* Gould and Haldeman, 1840 (q.v.). *Euamnicola* was placed on the "Official Index of Rejected and Invalid Generic Names in Zoology" (*ICZN*, Opinion 1108).

Eubaicalia Lindholm, 1924b:222, 223. *Hydrobia angarensis* Gerstfeldt, 1859; OD (of *Baikalia* Crosse and Fischer, 1879). Described as a subgenus of *Baicalia* von Martens, 1876. Recent, freshwater, Lake Baikal. Proposed as a replacement name for *Baikalia* Crosse and Fischer, 1879 (non Dall), and *Liobaikalia* Westerlund, 1902 (non Dall). Kozhov (1936: 55–66) redescribed this taxon and recognized six species from the Baikal Sea. *Eubaikalia* Starostin, 1928; error.

Eubaikalia Starostin, 1928:21, 22. Error (or unnecessary emendation) for *Eubaicalia* Lindholm, 1909.

Eubora Kadolsky, 1980:366. Replacement name for *Ebora* Conrad, 1871, non Walker, 1867. *Ebora crassilabra* Conrad, 1871; M (of *Ebora* Conrad). Pliocene, Pebas Formation, Pichana, Peru. Kadolsky (1980:366–371) redescribed this genus, discussed its potential relationships to other hydrobiids and rejected the placement of *Ebora* in the Lacunidae (by Wenz, 1939 and others). Ponder (1985b:32) briefly noted the resemblance of *Eubora* to *Elachisina* (Rissooidea). Nuttall (1990:216–218) redescribed the species referred to *Eubora*. *Nesis* Conrad, 1871; a subjective synonym (fide Kadolsky, 1980).

Euchilus Sandberger, 1872:211–212, 225. *Bithinia deschiensiana* Deshayes, 1862; OD. Eocene, France. Sandberger (1873:315–316; 1875:423, 452, 490, 513) referred eight other species to *Euchilus*. Wenz (1926:2157, 2177) considered *Euchilus* to be a junior synonym, in part, of *Nystia* Tournouer, 1869, and of *Stalioa* Brusina, 1870 (see also Rzehak, 1893:173, and Kadolsky, 1971). Schlickum (1961) reviewed the nomenclature of *Euchilus*, which he recognized as a valid genus; and described three new species from the Miocene of Germany (see also Schlickum, 1965). However, Schlickum (apparently following Dollfus, 1912:207) had stated the type of *Euchilus* to be *Paludina desmaresti* Prévost, 1821; this species is actually the type of *Stalioa* Brusina, 1870 (q.v.). Hence *Euchilus* sensu Schlickum non Sandberger is a junior objective synonym of *Stalioa;* see *Sandbergeriella* Schlickum, 1968.

Eupaludestrina Mabille, 1877:214, 215 (ex Bourguignat, ms.). Type species not indicated; 13 originally included species. Recent, marine (various localities), France. Described as a subgenus of *Paludestrina* d'Orbigny, 1840. Is a junior synonym of *Hydrobia* Hartmann, 1821 (fide Wenz, 1926:1863).

Eurycaspia Kolesnikov, 1947:108, 111. An invalid name; type species not designated (*ICZN*, Article 13b). Kolesnikov placed *Eurycaspia* in the Turricaspiinae (Micromelaniidae) as a section (= subgenus) of *Turricaspia* B. Dybowski and Grochmalicki, 1917. See *Eurycaspia* Logvinenko and Starobogatov, 1968.

Eurycaspia Logvinenko and Starobogatov, 1968:357 (ex Kolesnikov, 1947). *Micromelania pseudodimidiata* B. Dybowski and Grochmalicki, 1915; OD. Recent, freshwater, Caspian Sea. Logvinenko and Starobogatov (1968:357–358) listed this as a section (= subgenus) of *Pyrgula* Cristofori and Jan, 1832, and referred two new species to this taxon. Roshka (1973:125–136) referred 11 fossil species (six undescribed) from the Maeotian (Miocene) of Ukraine to this taxon.

Falniowskia Bernasconi, 1990a:48. *Bythiospeum neglectissimum* Falniowski and Steffek, 1989; OD. Recent, moist leaf litter, Pradnik Valley, Krakow, Poland.

Falsibelgrandiella Radoman, 1973a:8, 22. *Falsibelgrandiella bunarica* Radoman, 1973; M. Recent, freshwater, Pinar Basa spring, near Gemlik, Turkey. Originally placed in the Orientaliinae (Orientaliidae).

Falsihydrobia Chukhchin, 1975:121. *Falsihydrobia streletzkiensis* Chukhchin, 1975; M. Recent, brackish water, Black Sea (off Sevastopol), Ukraine. This taxon was not mentioned by Chukhchin, 1976a. Giusti and Pezzoli (1984:140) placed *Falsihydrobia* into synonymy of the South American *Heleobia* Stimpson, 1865 (see also Hershler and Thompson, 1992:46, 56). Bank and Butot (1984:12–13) synonymized *Falsihydrobia* with the European *Semisalsa* Radoman, 1974.

Falsipyrgula Radoman, 1973a:13. *Pyrgula pfeiferi* Weber, 1927; OD. Recent, freshwater, Lake Egerdir, Turkey. Originally placed in the Turricaspiidae and representing a westwards extension of that Caspian Sea group (*Turricaspia*, q.v.). Radoman (1973c:79–80) provided a more extensive description of this taxa and its included Levantine species.

Fissuria Boeters, 1981a:57–58. *Fissuria boui* Boeters, 1981; OD. Recent, freshwater, Bassin du Rhône, Bouches-du-Rhône, France. Boeters (1981a) differentiated this monotypic genus from *Hauffenia* s.l. and *Horatia*.

Flumenicola Meade, 1967:210. Error for *Fluminicola* Stimpson, 1865.

Flumincola Eastman, 1900:465. Error for *Fluminicola* Stimpson, 1865.

Fluminicola Stimpson, 1865a:52–53. *Paludina nuttalliana* Lea, 1839; OD. Recent, freshwater, Oregon and California, U.S.A. Stimpson (1865b:24–26) provided a more detailed description and referred several other species to this genus. Pilsbry (1935:548–554) and Henderson (1935:199–201) discussed several Pliocene (California-Oregon) species referrable to this genus. Hannibal (1912:186) stated that *Paludina virens* Lea, 1838, was a senior synonym of *Paludina nuttaliana* Lea, 1839. *Heathilla* Hannibal, 1912, was described as a subgenus of *Fluminicola*. Taylor (1966a:131) placed *Fluminicola* into the synonymy of the European *Lithoglyphus* Hartmann, 1821. Thompson (1984:120–122, 127) maintained *Fluminicola* as a valid North American genus in the Lithoglyphinae and reviewed its systematic relationships with other lithoglyphine taxa. *Flumenicola* Meade, 1967; *Flumincola* Eastman, 1900; *Flumminicola* Parodiz, 1965; *Flumnicola* Dollfuss, 1912; and *Flumunicola* Parodiz, 1969; errors.

Flumminicola Parodiz, 1965a:277. Error for *Fluminicola* Stimpson, 1865.

Flumnicola Dollfuss, 1912:230. Error for *Fluminicola* Stimpson, 1865.

Flumunicola Parodiz, 1969:113. Error for *Fluminicola* Stimpson, 1865.

Fluvidona Iredale, 1937:306. *Hydrobia petterdi* Smith, 1882; M. Recent, freshwater, Richmond River, New South Wales, Australia. McMichael (1967:132) synonymized *Fluviodona* with *Fluviopupa* Pilsbry, 1911. However, Ponder (1988:285) synonymized *Rivisessor* Iredale, 1943, and *Austropyrgus* Cotton, 1943, with *Fluvidona* and provided further discussion of these taxa. Ponder and Clark (1990:509) synonymized *Angrobia* Iredale, 1943, and *Pupiphryx* Iredale, 1943, with *Fluvidona* and stated that *Posticobia* Iredale, 1943, "is at best a subgenus." Placed with *Jardinella* and several other genera in the Tateinae by Ponder and Clark (1990). The Australian species were enumerated by Smith (1992:46–48).

Fluviopupa Pilsbry, 1911:549 (footnote). *Fluviopupa pupoidea* Pilsbry, 1911 (ex Mousson, ms.); OD. Recent, freshwater, Fiji. Wenz (1938) determined that Pilsbry had used a manuscript species name of Mousson; Wenz also provided a formal description of the type species. Hubendick (1952) reviewed the type species, described two additional freshwater species, from Rapa and Rurutu (Austral Islands, French Polynesia) and listed several other species (from New Caledonia, Australia, and New Zealand) that might be referrable to *Fluviopupa*. Climo (1974:254–5) erected the "*Fluviopupa*-tribe" (in the Hydrobiinae) for *Fluviopupa, Opacuincola, Beddomena, Petterdiana, Jardinella, Tasmaniella,* and *Valvatasma*. This group was reconsidered by Climo (1977:70–73). Ponder (1982a:94–118) provided further discussion of this genus and its distribution on Lord Howe Island (Australia). *Fluviorissoina* Iredale, 1944, and *Pupidrobia* Iredale, 1944; junior subjective synonyms (fide Hubendick, 1952; Solem, 1959; and Ponder, 1982a). Ponder and Clark (1990:509) placed *Fluviopupa* into the Tateinae.

Fluvioressoina Salisbury, 1957:78. Error for *Fluiviorissoina* Iredale, 1944.

Fluviorissoina Iredale, 1944a:332 (ex Preston, ms.). *Bythinella ramsaii* (= *ramsayi*) Brazier in Etheridge, 1889; OD. Recent, freshwater, Lord Howe Island, Australia. Hubendick (1952:295) and Solem (1959:195) treated *Fluviorissoina* as a junior subjective synonym of *Fluviopupa* Pilsbry, 1911; see also Ponder (1982a:94–95). *Fluvioressoina* Salisbury, 1957, and *Fluviorissoins* Edwards, 1984; errors.

Fluviorissoins Edwards, 1984:xvii, 398. Error for *Fluviorissoina* Iredale, 1944.

Fonscochlea Ponder, Hershler, and Jenkins, 1989:18–26. *Fonscochlea accepta* Ponder, Hershler, and Jenkins, 1989; OD. Recent, freshwater, springs, between Marree and Oodnadatta, northern South Australia, Australia. The authors recognized two subgenera, *Fonscochlea* sensu strictu with five species and the monotypic *Wolfgangia* (q.v.).

Fontelicella Gregg and Taylor, 1965:103–104. *Fontelicella californiensis* Gregg and Taylor, 1965; OD. Pliocene to Recent, Baja California, Mexico to California, Oregon, Idaho, Utah, and Nevada, U.S.A. Gregg and Taylor (1965:108) referred seven other species to this genus, which was also included two new subgenera: *Natricola* and *Microamnicola*, both of Gregg and Taylor, 1965. Thompson (1979:47) placed *Fontelicella* into the Nymphophilinae. *Fonticella* Thompson, 1977; error. Taylor (1987:9–32) discussed this genus and described 10 new species from New Mexico and adjacent regions. Is a junior synonym of *Pyrgulopsis* Call and Pilsbry, 1886 (fide Hershler and Thompson, 1987:28).

Fonticella Thompson, 1977:113, 132. Error for *Fontelicella* Gregg and Taylor, 1965.

Fontigens Pilsbry, 1933:12. Replacement name for *Stimpsonia* Clessin, 1878, non Girard, 1853, nec Bate, 1862. *Paludina nickliniana* Lea, 1838; M (of *Stimpsonia*). Recent, freshwater, Bath County, Virginia, U.S.A. Morrison (1949) stated that *Fontigens* was to be included in the Emmericiinae. Taylor (1966b:182) maintained the distinction of *Fontigens* from *Emmericiia;* Taylor also established the monogeneric subfamily Fontigentinae. Hershler et al. (1990) provided a thorough redescription of *Fontigens* and its species, all known from the central and eastern parts of the U.S.A. The Fontigentinae was synonymized with the Emmericiinae by Hershler et al. (1990); *Fontigens* and *Emmericia* (from Europe) were the only genera known for this subfamily.

Forbesia Rolle, 1859:515 (ex Nyst, ms.), non Goodsir, 1845 (Annelida), nec McCoy, 1849 (Trilobita), nec Lacaze-Duthiers and Delage, 1899 (Tunicata); see *Nystia* Tournouer, 1869. *Paludina chastelii* Nyst, 1836; M. Eocene, France. Described as a subgenus of *Paludina* Lamarck, 1799. The correct spelling of the type species is *duchasteli* (fide Schlickum, 1968a:40).

Fossarulus Neumayr, 1869:361. *Fossarulus stachei* Neumayr, 1869; M. Pontian, Upper Miocene, Miocic and Ribaric, Croatia (see also Brusina, 1874a:38, 1874b:53). Cossmann (1921:146, 149) listed this taxon in the Bithiniidae.

Frauenfeldia Clessin, 1878b:130, non Egger, 1863 (Diptera). *Paludina lacheineri* Küster, 1853; M. Recent, freshwater, Andritz Spring, near Graz, Austria. This taxon was further discussed by Clessin (1890:632–635). Kennard and Woodward (1926a:24) listed *Frauenfeldia* as a junior synonym of *Bythinella* Moquin-Tandon, 1855. Boeters (1970a) concluded that *Microna* Clessin, 1890, was the next available name; in contrast, Zilch (1970b) determined that *Belgrandiella* Wagner, 1927, was in fact the correct replacement name for *Frauenfeldia* Clessin, 1878. See also *Graziana* Radoman, 1975. *Frauenfeldtia* Chappuis, 1927; error.

Frauenfeldtia Chappuis, 1927:34. Error for *Frauenfeldia* Clessin, 1878.

Fuxinia Yu, 1982:202, 205. *Fuxinia obesa* Yu, 1982; OD. Upper Jurassic, Fuxin Formation, western Liaoning, China. This monotypic genus was compared with other taxa of the Amnicolinae.

Gaspiohydrobia Starobogatov and Andreeva, 1981:30. Error for *Caspiohydrobia* Starobogatov, 1970.

Gerstfeldia Westerlund, 1902:127. Error for *Gerstfeldtia* Clessin, 1880.

Gerstfeldtia Clessin, 1880:187, non Sabussov, 1911 (Turbellaria). *Limnorea (Leucosia) godlewskii* W. Dybowski, 1875; SD, Lindholm, 1909:66. Recent, freshwater, Lake Baikal. *Gerstfeldtia* was intended to encompass (as subgenera) the taxa *Godlewskia* Crosse and Fischer, 1879, and *Trachybaicalia* von Martens, 1876; hence, it must be an objective junior synonym of one of these older names. Sitnikova (1991:292–293) used *Godlewskia* (which he attributed to Westerlund, 1902) as the valid generic name for the species hitherto referred to as *Gerstfeldtia*. Lindholm (1909:66, 1924b:223) and B. Dybowski and Grochmalicki (1913:281–315) ranked *Gerstfeldtia* as a subgenus of *Baikalia* Dall, 1877. B. Dybowski and Grochmalicki (1913:281–315) provided an exhaustive description of the four species and 27 varieties from Lake Baikal, which they claimed to recognize. Kozhov (1936:105–116) redescribed five species (including four varieties) from Lake Baikal, which he referred to *Gerstfeldtia*. *Gerstfeldia* Westerlund, 1902; error.

Geyeria Wagner, 1914:39, 46, non Buchecker, 1880 (Lepidoptera), nec Buckman, 1899 (Mollusca: Cephalopoda), nec Carapezzae and Schopen, 1899 (Brachiopoda), nec Fucini, 1901 (Mollusca: Cephalopoda); see *Plagigeyeria* Tomlin, 1930. *Geyeria plagiostoma* Wagner, 1914; M. Recent, freshwater, Bosna-springs, Bosnia and Herzegovina. Wagner (1927:283–285) provided further discussion of this taxon. Starobogatov (1962:48–49) described two new species, of "*Geyeria*," from caves in the Caucasus.

Giaia Radoman, 1961a:113. Error for *Ginaia* Brusina, 1896.

Gibbiana Fagot, 1892:28, 1893:143. *Cyclostoma gibbum* Draparnaud, 1805; OD. Recent, freshwater, southern France. Fagot referred two other species to this group (= subgenus) of *Belgrandia*.

Gillia Stimpson, 1865a (February):53, non Günther, 1865 (August) (Pisces). *Melania altilis* Lea, 1841; OD. Recent, freshwater, "North America, east of the Alleghanies, from Pennsylvania to Georgia" (U.S.A.). Stimpson (1865b:26–28, 51) described the anatomy of the type species and referred one other species, *Melania integra* Say, 1829, from the tributaries of the Mississippi River (U.S.A.) to this genus. Tryon (1883:271) suggested that *Gillia* was "probably a synonym..." of *Somatogyrus* Gill, 1863. Thompson (1984:120, 127, 132–134) maintained the validity of *Gillia*, albeit as a monotypic genus, which he placed in the Lithoglyphinae. Vaught (1989:21) erroneously listed *Gillia* as a subgenus of *Lepyrium* Pilsbry and Olsson, 1951; this is nomenclaturally incorrect.

Ginaia Brusina, 1896:366. *Emmericia munda* Sturany, 1894; OD. Recent, freshwater, Lake Ohrid, Macedonia. Brusina (1896:368) suggested that *Ginaia* could be ranked as a full genus or as a subgenus of *Fossarulus* Neumayr (see also Sturany, 1894:384). Radoman (1978b:48) divided the type of this monotypic taxon into two presumed subspecies, both from Lake Ohrid. Ponder and Clark (1988:684) compared their *Ascorhis* with *Ginaia*. *Giaia* Radoman, 1961; error.

Ginolensiana Fagot, 1892:26, 1893:141. *Bythinella ginolensis* Fagot, 1881; M. Recent, freshwater, Bains de Ginoles, near Quillan, Aude, France.

Glantonogyra Salisbury, 1947:58. Error for *Stantonogyra* Yen, 1946.

Glibertiella Schlickum, 1968a:41–42. *Cyclostoma microstoma* Deshayes, 1824; OD. Lutetian and Bartonian, Eocene, Le Vouast, Oise (and elsewhere), France. Schlickum (1968a:42) referred 11 other species to *Glibertiella*. Lozouet (1985:136, 138) placed *Glibertiella* and *Nystia* (q.v.) in the family Micromelaniidae.

Gocea Hadzisce, 1956a:496–499. *Gocea ohridana* Hadzisce, 1956; OD. Recent, freshwater, Lake Ohrid, Macedonia. Stankovic (1960:190) suggested that *Gocea* may be a synonym of *Horatia* Bourguignat, 1887. An der Lan (1970) transferred *Gocea* to the Planorbidae (Pulmonata) based on its superficial similarity with certain uncoiled *Gyraulus* from the Steinheim (Miocene). Radoman (1962) transferred *Gocea* to the Valvatidae, based on presumed anatomical and conchological similarities. Taylor (1966b:175) placed *Gocea* into the tribe Horatiini (Hydrobiidae, Cochliopinae). Hadzisce et al. (1976; 1977), based on analyses of the protoconch sculpture and radular morphology, determined that *Gocea* was correctly placed in the Hydrobiidae and not in the Valvatidae or elsewhere in the Gastropoda.

Godlewskia Crosse and Fischer, 1879:152, non Clessin, 1883 (Mollusca: Hydrobiidae). *Limnorea (Ligea) turriformis* W. Dybowski, 1875; OD. Recent, freshwater, Lake Baikal. Crosse and Fischer ranked *Godlewskia* as a subgenus of

"Baikalia" (= *Baicalia* von Martens, 1876), and referred three species, all from Lake Baikal, to this taxon. Lindholm (1909:63–66) described two additional species in this taxon; see also Kozhov (1936:123-124).

Godlewskia Clessin, 1883:65, non Crosse and Fischer, 1879 (Mollusca: Hydrobiidae). *Limnorea (Leucosia) godlewskii* W. Dybowski, 1875; SD, Westerlund, 1902:127. Recent, freshwater, Lake Baikal. Described as a section (= subgenus) of *Gerstfeldtia* Clessin, 1883. B. Dybowski and Grochmalicki (1914a) redescribed this taxon (which they used as a subgenus of *Baicalia*) and its three Baikal species, comprising a claimed 19 varieties thereof. Lindholm (1924b:223) listed this taxon as a junior synonym of *Gerstfeldtia* Clessin, 1880.

Goergesia Anderson, 1960:17–18. *Rissoa terebellum* Philippi, 1843; OD. Upper Oligocene, Freden, and other localities near Kassel, Germany. This monotypic genus was described in the subfamily Pyrgulinae of the family Truncatellidae. However, these two groups are not considered to be confamilial and we tentatively refer *Goergesia* to the Hydrobiidae (Pyrgulinae) rather than the Truncatellidae.

Goniatogyra Cossmann, 1921:92–93. *Rissoa tenuis* Briart and Cornet, 1889; M. Montian, Paleocene, near Mons, Belgium. Originally described in the Rissoinidae (= Rissoidae). Ponder (1985a:102) "tentatively included" this genus in the Hydrobiidae rather than the Rissoidae.

Goniochilus Sandberger, 1875:689–690, non *Goniochilus* Harold, 1878 (Coleoptera). *Pleurocera costulatum* Fuchs, 1870; M. "Congerienschichten," Pontian, Upper Miocene, Radmanest and elsewhere, Hungary. Sandberger (1875:690) stated that *"Micromelania* Brusina, 1874 ist dieselbe Gattung"; hence *Goniochilus* would then be a junior synonym of *Micromelania*. However, Wenz (1926:2145–2154) maintained *Goniochilus* as a valid genus separate from *Micromelania* and enumerated the fossil species (Pontian, Miocene to Plaisancien, Pliocene) referred to *Goniochilus*. Basch (1990) used *Goniochilus* as a subgenus of *Micromelania* without further discussion of the status of these two taxa. *Goniochylus* Papp, 1951; error.

Goniochylus Papp, 1951:146. Error for *Goniochilus* Sandberger, 1875.

Graecamnicola Willmann, 1981:209. *Valvata euomphalus* Fuchs, 1877; OD. Neogene, Livonates near Talandi, Greece. A second species, also originally placed in *Valvata*, was referred to this new taxon by Willmann, who noted that its supposed resemblance to the Valvatidae was incorrect.

Graecoanalitica Radoman and Stankovic, 1979:6. Error for *Graecoanatolica* Radoman, 1973.

Graecanatolica Willmann and Pieper, 1978:128. Error for *Graecoanatolica* Radoman, 1973.

Graecoanatolica Radoman, 1973a:11, 24–25. *Hydrobia vegorriticola* Schütt, 1962; OD. Recent, freshwater, Vegorritis Lake, Greece. Radoman (1973a) established the monogeneric subfamily Graecoanatolicinae (Orientaliidae) and referred seven species (five new) to this genus. Radoman and Stankovic (1979) described a new species from Lake Dojran, Macedonia. Schutt (1980:119–120) redescribed the type species. *Graecoanalitica* Radoman and Stankovic, 1979, and *Graecanatolica* Willmann and Pieper, 1978; errors.

Graecorientalia Radoman, 1973a:8. *Pseudamnicola vrissiana* Radoman, 1966; M. Recent, freshwater, spring near Vrissia, Greece. Originally placed in the Orientaliinae (Orientaliidae).

Graziana Radoman, 1975:38–39, 58. *Paludina lacheineri* Kuster, 1852; M (of *Frauenfeldia*). Proposed as a replacement name for *Frauenfeldia* Clessin, 1878, non Egger, 1863. Recent, freshwater, Andritz Spring, near Graz, Austria. Radoman (1975:40–44) also described six new species in this taxon. Is a junior synonym of *Belgrandiella* Wagner, 1927 (fide Zilch, 1970b; Pezzoli and Giusti, 1981). *Graziena* Radoman 1975; error.

Graziena Radoman, 1975:39. Error for *Graziana* Radoman, 1975.

Grossuana Radoman, 1973a:7, 19–20. *Grossuana serbica* Radoman, 1973; OD. Recent, freshwater, springs near Raska River, Sopocani monastery, Serbia. Radoman (1973a) referred six species (four new) to this genus, which was placed in the Orientaliinae (family Orientaliidae). Reischütz (1988b) ranked *Orientalina* Radoman, 1978, as a subgenus of *Grossuana*.

Gypsobia Tausch, 1886:13. *Gypsobia cretacea* Tausch, 1886; M. Upper Cretaceous, Danian, near Ajka, Balaton, Hungary. Tausch compared *Gypsobia* with the Baikal *"Godlewskia pulchella"* (i.e., *Godlewskia* Clessin, 1883, non Crosse and Fischer, 1879).

Gyromelania Wenz, 1939:595. *Micromelania klaici* Brusina, 1874; OD. Lower Pliocene, Pontian, "Congerien-schichten," Kutosak, near Zagreb, Croatia. This monotypic taxon was described as a subgenus of *Micromelania* Brusina, 1874, and referred to the Micromelaniidae (Micromelaniinae). Wenz indicated that this was questionably equivalent to *Thaumasia* Westerlund, 1903, non Perty, 1833 (q.v.).

Haauffenia Gasull, 1981:87. Error for *Hauffenia* Pollonera, 1898.

Hadoceras Hershler and Longley, 1986b:122–125, non Strand, 1934 (Mollusca: Cephalopoda); see *Phreatoceras* Hershler and Longley, 1987. *Hadoceras taylori* Hershler and Longley, 1986; OD. Recent, freshwater springs, Nueces River drainage, Real County, Texas, U.S.A. Described for the taxon reported as *"Orygoceras"* by Taylor (1974); Hershler and Longley differentiated this from the European *Orygoceras* (also known from the Tertiary of Idaho) and placed *Hadoceras* in the subfamily Littoridininae.

Hadopyrgus Climo, 1974:263. *Hadopyrgus anops* Climo, 1974; OD. Recent, caves and phreatic habitats, Nelson and Waimea Plains, South Island, New Zealand. Placed in the *"Hemistomia*-tribe" of the Hydrobiinae by Climo (1974: 253–4).

Hadziella Kuscer, 1932:54. *Hadziella ephippiostoma* Kuscer,

1932; M. Recent, freshwater, springs near Podgora (and elsewhere), near Ljubljana, Slovenia. Taylor (1966b:175) placed *Hadziella* into the Horatiini (Cochliopinae). Giusti and Pezzoli (1980:41–43) redescribed an Italian species tentatively referred to *Hadziella,* which they placed in the Moitessieriidae. Bole and Velkovrh (1986:191) enumerated several phreatic species, all Slovenian and Croatian, of this genus (but the three taxa listed as "sp. n." are nomina nuda). Taylor (1988:529, table 6) indicated that there was an undescribed genus from Texas and northeastern Mexico that represents the biogeographical counterpart of the European *Hadziella.*

Haffenia Boeters in Gasull, 1981:88. Error for *Hauffenia* Pollonera, 1898.

Haihenia Youluo, 1978:110. *Haihenia tricarinodosa* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Placed in the family "Bohaispiridae"; see also under *Bohaispira.*

Hauffenia Pollonera, 1898:3. *Horatia (Hauffenia) tellini* Pollonera, 1898; SD, Walker, 1918:33. Recent, freshwater, Natisone Valley, near Friuli, Italy. Described as as subgenus of *Horatia* Bourguignat, 1887. Pilsbry (1916) referred a species from Texas, U.S.A. to *Horatia* (*Hauffenia*); this was subsequently referred to *Phreatodrobia* (q.v.). Hadzisce (1956b:66–68) described a new species of this taxon from Lake Ohrid, Macedonia. Taylor (1966b:175) placed this taxon (as a subgenus of *Horatia*) in the tribe Horatiini (Cochliopinae). Bole (1970:88–93, 107–108) reviewed the systematic status of this taxon, which he used as a full genus (see also Boeters, 1974b:88), and described the anatomy of the type species. Radoman (1973a:10) placed *Hauffenia* in the Pseudohoratiinae (Orientaliinae). Giusti and Pezzoli (1980:43–45) redescribed the type species and recognized three subgenera for this taxon: *Hauffenia* s.s., *Neohoratia* Schütt, 1961, and *Vrania* Radoman, 1978. Bole and Velkovrh (1986:192) listed the phreatic species of *Hauffenia;* however, they erroneously listed the type species under both *Baglivia* (p. 186) and *Hauffenia.* Haase (1992) discussed the anatomy and phylogenetic relationships of this genus, based on a new stygobiont species from eastern Austria. *Haauffenia* Gasull, 1981; *Haffenia* Boeters in Gasull, 1981; and *Hauffenis* Vevers, 1978; errors.

Hauffenis Vevers, 1978:11. Error for *Hauffenia* Pollonera, 1898.

Heathilla Hannibal, 1912:186, 187. *Paludina seminalis* Hinds, 1842; OD. Recent, freshwater, California and the Great Basin (and adjacent regions), U.S.A. Described as a subgenus of *Fluminicola* Stimpson, 1865.

Heideella Backhuys and Boeters, 1974:112. *Heideella andreae* Backhuys and Boeters; M. Recent and subfossil, freshwater, Oued Seyad, east of Fask, southern Morocco. Climo (1977:69) suggested that this genus may be a junior synonym of the Japanese *Saganoa* Kuroda and Habe, 1958. Damme (1984:18) cogently criticized the nature of the description of *Heideella.*

Heleobia Stimpson, 1865b:47. *Paludestrina culminea* d'Orbigny, 1840; OD. Recent, freshwater, Lake Titicaca, Bolivia. Pilsbry (1911:550), Haas (1955:285), and Taylor (1966b:187) suggested that *Heleobia* was a junior synonym of *Littoridina* Eydoux and Souleyet, 1852. This was rejected by Davis, Mazurkiewicz, and Mandracchia (1982:168–169), who maintained the separate identities of these two genera; they synonymized the European *Semisalsa* Radoman, 1974, with *Heleobia* (see also Giusti and Pezzoli, 1984:140). However, Bank and Butot (1984) considered *Semisalsa* to be a valid European genus, with *Falsihydrobia* Chukhchin, 1975, to be a junior synonym of *Semisalsa* (see also Schütt, 1991). Boeters (1988:188) incorrectly attributed *Heleobia* to "Davis [et al.], 1982" and placed it as a junior synonym of *Semisalsa.* Thompson (1968:20) erected the *"Heleobia* Tribe" to encompass *Heleobia* and *Heleobops.* Hershler and Thompson (1992:45–57) reviewed the numerous species referred to *Heleobia,* which they transferred to the Cochliopinae. See also the discussion under *Ventrosia* Radoman, 1977. *Brachypyrgulina* Haas, 1955, *Ecpomastrum* Haas, 1957, *Falsihydrobia* Chuckchin, 1975, *Heligmopoma* Haas, 1955, *Limnothauma* Haas, 1957, *Lyrodes* Doering, 1884, *Rhamphopoma* Haas, 1955, *Semisalsa* Radoman, 1974, *Strobeliella* Cazzaniga, 1981, and *Strombopoma* Haas, 1955; all junior synonyms (fide Hershler and Thompson, 1992). *Heliobia* Davis, Mazurkiewicz, and Mandracchia, 1982; error.

Heleobops Thompson, 1968:20–23. *Heleobops docima* Thompson, 1968; OD. Recent, freshwater, peninsular Florida (various localities), U.S.A. This genus was described in the *"Heleobia* Tribe" of the Hydrobiinae (Hydrobiidae). Davis and McKee (1989) described a second species in this genus and briefly outlined the possible relationships with other genera of the Littoridininae (= Cochliopinae, fide Hershler and Thompson, 1992). Five species were referred to this taxon by Hershler and Thompson (1992:57–61).

Heligmopoma Haas, 1955:300. *Heligmopoma umbilicatum* Haas, 1955; OD. Recent, freshwater, Lake Titicaca, South America. Hubendick (1955:325) briefly described the anatomy of this genus. Taylor (1966b:182, 186) placed this monotypic genus in the Littoridininae. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Heliobia Davis, Mazurkiewicz, and Mandracchia, 1982:170, 172. Error for *Heleobia* Stimpson, 1865.

Hemistomia Crosse, 1872a:72 (also, 1872c:352–353). *Hemistomia caledonica* Crosse, 1872; M. Recent, freshwater, near Nouméa, New Caledonia. Thiele (1929:168) erected the subfamily Hemistomiinae (of the family Rissoidae). Cotton (1959:354) elevated this to a full family, Hemistomiidae, which also included *Tatea* Tenison-Woods, 1879. Solem (1960:6, 1961:431) noted that the familial placement of this genus (along with *Angrobia* and *Tatea*) remained uncertain: either Rissoidae or Hydrobiidae. Coan (1964:170) classified

Hemistomia as a subgenus of *Eatoniella* Dall, 1876 ("Rissoinidae"; now in the Eatoniellidae). However, Ponder (1967:221) rejected this allocation and concluded that *Hemistomia* belonged with *Tatea* Tenison-Woods, 1879, in the Hydrobiidae. Climo (1974:254) erected the *"Hemistomia*-tribe" of the Hydrobiinae for *Hadopyrgus, Hemistomia, Kuschelita, Paxillostium, Potamopyrgus, Pupiphryx, Rivisessor,* and *Tatea.* In fact, the tribe-level name should be cited as "Hemistomini Thiele, 1929 (emend. Climo, 1974)." Ponder (1982a) synonymized *Rivisessor* Iredale, 1943, with *Hemistomia;* subsequently Ponder (1988:285) instead placed *Rivisessor* into the synonymy of *Fluvidona* Iredale, 1937. The usage of *"Hemistomia"* sensu Ponder, 1982, was actually based on Australian taxa referrable to *Fluvidona* and not to the New Caledonian species of *Hemistomia,* hence this change of synonymy for *Rivisessor.* Ponder (1992a:526) recognized the *"Hemistomia* radiation" amongst the Australian Hydrobiidae, including a number of New Zealand and Pacific Island genera: *Hemistomia, Catapyrgus, Fluvidona, Fluviopupa, Hadopyrgus, Kuschelita, Paxillostium, Posticobia, Potamopyrgus, Tatea;* with *Fonscochlea, Jardinella* and *Trochidrobia* also probably related to this radiation.

Heterocyclus Crosse, 1872b:156 (also, 1872c:354–355). *Heterocyclus perroquini* Crosse, 1872; M. Recent, freshwater or estuarine, New Caledonia. Thiele (1928:378) and Solem (1961:429) ranked *Heterocyclus* as a subgenus of the North American *Lyogyrus* Gill, 1863.

Holsingeria Hershler, 1989b:93. *Holsingeria unthanksensis* Hershler, 1989; M. Recent, freshwater, Unthanks Cave, Lee County, Virginia, U.S.A. Hershler and Thompson (1990) placed *Holsingeria* in the Lithoglyphinae.

Horatia Bourguignat, 1887:47–49. *Horatia klecakiana* Bourguignat, 1887; SD, Westerlund, 1902:129. The designation of *Horatia letourneuxi* Bourguignat, 1887; by Dollfus (1912:219) postdates Westerlund's. Recent, freshwater, caves, western Balkans ("la Dalmatie, à l'Albanie septentrionale et ... la Bosnie."). Bourguignat also named nine other species in his new genus, which was intended as a replacement name for *Aristidia* Servain, 1884 (q.v.). Pilsbry (1916) extended this genus to encompass *"Valvata" micra* Pilsbry and Ferriss, 1906, from Texas, U.S.A. (but see *Phreatodrobia* Hershler and Longley, 1986). Hadzisce (1956b:64–68) described two new species from Lake Ohrid and ranked *Hauffenia* Pollonera, 1898, as a subgenus of *Horatia.* Binder (1957) redescribed the genus and concluded that the other nine species were all synonyms of *H. klecakiana;* see also Ant (1962) and Radoman (1965; 1966a). Schütt (1961a) reviewed this genus and redescribed the species referred thereto (see also Boeters, 1974). Starobogatov (1962:42–45) described three new species of *Horatia* from caves in the Caucasus. Taylor (1966b:175) established the tribe Horatiini (of the subfamily Cochliopinae) for 12 genera or subgenera, primarily from southeastern Europe but also including two genera found in Mexico and the southeastern United States. This concept of the Horatiini was rejected by Hershler and Thompson (1992:129). Climo (1977:69, 75) erected the *"Horatia*-group" of the Hydrobiinae for *Horatia* and *Saganoa* (including *Kuschelita* and *Phreatica*), and described a new species from a cave pool, Nelson, New Zealand. The latter genera listed by Climo were not mentioned by Taylor (1966b) in his definition of the Horatiini. Bole and Velkovrh (1986:193) enumerated the phreatic taxa of *Horatia.* Angeles Ramos et al. (1992) briefly described the reproductive anatomy of an Iberian species tentatively referred to *Horatia;* they noted that the females brooded a single embryo in the umbilicus of the shell. *Hortia* Radoman, 1955; error.

Hortia Radoman, 1955a:105. Error for *Horatia* Bourguignat, 1887.

Hoyia F.C. Baker, 1926:195–196. *Amnicola sheldoni* Pilsbry, 1890; OD. Recent, Lake Michigan, U.S.A.

Hungarica Clessin, 1890:652. *Paludinella lata* Frauenfeld, 1863; OD. Recent, freshwater, springs near Kaschau, Hungary. Described as a "Gruppe" (= section) of the subgenus *Microna* Clessin, 1890 (q.v.) in the genus *Bythinella* Moquin-Tandon, 1855.

Huttonia Johnston, 1891:90, non Pickard-Cambridge, 1880 (Arachnida), nec Kirk, 1882 (Mollusca), nec Marshall, 1896 (Diptera). *Melania corolla* Gould, 1847; OD. Recent, New Zealand. Is a junior objective synonym of *Potamopyrgus* Stimpson, 1865 (see also Morrison, 1939a:87; Iredale, 1943:200). Johnston thought that Hutton's usage of *Potamopyrgus* was not the same as Stimpson's; hence he established *Huttonia* as a replacement name.

Hyalopyrgus Thompson, 1968:43–46. *Bythinella aequicostata* Pilsbry, 1889; OD. Recent, freshwater, peninsular Florida (various localities), U.S.A. Is a junior synonym of *Tryonia* Stimpson, 1865 (fide Hershler and Thompson, 1987:26). *Hyglopyrgus* Davis, Mazurkiewicz and Mandracchia, 1982; error.

Hydrioba Schäfer, 1941:138. Error for *Hydrobia* Hartmann, 1821.

Hydrobia Hartmann, 1821a:258; 1821b:47–48, 58. *Cyclostoma acutum* Draparnaud, 1805; SD, Gray, 1847:151. Recent, brackish water, Étang du Prévost, near Montpellier, France (Mediterranean) (type locality as restricted by Radoman (1977) and others).

The two publications of Hartmann (1821a,b) have engendered some confusion in the literature as to their precedence and contents. Sherborn (1922:40) and Pilsbry (1926) thought that Hartmann's descriptions in "Sturm's Deutschlands Fauna" preceeded those in the "Neue Alpina"; in fact, the opposite precedence is documented by internal references to the "Neue Alpina" in Sturm's work (*ICZN,* Opinion 344, page 325; Rosenberg and Davis, 1990:106).

Ellis (1951:121) submitted *Hydrobia* for inclusion on the ICZN "Official List of Generic Names in Zoology," together with a number of other non-marine molluscan genera. Ellis

referred solely to the description in the "Neue Alpina" (i.e., Hartmann, 1821a) and stated that *Cyclostoma acutum* was the type species, by M. However, in Hartmann (1821a) there were actually three originally included species: *acutum, thermarum* (= *Turbo thermalis* Linnaeus, 1758) and *"diaphana"* (nomen nudum). Although most of Ellis's submitted names were subsequently accepted for inclusion on the "Official List" (*ICZN*, Opinion 335, 1955), eight (including *Hydrobia* (*ICZN*, File Z.N.(S.) 807)) were reserved pending further study. Rosenberg and Davis (1990) independently submitted a request to the ICZN (primarily concerning the superfamily names Rissooidea and Truncatelloidea), which also mentioned the nomenclature of *Hydrobia*. These authors noted that Gray (1847) was the first subsequent reference to correctly cite the type species of *Hydrobia*. After subsequent correspondence, the ICZN decided not to include any decisions regarding this generic name, pending an independent request for stabilization of the family-level name Hydrobiidae (used in both Mollusca and Insecta) (*ICZN*, Opinion 1664 (1992)). Although previously used as a full family in the Coleoptera: Staphyliniformia as "Hydrobiidae Mulsant, 1844"; this taxon has been ranked at lower levels by recent entomologists. At the present, it is in usage as a mere subtribe, "Hydrobiina" in the family Hydrophilidae (Hansen, 1991:160–164; see also Newton and Thayer, 1992:25, 83) containing only five genera. In comparison, the well-known gastropod family Hydrobiidae herein comprises several hundred valid genera.

Several authors (e.g., Moquin-Tandon, 1855:515; Kennard and Woodward, 1926a:18) claimed that *Hydrobia* was preoccupied by *Hydrobius* Leach, 1817 (Coleoptera); however, the spellings are not the same and both generic names remain valid (Pilsbry, 1935:560). Vaught (1989:20) erroneously gave the year as "1921." *Hydrioba* Schäfer, 1941; *Hydrolia* Pavlovic, 1911; *Hydroria* Pavlovic, 1903; *Hyrobia* Davis, 1981; and *Nydrobia* Izzatullaev, Sitnikova, and Starobogatov, 1985; errors.

Junior synonyms of *Hydrobia* include *Pyramis* Brown, 1827, partim; *Paludestrina* d'Orbigny, 1840; *Sabanaea* Leach in Gray, 1847, partim, *Subulina* Schmidt, 1851; *Eupaludestrina, Pseudopaludinella,* and *Thalassobia* all of Mabille, 1877; *Annulifer* Cossmann, 1921 (fide Wenz, 1939:555); *Caspiohydrobia* Starobogatov, 1970 (fide Chukhchin, 1976a); and *Obrovia* Radoman, 1973 (fide Radoman, 1977).

Ellis (1951:121) stated that *Turbo ventrosus* Montagu, 1803, was a senior synonym of *Cyclostoma actum* Draparnaud, 1805; if so, then *Ventrosia* Radoman, 1977, would be a junior objective synonym of *Hydrobia* (see Davis et al., 1989:341–347). This species synonymy has not been accepted by some other authors (e.g., Mars, 1966:237–245); further study of these two species is needed.

Wenz (1926:1863–1953) provided comprehensive synonymies for the numerous fossil species (Paleocene-Pliocene) referred to this genus. Henderson (1935:194–199) and Taylor (1975:379–383) enumerated the numerous fossil (Tertiary) species from North America "described" in this genus; the latter author noted that the actual generic allocation(s) remained unknown. Taylor (1966b:171) noted that the composition of the subfamily Hydrobiinae was artificial in comprising both "genera similar to *Hydrobia* and those left out when obviously distinct groups have been separated." Taylor (1966b:172) listed 14 genera, mostly American, which he referred to the Hydrobiinae.

The systematics, morphology, and ecology of the North American (eastern Atlantic seaboard) species of *Hydrobia* were discussed by Hershler and Davis (1980) and Davis et al. (1988, 1989); see also *Spurwinkia* Davis and Mazurkiewicz, 1982. These taxa, as well as the European marine congeners (see Muus, 1963; Barnes, 1992), are the most widely studied species of this family, especially in ecological contexts.

Hydrolia Pavlovic, 1911:592. Error for *Hydrobia* Hartmann, 1821.

Hydroria Pavlovic, 1903:140. Error for *Hydrobia* Hartmann, 1821.

Hyglopyrgus Davis, Mazurkiewicz, and Mandracchia, 1982. Error for *Hyalopyrgus* Thompson, 1968.

Hyrobia Davis, 1981:262. Error for *Hydrobia* Hartmann, 1821.

Ibicicornu Dall, 1924a:88 (also Dall, 1924b:113). *Orygoceras fistula* Brusina, 1892; OD. Pontian, "Pliocene" (Upper Miocene), Ripanj, Serbia. Proposed as a section (= subgenus) of *Orygoceras* Brusina, 1882. Dall (1924b) used this subgenus for two species from the Pliocene of Castle Creek, Owyhee County, Idaho, U.S.A. A junior subjective synonym of *Orygoceras* (fide Wenz, 1928:2484). *Ibicornu* Wenz, 1928; error.

Ibicornu Wenz, 1928:2484 (also Wenz, 1939:508). Error for *Ibicicornu* Dall, 1924.

Iglica Wagner, 1927:295. *Vitrella gratulabunda* Wagner, 1910; OD. Recent, freshwater, various localities in Austria, Slovenia, Croatia, Serbia, and Bosnia and Hercegovina. Schütt (1975) redefined this genus and reviewed the distribution of its included species. Climo (1977:69) suggested that *Iglica* may be the earliest name for the Japanese *Saganoa* Kuroda and Habe, 1958 (Climo also synonymized *Phreatica* Velkovrh, 1970, and *Kuschelita* Climo, 1974, with *Saganoa*). Placed in the *"Horatia*-group" of the Hydrobiinae by Climo (1977:69). Pezzoli and Giusti (1980) concluded that *Iglica* should be restricted to the type species and the other species hitherto placed in *Iglica* were referred to *Paladilhiopsis* Pavlovic, 1913. Giusti and Pezzoli (1982:464) noted the conchological relationships of *Iglica* to *Bythiospeum* Bourguignat, 1882. Bole and Velkovrh (1986:193–194) listed the numerous phreatic taxa of *Iglica;* they used *Rhaphica* Schütt, 1975, as a subgenus.

Iljinella Roshka, 1973:141. *Pyrgula* (*Iljinella*) *sasykensis* Roshka, 1973; OD. Maeotian, Upper Miocene, Ukraine.

Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Roshka (1973:142–146) referred three other species (one undescribed) to this taxon.

Incilicornu Dall, 1924a:88 (also Dall, 1924b:113). *Orygoceras leptonema* Brusina, 1902; OD. Pontian, "Pliocene" (Upper Miocene), Dugoselo, Croatia. Proposed as a section (= subgenus) of *Orygoceras* Brusina, 1882. A junior subjective synonym of *Orygoceras* (fide Wenz, 1928:2484).

Indopyrgus Thiele, 1928:373, 378. *Potamopyrgus (Indopyrgus) nevilli* Thiele, 1928; M. Recent, freshwater, Andaman Islands. Described as a subgenus of *Potamopyrgus* Stimpson, 1865. Abbott (1945) elevated this to a full genus and described a new species; the range of this genus was extended to Borneo and the Philippines.

Insignia Angelov, 1972:108. *Insignia macrostoma* Angelov, 1972; OD. Recent, freshwater, springs, Polaten, Tetewen district, Bulgaria. Angelov compared this monotypic genus with *Belgrandiella* Wagner, 1927. Vaught (1989:21) listed this as a junior synonym of *Paladilhiopsis* Pavlovic, 1913; Bole and Velkovrh (1986:195) retained this as a valid genus.

Iraklimelania Willmann, 1980b:15. Nomen nudum; see *Iraklimelania* Willmann, 1981.

Iraklimelania Willmann, 1981:164 (also, pp. 134, 190). *Iraklimelania levis* Willmann, 1981; OD. Neogene, Irakli-Tal, Kos, Aegean Sea, Greece. This monotypic genus was described in the Micromelaniidae.

Isaea Conrad, 1871:193, non Milne-Edwards, 1830 (Crustacea: Amphipoda), nec Agassiz, 1846 (Crustacea: Decapoda). *Mesalia ortoni* Gabb, 1869; SD, Wenz, 1926:1970. Pliocene, Pebas, Loreto Province, Peru. See *Tryonia* Stimpson, 1865, and *Conradia* Wenz, 1925. Wenz (1939:572) used *Dyris* Conrad, 1871, in place of *Isaea*.

Islamia Radoman, 1973a:10, 23–24. *Horatia servaini* Bourguignat, 1887; OD. Recent, freshwater, Vrelo Bosne, near Sarajevo, Bosnia and Herzegovina. Radoman (1973a) established the monogeneric subfamily Islamiinae (Orientaliidae) and referred eight species (six new) to this genus. Radoman (1973d:227–233) provided a more extensive description of this genus and described a new subgenus, *Adriolitorea*. Giusti and Pezzoli (1980:52–54) and Giusti et al. (1982) redescribed *Islamia* and referred four Italian species (three unnamed) to this taxon. Esu (1986:28–32) described a Pliocene species from Sardinia that was tentatively referred to *Islamia;* the paleobiogeographic consequences of this species were discussed at length. Jovanovic (1991:238) stated that the type species of *Islamia* was *Hydrobia valvataeformis* Möllendorff, 1873; presumably this species was considered a senior synonym of *servaini* (both share the same type locality).

Istriana Velkovrh, 1971:159. *Istriana mirnae* Velkovrh, 1971; M. Recent, freshwater, springs near Gruznjan, and the Mirna River, Istria, Croatia. Climo (1974:255) erected the *"Istriana*-tribe" in the Hydrobiinae for *Catapyrgus* and *Istriana*.

Jardinella Iredale and Whitley, 1938:67. *Petterdiana thaanumi* Pilsbry, 1900; OD. Recent, freshwater, near Cairns, Queensland, Australia. Placed in the *"Fluviopupa*-tribe" of the Hydrobiinae by Climo (1974:255). Ponder and Clark (1990) redescribed the genus and reviewed several endemic radiations of this group from artesian springs in western Queensland; *Jardinella* was placed in the *Tateinae* by Ponder and Clark (1990:309), along with *Fluvidona, Fluviopupa, Fonsocochlea, Potamopyrgus* and (perhaps) *Trochidrobia*. Ponder (1991) redescribed the type species as well as two new species from eastern Queensland.

Juliana Sharp, 1915:11. Error for *Juliania* Roman, 1910.

Juliania Roman, 1910:935, non Fucini, 1895 (Mollusca). *Juliania expansa* Roman, 1910; OD. Tongrien, Lower Oligocene, La Butte Iouton, Gard, France. Roman referred one other new species to this taxon; Wenz (1926:2016) provided the full geological data for these species. See *Romania* Cossmann, 1913. *Juliana* Sharp, 1915; error. Is a junior synonym of *Dieretostoma* Cossmann, 1888 (see also Wenz, 1939:564).

Kainarella Starobogatov, 1972:167–168. *Kainarella minima* Starobogatov, 1972; OD. Recent, freshwater, Khodzha-Kainir spring, Charshanginskii region, Turkmenistan. Starobogatov (1972:168) compared his new genus with the Littoridinidae and with *Taihua;* the latter taxon is actually in the Pomatiopsidae, however.

Kaingxianospira Guo in Guo, Yu, and Pan, 1982:38. *Kaingxianospira mucronata* Guo in Guo, Yu, and Pan, 1982; M. Early Cretaceous, China. Described in the family Amnicolidae.

Karevia Hadzisce, 1956b:81–82. *Ohrigocea (Karevia) prlitchevi* Hadzisce, 1956 (= *Pseudamnicola ornata* Radoman, 1956); SD, Radoman, 1962:78. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Ohrigocea* Hadzisce, 1956. Radoman (1962:78) ranked *Karevia* as a subgenus of *Pseudamnicola* Paulucci, 1878. Taylor (1966b:175) placed *Karevia* (as a subgenus of *Ohrigocea*) in the tribe Horatiini (Cochliopinae). Radoman (1973a:8) subsequently ranked *Karevia* as a full genus in the Orientaliinae (Orientaliidae).

Kerkia Radoman, 1978a:29. *Hauffenia kusceri* Bole, 1961; OD. Recent, freshwater, Krka Spring, southwest of Ljubljana, Slovenia. Originally described in the Horatiinae (Orientaliidae).

Kirelia Radoman, 1973a:5, 16. *Kirelia carinata* Radoman, 1973; OD. Recent, freshwater, Beyshehir Lake, Turkey. Originally described in the subfamily Pyrgorientaliinae of the Hydrobiidae. Radoman (1977:215–216) provided an extensive description of this taxon and its two included species (both from Turkey).

Kobeltocochlea Lindholm, 1909:36. *Hydrobia martensiana* W. Dybowski, 1875; M. Recent, freshwater, Lake Baikal. Described in the family Benedictiidae. Lindholm (1909:37) referred one other Baikal species to this new genus; another species was subsequently described by Lindholm

(1924b:217–219). Lindholm (1929b:316–318) described a new species of *Kobeltocochlea* from the "See Kosogol" (= Hövsgöl Nuur, 51°N, 101°E), northwest Mongolia, and compared this genus with *Benedictia* W. Dybowski, 1875. Kozhov (1928; 1936:31–35) redescribed the genus and its Baikal species. The reproductive systems of this taxon was described by Kozhov (1945, 1950); he concluded that *Kobeltocochlea* and *Benedictia* were quite similar in these structures. Kozhov (1946:367–368) discussed the biogeographical relationships between the Baikal and Lake Kosogol taxa. Sitnikova (1987) further reviewed the four Baikal species of *Kobeltocochlea;* the new monotypic subgenus *Pseudobenedictia* (q.v.) was described for the aforementioned Mongolian species. *Cobeltocochlea* Kozhov, 1928; error.

Kolhymamnicola Starobogatov and Budnikova, 1976:75. *Amnicola kolhymensis* Starobogatov and Streletzkaya, 1967; OD. Recent, freshwater, near Karatevo (Kolyma River) and the mouth of the Omolon River, northeastern Siberia, Russia. This monotypic genus was described in the subfamily Amnicolinae of the family Bithyniidae; however, the Amnicolinae are actually considered to be in the Hydrobiidae. Zatravkin and Bogatov (1988) described four species (two new) from Japan and the Far East of Russia referred to *Kolhymamnicola.*

Korotnewia Kozhov, 1936:55, 78. *Baikalia* (*Godlewskia*) *korotnewi* Lindholm, 1909; OD. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baicalia* von Martens, 1876. Kozhov (1936:78–85) referred three species (including three subspecies) to this taxon.

Kuiperia Schlickum, 1961:63. *Cyclostoma clandestinum* Deshayes, 1863; OD. Chattian, Oligocene, Calcaire de Beauce inferieur, near Fontainbleu, Seine-et-Marne, France.

Kuschelita Climo, 1974:265. *Kuschelita mica* Climo, 1974; OD. Recent, "gravels of Nelson," South Island (and Napier, North Island), New Zealand. Placed in the *"Hemistomia-*tribe" of the Hydrobiinae by Climo (1974:253–4). Climo (1977:68) synonymized *Kuschelita* with *Saganoa* Kuroda and Habe 1958; the geographical separation indicates that further study is warranted.

Labrosa Youluo, 1978:114. *Labrosa labrosa* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Placed in the family "Bohaispiridae"; see also under *Bohaispira.*

Lacunorbis Yen, 1950:187. *Lacunorbis nevadensis* Yen, 1950; M. Pliocene, Truckee Formation, Hot Spring Mountains, Nevada, U.S.A. Yen compared his new genus with *Branneriillus* Hannibal, 1912, and *Cochliopa* Stimpson, 1865. Taylor (1966b:175, 178–180) placed *Lacunorbis* in the tribe Cochliopini (Cochliopinae); see also Hershler and Thompson (1992:129).

Laevicaspia B. Dybowski and Grochmalicki, 1917:5. *Rissoa caspia* Eichwald, 1838; SD, Logvinenko and Starobogatov, 1968:369. Recent, freshwater, Caspian Sea. Described as a section ("Glatte, ungekielte Arten. Acarinatae oder Laevicaspia") of the subgenus *Turricaspia* B. Dybowski and Grochmalicki, 1917. These authors placed five species (including 15 presumed varieties) into *Laevicaspia.* Wenz (1939:595) treated *Laevicaspia* as a junior synonym of *Turricaspia* B. Dybowski and Grochmalicki, 1917. However, Kolesnikov (1947:108, 111) ranked *Laevicaspia* as a subgenus of *Caspia* Clessin and W. Dybowski in W. Dybowski, 1888. Golikov and Starobogatov (1966:358–359) ranked *Laevicaspia* as a subgenus of *Pyrgula* Cristofori and Jan, 1832, and referred four species (three new) to this taxon. Logvinenko and Starobogatov (1968:353, 369–370) reviewed the four Caspian Sea species referred to *Laevicaspia.* Alekseenko and Starobogatov (1987) ranked *Laevicaspia* as a subgenus of *Turricaspia. Leavicaspia* Logvinenko and Starobogatov, 1968; error.

Lanzaia Brusina, 1906:154–157. *Turbo elephantotus* Megerle von Mühlfeld, 1824; M. Recent, freshwater, Adriatic coast, Dalmatia (and northwards). Karaman (1954) reviewed this genus, together with several subsequently included species from coastal Croatia (and adjacent regions). Coan (1964:169) placed this taxon in the Rissoinidae (= Rissoidae). Bole (1970:99–102; 109) compared *Lanzaia* with *Plagigeyeria* Tomlin, 1930 and *Saxurinator* Schütt, 1960, and described the anatomy of these taxa (see also Schütt, 1968). Nordsieck (1972:172) referred *Lanzaia* to the new subfamily "Foliniinae" of the Rissoidae. Bole and Velkovrh (1986:195–196) listed several phreatic taxa of *Lanzaia;* however, five of the species (as "sp. n.") are actually nomina nuda. *Lanzia* Coan, 1964; error.

Lanzaiopsis Bole, 1989:67, 72. *Lanzaiopsis savinica* Bole, 1989; OD. Recent, freshwater, springs near Luce, Savinjske Alps, Slovenia. This monotypic taxon was compared with *Lanzaia* Brusina, 1906, and *Saxurinator* Schütt, 1960 (of the "family" Belgrandiellidae); the type species was one of the nomina nuda listed by Bole and Velkovrh (1986) under *Lanzaia* (q.v.).

Lanzia Coan, 1964:169. Error for *Lanzaia* Brusina, 1906.

Lapparentia Berthelin, 1885:455. *Bithinia irregularis* Deshayes, 1862; OD. Lutetian and Bartonian, Eocene, Paris Basin (various localities), France. Berthelin (1886:191–195) referred a second (new) species to this taxon and discussed the presumed affinities with several other hydrobiid genera. Wenz (1926:2035–2038) provided comprehensive synonymies for the fossil species (Paleocene-Eocene) referred to this taxon. *Characebia* Stache, 1889, is a junior synonym, fide Cossmann (1921:128).

Lartetella Cossmann, 1921:139. *Bithinella plicistria* Cossmann, 1888; OD. Eocene, Sparnacian, Sinceny and Pourcy, France. Described as a section of *Paladilhia* Bourguignat, 1865.

Lartetia Bourguignat, 1869:15–19. *Lartetia belgrandi* Bourguignat, 1869; SD, Pilsbry, 1909:47. Westerlund (1902:130) stated the type species to be *Lartetia bourguignati* Paladilhe, but this was not an originally included species (Boeters,

1972:104). Quaternary, Joinville-le-Pont, near Paris, France. Bourguignat (1869, 1877:89–90) described *Lartetia* in the Melaniidae (= Thiaridae, Cerithioidea). Clessin (1878a) and Locard (1882) redescribed the genus and its included species; its familial relationships remained uncertain (see also Coutagne, 1892). Tryon (1883:268) stated that *Micromelania* Brusina, 1874, and *Goniochilus* Sandberger, 1875, were both junior synonyms of *Lartetia;* however, these two genera were recognized as valid in the "Micromelaniidae" by Wenz (1939:595). Pilsbry (1909:47) concluded that *Lartetia* was a subgenus or even junior synonym of *Paladilhia* Bourguignat, 1865 (see also Schütt, 1970). Boettger (1905:115–116, 1906:30), Pilsbry (1909:47) and Wagner (1927:290–291) all considered *Vitrella* Clessin, 1877, to be a junior synonym of *Lartetia,* which Boettger thought to be a senior name for *Bythiospeum* Bourguignat, 1882. However, Zilch (1970b:320) concluded that *Vitrella* Clessin non Swainson was actually referrable to *Bythiospeum* Bourguignat, 1882; Zilch maintained the separation of *Bythiospeum* from *Lartetia* (see also Bolling, 1965:31). Chappuis (1927:31–34) and Bolling (1965:62–81) reviewed the numerous European species referrable to *Lartetia.* Giusti (1969) described the anatomy of two Italian species of *Lartetia* and differentiated this taxon from certain other hydrobiid genera. Giusti and Pezzoli (1982:464, footnote 2) noted that because the type species of *Lartetia* was extinct, "it is an undefinable group whose concord with either *Paladilhia* or *Bythiospeum* can never be ascertained. This situation indicates elimination of the name *Lartetia* from use."

Lavansia Bandel, 1991:16. *Lavansia mojonia* Bandel, 1991; OD. Purbeck facies, Lower Berriasian, Lower Cretaceous, Lavans-lés-Sainte-Claude and Thoirette, Jura, eastern France. This monotypic genus was of uncertain affinities: either the "Cerithiimorpha" (Littorinoidea) or "Metamesogastropoda" (novum! Rissooidea) were suggested by Bandel.

Leachia Risso, 1826:102, non Lesueur, 1821 (Mollusca: Cephalopoda), nec Goodsir, 1841 (Crustacea), nec Brullé, 1846 (Hymenoptera), nec Signoret, 1876 (Hemiptera). Type species not indicated in original; four included species (all new). Recent, brackish-marine, southern France. Herrmannsen (1849:579; see also H. and A. Adams, 1853:335) listed this as a synonym of *Hydrobia* Hartmann, 1821. Subsequently, Clessin (1890:325), Kennard and Woodward (1926a:23), inter alia, stated that *Bythinella* Moquin-Tandon, 1855, is the next available name for *Leachia* Risso non Lesueur.

Leavicaspia Logvinenko and Starobogatov, 1968:353. Error for *Laevicaspia* B. Dybowski and Grochmalicki, 1917.

Lemanica Clessin, 1890:649. *Paludina abbreviata* Michaud, 1831; OD. Recent, freshwater, springs in southwest Switzerland. Described as a "Gruppe" (= section) of *Bythinella* Moquin-Tandon, 1855.

Lepyrium Dall, 1896:15. *Neritina showalteri* Lea, 1861; M. Recent, "from rivers of the Appalachian drainage in northeastern Alabama," U.S.A. Pilsbry and Olsson (1951) gave the locality as Coosa River, 10 miles upstream from Fort William, Shelby County, Alabama, U.S.A.; they also erected the new family Lepyriidae (Rissoacea) for this genus. Thompson (1982) recognized the Lepyriinae as a subfamily of the Hydrobiidae to encompass *Clappia, Gillia, Lepyrium,* and *Somatogyrus.* Thompson (1984:110-114, 128, 130) subsequently redescribed this monotypic genus, which he placed in the Lithoglyphinae. Vaught (1989:20) erroneously attributed this genus to Pilsbry and Olsson rather than to Dall.

Leucosia W. Dybowski, 1875:36, non *Leucosia* Weber, 1795 (Crustacea), nec Leach, 1817 (Crustacea), nec Rambur, 1866 (Lepidoptera); see *Liobaicalia* von Martens, 1876. *Limnorea* (*Leucosia*) *stiedae* Dybowski, 1875; SD (of *Liobaicalia* von Martens, 1876), Dall, 1877:46. Recent, freshwater, Lake Baikal. Described as a subgenus of *Limnorea* W. Dybowski, 1875.

Lhotelleria Bourguignat, 1877:49–51. *Lhotelleria letourneuxi* Bourguignat, 1877; SD, Westerlund, 1902:132. Recent, freshwater (various localities), Algeria. Bourguignat (1877:90–91) placed *Lhotelleria* and *Moitessieria* Bourguignat, 1863, into the "family" Moitessieridae. Westerlund (1902:131–132) and Cossmann (1921:123) considered *Locardia* Folin, 1880, to be a junior synonym of *Lhotelleria.* Schütt (1970) ranked *Lhotelleria* as a subgenus of *Paladilhia* Bourguignat, 1865.

Liaoheniella Youluo, 1978:38. *Liaoheniella gracilis* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Youluo placed this monotypic genus in the subfamily Hydrobiinae.

Liaohenia Youluo, 1978:37. *Paladilhia* (*Liaohenia*) *sinensis* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Described as a subgenus of *Paladilhia* Bourguignat, 1865. Youluo (1978:38) referred one other new species to this taxon, which he placed in the Hydrobiinae.

Ligea W. Dybowski, 1875:36, non Illiger, 1801 (Crustacea), nec Cory, 1884 (Aves); see *Trachybaicalia* von Martens, 1876. Type species not indicated; eight originally included species. Recent, freshwater, Lake Baikal. Described as a subgenus of *Limnorea* W. Dybowski, 1875.

Limnidia Schütt in Schütt and Besenecker, 1973:11. *Hydrobia* (*Bythinella*) *skhiadica* Bukowski, 1895; OD. Neogene, Rhodes and Chios, Aegean Sea, Greece. Willmann (1980a:281–285, 1981:78-80) described two new Neogene species from Crete and Rhodes, and ranked *Limnidia* as a subgenus of *Pseudamnicola* Paulucci, 1878.

Limnorea W. Dybowski, 1875:1, 33–36, non Goldfuss, 1826 (Porifera), nec Agassiz, 1846 (Coleoptera); see *Baicalia* von Martens, 1876. *Limnorea* (*Ligea*) *carinata* W. Dybowski, 1875; SD (of *Baicalia* von Martens, 1876), Dall, 1877:45. Recent, freshwater, Lake Baikal. W. Dybowski referred 13 species to this genus; however, all were placed in one of two subgenera: either *Leucosia* or *Ligea,* both new. Hence, there were no species in *Limnorea* sensu strictu, contrary to nomenclatural practice (Dall, 1877). Dall thus treated *Ligea*

(= *Trachybaicalia* von Martens, 1876) as a junior objective synonym of *Baicalia*. The designation of *Hydrobia angarensis* Gerstfeldt, 1859 as the type species by Clessin (1880:185) postdates Dall's (1876) designation. The depth distributions of the species of *Leucosia* and *Ligea* were charted by W. Dybowski (1880, table 1). *Limnozea* B. Dybowski and Grochmalicki, 1923; error.

Limnothauma Haas, 1955:302. *Limnothauma crawfordi* Haas, 1955; OD. Recent, freshwater, Lake Titicaca, South America. Taylor (1966b:175, 179) placed *Limnothauma* in the tribe Cochliopini (Cochliopinae), based on its conchological similarity to *Lacunorbis* Yen, 1950. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Limnozea B. Dybowski and Grochmalicki, 1923:48. Error for *Limnorea* W. Dybowski, 1875.

Lindholmia Kozhov, 1936:37–39, non Hesse, 1918 (Mollusca). *Hydrobia maxima* W. Dybowski, 1875; OD. Recent, freshwater, Lake Baikal. Described as a monotypic subgenus of *Benedictia* W. Dybowski, 1875.

Liobacalia B. Dybowski and Grochmalicki, 1920:93. Error for *Liobaicalia* von Martens, 1876.

Liobaicalia von Martens, 1876:183. Replacement name for *Leucosia* Dybowski, 1875, non Weber, 1795 (et al.). *Limnorea* (*Leucosia*) *stiedae* Dybowski, 1875; SD, Dall, 1877:46. Recent, freshwater, Lake Baikal. Emended to *Liobaikalia* Dall, 1877, who ranked it as a subgenus of the North American *Tryonia* Stimpson, 1865. B. Dybowski and Grochmalicki (1913:277) established the monogeneric subfamily Liobaicalinae in the Baicaliidae. Kozhov (1936:125) recognized *Liobaicalia* as a full genus and redescribed the type species; see also Sitnikova (1991:283–285). *Liobacalia* B. Dybowski and Grochmalicki, 1920 and *Platybaicalia* Clessin, 1878; errors.

Liobaikalia Dall, 1877:45, non *Liobaikalia* Westerlund, 1902 (Mollusca). An unnecessary emendation for *Liobaicalia* von Martens, 1876. Nevill (1885:62) ranked *Liobaikalia* as a section (= subgenus) of *Baikalia* von Martens, 1876. Westerlund's (1902) usage of *Liobaikalia*, with a different type species, is a junior homonym but not a junior synonym of *Liobaikalia* Dall, 1877. Lindholm (1909:41, 43) redescribed the genus, which he considered to be monotypic. *Liobajkalia* Lörenthey, 1902; error.

Liobaikalia Westerlund, 1902:127, non Dall, 1877 (Mollusca: Hydrobiidae); see *Eubaicalia* Lindholm, 1924. *Hydrobia angarensis* Gerstfeldt, 1859; OD. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baikalia* Dall, 1877.

Liobajkalia Lörenthey, 1902:231, 232. Error (or unnecessary emendation) for *Liobaikalia* Dall, 1877.

Liogyrus Ancey, 1889:40 Error for *Lyogyrus* Gill, 1863.

Liosarmata B. Dybowski and Grochmalicki, 1920:94, 108. *Hydrobia sopronensis* Hoernes, 1897; M. Sarmatian, Miocene, Zemendorf, near Mattersburg, eastern Austria. Described as a subgenus of *Hydrobia* Hartmann, 1821. Is a junior objective synonym of *Microliopalaeina* B. Dybowski and Grochmalicki, 1913 (see also Lindholm, 1927:144).

Liosoma Conrad, 1874:31, non Brandt, 1835 (Echinodermata), nec Fitzinger, 1843 (Reptilia), nec Agassiz, 1846 (Coleoptera), nec Trouessant, 1892 (Arachnida). *Liosoma curta* Conrad, 1874; M. Pliocene, Pebas, Peru. A junior synonym of *Toxosoma* Conrad, 1874 (fide Kadolsky, 1980:372; the type species are subjective synonyms).

Liris Conrad, 1871:193–194, non Fabricius, 1805 (Hymenoptera). *Liris laqueata* Conrad, 1871 (= *Turbonilla minuscala* Gabb, 1869 (fide Boettger, 1878:496)); M. Pliocene, Pichau [Pichana], Loreto province, Peru. Conrad (1874:32) suggested that the type species "appears to me to be a land shell allied to *Cylindrella* and *Clausilia*." Taylor (1966b:196) treated *Liris* as a junior synonym of *Tryonia* Stimpson, 1865. Parodiz (1969:119–120, 1982:40) and Nuttall (1990:202–204) maintained the separate identities of these taxa and redescribed the Neogene species of *Liris* from northern South America. However, as *Liris* Conrad is a junior homonym, it must be renamed if this taxon is to be recognized as a valid group.

Lisinskia Brusina, 1897:40. *Coelacanthia stigmatica* Brusina, 1897; OD. "Congerienschichten," Pontian, Miocene, Okrugljak near Zagreb, Croatia. This monotypic genus was established because N. Andrusov (in litt. to S. Brusina) had objected to the use of *Coelacanthia* Andrusov (q.v.) for Brusina's species. However, the type species is a nomen nudum in Brusina (1897) and was first validated by Dollfus (1912:226). Wenz (1939:595) listed *Lisinskia* as a questionable subgenus of *Micromelania* Brusina, 1874.

Lisinskia Dollfus, 1912:226 (ex Brusina, ms.). *Coelacanthia stigmatica* Brusina, 1897; OD. "Congerienschichten," Pontian, Miocene, Okrugljak near Zagreb, Croatia.

Lithabitella Radoman, 1973a:7 (also: Vaught, 1989:20; Bernasconi, 1990a:50). Error for *Litthabitella* Boeters, 1970.

Lithoclyphus Paetel, 1875:113. Error for *Lithoglyphus* Hartmann, 1821.

Lithoclyptus Schmidt, 1847:24. Error for *Lithoglyphus* Hartmann, 1821.

Lithoclypus Cristofori and Jan, 1832:7 (also Krynicki, 1837:57). Error for *Lithoglyphus* Hartmann, 1821.

Lithococcus Pilsbry, 1911:602. *Lithoglyphus multicarinatus* Miller, 1879; OD. Recent, freshwater, Rio Cayapas, Esmeraldas Province, Ecuador. Thiele (1929:142) and Vaught (1989:20) listed this as a subgenus of *Potamolithus* Pilsbry, 1896; however, Parodiz (1965b:17) maintained *Lithococcus* as a full genus. Hershler and Thompson (1992:61–63) redescribed this taxon and referred it to the Cochliopinae.

Lithoflyphus Radoman, 1978:46. Error for *Lithoglyphus* Hartmann, 1821.

Lithoghyphus Edwards, 1981:xix, 299. Error for *Lithoglyphus* Hartmann, 1821.

Lithogliphus Lörenthey, 1894:153 (also, Hadzisce, 1956b:67). Error for *Lithoglyphus* Hartmann, 1821.

Lithogliphoides Hadzisce, 1956:68. Error for *Lithoglyphoides* Sturany and Wagner, 1914.

Lithoglyphoides Sturany and Wagner, 1914:135 [117]. *Paludina fluminensis* Schmidt, 1847 (ex Sadler and Lang, ms.); SD, Wagner, 1927:298. Recent, freshwater springs and streams, near Laibach [= Ljubljana], Slovenia. Wagner (1927:298–299) provided further discussion of *Lithoglyphoides,* which he attributed solely to "Wagner, 1914." Is a junior objective synonym of *Sadleriana* Clessin, 1890 (see also Wenz, 1939:568; Radoman, 1967c; and Bole, 1972). See also *Zagrabica* Brusina, 1884. *Lithogliphoides* Hadzisce, 1956; error.

Lithoglyphulus Schlickum and Schütt, 1971:289–290. *Lithoglyphulus tedanicus* Schlickum and Schütt, 1971; OD. Recent, freshwater, Zrmanja river, near Obrovac, Croatia. Schlickum and Schütt (1971:289) also referred two Pleistocene species (from England and Denmark) to this taxon. Girotti (1972) extended this genus to the Plio-Pleistocene of central Italy. Schlickum (1974b) determined that the type species was a junior synonym of the type of *Tanousia* Bourguignat, 1881 (= *Sandria* Brusina, 1886); hence *Lithoglyphulus* is a junior objective synonym of *Tanousia* (q.v.).

Lithoglyphus Hartmann, 1821a:57 (ex Megerle von Mühlfeld, ms.). *Lithoglypus eburneus* Hartmann, 1821 (nomen nudum; = *Paludina naticoides* Pfeiffer, 1828 (ex Férussac, ms.)); SD, Herrmannsen, 1847:612. Recent, freshwater, central Europe. Bourguignat (1877:89) placed *Lithoglyphus* into the Melanidae (= Thiaridae, Cerithioidea). Krause (1949) described the anatomy and distribution of the type species. Davis et al. (1976:284) outlined the nomenclatural history of the type species and noted that the designation of *Paludina fusca* Pfeiffer, 1828 (ex Ziegler, ms.) by Gray (1847b:150; post 7 Nov.) was published after that of Herrmannsen. Davis et al. stated that Herrmannsen's designation was published in 1846; in fact, pages 233–637 of Herrmannsen (volume 1) actually appeared in 1847, with the section including *Lithoglyphus* published on 25 May 1847. Thus, Hermmansen's designation remains valid, albeit by only a half-year. Bole (1982) redescribed the genus and mapped the distribution of the presumed subspecies of the type species (see also Radoman, 1968; Urbanski, 1975).

Originally spelled as *"Lithoglyp."*; emended to *Lithoglyphus* by Pfeiffer (1828:47). Stimpson (1865b:53–54) tentatively placed several South American species into this genus. Stoliczka (1868:261) placed *Lithoglyphus* into the Lacuninae (Littorinidae). Tryon (1883:271) listed *Benedictia* Dybowski, 1875, and *Jullienia* Crosse and Fischer, 1876, as subgenera of *Lithoglyphus;* in fact, the first genus is now in the Benedictiinae and the second genus is now in the Pomatiopsidae. Wenz (1928:2270–2281) provided extensive synonymies of the numerous Tertiary (Miocene-Pliocene) European species referred to *Lithoglyphus;* Wenz recognized the Lithoglyphidae as a monogeneric family. Taylor (1966a:131, 132) placed the North American *Fluminicola* Stimpson, 1865, and *Pilsbryus* Yen, 1944, into synonymy of the European *Lithoglyphus;* Taylor (1966b:182) added the Californian Pliocene *Heathilla* Hannibal, 1912, as another junior synonym. Taylor (1966b:182) established the "new subfamily" Lithoglyphinae (monogeneric); in fact, this family group name dates to Troschel, 1857. Aleksenko et al. (1990) reviewed the Russian species referred to this genus and established the new subgenus *Prasinoglyphus* (q.v.). Hershler and Thompson (1990:198) redefined the Lithoglyphinae on anatomical criteria; several additional genera of North American cave hydrobiids were referred to this subfamily. *Lithoclyphus* Paetel, 1875, *Lithoclypus* Cristofori and Jan, 1832, *Lithoclyptus* Schmidt, 1847, *Lithoflyphus* Radoman, 1968; *Lithoghyphus* Edwards, 1981; *Lithogliphus* Lörenthey, 1894; *Lithoglyplus* Cossmann, 1921; *Lithoglypter* Fitzinger, 1833; *Lithoglyptus* Paetel, 1875; and *Lythoglyphus* Clessin, 1877; errors.

Lithoglyplus Cossmann, 1921:109. Error for *Lithoglyphus* Hartmann, 1821.

Lithoglypter Fitzinger, 1833:116. Error for *Lithoglyphus* Hartmann, 1821.

Lithoglyptus Paetel, 1875:113. Error for *Lithoglyphus* Hartmann, 1821.

Litorinella Braun, 1842:149, 150. Also spelled as *"Litorinellen"* (as a group name, p. 148). No species indicated; nomina nuda. See *Litorinella* Thomä, 1845. *Littorinella* Herrmansen, 1847; error.

Litorinella Thomä, 1845:159 (ex Braun, ms.). *Cyclostoma acutum* Draparnaud, 1805; SD, Fischer, 1878:154. Recent, freshwater, "Mühlthal near Wiesbaden" (and elsewhere), central Germany. The type species is also the type of *Hydrobia* Hartmann, 1821; hence *Litorinella* is a junior objective synonym of *Hydrobia* (Wenz, 1926:1863). Stimpson (1865b:42) stated the type species of *Litorinella* to be *Turbo ventrosus* Montagu, 1803, which he thought was a senior synonym of *acutum* Draparnaud. *Littorinella* Hermannsen, 1847; an unnecessary emendation.

Litterodinops Font, Heard, and Overstreet, 1984:392ff. Error for *Littoridinops* Pilsbry, 1952.

Litthabitella Boeters, 1970a:118. *Paludinella (Bythinella) chilodia* Westerlund, 1886; M. Recent, freshwater springs, coastal regions of the Balkan Peninsula (numerous localities from Greece to Slovenia). Described as a subgenus of *Microna* Clessin, 1890 (= *Belgrandiella* Wagner, 1927). Bole (1971a) described the anatomy and ecological variation of the type species; he used *Litthabitella* as a full genus. Thompson (1979:47) placed *Litthabitella* (which he attributed to "Bole, 1971") in the Nymphophilinae. *Lithabitella* Radoman, 1973; error.

Littoridina Souleyet 1852:563–564. *Littoridina gaudichaudii* Souleyet, 1852; M. Recent, brackish to freshwater, Rio Guayas, Guayaquil, Ecuador. Pilsbry (1934:16, 1935:558) extended this tropical genus to the Pliocene of California. Haas (1955:285–296) and Hubendick (1955:321–324) dis-

cussed nine species of this genus, found at Lake Titicaca and elsewhere in South America. Taylor (1966b:182) established the "new subfamily" Littoridininae; in fact, this family-group name dates to Thiele, 1928. Taylor (1966b:182–198) reviewed the 15 genera, from North and South America, which he referred to this subfamily. Gaillard and Castellanos (1976) redescribed 16 species from Argentina referred to *Littoridina*. Davis, Mazurkiewicz, and Mandracchia (1982:168–169) maintained the separate identities of *Littoridina* and *Heleobia* Stimpson, 1865 (contra Taylor, 1966b:187). Hershler and Thompson (1992:63–68) redescribed this taxon, which they referred to the Cochliopinae (= Littoridininae). *Littorinida* Stimpson, 1865; *Littorinidea* Cossmann, 1921, and *Littorinidia* Preston, 1913; errors.

Littoridinops Pilsbry, 1952:51. *Amnicola tenuipes* Couper in Haldeman, 1844; OD. Recent, freshwater, Altamaha River, Georgia, U.S.A. Proposed as a subgenus of *Littordina* Eydoux and Souleyet, 1852. Pilsbry noted that the type of this monotypic subgenus ranged from the Hudson River Valley (New York) to Florida. Taylor (1966b:182, 187) placed *Littoridinops* in the Littoridininae, and enumerated the known species, from the east coast of the U.S.A. (possibly also from the Bahamas and Mexico). Thompson (1968:56–74) redescribed this genus and its peninsular Florida species; he placed it in the "*Hydrobia* Tribe" of the Hydrobiinae (Hydrobiidae). Hershler and Thompson (1992:68–71) redescribed this taxon and referred it to the Cochliopinae. *Litterodinops* Font et al., 1984; error.

Littorinella "Braun" Herrmannsen, 1847:616. Error (or unnecessary emendation) for *Litorinella* Thomä, 1845. Cossmann (1921:103) independently arrived at this emendation; however, he erred in stating the type species to be "*Bulimus inflatus* Faujus."

Littorinida Gray, 1855:20 (also, Stimpson, 1865b:43; Fischer, 1885:750). Error for *Littoridina* Souleyet, 1852.

Littorinidea Cossmann, 1921:98. Error for *Littoridina* Souleyet, 1852.

Littorinidia Preston, 1913:68. Error for *Littoridina* Souleyet, 1852.

Lobaunia Haase, 1993:98–99. *Lobaunia danubialis* Haase, 1993; OD. Recent, "ground waters" of the Danube River, near Vienna, Austria.

Lobogenes Pilsbry and Bequaert, 1927:224. *Lobogenes michaelis* Pilsbry and Bequaert, 1927; OD. Recent, freshwater, source of Kimilolo River near Elisabethville, Congo (= Lubumbashi, Zaire). One other new species, from the same locality, was also referred to *Lobogenes* by Pilsbry and Bequaert (1927). Hershler and Thompson (1992:71–74) redescribed this taxon and referred it to the Cochliopinae. Brown et al. (1992:18) recorded the type species from the Caprivi and Okavango regions of Namibia and Botswana.

Locardia Folin, 1880:236–237. *Locardia apocrypha* Folin, 1880; M. Recent, freshwater, Rhône Basin, France. Tryon (1883:267) and Westerlund (1902:132) considered this to be a junior synonym of *Lhotelleria* Bourguignat, 1877; Clessin (1882a:127–128) thought both *Locardia* and *Lhotelleria* to be junior synonyms of *Vitrella* Clessin, 1876.

Luofuspira Yu, 1977:200. *Luofuspira elegans* Yu, 1977; OD. Cretaceous-Early Tertiary, South China. Described in the family Amnicolidae.

Lygogyrus Sykes, 1899:67. Error for *Lyogyrus* Gill, 1863.

Lyhnidia Hadzisce, 1956b:88. *Lyhnidia hadzii* Hadzisce, 1956; SD, Radoman, 1962:77. Radoman (1967b:151, 1973:10, 1983:115; see also Jovanovic, 1991:236) erroneously stated the type species to be *Lyhnidia gjorgjevici* Hadzisce, 1956; Radoman had overlooked his earlier (1962) type designation. Recent, freshwater, Lake Ohrid, Macedonia. Radoman (1962:77) ranked *Lyhnidia* as a subgenus of *Pseudamnicola* Paulucci, 1878. Taylor (1966b:175) placed *Lyhnidia* into the tribe Horatiini (Cochliopinae). Radoman (1973a:10) subsequently ranked *Lyhnidia* as a full genus in the Pseudohoratiinae (Orientaliidae).

Lyobasis Huang, 1987:186, 201. *Lyobasis subulata* Huang, 1987; OD. Paleocene, China. This monotypic genus was differentiated from *Paladilhia*.

Lyogyrus Gill, 1863:34. *Valvata pupoidea* Gould, 1839; OD. Recent, freshwater, Fresh Pond, Cambridge, Middlesex County, Massachusetts, U.S.A. Originally described in the Valvatidae. Pilsbry (1888, 1892) transferred *Lyogyrus* to the Hydrobiidae (as "Amnicoloid"). Pilsbry (1916:84) referred *Horatia* (q.v.) to the new subfamily Lyogyrinae. Thiele (1928:378) and Solem (1961:429) classified the New Caledonian *Heterocyclus* Crosse, 1872, as a subgenus of *Lyogyrus*. Taylor (1966b:198) briefly reviewed this taxon, in the monogeneric subfamily Lyogyrinae; the known species occured "from the Atlantic and Gulf coasts of the U.S.A., from Massachusetts to Alabama." Thompson (1968:162–163) instead ranked *Lyogyrus* as a subgenus of *Amnicola* (Amnicolinae, Hydrobiidae) and redescribed the peninsular Florida species of *Lyogyrus*. *Liogyrus* Ancey, 1889; *Lygogyrus* Sykes, 1899; and *Lyogryrus* Gill, 1863; errors.

Lyogryrus Gill, 1863:32 (footnote). Error for *Lyogyrus* Gill, 1863.

Lyrodes Döring, 1885:461, non Horváth, 1900 (Hemiptera). *Lyrodes guaranitica* Doering, 1885; SD, Pilsbry, 1911:562. Recent, freshwater, lagoons along the Barrancas River, Argentina; the other included species were from Lake Titicaca and "Venezuela, Cuba, etc." Pilsbry (1911:562) synonymized *Pyrgophorus* Ancey, 1888, and *Lyrodes* with the New Zealand *Potamopyrgus* Stimpson, 1865. Morrison (1939a) established the independent identity of *Potamopyrgus* and *Lyrodes;* Morrison also stated that *Lyrodes* was the next available name for "*Paludestrina*" sensu Stimpson, 1865 (non d'Orbigny, 1840). Parodiz (1960) translated the original description and provided additional remarks on this genus; Morrison and Parodiz also synonymized *Pyrgophorus* with *Lyrodes*. Taylor (1966b:182,

187–188) placed *Lyrodes* in the Littoridininae and concluded that *Pyrgophorus* was a valid genus, also in the same subfamily. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Lysiogyrus Youluo, 1978:44. *Lysiogyrus costatus* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Youluo placed described one other new species in this genus, which was placed in the Lyogyriinae (Hydrobiidae).

Lythoglyphus Clessin, 1877:321. Error for *Lithoglyphus* Hartmann, 1821.

Maackia Clessin, 1880:187. *Limnorea (Leucosia) costata* W. Dybowski, 1875; SD, Westerlund, 1902:127 [46]. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baikalia* von Martens, 1876. Westerlund (1897:128) described *B. (Maackia) nodosa* from the Argunj River, Siberia. Lindholm (1909:58, 62) treated *Maackia* as a monotypic subgenus of *Baikalia* Dall, 1876; *contabulata* was transferred to the subgenus *Pseudobaikalia* (see also Kozhov, 1936:103–105; and Sitnikova, 1991:288–290). Lindholm (1913a) determined that Westerlund's *nodosa* was actually a synonym of *"Melania (Melanoides) cancellata"* Benson, 1842 (non Say, 1829; = *Melania amurensis* Gerstfeldt, 1859) (Cerithioidea), and was not referrable to the "Baicaliidae." *Trachybaikalia* Nevill, 1885 (non Dall), is a junior objective synonym. *Maakia* Stache, 1883; error.

Maakia Stache, 1883:148. Error for *Maackia* Clessin, 1880.

Macedopyrgula Radoman, 1973a:12. Replacement name for *Trachypyrgula* Radoman, 1955, non Cossmann, 1921. *Pyrgula pavlovici* Polinski, 1929; OD Radoman, 1973a:12 (for *Macedopyrgula*). Recent, freshwater, Lake Ohrid, Macedonia. Originally placed in the Chilopyrgulinae (Pyrgulidae) by Radoman.

Maeotidia Andrusov, 1890:296–297. *Maeotidia bucculenta* Andrusov, 1890; M. Pontian, Miocene, Pavlovskii, Russia. Roshka (1973:160–164) ranked *Maeotidia* as a subgenus of *Turricaspia* B. Dybowski and Grochmalicki, 1917; this is nomenclaturally incorrect as the subgenus can not be an older name than the genus. Roshka also referred three species (one new, one undescribed) from the Maeotian (Miocene) of Ukraine to this taxon.

Malaprespia Radoman, 1973a:7, 21. *Malaprespia albanica* Radoman, 1973; M. Recent, freshwater, Malo Prespansko Jezero [= Mikra Prespa lake], Albania. Originally described in the Orientaliinae (Orientaliidae).

Maresia Bourguignat, 1877:85–86, non Walker, 1866 (Lepidoptera). *Hydrobia dolichia* Bourguignat, 1862; M. Recent and subfossil, freshwater, Géryville, Algeria. Boeters (1988:224) suggested that *Maresia* might be a senior synonym of *Belgrandiella* Wagner, 1927 (q.v.), but as Bourguignat's *Maresia* is a junior homonym, then it cannot be used in the Mollusca.

Marstonia F.C. Baker, 1926:195. *Amnicola lustrica* Pilsbry, 1890 (non *Paludina lustrica* Say, 1821); OD. Recent, freshwater, New York westwards to Minnesota, U.S.A. Described as a subgenus of *Amnicola* Gould and Haldeman, 1840. Morrison (1947a:86) proposed the replacement name *Amnicola lacustris* for the type species of *Marstonia*. Taylor (1960:50–51) discussed the problems with the type species and claimed that *decepta* F.C. Baker (which has priority over *lacustris* Morrison) was the next available name for *lustrica* Pilsbry non Say. However, *ICZN*, Opinion 1108 (1978) conserved both *Marstonia* and *lustrica* Pilsbry while suppressing *lustrica* Say and *lacustris* Pilsbry, 1890 (= *"lacustris* Morrison"), thus rendering moot the actions of Morrison and Taylor (see also the discussion under *Amnicola* Gould and Haldeman, 1840). Thompson (1970:242–243) redefined the genus, which he restricted to the type species and one new species. Subsequently, Thompson (1977) referred eight species (five new) to *Marstonia*, considered it most closely related to *Cincinnatia*, and compared it with other genera of the Nymphophilinae. Davis and Mazurkiewicz (1985:44) differentiated *Cincinnatia* from *Marstonia;* they placed the latter genus into the tribe Hydrobiini. Is a junior synonym of *Pyrgulopsis* Call and Pilsbry, 1886 (fide Hershler and Thompson, 1987:28).

Marstoniopsis Altena, 1936:68–69. *Hydrobia steinii* von Martens, 1858 (= *Hydrobia scholtzi* Schmidt, 1856 (fide Baker, 1961:147)); OD. Recent, freshwater, northwestern Europe. Altena compared his new genus with *Marstonia* F.C. Baker, 1926. Morrison (1947a) thought that *Marstoniopsis* should be used for the North American *Amnicola porata* (Say, 1821). Thus, Taylor (1960:50) claimed that *Marstoniopsis* was a junior synonym of *Amnicola* Gould and Haldeman, 1840. However, the confirmation of *porata* as the type species of *Amnicola* (*ICZN*, Opinion 1108) negates this usage of *Marstoniopsis* with regard to North American species. Taylor (1966b:173) recognized *Marstoniopsis* as a valid genus in the Amnicolinae, along with *Amnicola*, and noted that the supposed similarities to *Marstonia* F.C. Baker, 1926, were erroneous. Boeters (1974a:277–282) redescribed the type species and two other taxa of *Marstoniopsis*. Giusti and Pezzoli (1980:58) referred this taxon to the family Bythinellidae. Bole and Velkovrh (1986:197; 1987:73–74, 79–80) listed several phreatic taxa of *Marstoniopsis*.

Martensamnicola Izzatullaev, Sitnikova, and Starobogatov, 1975:53. *Nydrobia* [sic] *brevicula* von Martens, 1874; OD. Recent, springs, Maracandam, Turkmenistan; also from Kazakhstan. Placed in the new subfamily Martensamnicolinae of the "family" Belgrandiellidae Radoman, 1983.

Marticia Brusina, 1897:xv (footnote 2). *Hydrobia tietzei* Neumayr, 1880; OD. "Congerienschichten," Pontian, Upper Miocene, near Konjica, Bosnia and Herzegovina. Wenz (1926:2124–2125) reviewed the four fossil species (Pontian, Miocene to Pliocene) referred to *Marticia*. Willmann (1981) referred this genus to the family Pyrgulidae and discussed the (sub-)speciation in the Neogene representatives from the Aegean Islands of Greece.

Martiniella Schlickum in Schlickum and Moayedpour,

1973:240–241, non Grabau and Tien, 1931 (Brachiopoda); see *Martinietta* Schlickum, 1974. *Bithynella striata* Fischer and Wenz, 1914; OD. Miocene, near the Rhone River, France. Described as a subgenus of *Nematurella* Sandberger, 1875.

Martinietta Schlickum, 1974a:69. Replacement name for *Martiniella* Schlickum in Schlickum and Moayedpour, 1973, non Grabau and Tien, 1932. *Bithynella striata* Fischer and Wenz, 1914; OD (of *Martiniella*). Miocene, near the Rhone River, France.

Maxipyrgus Davis and McKee, 1989:238. Error for *Mexipyrgus* Taylor, 1966.

Mercuria Boeters, 1971b:177–178. *Amnicola confusa* Frauenfeld, 1863; OD. Recent, freshwater, southeastern France. Proposed for *"Cyrniacana"* and *"Similiana,"* nomina nuda (both of Fagot, 1892–1893). Giusti (1979) described the anatomy of the Sardinian species that he referred to *Mercuria,* hitherto unknown in the Italian hydrobiid fauna (see also Giusti and Pezzoli, 1980:23). Thompson (1979:47) placed *Mercuria* into the Nymphophilinae. Schlickum and Strauch (1979:16) extended this genus to the Pliocene of the Rhine Valley, Germany. Boeters (1988:206–212) redefined this genus and the Iberian species referred therein. Boeters and Beckmann (1991) reviewed two Maltese species of *Mercuria,* one tentatively identified as the type species.

Mervicia Bole, 1967:6, 11. *Mervicia eximia* Bole, 1967; M. Recent, freshwater, Dovjez, north of Ljubljana, Slovenia. Boeters (1991) described a species tentatively referred to this taxon, from caves near Mantoudi, Euboea [Évvoia], northwest Greece.

Mesobia Thompson and Hershler, 1991b:678–679. *Mesobia pristina* Thompson and Hershler, 1991; OD. Recent, freshwater, Lago de Yajoa, Cortez province, Honduras. This monotypic taxon was described in the Cochliopinae (see also Hershler and Thompson, 1992:74).

Mesocochliopa Yen and Reeside, 1946b:54. *Mesocochliopa assiminoides* Yen and Reeside, 1946; OD. Morrison Formation, Jurassic, near Mill Creek, Sublette County, Wyoming, U.S.A.

Mesopyrgium Yen and Reeside, 1946b:56. *Mesopyrgium pendilabium* Yen and Reeside, 1946; OD. Morrison Formation, Jurassic, near Mill Creek, Sublette County, Wyoming, U.S.A.

Mexipyrgus Taylor, 1966b:188–189. *Mexipyrgus carranzae* Taylor, 1966; OD. Recent, freshwater, Cuatro Ciénagas basin, Coahuila, Mexico. Taylor (1966b:182, 188–194) placed *Mexipyrgus* in the Littoridininae and referred six species (all new) to this genus. Hershler (1985:87–98, 99–104) concluded that the nominal species of Taylor all represented a single polytypic taxon; this was further corroborated by Hershler and Minckley (1986). Hershler and Thompson (1992:75–78) reviewed this taxon and referred it to the Cochliopinae. *Maxipyrgus* Davis and McKee, 1989; error.

Mexistiobia Hershler, 1985:46–47. *Mexistiobia manantiali* Hershler, 1985; OD. Recent, freshwater, Cuatro Ciénagas Basin and Durango, Mexico. This monotypic genus was referred to the Nymphophilinae. Is a junior synonym of *Pyrgulopsis* Call and Pilsbry, 1886 (fide Hershler and Thompson, 1987:29). *Mexistobia* Banarescu, 1992; error.

Mexistobia Banarescu, 1992:549. Error for *Mexistiobia* Hershler, 1985.

Mexithauma Taylor, 1966b:205. *Mexithauma quadripaludium* Taylor, 1966; OD. Recent, freshwater, Cuatra Ciénagas basin, Coahuila, Mexico. Taylor (1966b:204) established the sufamily Mexithaumatinae for this monotypic genus; he indicated that its characters were quite different from other hydrobiids yet not related to other families of Rissoacea hence this subfamily was "left in the Hydrobiidae by default." Hershler (1985:72–78) transferred *Mexithauma* to the Littoridininae (Cochliopinae, fide Hershler and Thompson, 1992:78–80) and redescribed the type species.

Microamnicola Gregg and Taylor, 1965:109. *Amnicola micrococcus* Pilsbry in Stearns, 1893; OD. Recent, freshwater, Amargosa River drainage, Nevada and California, U.S.A. Described as a subgenus of *Fontelicella* Gregg and Taylor, 1965. Is a junior synonym of *Pyrgulopsis* Call and Pilsbry, 1886 (fide Hershler and Thompson, 1987:28).

Microbaicalia Kozhov, 1936:53, 91. *Leucosia angarensis* var. *pulla* W. Dybowski, 1875; OD. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baicalia* von Martens, 1876.

Microbeliscus Sandberger, 1875:690–691. *Turbonilla (Melania) inaspecta* Fuchs, 1870; M. A replacement name for *Melania* sensu Fuchs, 1870, non Lamarck, 1799. "Congerienschichten," Pontian, Upper Miocene, Tihany, Zala, Hungary. Wenz (1926:2155–2156) reviewed the two fossil species, both Pontian, referred to *Microbeliscus,* which he ranked as a full genus in the Baicaliinae.

Microliopalaeina B. Dybowski and Grochmalicki, 1913:278. *Hydrobia sopronensis* Hoernes, 1897; M. Sarmatian, Miocene, Zemendorf, near Mattersburg, eastern Austria. The authors also erected the new subfamily Microliopalaeinae, in the Baicaliidae. *Liosarmata* B. Dybowski and Grochmalicki, 1920; junior objective synonym.

Micromelania Brusina, 1874b:133–134. *Micromelania cerithiopsis* Brusina, 1874; SD, Brusina, 1892:164. "Congerien-Schichten," Pontian, Upper Miocene, near Zagreb, Croatia. The etymological derivation of this genus was intended to indicate its presumed relationship to *Melania* (Cerithioidea). Wenz (1926:2126–2145) provided comprehensive synonymies for the numerous fossil species (Sarmatian, Miocene to Piacenzian, Pliocene) referred to *Micromelania.* Wenz (1939:594) incorrectly listed the type species as *"M. cerithioides* Brusina." *Micromelonia* Brusina, 1892; error.

Micromelonia Brusina, 1892:163. Error for *Micromelania* Brusina, 1874.

Microna Frauenfeld, 1863a:200 (ex Ziegler, ms.), non *Microna* Clessin, 1890 (Mollusca: Hydrobiidae). Type species not indicated in original; of the six included names, only two are valid (Zilch, 1970a): *Bulimus viridis* Poiret, 1801, and *Paludina ferussina* Desmoulins, 1827. Recent, freshwater, France. Stimpson (1865b:4, 19) synonymized *Microna* with *Bythinella* Moquin-Tandon, 1855. Several authors (e.g., Bourguignat, 1887:24; Cotton, 1943a:125; Vaught, 1989:20) attributed this name to "Ziegler, 1852"; no such usage has been found. Zilch (1970a) further discussed the nomenclatural problems with the various interpretations of *Microna*. Is a junior objective synonym of *Bythinella* Moquin-Tandon, 1855, as the same species are included.

Microna Clessin, 1890:636, 651 (ex Ziegler, ms.) non *Microna* Frauenfeld, 1863 (Mollusca: Hydrobiidae). *Paludina pareyessi* Pfeiffer, 1841; M. Boeters (1970a) regarded Clessin's *Microna* to be valid (and the next available name for *Frauenfeldia* Clessin non Egger) because Boeters considered Frauenfeld's usage of *Microna* as a nonen nudum. This was immediately contradicted by Zilch (1970a) who provided further discussion regarding these taxa and concluded that *Belgrandiella* Wagner, 1927, was the next available name for *Microna* Clessin, 1890. *Litthabitella* Boeters, 1970, was described as a subgenus of *Microna* Clessin. Thompson (1979:47) placed *Microna* Clessin into the Nymphophilinae. A junior homonym but not a synonym of *Microna* Frauenfeld, 1863.

Micropyrgula Polinski, 1929:134, 154, 180. *Micropyrgula stankovici;* OD. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Polinski (1929:154; 1932:638–639) referred three other species, from the Pyrenees (France-Spain) and Kurd (Hungary) to this taxon. Radoman (1973a:12) established the monogeneric family Micropyrgulidae for this taxon.

Micropyrgus Meek in Conrad, 1866:12, 35. *Melania minutula* Meek and Hayden, 1857; M. Paleocene, Fort Union Beds, North Dakota, U.S.A. Stoliczka (1868:273) suggested that *Micropyrgus* probably belonged in the Truncatellinae (Rissoidae). Tryon (1883:267) listed *Micropyrgus* as a subgenus of *Bithynella* Moquin-Tandon, 1855. Wenz (1939:449) listed this taxon a full genus in the Hydrobiinae. Henderson (1935:201) and Taylor (1975:384) provided a full synonymy of the type species, originally recorded from the "Eocene" of "Dakota" and subsequently known from Utah, Wyoming. *Mycropyrgus* White, 1877; error.

Microsalpinx Kuscer, 1932:59. *Microsalpinx substricta* Kuscer, 1932; M. Recent, freshwater, Bistra springs (and other localities), near Ljubljana, Slovenia. Boeters (1970a:117) regarded *Microsalpinx* as a junior synonym of *Microna* Clessin, 1890 (= *Belgrandiella* Wagner, 1927).

Mienisiella Schütt, 1991:134. *Mienisiella mienisi* Schütt, 1991; OD. Recent, freshwater, springs, Hula Basin, northern Israel. One other species (from Lebanon and northern Israel) was referred to *Mienisiella,* which was placed in the Hydrobiinae.

Mikrogoniochilus Willmann, 1981:162. *Mikrogoniochilus minutus* Willmann, 1981; OD. Neogene, Irakli-Tal, Kos, Aegean Sea, Greece. Willmann placed this monotypic taxon in the family Pyrgulidae; he recognized three subspecies of the type species.

Mirolaminatus Wang in Yu and Wang, 1977:77. *Mirolaminatus lamellatus* Wang in Yu and Wang, 1977; OD. Late Cretaceous to Lower Tertiary, Jiangsu Province, China. Three other species were referred to this genus, which was actually based on opercula; the shells were unknown. The familial placement was uncertain, but this taxon was referred to the Rissoacea. We list this taxon herein pending further study, especially discovery of shells associated with these opercula.

Miromphalus Youluo, 1978:109. *Miromphalus angulatus* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Placed in the family "Bohaispiridae"; see also under *Bohaispira.*

Mycropyrgus White, 1877:613. Error for *Micropyrgus* Meek in Conrad, 1866.

Moesia Jekelius, 1944:84. *Moesia laevigata* Jekelius, 1944; original desgination. Sarmatian, Late Miocene, near Soceni, Romania. The systematic position of this new taxon was uncertain. Jekelius placed *Moesia* between *Carasia* (q.v.; now in the Hydrobiidae) and *Odostomia* (Pyramidellidae); possible relationships with *Niso* (Eulimidae) were also suggested. Further research is needed to determine the familial placement of *Moesia.*

Mohrensternia Stoliczka, 1868:274. *Rissoa angulata* Eichwald, 1830; SD, Nevill, 1885:100. Badenian, Miocene, freshwater, eastern Europe. Pchelintsev and Korobov (1960:147) erected the "subfamily Mohrensterniinae," for this genus and *Barleeia,* in the Rissoidae. Golikov and Starobogatov (1972:93–94) redescribed this taxon, which they also referred to the Rissoidae (see also Roshka, 1973:120–122; Slavoshevskaya, 1975:119). Zhgenti (1981:119–128) referred a number of new species from the Miocene of Georgia to this genus. Ponder (1985a:17, 33) suggested that this genus may actually be hydrobiid rather than rissoid, but lacking anatomical data further resolution was not possible.

Moitessieria Bourguignat, 1863:434–435 [7–8]. *Paludina simoniana* Saint-Simon, 1848 (ex Charpentier, ms.); SD, Kobelt, 1878:132. Recent, freshwater, Garonne River, near Toulouse, France. Stoliczka (1868:271) suggested that *Moitessieria* belonged in the Truncatellinae (Rissoidae). Bourguignat (1863, 1877:90–91) established the family Moitessieridae, for *Moitessieria; Lhotelleria* Bourguignat, 1877, was subsequently referred to this family. Cossmann (1921:108) erroneously stated the type species of *Moitessieria* to be *M. rolandiana* Bourguignat, 1863. Bodon (1980) provided several Italian records for this genus. Bernasconi (1984) compared *Moitessieria* with a number of other subterranean genera recorded from France. Boeters and Gittenberger (1990:123–124) redefined the Moitessieriidae

(comprising *Moitessieria, Paladilhia,* and *Clameia*) and differentiated it from the Hydrobiidae. However, Bodon and Giusti (1991) concluded that *Moitessieria* was in fact referrable to the Hydrobiinae and that the "Moitessieriidae" was a synonym of the Hydrobiidae. Bodon and Giusti (1991) provided a thorough review of *Moitessieria* and discussed its relationships with *Paladilhia* Bourguignat, 1865. *Moitessierie* Larraz et al., 1987, and *Moitissieria* Clessin, 1880; errors.

Moitessierie Larraz, Equisoain and Beruete, 1987:69. Error for *Moitessieria* Bourguignat, 1863.

Moitissieria Clessin, 1880:178. Error for *Moitessieria* Bourguignat, 1863.

Montjavoultia Raspail, 1909:198. *Bithinella (Montjavoultia) holostoma* Raspail, 1909; SD, Cossmann, 1913b:129. Bartonian, Eocene, La Vouast, near Montjavoult, Oise, France. Described as a section (= subgenus) of *Bithinella* Moquin-Tandon, 1855. Raspail referred four other new species, all from the same locality, to this taxon (see also Wenz, 1926:2038–2040).

Moria Kuroda and Habe, 1958:189. *Bythinella nipponica* Mori, 1937; OD. Recent, freshwater, limestone caves and streams (various localities), Japan. Kuroda and Habe erected this subgenus to differentiate the Japanese species previously referred to *Bythinella* Moquin-Tandon, 1855. Kuroda (1963:16) listed the four Japanese species referred to this taxon.

Nanivitrea Thiele, 1927:123, 126. *Paludinella helicoides* Gundlach in Poey, 1865; OD. Described as a section (= subgenus) of *Paludinella* Pfeiffer, 1841. Recent, freshwater, Matanzas, Matanzas Province, Cuba. Originally placed in the Assimineidae. Transferred to the Hydrobiinae of the "Amnicolidae") by Jaume and Abbott (1948), based on radular and opercular characters. Jaume and Abbott enumerated the four known West Indian (Cuba and Jamaica) species, suggested that there were probably other as yet unknown species in Central America, and thought *Nanivitrea* to be conchologically similar to *Cochliopina* Morrison, 1946. Taylor (1966b:175, 179) placed *Nanivitrea* in the tribe Cochliopini (Cochliopinae); see also Hershler and Thompson (1992:80–83). Nuttall (1990:212–214) described the first fossil species of *Nanivitrea*.

Nanningospira Yu, 1983:340, 350. *Stenothyra (Gangetia) marginata* Odhner, 1930; OD. Pliocene, near Nanning, Guangxi, China. This monotypic genus was placed in the family Bohaispiridae.

Nannopyrgula Youluo, 1978:53. *Nannopyrgula nana* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Youluo (1978:54–55) described three other new species in this genus, which he placed in the Pyrgulinae (of the Truncatellidae).

Narentiana Radoman, 1973a:7, 20. *Narentiana albida* Radoman, 1973; M. Recent, freshwater, spring near north coast of Bacina lake, Bosnia and Herzegovina. Originally placed in the Orientaliinae (Orientaliidae).

Natricola Gregg and Taylor, 1965:108–109. *Pomatiopsis robusta* Walker, 1908; OD. Recent, freshwater, Snake River drainage, Oregon, Idaho and Wyoming, U.S.A. Described as a subgenus of *Fontelicella* Gregg and Taylor, 1965. Gregg and Taylor (1965:109) referred two other species to this subgenus. Is a junior synonym of *Pyrgulopsis* Call and Pilsbry, 1886 (fide Hershler and Thompson, 1987:28).

Naumia Radoman, 1973a:8. *Pseudamnicola sanctinaumi* Radoman, 1964; OD. Recent, freshwater, springs near Sveti Naum, near Lake Ohrid, Macedonia. Originally placed in the Orientaliinae (Orientaliidae).

Nematorella Kennard and Woodward, 1926a:26. Error for *Nematurella* Sandberger, 1875.

Nematurella Sandberger, 1875:575, 673. *Nematurella flexilabris* Sandberger, 1875; SD, Clessin, 1880:183. Silvanaschichten, Tortonien, Upper Miocene, Tramelan, Bern canton, Switzerland. Sandberger gave the age as Pliocene, but Wenz (1926:2007) corrected this to Upper Miocene. Kennard and Woodward (1926a:26) listed *Nematurella* in the "subfamily Stenothyrinae" of the Hydrobiidae. Wenz (1926:2007–2015) provided comprehensive synonymies for the fossil species referred to *Nematurella*; all were limited to the Miocene and Pliocene. Henderson (1935:203) listed three species (one undetermined) referred to this taxon from the Tertiary of California and Idaho, U.S.A. Schlickum (1960) discussed the nomenclature of this genus and described five new species, all from the Miocene of Germany. Taylor (1966a:120) listed this genus in the Hydrobiinae. Schlickum (1972) referred *"Melania" ovata* and *oblonga* both of Bronn, 1831 (which Sandberger, 1875:744, had placed in *Nematurella*), to *Prososthenia* Neumayr, 1869.

Neochilus Stefani, 1877:163, 258. *Bithinia simplex* Fuchs, 1877; M. Astian, Pliocene, Orciano, Toscana, Italy. Cossmann (1921:132) and Wenz (1939:556) concluded that this taxon was a junior synonym of *Peringia* Paldilhe, 1874. However, Cossmann gave the type species as *Bithinia procera* Mayer, 1864 (Astian, Pliocene, near Siena, Italy); perhaps he meant that *procera* was a senior synonym of *simplex*.

Neofossarucus Jaeckel, 1967:99. Error for *Neofossarulus* Polinski, 1929.

Neofossarulus Polinski, 1929:134, 156–157, 180. *Neofossarulus stankovici* Polinski, 1929; OD. Recent, freshwater, Lake Ohrid, Macedonia. This monotypic genus was described in the Fossarulinae (Pyrgulidae). Polinski (1932: 643–644) redescribed the type species. Wenz (1939:595) listed this taxon as a subgenus of *Chilopyrgula* Brusina, 1896. *Neofossarucus* Jaeckel, 1967; error.

Neohoratia Schütt, 1961:71–72. *Valvata subpiscinalis* Kuscer, 1932; OD. Recent, freshwater, springs near Ljubljana, Slovenia. Described as a subgenus of *Horatia* Bourguignat, 1887. Taylor (1966b:175) placed *Neohoratia* (as a subgenus of *Horatia*) in the tribe Horatiini (Cochliopinae). Boeters (1974:88) ranked *Neohoratia* as a subgenus of *Hauffenia* Pollonera, 1898. Bole and Velkovrh (1986:198) listed several

phreatic species of *Neohoratia*, which they ranked as a full genus. Boeters (1988:214–220) reviewed the Iberian taxa of *Neohoratia* (as a full genus). Dimentman and Por (1991:161) recorded an unidentified species of *Neohoratia* from spring heads on the Dead Sea shore.

Nesis Conrad, 1871:194, non Mulsant, 1850 (Coleoptera), nec Stål, 1860 (Hemiptera), nec Sacco, 1901 (Mollusca), nec Cambridge, 1883 (Arachnida). *Ebora (Nesis) bella* Conrad, 1871; M. Pliocene, Pebas, Peru. Described as a subgenus of *Ebora* Conrad, 1871. Is a subjective synonym of *Eubora* Kadolsky, 1980 (q.v.).

Nodilirata Youluo, 1978:113–114. *Nodilirata truncatellata* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Placed in the family "Bohaispiridae"; see also under *Bohaispira*.

Notogillia Pilsbry, 1953: 439–440. *Hydrobia wetherbyi* Dall, 1885; OD. Pliocene to Recent, freshwater, Florida. Thompson (1968:100–107) described the anatomy of the type species. Thompson (1970:251) described another species in this genus, which he contrasted with *Somatogyrus* Gill, 1863. Thompson (1979:47) transferred *Notogillia* to the Nymphophilinae.

Nurekia Izzatullaev, Sitnikova and Starobogatov, 1985:59. *Nurekia triculiformis* Izzatullaev, Sitnikova, and Starobogatov, 1985; OD. Recent, freshwater, Tajikistan. Placed in the "family" Pseudocaspiidae Sitnikova and Starobogatov, 1983 (= Hydrobiidae, Micromelaniinae). Vaught (1989:20) transferred *Nurekia* to the hydrobiid subfamily Belgrandiellinae.

Nydrobia Izzatullaev, Sitnikova, and Starobogatov, 1985:53. Error for *Hydrobia* Hartmann, 1821.

Nymphophilus Taylor, 1966b:199–203. *Nymphophilus minckleyi* Taylor, 1966; M. Recent, freshwater, Cuatro Cienegas Basin, Coahuila, Mexico. Taylor (1966b:199) erected the monogeneric subfamily Nymphophilinae for this species. Thompson (1979) redescribed this taxon and included 14 other genera, European and North American, in the Nymphophilinae, which he recognized as a senior synonym of Orientaliidae Radoman, 1973. Hershler (1985:38–45) redescribed this genus and its two species (one new) from the Cuatro Cienegas Basin.

Nystia Tournouer, 1869a:91. *Paludina duchasteli* Nyst, 1836; M (of *Forbesia* Rolle, 1859). Eocene, France. Replacement name for *Forbesia* Rolle, 1859, non Goodsir, 1845, nec McCoy, 1849. Cossmann (1921:146, 158) transferred *Nystia* to the subfamily Stenothyrinae (of the Bithiniidae); the Stenothyridae are now considered to be a separate family from the Bithyniidae. Wenz (1926:2157–2177) provided comprehensive synonymies of the numerous fossil taxa (Paleocene-Oligocene) referred to *Nystia*. Schlickum (1968a:40–41, 46, 1970; Schlickum and Strauch, 1979:17–19) and Janssen (1980:46–47) provided further discussion of this taxon. Lozouet (1985:136, 138) referred *Nystia* and *Glibertiella* (q.v.) to the family Micromelaniidae, which he considered to be of uncertain systematic status within the superfamily Hydrobioidea. Kadolsky (1988:103–105) transferred *Nystia* to the Truncatellidae (Rissooidea) based on the shell morphology, including the decollation (truncation) of the apex. *Wystia* Tournouer, 1869; error.

Obrovia Radoman, 1973a:5, 15–16. *Obrovia salaria* Radoman, 1973; OD. Recent, brackish water, Zrmanja River, near Obrovac, Croatia. Originally placed in the Hydrobiinae (Hydrobiidae). Radoman (1974a:286–288) provided a more extensive description of this taxon and its two included species, both from the same locality. Radoman (1977:203 ff.; 1983:29) subsequently synonymized *Obrovia* with *Hydrobia* Hartmann, 1821.

Ochridopyrgula Radoman, 1955a:85. *Pyrgula macedonica* Brusina, 1896; M. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Radoman (1955a:85) in his list of subgenera of *Pyrgula* inadvertently used *"Ochridopyrgula"* twice; the first time in place of *Trachypyrgula* (as the fifth subgenus). Radoman (1973a:12) established the subfamily Ochridopyrgulinae (Pyrgulidae) for this taxon as well as *Ginaia* and *Xestopyrgula*. Radoman (1978b:47) briefly discussed this taxon and the two presumed subspecies (both from Lake Ohrid) of its type species. *Ohridopyrgula* Radoman, 1983; error.

Odontocaspia Pavlovic, 1927:91 (also, Pavlovic, 1928:52). A tentatively proposed generic name listed under *Odontohydrobia ranojevici* Pavlovic, 1927 (Pontian, Miocene, Karagac, Serbia), by its supposed similarity to certain Recent hydrobiids of the Caspian Sea and fossils of Hungary and the Balkan Peninsula. Not mentioned by Wenz (1939). Not a validly established name.

Odontohydrobia Pavlovic, 1927:89–90 (also, Pavlovic, 1928:51. *Odontohydrobia ranojevici* Pavlovic, 1927; SD, Wenz, 1939:605. Pontian, Miocene, near Belgrade, Serbia. Pavlovic (1927:90–91) referred three other new species to this taxon. Jekelius (1932:71, 1944:126) referred two new species (Miocene and Pliocene, Romania) to *Odontohydrobia*.

Ohridohauffenia Hadzisce, 1956b:74. *Ohridohoratia (Ohridohauffenia) gjorgjevici* Hadzisce, 1956; M. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Ohridohoratia* Hadzisce, 1956. Radoman (1962:77) ranked *Ohridohauffenia* as a subgenus of *Pseudamnicola* Paulucci, 1878. Taylor (1966b:175) placed this taxon in the tribe Horatiini (Cochliopinae). Radoman (1973a:7) placed this taxon in the Orientaliinae (Orientaliidae). Jovanovic (1991:225) stated that *Pseudamnicola depressa* Radoman, 1956 was the type species; presumably *gjorgjevici* was considered to be a junior synonym of *depressa*.

Ohridohoratia Hadzisce, 1956b:69–72. *Hydrobia sturanyi* var. *pygmaea* Westerlund, 1902; OD. Recent, freshwater, Lake Ohrid, Macedonia. Hadzisce (1956b:70) compared this new genus with *Pseudamnicola* Paulucci, 1878. Radoman (1962:76) ranked *Ohridohoratia* as a subgenus of *Pseudamnicola*. Taylor (1966b:175) placed this taxon in the tribe

Horatiini (Cochliopinae). Radoman (1973a:7) placed *Ohridohoratia* in the Orientaliinae (Orientaliidae).

Ohridopyrgula Radoman, 1983:146ff. (also, Jovanovic, 1991:243–244). Error for *Ochridopyrgula* Radoman, 1955.

Ohridosturanya Radoman, 1973a:8. *Horatia stankovici* Hadzisce, 1956; OD. Recent, freshwater, Lake Ohrid, Macedonia. This monotypic genus was originally placed in the Orientaliinae (Orientaliidae).

Ohrigocea Hadzisce, 1956b:76–77. *Ohrigocea (Ohrigocea) samuili* Hadzisce, 1956; SD, Radoman, 1962:78. Recent, freshwater, Lake Ohrid, Macedonia. Radoman (1962:78) ranked *Ohrigocea* as a subgenus of *Pseudamnicola* Paulucci, 1878. Taylor (1966b:175) placed this taxon in the tribe Horatiini (Cochliopinae). Radoman (1973a:8) subsequently ranked *Ohrigocea* as a full genus in the Orientaliinae (Orientaliidae).

Onobops Thompson, 1968:28–30. *Onobops crassa* Thompson, 1968; OD. Recent, brackish water, mangrove swamps, Dade and Collier counties, Florida, U.S.A. Thompson also referred *"Onoba" jacksoni* Bartsch, 1953 (from Chesapeake Bay, Maryland, and Levy County, Florida) to this taxon, which he placed in the monogeneric *"Onobops* Tribe" of the Hydrobiinae (Hydrobiidae). Hershler and Thompson (1992:83–85) transferred this genus to the Cochliopinae.

Opacuincola Ponder, 1966:35. *Opacuincola caeca* Ponder, 1966; OD. Recent, freshwater, George Creek Cave, East Takaka, Nelson, South Island, New Zealand. Gardner (1973) recorded the type species from a soda spring near Aria on the North Island of New Zealand. Two new cave species, from the North and South Islands of New Zealand, were described by Climo (1974:269–270). Placed in the *"Fluviopupa*-tribe" of the Hydrobiinae by Climo (1974:254–255). Climo (1977:75) subsequently transferred the North Island species to *Potamopyrgus*.

Orientalia Radoman, 1972:196, non Bykova, 1947 (Foraminifera); see *Orientalina* Radoman, 1978. *Paludina curta* Küster, 1852; OD. Recent, freshwater, springs near Zeta River, Montenegro. Radoman (1973:6) erected the family Orientaliidae for this genus and described 16 new species from the Balkan Peninsula. Thompson (1979) synonymized the Orientaliidae with the Nymphophilinae Taylor, 1966. Thompson (1979:47) also noted that certain genera included by Radoman in the "Orientaliidae" (based on the seminal receptacles) need to be critically re-examined due to the plasticity of the reproductive system in this family.

Orientalina Radoman, 1978a:27. Replacement name for *Orientalia* Radoman, 1972, non Bykova, 1947. *Paludina curta* Küster, 1852; OD (of *Orientalia*). Recent, freshwater, springs near Zeta River, Montenegro. Reischütz (1988b) ranked *Orientalina* as a subgenus of *Grossuana* Radoman, 1973. Bodon et al. (1992) extended this genus to central Italy (Apennines) and contrasted it with certain conchologically similar Balkan genera, based on anatomical comparisons.

Orientalinna Bole, 1985; error.

Orientalinna Bole, 1985:324. Error for *Orientalina* Radoman, 1978.

Origoceras Contreras-Arquieta, 1986:18. Error for *Orygoceras* Brusina, 1882.

Orygoceras Brusina, 1882:41–42, non Ruedemann, 1906 (Mollusca: Cephalopoda). *Orygoceras cornucopiae* Brusina, 1882; SD, Cossmann, 1921:175. Pontian, "Pliocene" (Upper Miocene), Miocic and Trnovaca (near Sinj), Croatia. Brusina (1882:41) established the family Orygoceratidae (of uncertain systematic affinities; either prosobranch or pulmonate) for this genus. Dall (1924b:113) reported this genus from the Pliocene of Idaho (U.S.A.) and provided descriptions of the four "sections," which he had previously (Dall, 1924a) established. Wenz (1928, 1939:508) transferred this genus to the Valvatidae (Prosobranchia). Wenz (1928:2484–2491) also provided extensive synonymies of the numerous "Pliocene" (Upper Miocene) European species of this genus; Wenz had overlooked the North American (Pliocene of Idaho) species of Dall. Vitalis (1936) also reviewed the Central European records of this genus, with emphasis on the Hungarian material. Papp (1962) compared *Orygoceras* with certain uncoiled *Gyraulus* (Pulmonata: Planorbidae). Taylor (1974) described the general anatomy of an undescribed species from a cave in Texas (U.S.A.) and concluded that *Orygoceras* belonged in the Hydrobiidae. Hershler and Longley (1986b) separated the Recent American species into the new genus *Hadoceras* (= *Phreatoceras* Hershler and Longley, 1987). *Bovillina, Ibicicornu,* and *Incilicornu,* all of Dall, 1924; junior subjective synonyms (fide Wenz, 1928:2484). *Origoceras* Contreras-Arquieta, 1986 and *Oxyceras* Banarescu, 1992; errors.

Oxyceras Banarescu, 1992:548. Error for *Orygoceras* Brusina, 1882.

Oxypyrgula Logvinenko and Starobogatov, 1968:352, 366. *Pyrgula (Oxypyrgula) pseudospica* Logvinenko and Starobogatov, 1968; OD. Recent, freshwater, Caspian Sea. Described as a section (= subgenus) of *Pyrgula* Cristofori and Jan, 1832. Logvinenko and Starobogatov (1968:366–368) referred seven other species (six new) from the Caspian Sea to this taxon; see also Tadjalli-Pour (1977:104–105). Roshka (1973:146) ranked *Oxypyrgula* as a subgenus of *Turricaspia* B. Dybowski and Grochmalicki, 1917, and described six new species from the Maeotian (Miocene) of Ukraine.

Palacanthilhiopsis Bernasconi, 1988:290–292. *Palacanthilhiopsis vervierii* Bernasconi, 1988; M. Recent, freshwater, Foussoubie cave, Ardèche River valley, Gard, France.

Paladhilia Morrison, 1970:278. Error for *Paladilhia* Bourguignat, 1865.

Paladilha Paetel, 1875:150 (also, Cossmann, 1921:98). Error for *Paladilhia* Bourguignat, 1865.

Paladilhia Bourguignat, 1865:14–15. *Paladilhia pleurotoma* Bourguignat, 1865; SD, Westerlund, 1902:131. Recent, freshwater, springs near Lez river, Montpellier, France.

Westerlund (1902:130–131) placed *Paladilhia* into the "Melanidae"; however, his concept of that family encompassed what are now referred to the Hydrobiidae (sensu latu) as well as the Melanopsidae (Cerithioidea). Pilsbry (1909:47) compared *Paladilhia* with his *Pterides* from Mexico and also concluded that *Lartetia* Bourguignat, 1869, was merely a subgenus or even a junior synonym of *Paladilhia*. Dodge (1959:236) stated that *Turbo thermalis* Linnaeus, 1767 (the type species of *Thermhydrobia* Paulucci, 1878), "is now placed in the genus *Paladilhia*..."; however, hydrobiid workers have instead referred *thermalis* to *Belgrandia* Bourguignat, 1869 (q.v.). Schütt (1970) reviewed this genus and ranked three other taxa as subgenera: *Lartetia, Lhotelleria,* and *Paladilhiopsis* (see also Boeters, 1971a). Bole and Velkovrh (1986:199) listed the phreatic taxa of this genus, including the subgenus *Spiralix* Boeters, 1972. Bodon and Giusti (1991:25–29) discussed the relationships of *Moitessieria* and *Paladilhia* and referred both taxa to the Hydrobiinae. *Paladilha* Paetel, 1875, *Paladhilia* Morrison, 1970, and *Poladilhia* Stoliczka, 1868; errors.

Paladilhiopsis Pavlovic, 1913:75. *Paladilhia robiciana* Clessin, 1882; SD, Wagner, 1927:292. Proposed as a section (= subgenus) of *Paladilhia* Bourguignat, 1865. Recent, freshwater, Predvor spring, Slovenia. Wagner (1927:291–294) elevated *Paldilhiopsis* to a full genus and referred several other species to this group, which was now known from various localities throughout south-central Europe. Starobogatov (1962:45–48) described six new species of *Paladilhiopsis* from caves in the Caucasus. Bole (1970:93–96; 108) discussed the anatomy and systematic status of this taxon; see also Giusti (1975, 1976; Giusti and Pezzoli, 1980:33–40). Schütt (1970) also reviewed the systematic status of this taxon, but ranked it as a subgenus of *Paladilhia*. Radoman (1973a:9) erroneously stated the type species of *Paladilhiopsis* to be *Paladilhia serbica* Pavlovic, 1913. Grossu and Negrea (1984) reviewed the three Romanian species of *Paladilhia (Paladilhiopsis),* found in underground water and caves in the Western Carpathians. Pezzoli and Giusti (1980) maintained the distinction of *Paladilhiopsis* from *Iglica* Wagner, 1927. Subsequently, Giusti and Pezzoli (1982:464) concluded that *Paladilhiopsis* was a junior synonym of *Bythiospeum* Boruguignat, 1882; it was regarded as merely the eastern (Balkan) form of this widespread European genus. Bole and Velkovrh (1986:199–201, 1987:74–75, 80–81) enumerated 35 phreatic species referred to *Paladilhiopsis;* the distribution was from Eastern Europe to Central Asia.

Palaeobaicalia Martinson, 1961:260. *Palaeobaicalia pumila* Martinson, 1961; OD. Turonian-Cenomanian, Upper Cretaceous, western Mongolia. Martinson referred one other species, also from Mongolia, to this taxon which was described in the Baicaliidae.

Paludestina Paetel, 1875:150 (also, Preston, 1914:63). Error for *Paludestrina* d'Orbigny, 1840.

Paludestrina d'Orbigny, 1840:381. *Cyclostoma acutum* Draparnaud, 1805; SD, Bourguignat, 1887:9, 10. Recent, marine, southern France. Described as a subgenus of *Paludina* Lamarck, 1799. Stimpson (1865b:46) erroneously designated *Paludestrina auberina* d'Orbigny, 1841, as the type species; Stimpson thought that the genus dated from 1841 rather than 1840 (see *Lyrodes* Doering, 1885, for *Paludestrina* sensu Stimpson (Morrison, 1939a:87)). Ihering (1895:128) stated the type to be *Paludina peristomata* d'Orbigny, 1835, as Ihering dated *Paludestrina* from 1835; this is also incorrect (Pilsbry, 1897a). Parodiz (1955) overlooked these earlier actions and stated that *Paludestrina peristomata* d'Orbigny, 1840, was the type species as it was the first included species; Parodiz thus synonymized *Potamolithus* Pilsbry, 1896, with *Paludestrina*. Subsequent authors (including Parodiz, 1965a,b) have instead recognized the validity of *Potamolithus*. Is a junior objective synonym of *Hydrobia* Hartmann, 1821. *Paludestina* Paetel, 1875, and *Pelidostrema* Jaeger, 1965; errors.

Paludinella Lovén, 1846:157 [25], non Pfeiffer, 1841 (Mollusca: Assimineidae). Type species not indicated; two originally included species, viz. *Turbo ulvae* Pennant, 1777, and *Paludinella balthica* Loven, 1846 (ex Nilsson, ms.). Recent, brackish-marine, northern Europe. Is a junior synonym of *Hydrobia* Hartmann, 1821 (fide Stimpson, 1865b:43–44).

Paludinella Frauenfeld, 1863a:199, non Pfeiffer, 1841 (Mollusca: Assimineidae), nec Lovén, 1846 (Mollusca: Hydrobiidae). Type species not indicated by Frauenfeld (1863a:199–207); the numerous listed species are mostly hydrobiids. Is a junior synonym of *Bythinella* Moquin-Tandon, 1855 (fide Stimpson, 1865b:44).

Paludiscala Taylor, 1966b:207. *Paludiscala caramba* Taylor, 1966; OD. Recent, freshwater, Cuatro Ciénegas basin, Coahuila, Mexico. Taylor (1966b:207) established the subfamily Paludiscalinae for this monotypic genus and questionably placed it in the Hydrobiidae. Hershler (1985: 58–64) redescribed this taxon and referred it to the Littoridininae (Cochliopinae, fide Hershler and Thompson, 1992:85–87). Taylor (1988:569, and table 6) stated that *Paludiscala* and *Pterides* (q.v.) were the "American counterparts" of the European *Lanzaia* and *Saxurinator,* based on the similarities of shell form.

Pannona Lörenthey, 1902:229. *Cyclostoma minima* Lörenthey, 1893; OD. Pannonian, Late Miocene, near Szilágy-Somlyó and Budapest-Köbánya, Hungary. Described as a subgenus of *Hydrobia* Hartmann, 1821. Kennard and Woodward (1926a:24) listed this taxon as a possible junior synonym of *Bythinella* Moquin-Tandon, 1855. *Pannonia* Dollfus, 1912; error.

Pannonia Dollfus, 1912:226 (also, Kennard and Woodward, 1926a:24). Error for *Pannona* Lörenthey, 1902.

Parabaicalia B. Dybowski, 1911:974. An unnecessary emendation for *Parabaikalia* Lindholm, 1909.

Parabaikalia Lindholm, 1909:42, 50. *Limnorea (Leucosia) florii* W. Dybowski, 1875; OD. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baikalia* Dall, 1877. Lindholm (1909:51–54) referred five other species (three new) to this taxon. Kozhov (1936:66–78) redescribed this taxon and recognized four species from Lake Baikal. *Parabaicalia* B. Dybowski, 1911; an unnecessary emendation.

Parabyhinella Radoman, 1979a:25. Error for *Parabythinella* Radoman, 1973.

Parabythinella Radoman, 1973a:14, 25. *Belgrandia macedonica* Hadzisce, 1958; OD. Recent, freshwater, Prespa Lake, Macedonia. Originally described in the family Bythinellidae; Radoman (1973a) referred one other species (new) to this genus. Radoman (1976:147) subsequently established the monogeneric subfamily Parabythinellinae; the Bythinellinae (s.s.) was then restricted to *Bythinella*. *Parabyhinella* Radoman, 1979; error.

Parateinostoma Oppenheim, 1892:777. *Hydrobia mana* Tausch, 1886; M. Upper Cretaceous, Danian, Csinjerthal, near Ajka, Balaton, Hungary. Yen (1951b:14–15) extended this genus to the Cretaceous of North America (Montana and Wyoming) with the description of three new species referred to this taxon. *Paratinostoma* Cossmann, 1921; unnecessary emendation.

Paratinostoma Cossmann, 1921:140. An unnecessary emendation for *Parateinostoma* Oppenheim, 1892.

Parhydrobia Cossmann and Dollfus in Cossmann, 1913b:126. Replacement name for *Ecrobia* Cossmann, 1888, "non" Stimpson, 1865. *Bithinia subulata* Deshayes, 1824; SD, Cossmann 1921:106. Lutetian and Bartonian, Eocene, France (and England). Wenz (1926:1953–1964) provided comprehensive synonymies for the fossil species referred to this taxon; one species was known from the Paleocene and the remainder were limited to the Eocene. Li (1988) described four species (three new) from the Late Cretaceous of China referred to this taxon.

Parodizia de Medina, 1959:52. *Parodizia uruguayensis* de Medina, 1959; OD. Recent, freshwater, Río de la Plata, República Oriental, Uruguay. This monotypic genus was described in the "subfamily" Symolopsinae of the family Bithyniidae. In fact, neither family is native to South America: the Symolopsidae are actually in the Cerithioidea and are restricted to Africa; the Bithyniidae are restricted to the Old World and North America. This taxon is tentatively listed herein in the Hydrobiidae pending further research.

Patamopyrgos Paetel, 1887:429. Error for *Potamopyrgus* Stimpson, 1865.

Patamopyrgus Pilsbry and Bequaert, 1927:222. Error for *Potamopyrgus* Stimpson, 1865.

Patuliana Bourguignat, 1880:6, 25. *Paludina patula* Brumati, 1838; OD. Recent, freshwater, northeastern Italy, Croatia and Dalmatia. Described as a "séries" (= subgenus) of *Emmericia* Brusina, 1870. Bourguignat (1880) referred 52 species to this new taxon. Is a junior objective synonym of *Emmericia* Brusina, 1870.

Paulia Bourguignat, 1882b:6, non Gray, 1840 (Echinodermata), nec Stål, 1869 (Hemiptera); see *Avenionia* Nicolas, 1882. *Paulia berenguieri* Bourguingat, 1882; SD, Westerlund, 1902:127. Recent, freshwater, near Avignon, France. Bourguignat (1882b:7–8) described one other new species in this genus. Boeters (1967) reviewed the nomenclatural history of this taxon and of *Avenionia;* the type species of *Paulia* was ranked as a subspecies of *Avenionia brevis* (Draparnaud, 1805).

Paulucccia Pezzoli, 1988:135 (caption to fig. 108). Error for *Pauluccia* Giusti and Pezzoli, 1980.

Pauluccia Giusti and Pezzoli, 1980:54, non Brusina, 1902 (Gastropoda: Melanopsidae); see *Pauluccinella* Giusti and Pezzoli, 1990. *Amnicola minima* Paulucci, 1881; M. Recent, freshwater, St. Agata near Matese, Torano, Terra di Lavoro, Italy. Giusti and Pezzoli (1981:214–221) provided a lengthier description of this monotypic genus, which they compared with *Islamia* Radoman, 1973 in the Islamiinae (Moitessieriidae). *Paulucccia* Pezzoli, 1988; error.

Pauluccinella Giusti and Pezzoli, 1990:340. Replacement name for *Pauluccia* Giusti and Pezzoli, 1980, non Brusina, 1902. *Amnicola minima* Paulucci, 1881; M (of *Pauluccia*). Recent, freshwater, St. Agata near Matese, Torano, Terra di Lavoro, Italy. *Paulueinella* Ghisotti, 1990; error.

Paulueinella Ghisotti, 1990:ii. Error for *Pauluccinella* Giusti and Pezzoli, 1990.

Paupertryonia Taylor, 1987:38. *Potamopyrgus cheatumi* Pilsbry, 1935; OD. Recent, freshwater, Phantom Lake, Jeff Davis County, Texas, U.S.A. Described as a subgenus of *Tryonia* Stimpson, 1865 and placed in the family Littoridinidae; Taylor (1987:41–47) also described four new species in this taxon. Is a junior synonym of *Tryonia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Pavleradomania Reischütz, 1988a:347. A replacement name for "*Turkorientalia* Radoman, 1983," non *Turcorientalia* Schütt, 1980. In fact, Radoman's taxon, as *Turcorientalia* (q.v.), dates from 1973, not 1983.

Paxillostium Gardner, 1970:181. *Paxillostium nanum* Gardner, 1970; OD. Recent, freshwater, south of Parakao (and elsewhere), North Island, New Zealand. This genus was compared with *Hemistomia* Crosse, 1872, by Gardner. Placed in the "*Hemistomia*-tribe" of the Hydrobiinae by Climo (1974:254).

Pelidostrema Jaeger, 1965:65. Error for *Paludestrina* d'Orbigny, 1840.

Peringia Paladilhe, 1874:6, 7–9. *Turbo ulvae* Pennant, 1777; SD, Westerlund, 1902:128. Recent, marine, "Flintshire," England (also Spain to Portugal); see Boeters (1988:193)]. Bourguignat (1877:86–87) noted that this genus was primarily marine, but that it was also found in the inland freshwaters of France and Switzerland: he claimed that 45 such species of *Peringia* were known to him. Kennard and

Woodward (1924:128–129, 1926a:20–22, 1926b:40–41) and Ellis (1925) discussed the nomenclature of this genus and its type species; these authors recognized *Peringia* as the next available name for *Sabinea* Sowerby, 1842, non Owen, 1835 (Crustacea). Wenz (1926:1978–1987) provided comprehensive synonymies of the fossil species (Paleocene-Pliocene) referred to this taxon. Falniowski (1988) and Gorbushin (1992) briefly redescribed the female reproductive anatomy of the type species (as *"Hydrobia" ulvae*). Vaught (1989:20) erroneously listed *Peringia* as a junior synonym of *Sabinea* Sowerby.

Petterdiana Brazier, 1896:105. Replacement name for *Brazieria* Petterd, 1889, non Ancey, 1887 (Mollusca). *Ampullaria tasmanica* Tenison-Woods, 1876; M (of *Brazieria* Petterd, 1889) (= *Littorina paludinella* Reeve, 1857; fide Climo, 1974:255). Recent, freshwater, Tasmania, Australia. Cotton (1943a:124) briefly discussed this genus; it was only known from northern Tasmania. Climo (1974:255) placed this taxon in the *"Fluviopupa*-tribe" of the Hydrobiinae. *Pseudampullaria* Ancey, 1898, is a junior objective synonym. Is a junior synonym of *Beddomeia* Petterd, 1889 (fide Ponder in Smith, 1992:44). *Petterdiella* Pilsbry, 1900; error.

Petterdiella Pilsbry, 1900:144. Error for *Petterdiana* Brazier, 1896.

Pezzolia Bodon and Giusti, 1986:62–63. *Pezzolia radapalladis* Bodon and Giusti, 1986; OD. Recent, freshwater, spring adjacent to Rio di Tonnego, Rapallo, Genoa, Italy.

Phraetica Boeters, 1972:100. Error for *Phreatica* Velkovrh, 1970.

Phranntela Cotton 1943b:144. Error for *Phrantela* Iredale, 1943.

Phrantela Iredale, 1943:202. *Potamopyrgus marginata* Petterd, 1889; OD. Recent, freshwater, Heazlewood River, Tasmania, Australia. *Phranntela* Cotton, 1943; error.

Phreatica Velkovrh, 1970:99. *Phreatica bolei* Velkovrh, 1970; OD. Recent, freshwater, Torre [Baches Ter], Isonzo River (Soco River), northeastern Italy. Climo (1977:68) synonymized *Phreatica* and *Kuschelita* with the Japanese *Saganoa* Kuroda and Habe, 1958. Giusti and Pezzoli (1980:29–31) redescribed the type species and placed this taxon in the Moitessieriidae. *Phraetica* Boeters, 1972; error.

Phreatoceras Hershler and Longley, 1987a:402. Replacement name for *Hadoceras* Hershler and Longley, 1987, non Strand, 1934 (Mollusca: Cephalopoda). *Hadoceras taylori* Hershler and Longley, 1986; OD (of *Hadoceras*). Recent, freshwater springs, Nueces and Brazos River drainages, Real County, Texas, U.S.A. Placed in the Cochliopinae by Hershler and Thompson (1992:87–89).

Phreatodrobia Hershler and Longley, 1986a:132–134. *Valvata micra* Pilsbry and Ferriss, 1906; OD. Recent, freshwater, Edwards Aquifer, Real County, Texas, U.S.A. Hershler and Longley (1986:134–152) referred seven species (five new) to this taxon, which was erected for the Texan species hitherto referred to the European genera *Horatia* and *Hauffenia*. Hershler and Longley (1987b) described another new species of *Phreatodrobia*. Originally placed in the Hydrobiinae; subsequently referred to the Lithoglyphinae (Hershler and Thompson, 1990).

Pilsbryus Yen, 1944:105. *Lithasia antiqua* Gabb, 1865; OD. Pliocene, California and Idaho, U.S.A. Yen compared this genus with *Lithoglyphus* and *Fluminicola*. Previously, Dall (1924b:114–115) had transferred this species to *Lithoglyphus* Hartmann, 1821. Taylor (1966a:122, 132) stated that the type species was a junior synonym of *Natica occidentalis* Hall, 1845; he then synonymized *Pilsbryus* with *Lithoglyphus* Hartmann, 1821, without providing any justification thereof.

Pingyispira Li, 1986a:169. Nomen nudum; see *Pingyispira* Li, 1986b.

Pingyispira Li, 1986b:73, 78–79. *Pingyispira delicata* Li, 1986; OD. Guanzhuang Formation, Lower Eocene, Pingyi County, Shandong Province, China. One other new species, from the same locality, was referred to this genus.

Pirgula Brusina, 1881:266. Error for *Pyrgula* Cristofori and Jan, 1832.

Plagigeyeria Tomlin, 1930:24. Replacment name for *Geyeria* Wagner, 1914, non Buchecker, 1876 (et al.). *Geyeria plagiostoma* Wagner, 1914; M (of *Geyeria*). Recent, freshwater, Bosna-springs, Bosnia and Herzegovina. Wagner (1927:283–285) provided further discussion of this taxon (as *Geyeria*). Schütt (1961b) provided an identification key to the Dalmatian spring species of this genus and described three new species. Starobogatov (1962:48–49) described two new species of *"Geyeria"* from caves in the Caucasus. Angelov (1965) extended the distribution of this genus eastwards to Bulgaria. Bole (1970:99–100, 105–106, 109) compared *Plagigeyeria* with *Lanzaia* Brusina, 1906, and *Saxurinator* Schütt, 1960, and discussed their relationships with other hydrobiids. Schütt (1972) reviewed the distribution of the numerous species (all Balkan) referred to this taxon. Bole and Velkovrh (1986:202–203, 1987:75–77, 81–82) enumerated 22 species referred to *Plagigeyeria*. *Plagiogeyeria* Kuscer, 1933b; error.

Plagiogeyeria Kuscer, 1933b:138. Error for *Plagigeyeria* Tomlin, 1930.

Platybaicalia Clessin, 1878a:126 (also, Clessin, 1878d:133, 135, 1880:186). Error (or unjustified emendation) for *Liobaicalia* von Martens, 1876.

Poladilhia Stoliczka, 1868:271. Error for *Paladilhia* Bourguignat, 1865.

Polamopyrgus Salisbury and Edwards, 1959:102. Error for *Potamopyrgus* Stimpson, 1865.

Polinskiola Radoman, 1973a:7. Replacement name for *Sturanyia* Radoman, 1962, non Wagner, 1905. *Hydrobia sturanyi* Westerlund, 1902; OD (of *Sturanyia*). Recent, freshwater, Lake Ohrid, Macedonia. Radoman (1973a) placed this taxon in the Orientaliinae (Orientaliidae).

Polycirsus Cossmann, 1888:229. *Bithinia tuba* Deshayes, 1862

(= *Bithinia marceauxiana* Deshayes, 1862; fide Wenz, 1926:1966); OD. Described as a section (= subgenus) of *Hydrobia* Hartmann, 1821. Eocene (Bartonian), France and England. Wenz (1926:1964–1970) provided comprehensive synonymies for the fossil species referred to this taxon (as a subgenus of *Hydrobia*); several species were known from the Paleocene and one questionably from the Oligocene.

Pomataclis Fischer, 1885:726. Error for *Potamaclis* Sandberger, 1873.

Pomatopyrgus Stoliczka, 1868:271. Error for *Potamopyrgus* Stimpson, 1865.

Pontobelgrandiella Radoman, 1978a:30. *Belgrandiella nitida* Angelov, 1972; OD. Recent, freshwater, Vodna Pest cave, between Glozena and Polaten, Teteven, Bulgaria. Originally described in the Horatiinae (Orientaliidae).

Pontohydrobia Badzoshvili, 1979:112. *Hydrobia panticapaea* Andrusov, 1890; OD. Maeotian, Upper Miocene, Cape Pavlovskiy (Crimea), Busteni (Romania) and Badnjewo, near Negotin (Serbia). Badzoshvili referred four other species (one new) to this taxon.

Posticobia Iredale, 1943:204. *Hydrobia brazieri* Smith, 1882; original designation. Recent, freshwater, Clarence River, New South Wales, Australia. Ponder (1981) provided further discussion of this genus which is limited to the type species and *P. norfolkensis* (Sykes, 1900) (Norfolk Island, Australia). Ponder and Clark (1990:309) stated that *Posticobia* "is at best a subgenus" of *Fluvidona* Iredale, 1937.

Potamaclis Sandberger, 1873:312–313. *Melania turritissima* Forbes, 1856; SD, Clessin, 1880:183. Oligocene, Hempstead and Hordwell, England. *Pomataclis* Fischer, 1885; error.

Potamapyrqus Gasull, 1981:92. Error for *Potamopyrgus* Stimpson, 1865.

Potamolithoides Marshall and Bowles, 1932:4. *Potamolithoides biblianus* Marshall and Bowles, 1932; OD. Miocene [? Pliocene], Loyola Formation, Biblian, Canar Province, Ecuador. Tentatively placed in the "Amnicolidae" (= Hydrobiidae); named for its resemblance to *Potamolithus* Pilsbry, 1896. Parodiz (1965b:21) stated that *Potamolithoides* was not hydrobiid, although no family placement was suggested. Subsequently, Parodiz (1969:116; 1982:42–43) included this in the Littoridininae (Hydrobiidae) without mentioning his previous conclusions; see also Hershler and Thompson (1992:129).

Potamolithus Pilsbry in Pilsbry and Rush, 1896:80. *Paludina lapidum* d'Orbigny, 1835; SD, Clench, 1948:105. Recent, freshwater, Uruguay. Pilsbry (1911:566–602) and Parodiz (1965a,b, 1969) redescribed the genus and its included species (all South American); Parodiz also suggested possible relationships with *Aroapyrgus*, *Lithococcus*, and *Tropidebora*. Pilsbry (1896:86) and Wenz (1939:574) incorrectly gave *Potamolithus rushi* Pilsbry, 1896, as the type species; but this species was not validly described in the original establishment of this genus (see Clench, 1948, and Zilch, 1960:826). This was overlooked by Lopez Armengol and Manceñido (1992) who submitted Case 2801 to the ICZN to confirm *rushii* as the type species. Davis and da Silva (1984) described the anatomy of *P. ribeirensis* Pilsbry, 1911, which was placed in the Lithoglyphinae, discussed its superficial convergence upon certain taxa of the Triculinae (Pomatiopsidae) and reviewed several scenarios for the origins and dispersal of these taxa.

Potamopyrgos Paetel, 1883:70 (also, Vandel, 1965:79). Error for *Potamopyrgus* Stimpson, 1865.

Potamopyrgue Taylor, 1987:38. Error for *Potamopyrgus* Stimpson, 1865.

Potamopyrgus Stimpson, 1865a:53–54 (also, Stimpson, 1865b:49–50). *Melania corolla* Gould, 1847; OD (= *Amnicola antipodanum* (sic) Gray, 1843; fide Ponder, 1988). Recent, freshwater, New Zealand; introduced to southern Australia and Europe. Pilsbry (1911:562) synonymized the South American *Lyrodes* Doering, 1885, and *Pyrgophorus* Ancey, 1888, with *Potamopyrgus;* these are now considered to be distinct taxa. The subfamily Potamopyrginae was erected by F.C. Baker (1928:144); this was overlooked by Boeters (1984e) who thought he was establishing a new monogeneric subfamily. Morrison (1939a:87) provided a brief discussion of this genus. McMichael (1967:132) considered both *Austropyrgus* Cotton, 1943, and *Rivisessor* Iredale, 1943, to be junior synonyms of *Potamopyrgus;* this was not accepted by subsequent authors. Placed in the "*Hemistomia*-tribe" of the Hydrobiinae by Climo (1974:254), who reviewed the New Zealand species of this genus (see also Climo, 1977:73–75). Ponder (1988) provided a thorough review of this genus and the adventive distribution of the type species which is also found in the British Isles and continental Europe. The evolutionary consequences of apomictic parthenogenesis in the type species, and its correlations with parasite levels, were analysed by Hauser et al. (1992) and Lively (1992). *Huttonia* Johnston, 1891, is a junior objective synonym. *Austropyrgus* Cotton, 1943, was considered to be a junior synonym of *Potamopyrgus* (McMichael, 1967); but Ponder (1988:284) resolved this by his reanalysis of these taxa. Placed with *Jardinella* and several other Australian / southern Pacific Ocean genera in the Tateinae by Ponder and Clark (1990:309). *Patamopyrgos* Paetel, 1887, *Patamopyrgus* Pilsbry and Bequaert, 1927, *Polamopyrgus* Salisbury and Edwards, 1959, *Pomatopyrgus* Stoliczka, 1868, *Potamopyrgue* Taylor, 1987, *Potamapyrqus* Gasull, 1981, and *Potamopyrgos* Paetel, 1883; errors.

Prasinoglyphus Aleksenko, Levina, and Starobogatov, 1990: 9–10. *Paludina prasina* Küster, 1852; OD. Recent, freshwater, Slovenia and Croatia. Proposed as a subgenus of *Lithoglyphus* Hartmann, 1821.

Prespiana Radoman, 1973a:7, 21. *Prespiana lacustris* Radoman, 1973; M. Recent, freshwater, Stenje, Lake Prespa, Macedonia. Originally described in the Orientaliinae (Orientaliidae).

Prespoliorea Radoman, 1983: Errata. Error for *Prespolitorea* Radoman, 1973.

Prespoliroea Radoman, 1983:68. Error for *Prespolitorea* Radoman, 1973.

Prespolitoralia Radoman, 1973a:20, 21. Error for *Prespolitorea* Radoman, 1973.

Prespolitorea Radoman, 1973a:7. *Prespolitoralia valvataeformis* Radoman, 1973; OD. Recent, freshwater, Lake Prespa, Macedonia. Originally described in the Orientaliinae (Orientaliidae). *Prespoliorea* Radoman, 1983, *Prespoliroea* Radoman, 1983, and *Prespolitoralia* Radoman, 1973; errors.

Prespopyrgula Radoman, 1973a:11. *Hydrobia prespaensis* Urbanski, 1939; M. Recent, freshwater, Lake Prespa, Macedonia. Originally placed in the Pyrgulinae (Pyrgulidae) by Radoman.

Probaicalia Martinson, 1949:79. *Cerithium gerassimovi* Reis, 1910; OD. Mesozoic, various localities in Siberia (the Transbaikal), Russia. Martinson (1956:31–34, 1957:304–306, 1961:256–259) provided more extensive descriptions of the included species; this genus was placed in the Micromelaniidae.

Probythinella Thiele, 1928:370, 378. *Paludina emarginata* Küster, 1852 (non Say, 1821); M. Described as a subgenus of either *Cincinnatia* Pilsbry, 1891 (p. 370) or of *Hoyia* F.C. Baker, 1926 (p. 370 footnote; p. 378; see also Thiele, 1929:140). Recent, freshwater, North America ("between the Rocky Mountains and the Appalachians, from Great Slave Lake to Arkansas, Alabama, and New York" (Hibbard and Taylor, 1960:80)). Pilsbry (1935:562) compared *Probythinella* with *Brannerillus* (from the Pliocene of California) and suggested that they may be congeneric. Pilsbry stated that the the type species was actually *Paludina obtusa* Lea, 1844 (non Troschel, 1837); due to the homonymy, he concluded that the correct name for the type species is *Cincinnatia binneyana* Hannibal, 1912 (proposed as a replacement name for *obtusa* Lea). Morrison (1947c) further reviewed the nomenclatural history of *Probythinella* and claimed that *emarginata* and *obtusa* (= *binneyana*) were not even congeneric; therefore he proposed the replacement name *Probythinella lacustris limafodens* for the type species of *Probythinella* (see also Burch, 1982:269). The other subspecies included by Morrison were were *lacustris lacustris* (F.C. Baker, 1928) and *lacustris canadensis* (F.C. Baker, 1928). In contrast, Hibbard and Taylor (1960:80–82) claimed that *P. lacustris* represented a single, widespread species and that the various subspecies (as used by Morrison) could not be justified. *Vancleavia* Baker, 1930 is a junior objective synonym (fide Morrison, 1947c); *Vioscalba* Morrison, 1965, is a junior subjective synonym (fide Heard, 1979; see also Hershler and Thompson, 1992:129–130).

Prososthenia Neumayr, 1869:360. *Prososthenia schwarzi* Neumayr, 1869; SD, Clessin, 1880:181. Pliocene, Ribaric, Dalmatia. Brusina (1892:164) stated the type species to be *"Prososthenia tournoueria"*; in fact, that species was described by Neumayr, 1869, in the genus *Pyrgidium*. Brusina (1874:50–53) redescribed this genus and its Dalmatian species. Schlickum (1971:159–162, 1972) reviewed this taxon and concluded that *Pseudonematurella* Stefani, 1880, was a junior synonym.

Protamnicola Yen, 1946b:9. *Protamnicola naticoides* Yen, 1946; OD. Lower Cretaceous, Sage Creek, Fremont County, Wyoming, U.S.A.

Psedoamnicola Gasull, 1981:89. Error for *Pseudamnicola* Paulucci, 1878.

Pseudamicola Urbanski, 1960:70. Error for *Pseudamnicola* Paulucci, 1878.

Pseudamnicola Paulucci, 1878:48. *Paludina macrostoma* Küster, 1853 (non Deshayes, 1825); SD, Wagner, 1927:276. Recent, freshwater, Europe. Proposed for the European species hitherto placed in *"Amnicola"* (Haldeman, 1841), which Paulucci restricted to the American fauna. Westerlund (1902:129) erroneously stated the type species of *Pseudamnicola* to be *"Cyclostoma anatinum* Drp." (= *Buccinum anatinum* Poiret, 1801). In fact, Paulucci (1878:48–49) specified that *Paludina anatina* Küster, non Poiret was a junior synonym of *P. macrostoma* and that the name of Poiret (and as used by Draparnaud, as a new combination) was for a marine species. The designation of *Bythinia lucensis* Issel, 1866 (ex Stabile, ms.) as the type species by Kennard and Woodward (1926a:24; see also Boeters, 1971b:176, 1988:198; Radoman, 1972) is invalid because *lucensis* was not an originally included species (Zilch, 1966:291). However, the type species (*macrostoma*) is a junior homonym: a junior synonym of Küster's name must be used as the next available valid name; or, if none such are available, then the type species must be renamed. Paulucci (1878:49) listed *Paludina anatina* Küster, 1853, and *Bythinia similis* Villa, 1871, as junior synonyms of *P. macrostoma*, while noting that both names were also junior homonyms. Nevill (1885:55) stated the type to be *Cyclostoma simile* Draparnaud, 1805; it is uncertain to us as to whether the species of Draparnaud and Villa are identical. Radoman (1955c, 1956b, 1960, 1964) described a number of new species of *Pseudamnicola* from Lake Ohrid and noted the generic similarities to *Horatia*. Hadzisce (1956b:70) compared his new genus *Ohridohoratia* with *Pseudamnicola*. Radoman (1962) provided an extensive review of the Lake Ohrid species referred to *Pseudamnicola;* he recognized seven subgenera thereof. Radoman (1966b) extended this genus to the southern Balkan Peninsula (Greece) with two new species. Bole (1970:96–99, 109) described the anatomy of two Slovenian species of *Pseudamnicola*. Schütt and Bilgin (1970) extended this genus to the Anatolian Plateau (Turkey) and described the anatomy of the referred species. Roshka (1973:183–188) placed *Pseudamnicola* in the family Lithoglyphidae and referred six species (three undescribed) from the Maeotian (Miocene) of Ukraine to this taxon. Placed in the *"Horatia*-group" of the Hydrobiinae by Climo

(1977:69). Giusti and Pezzoli (1980:23–26) described the anatomy of several Italian species of *Pseudamnicola*. Schütt (1980:132–139) redescribed the Greek species of *Pseudamnicola*. Willmann (1980; 1982) reviewed several Neogene species from the Aegean Sea islands referrable to *Pseudamnicola* s.l.; the relationships of the subgenera *Limnidia* and *Staja* (q.v.) were discussed. Grossu (1986) redescribed the genus and established several new fresh and brackish water species; he erroneously attributed *Pseudamnicola* to "Paulaci, 1868." Pana (1988) inexplicably transferred *Pseudamnicola* to the Stenothyridae (Rissooidea). Burch and Bruce (1992:36–37) redescribed the Levantine species referred to this taxon. *Psedoamnicola* Gasull, 1981, *Pseudoamnicola* Boeters in Gasull, 1981, *Pseudamicola* Urbanski, 1960, *Pseudomnicola* Radoman, 1973, and *Pseugamnicola* Radoman, 1983; errors.

Pseudampullaria Ancey, 1898:148. Replacement name for *Brazieria* Petterd, 1889, non Ancey, 1887 (Mollusca). *Ampullaria tasmanica* Tenison-Woods, 1876; M (of *Brazieria* Petterd, 1889) (= *Littorina paludinella* Reeve, 1857; fide Climo, 1974:255). Recent, freshwater, Tasmania, Australia. A junior objective synonym of *Petterdiana* Brazier, 1896 (q.v.); Ancey was unaware that Brazier had already renamed *Brazieria*.

Pseudavenionia Bodon and Giusti, 1982:42–43. *Pseudavenionia piedmontana* Bodon and Giusti, 1982; OD. Recent, freshwater, Piedmont and Liguria (various localities), Italy. This monotypic genus was described in the "family" Horatiidae (Hydrobioidea). *Pseudavionia* Vaught, 1989; error.

Pseudavionia Vaught, 1989:21. Error for *Pseudavenionia* Bodon and Giusti, 1982.

Pseudoamnicola Boeters in Gasull, 1981:88. Error for *Pseudamnicola* Paulucci, 1878.

Pseudoampullaria Vaught, 1989:20. Error for *Pseudampullaria* Ancey, 1898.

Pseudobaicalia B. Dybowski, 1911:976. An unnecessary emendation for *Pseudobaikalia* Lindholm, 1909.

Pseudobaikalia Lindholm, 1909:42, 54. *Baikalia (Pseudobaikalia) jentteriana* Lindholm 1909; OD. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baikalia* Dall, 1877. Lindholm (1909:55–59) referred six other species (four new) to this taxon; see also Kozhov (1936:85–91) and Sitnikova (1991:285–286). Kozhov (1936:85) stated that the type species of *Pseudobaicalia* was *Ligea contabulata* W. Dybowski, 1875; perhaps he meant that *jentteriana* was a junior synonym of *contabulata*, but this was not clearly indicated. *Pseudobaicalia* B. Dybowski, 1911; unnecessary emendation.

Pseudobenedictia Sitnikova, 1987:1466. *Kobeltocochlea michnoi* Lindholm, 1929; OD. Recent, freshwater, Lake Baikal. Described as a monotypic subgenus of *Kobeltocochlea* Lindholm, 1909. Sitnikova noted that the type species was originally described from northwest Mongolia, but was subsequently recorded from Lake Baikal proper (and perhaps the original locality was in error).

Pseudobythinella Melville, 1956:105. *Pseudobythinella maris* Melville, 1956; OD. Lower Lias, Pliensbachian, Jurassic, Stowell Park Borehole, east of Cheltenham, Gloucestershire, England. This monotypic genus was questionably referred to the Hydrobiidae. *Pseudobythinella* Liu and Zhang, 1982, is a junior homonym; that taxon was transferred to the Pomatiopsidae by Davis et al. (1992). See discussion under *Pseudobythinella* in the list of excluded names at the end of this catalog.

Pseudocaspia Starobogatov in Birstein and Ljovuschkin, 1965:313 (also, Starobogatov, 1972:165). *Caspia issykkulensis* Clessin, 1894; OD. Recent, freshwater, Lake Issyk-kul, Kyrgyzstan. Starobogatov (1972:166–167) referred three new species from the Charshanginskii region of Turkmenistan to *Pseudocaspia;* one was from the Captar-Khana cave, the other two were from the Khodzha-Kainir thermal spring. The familial placement of this taxon was uncertain; it was originally placed in the "Truncatellidae Pomatiopsinae" (actually both are separate families). Subsequently, Starobogatov (1972) compared it with the Pyrgulidae, Baicaliidae and Littoridinidae; however, all three "families" are now considered to be subfamilies of the Hydrobiidae. Starobogatov had overlooked the previous work of Lindholm (1929a:313–314) who had ranked *issykkulensis* as a subspecies of *Hydrobia ventrosa*, which was known from the Black Sea (and elsewhere). However, given the geographical separation of Lake Issyk-kul from the Black Sea, Lindholm's subspecific ranking seems rather unlikely to us. If it were to be accepted, then *Pseudocaspia* would be a senior synonym of *Ventrosia* Radoman, 1977 (q.v.). Further research is needed to resolve the systematic status of these taxa.

Pseudohoratia Radoman, 1967b:149–151. *Valvata ochridana* Polinski, 1929; OD. Recent, freshwater, Lake Ohrid, Macedonia. Radoman (1967b:151) referred two other Lake Ohrid species to this taxon. Radoman (1973a:10) established the Pseudohoratiinae (Orientaliidae) for this genus as well as *Lyhnidia, Strugia,* and *Hauffenia*.

Pseudoislamia Radoman, 1979a:23, 27. *Pseudoislamia balcanica* Radoman, 1979; OD. Recent, freshwater, Trichonis Lake, near Mirtia, Greece. *Pseudoisslamia* Radoman, 1979; error.

Pseudoisslamia Radoman, 1979a:27. Error for *Pseudoislamia* Radoman, 1979.

Pseudolacuna Boettger, 1878:495. *Pseudolacuna macroptera* Boettger, 1878; M. Pliocene, Pebas Formation, Peru. Is a junior synonym of *Toxosoma* Conrad, 1874 (fide Kadolsky, 1980:372; the type species are synonyms).

Pseudomnicola Radoman, 1973b:429 (also, Pana, 1988:73). Error for *Pseudamnicola* Paulucci, 1878.

Pseudonematurella Stefani, 1880:10. *Litorinella dalmatina* Neumayr, 1869; SD, Schlickum, 1971:162. Pliocene, Zupica potok, Dalmatia. Described as a subgenus of *Nematurella*

Sandberger, 1875. Wenz (1926:2007) treated *Pseudonematurella* as a junior synonym of *Nematurella* Sandberger, 1875 (see also Schlickum, 1960:204). Subsequently, the type designation led Schlickum to conclude that *Pseudonematurella* was instead a junior synonym of *Prososthenia* Neumayr, 1869 (q.v.).

Pseudopaludinella Mabille, 1877:214, 222 (ex Bourguignat, ms.). *Paludestrina leneumicra* Bourguignat; SD, Anistratenko, 1991:75. Recent, marine, Arcachon, Narbonne and Antibes, southern France. Described as a subgenus of *Paludestrina* d'Orbigny, 1840. Tryon (1883:267) listed this as a junior synonym of *Paludestrina* d'Orbigny, 1840 (= *Hydrobia* Hartmann, 1821). Boeters et al. (1977) listed this as a possible senior synonym of *Semisalsa* Radoman, 1974 (q.v.). Anistratenko and Prisyazhniuk (1992) referred seven species (three new) from the Holocene of Odessa (Ukraine) to *Pseudopaludinella*. Anistratenko (1991:79) listed *Ventrosia* Radoman, 1977, as a junior synonym of *Pseudopaludinella;* further research is needed to clarify the systematic status of these genera.

Pseudorientalia Radoman, 1973a:8. *Paludina natolica* Küster, 1852; M. Recent, freshwater, Pinar Basa spring, Vedelek, near Gemlik, Turkey. Originally placed in the Orientaliinae (Orientaliidae).

Pseudotricula Ponder, 1992b:23–26. *Pseudotricula eberhardi* Ponder, 1992b; OD. Recent, small stream flowing in Cueva Blanca Cave, near Precipitous Bluff, Tasmania, Australia. This monotypic genus was contrasted with *Beddomeia* and similar Australian genera.

Pseugamnicola Radoman, 1983:245. Error for *Pseudamnicola* Paulucci, 1878.

Pterides Pilsbry, 1909:47. *Pterides pterostoma* Pilsbry, 1909; OD. Recent, freshwater (subterranean), eastern San Luis Potosi, Mexico. Pilsbry compared his new genus with the European *Paladilhia* Bourguignat, 1865, and *Lartetia* Bourguignat, 1869. Taylor (1966b:203–204) suggested that *Pterides* and *Emmericiella* Pilsbry, 1909, might belong to a new subfamily in the Hydrobiidae. Hershler and Thompson (1990; 1992:130) transferred *Pterides* to the Lithoglyphinae.

Ptychotropis Stache, 1889:165. *Ptychotropis carinifera* Stache, 1889; M. "Characeen-Kalksteins," Tertiary, Slovenia and Istra (Croatia). Originally described in the "Cyclostomatidae" (= Pomatiasidae, Littorinoidea); transferred to the Hydrobiidae by Wenz (1939:566) who listed this taxon as a questionable junior synonym of *Banneina* Stache, 1889.

Pupidrobia Iredale, 1944a:332. *Pupidrobia gracilis* Iredale, 1944 (ex Preston, ms.); OD. Recent, freshwater, Lord Howe Island, Australia. Hubendick (1952:295) and Solem (1959:195) placed *Pupidrobia* as a junior subjective synonym of *Fluviopupa* Pilsbry, 1911; see also Ponder (1982a: 94–95).

Pupiphryx Iredale, 1943:201. *Bithynia dyeriana* Petterd, 1879; OD. Recent, freshwater (or estuarine?), Long Bay, Tasmania, Australia. Iredale (1943; 1944b:114–115) referred five other species (from Tasmania, Victoria and New South Wales) to *Pupiphryx*. McMichael (1967:132) considered *Pupiphyrx* to be a junior synonym of *Tatea* Tenison-Woods, 1879. Placed in the *"Hemistomia*-tribe" of the Hydrobiinae by Climo (1974:254). A junior subjective synonym of *Fluvidona* Iredale, 1937 (fide Ponder and Clark, 1990:309).

Pycnanema Pan in Pan and Yü, 1980:152. *Pycnanema gradata* Pan in Pan and Yü, 1980; OD. Mesozoic, China. This monotypic genus was described in the family Amnicolidae.

Pyramis Brown, 1827: caption to pls. 50, 51, non Röding, 1798 (Mollusca), nec Schumacher, 1817 (Mollusca), nec Otto, 1821 (Coelenterata), nec Putzeys, 1846 (Coleoptera), nec Haeckel, 1887 (Protista), nec Colani, 1924 (Protista). No type species was designated; this taxon encompassed not only hydrobiids but also epitoniids, eulimids and other small, high spired gastropods. In part, a junior synonym of *Hydrobia* Hartmann, 1821 (fide Kennard and Woodward, 1926a:18, as *"Paludestrina"*).

Pyrgidium Tournouer, 1869a:86, 91. *Pyrgula nodotianum* Tournouer, 1866; M. Piacenzian, Pliocene, Araris valley, Côte-d'Or, France. Is a junior synonym of *Pyrgula* Cristofori and Jan, 1832 (fide Wenz, 1926:2094).

Pyrgiscus Herrmannsen, 1848:380, non Philippi, 1841 (Mollusca). An unnecessary emendation for *Pyrgula* Cristofori and Jan, 1832 (see also Stimpson, 1865b:48).

Pyrgobaicalia Starobogatov in Popova, Devjatkin, and Starobogatov, 1970:28. *Pyrgobaicalia aenigma;* M. Genus and species are nomina nuda; see *Pyrgobaicalia* Starobogatov, 1972.

Pyrgobaicalia Starobogatov, 1972:169. *Pyrgobaicalia aenigma* Starobogatov, 1972; OD. Recent, freshwater, in caves (mines), Dunkul'duk, Tajikistan. Starobogatov placed this new genus in the Baicaliidae and compared it with *Baicalia* von Martens, 1876, and *Turricaspia* B. Dybowski and Grochmalicki, 1917; see also *Aenigmapyrgus* Popova et al., 1970.

Pyrgobythinella Germain, 1931:627. *Hydrobia carinulata* Drouet, 1868; M. Recent, freshwater, springs near Dijon (and elsewhere), Côte d'Or, France. Proposed as a subgenus of *Bythinella* Moquin-Tandon, 1855. Is a junior synonym of *Bythinella* Moquin-Tandon, 1855 (fide Boeters, 1974a:271).

Pyrgohidrobia Radoman, 1961b:202. Error for *Pyrgohydrobia* Radoman, 1955.

Pyrgohydrobia Radoman, 1955a:85. *Hydrobia grochmalicki* Polinski, 1929; M. Recent, freshwater, Lake Ohrid, Macedonia. Described in the family Pyrgulidae. Radoman (1955b) subsequently described the anatomy of four species of *Pyrgohydrobia*, considered to be endemic to Lake Ohrid. Radoman and Marinkovic (1960) analyzed the variation in several Ohrid species of *Pyrgohydrobia*. Golikov and Starobogatov (1966:353) discussed two species from the Azov-Black Sea region, which they referred to *Pyrgohydrobia*. Logvinenko and Starobogatov (1968:345–350) referred 13 species (eight new) from the Caspian Sea to this taxon.

Pyrgohidrobia Radoman, 1961; error.

Pyrgophorus Ancey, 1888:188, 192. *Pyrgulopsis spinosa* Call and Pilsbry, 1886; SD, Pilsbry, 1911:562. Recent, freshwater, Comal Creek, New Braunfels, Comal County, Texas, U.S.A. Described for the "bythiniformes" species of *Pyrgulopsis;* Ancey (1888:194–202) referred several other Central American species to *Pyrgophorus*. Pilsbry (1911:562; see also Pilsbry and Bequaert, 1927:222) listed *Lyrodes* Doering, 1865, and *Pyrgophorus* as junior synonyms of the New Zealand *Potamopyrgus* Stimpson, 1865; but these taxa are no longer considered to be synonymous. Morrison (1939a:87) and Parodiz (1960:24) considered *Pyrgophorus* to be a junior subjective synonym of *Lyrodes* Doering, 1885. However, Taylor (1966b:182, 194–195) maintained the validity of *Pyrgophorus* and enumerated the 44 species (and subspecies) referred to that genus, which he placed in the Littoridininae. Thompson (1968:36–43) redescribed this genus and referred it to the "*Hydrobia* Tribe" of the Hydrobiinae (Hydrobiidae). Hershler and Thompson (1992:89–94) provided further discussion and transferred *Pyrgophorus* to the Cochliopinae.

Pyrgorientalia Radoman, 1973a:5. *Chilopyrgula zilchi* Schütt, 1964; M. Recent, freshwater, Kirgöz Spring, north of Antalya, Turkey. Radoman (1973a) also erected the new subfamily Pyrgorientaliinae (Hydrobiidae) for this genus and *Kirelia*. Radoman (1973c:84, 1977:214–215) subsequently provided a more extensive description of this taxon. *Pyrgorientia* Vevers, 1976; error.

Pyrgorientia Vevers, 1976: xxiv, 208. Error for *Pyrgorientalia* Radoman, 1973.

Pyrgula Cristofori and Jan, 1832:4. *Turbo annulatus* Linnaeus, 1758; M. Recent; locality not specified (presumably freshwater), Europe. Bourguignat (1877:89) placed *Pyrgula* in the Melanidae (= Thiaridae, Cerithioidea). Wenz (1926:2094–2119) provided comprehensive synonymies for the numerous fossil species (Pontian, Miocene to Pliocene) referred to *Pyrgula*. Radoman (1956a) redescribed a species from Lake Ohrid, originally placed in *Micromelania* and which he transferred to *Pyrgula*. The geographic variation of the Ohrid *P. sturanyi* was analyzed by Radoman (1959). Giusti and Pezzoli (1980:60–63) redescribed this genus and its type species, which they referred to the Pyrgulidae (Pyrguloidea). *Pyrgidium* Tournouer, 1869; junior synonym. *Pirgula* Brusina, 1881; error. *Pyrgiscus* Herrmannsen, 1848; unnecessary emendation.

Pyrgulopsis Call and Pilsbry, 1886:9–10. *Pyrgula nevadensis* Stearns, 1883; OD. Recent, freshwater, Pyramid and Walker Lakes, Nevada, U.S.A. Call and Pilsbry (1886:13–14) also referred three other species (from Illinois and Texas, U.S.A.) to their new genus. Wenz (1926:2041–2042) detailed the then known fossil species of this taxon. Pilsbry (1935:554–556) discussed several California Pliocene species referrable to *Pyrgulopsis*. Thompson (1979:47) suggested that this genus might belong in the Nymphophilinae. Hershler and Sada (1987:787–810) described an endemic radiation of this genus from springs in Ash Meadows, Nevada. The species from the Death Valley System were described by Hershler (1989a); those of Arizona by Hershler and Landye (1988). Hershler and Thompson (1987) redescribed this genus and enumerated its known Recent species from North America (including northern Mexico). *Fontelicella* Gregg and Taylor, 1965, *Marstonia* F.C. Baker, 1926, *Mexistiobia* Hershler, 1985, *Microamnicola* Gregg and Taylor, 1965, and *Natricola* Gregg and Taylor, 1965; all junior synonyms (fide Hershler and Thompson, 1987:28–29).

Rachipteron Thompson, 1964:97–98. *Rachipteron philopelum* Thompson, 1964; M. Recent, brackish water, Río Grande de Tárcoles and Río Barranca, Puntarenas Province, Costa Rica. Ponder (1985b:31–32) noted the similarity of this taxon to *Elachisina* (Elachisinidae) and that further research was needed to determine the correct familial allocation of *Rachipteron*.

Raphinema Vaught, 1989:21, 180. Error for *Rhapinema* Thompson, 1970.

Renistoma Yu, 1977:202. *Renistoma regularium* Yu, 1977; OD. Early Eocene, South China. Described in the family Micromelaniidae.

Revisessor Cotton, 1943b:144. Error for *Rivisessor* Iredale, 1943.

Reynesiana Fagot, 1892:27, 1893:142. Type species not specified; eight species of *Bythinella* from the south of France along with unspecified other species from central Spain were referred to this taxon.

Rhamphopoma Haas, 1955:298–299. *Rhamphopoma magnum* Haas, 1955; OD. Recent, freshwater, Lake Titicaca, South America. Hubendick (1955:325) described the anatomy of this genus. Taylor (1966b:182, 196) placed this genus in the Littoridininae. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Rhaphica Schütt, 1975:3. *Iglica bagliviaeformis* Schütt, 1970; OD. Recent, freshwater, springs near Dubrovnik (and elsewhere), Dalmatia, Croatia. Described as a subgenus of *Iglica* Wagner, 1927. Schütt (1975) referred three other species (from Bosnia and Herzegovina and southern Serbia) to this taxon. Schütt (1980) described two new species from Greece which he referred to *Rhaphica*.

Rhapinema Thompson, 1970:247. *Rhapinema dacryon* Thompson, 1970; OD. Recent, freshwater, Chipola River drainage, Jackson County, Florida, U.S.A. Placed in the Nymphophilinae (of the Hydrobiidae); see also Thompson, 1979:47. *Raphinema* Vaught, 1989; error.

Rhodopyrgula Willmann, 1978:235. Nomen nudum; see *Rhodopyrgula* Willmann, 1981.

Rhodopyrgula Willmann, 1981:120. *Pyrgula rhodensis* Bukowski, 1895; OD. Neogene, Rhodes, Aegean Sea, Greece. This taxon was described in the family Micromelaniidae.

Rivisessor Iredale, 1943:200. *Hydrobia gunni* Frauenfeld, 1863; OD. Recent, freshwater, Brighton, Tasmania, Austra-

lia. Iredale (1943) referred four other species, from Tasmania and South Australia, to this genus. McMichael (1967:132) thought *Rivisessor* to be a junior synonym of *Potamopyrgus* Stimpson, 1865. Placed in the "*Hemistomia*-tribe" of the Hydrobiinae by Climo (1974:254). Ponder (1982a) placed *Rivisessor* into synonymy of *Hemistomia* Crosse, 1873. Subsequently Ponder (1988:285) instead transferred *Rivisessor* to the synonymy of *Fluvidona* Iredale, 1937; he also suggested that the type species of *Rivisessor* may be a junior synonym of *Paludina nigra* Quoy and Gaimard, 1835. *Revisessor* Cotton, 1943; error.

Robicia Brusina, 1897:17, and caption to pl. 10. *Robicia pyramidella* Brusina, 1897; M. "Congerienschichten," Pontian, Upper Miocene, Gregetek, Slovenia. Genus and species are nomina nuda; only the locality and two illustrations are provided. Dollfus (1912:226) was apparently the first to validate this taxon; he noted that "ce genre doit proablement passer dans les Mélaniens [Cerithoidea]."

Robicia Dollfus, 1912:226 (ex Brusina, ms.). *Robicia pyramidella* Dollfus, 1912 (ex Brusina, ms.); M. "Congerienschichten," Pontian, Upper Miocene, Gregetek, Slovenia.

Romania Cossmann, 1913a:108. Replacement name for *Juliania* Roman, 1910, non Fucini. *Juliania expansa* Roman, 1910; OD [of *Juliania*]. Tongrien, Lower Oligocene, La Butte Iouton, Gard, France. Cossmann (1921:124) listed *Romania* as a junior synonym of *Dieretostoma* Cossmann, 1888.

Rotondia Radoman, 1964:108, 109. *Pseudamnicola (Rotondia) rotonda* Radoman, 1964; OD. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Pseudamnicola* Paulucci, 1878; Radoman (1964) referred five species (four new) to this taxon. Radoman (1973a:8) placed this taxon, as a full genus, in the Orientaliinae (Orientaliidae).

Rubiginosa Fagot, 1892:25, 1893:140. Nomen nudum. Described as "la section des *rubiginosa*, que Paladilhe avait appelé groupe de l'*entrepha;*" three species of *Bythinella* from southern France were referred to this section.

Sabinea Sowerby, 1842:250, non Owen, 1835 (Crustacea). *Turbo ulvae* Pennant, 1777; M. Recent, brackish to marine, northern Europe. Compare with *Sabanaea* "Leach" Gray, 1847. Herrmannsen (1847:411) listed *Sabinea* as a junior synonym of *Hydrobia* Hartmann, 1821. Ellis (1925) pointed out the generic homonymy and stated that *Peringia* Paladilhe, 1874, was the next available name for *Sabinea* Sowerby, unless *Sabanaea* Gray was to be considered valid. Kennard and Woodward (1924:128, 1926a:21, 1926b:40–41) further discussed this taxon and also concluded that *Peringia* was to be used for the species previously listed under *Sabinea* Sowerby. Vaught (1989:20) overlooked this homonymy and listed *Sabinea* as a subgenus of *Hydrobia* Hartmann, 1821.

Sadleriana Clessin, 1890:664. *Paludina fluminensis* "Sadler" Küster, 1852; OD. Proposed as a section (= subgenus) of *Lithoglyphus* Hartmann, 1821. Recent, freshwater, Slovenia and Croatia. Radoman (1967c) redescribed this genus and noted that *Lithoglyphoides* Sturany and Wagner, 1914, was a junior objective synonym. Giusti (1970) concluded that *Sadleriana* was a synonym or a subgenus of *Belgrandia* Bourguignat, 1869; subsequently Giusti (1975) maintained *Sadleriana* as a valid genus (see also Giusti and Pezzoli, 1980:46–47). Bole (1972) redescribed the *Sadleriana* (as a full genus) and its Slovenian species; its relationships with *Lithoglyphus* were discussed. *Sdleriana* Radoman, 1967, and *Sedleriana* Bole, 1971; errors.

Saganoa Kuroda, Habe, and Tamu in Kuroda and Habe, 1958:186. *Akiyoshia (Saganoa) kishiiana* Kuroda, Habe, and Tamu in Kuroda and Habe, 1958; OD. Described as a subgenus of *Akiyoshia* Kuroda and Habe, 1954. Recent, freshwater, wells, near Kyoto (and elsewhere), Japan. Kuroda (1963:15–16) enumerated the Japanese species referred to this taxon. Placed in the "*Horatia*-group" of the Hydrobiinae by Climo (1977:69). Climo (1977:68) synonymized *Phreatica* Velkrovh, 1970, and *Kuschelita* Climo, 1974, with *Saganoa,* which he elevated to a full genus. Climo further suggested that *Iglica* Wagner, 1927 "should replace *Saganoa*...as the earliest name for these elongate, minute, unpigmented, widely distributed subterranean snails" (Climo, 1977:69). *Heideella* Backhuys and Boeters, 1974, may also be a synonym (fide Climo, 1977:69); however, the geographical separation (Morocco and Japan, respectively) would suggest otherwise.

Sagia Yen, 1952:354. *Sagia physoides* Yen, 1952; OD. Upper Cretaceous, near Sage Junction, Lincoln County, Wyoming, U.S.A. Yen referred three other species (all new) to this taxon.

Salakosia Willmann, 1981:116. *Salakosia bukowskii* Willmann, 1981; OD. Neogene, Salakos Formation, Rhodes, Aegean Sea, Greece. This monotypic genus was described in the family Hydrobiidae, and compared with *Graecanatolica* (q.v.).

Sandbergeriella Schlickum, 1968b:53. *Paludina desmaresti* Prévost, 1821; OD. Bartonian and Lutetian, Eocene, France. Proposed as a subgenus of *Staliopsis* Rzehak, 1893. Schlickum intended for *Sandbergeriella* to be a replacement name for *Euchilus* sensu Schlickum, 1965, non Sandberger, 1872 (= *Stalioa* Brusina, 1870).

Sandria Brusina, 1886:49. *Limnaea zrmanjae* Brusina, 1886; M. Recent, freshwater, Zrmanja River, Croatia. Brusina originally placed this genus in the Limnaeidae (Pulmonata); see also Andrusov (1890:300–301). Wenz (1926:2088–2089) provided comprehensive synonymies for the three fossil species (Pontian to Levantian) referred to *Sandria,* which he transferred to the Hydrobiidae and ranked as a subgenus of *Amnicola* Gould and Haldeman, 1840. Wenz (1930:3042) subsequently treated *Sandria* as a junior synonym of *Tanousia* Bourguignat, 1881 (see also Schlickum, 1974b).

Sandria Andrussov, 1890:300–301, non Brusina, 1886 (Mol-

lusca: Hydrobiidae). *Sandria atava* Andrusov, 1890; M. Maeotian, Upper Miocene, Crimea, Ukraine. See *Andrusowiella* Wenz, 1939.

Sarajana Radoman, 1975:44–45, 59. *Frauenfeldia lacheineri* var. *apfelbecki* Brancsik, 1888. Recent, freshwater, spring near Vrelo Bosne, by Sarajevo, Bosnia and Herzegovina. Radoman (1975:45–48) referred four species (two new) to this taxon.

Sarmata B. Dybowski and Grochmalicki, 1920:100, 115 (caption to plate 1), as a subgenus of *Hydrobia* Hartmann, 1821. Not validly described; is a nomen nudum.

Savaginius Taylor, 1966a:130. *Paludestrina nanna* Chamberlin and Berry, 1933; OD. Pliocene and Pleistocene, California, Utah and Idaho, U.S.A. Taylor (1966a:121) referred nine species to this genus.

Saxurinator Schütt, 1960:146–147. *Paladilhiopsis buresi* Wagner, 1927; OD. Recent, freshwater, springs, Montenegro. Bole (1970:99–100, 102–105, 109) compared *Saxurinator* with *Lanzaia* Brusina, 1896, and *Plagigeyeria* Tomlin, 1930 (see also Schütt, 1968); and transferred several Slovenian species hitherto placed in *Lanzaia* to *Saxurinator*. Bole and Velkovrh (1986:204) enumerated the known phreatic species, all from the Balkan peninsula, referred to *Saxurinator*.

Scalimelania Wenz, 1939:595. *Micromelania ptychophora* Brusina, 1874; OD. Pontian, "Congerien-schichten," Miocene, Okrugljak, near Zagreb, Croatia. This monotypic taxon was described as a subgenus of *Micromelania* Brusina, 1874, and referred to the Micromelaniidae (Micromelaniinae).

Schuettemmericia Schlickum, 1961:62. *Hydrobia subpyrenaica* Noulet, 1854; OD. Aquitanian, Lower Miocene, Noaillan and Lucbardes, Gironde, France. Described as a subgenus of *Emmericia* Brusina, 1870.

Sdleriana Radoman, 1967c:124. Error for *Sadleriana* Clessin, 1890.

Sedleriana Bole, 1971b:122. Error for *Sadleriana* Clessin, 1890.

Sellia Raincourt, 1884: 344. *Sellia pulchra* Raincourt, 1884; M. Eocene, Le Ruel, Oise, France. Cossmann (1888:221, 1921:113) redescribed this taxon. Wenz (1926:2040–2041) provided a complete synonymy for the type species; it was then known from the Bartonian and Lutetian (Eocene) of England and France.

Semisalsa Radoman, 1974a:283–285. *Semisalsa dalmatica* Radoman, 1974; OD. Recent, freshwater, Pirovac spring and Zrmanja River (and elsewhere), Croatia. Radoman (1974a:285) described two other new species, also from the coastal Adriatic regions, in this taxon. Chukhchin (1976b) described the anatomy of this species and discussed its possible relationships with other rissoaceans; he concluded that its familial allocation remained uncertain. Boeters et al. (1977) redescribed this taxon and several species referred therein; they ranked *Semisalsa* as a subgenus of *Hydrobia*. Giusti and Pezzoli (1980:28) described the anatomy of an Italian species referred to *Semisalsa*, which they placed in the Moitessieriidae. Schütt (1980:116–119, 1983a,b, 1991:130–132) redescribed the Greek, Israeli and Jordanian species, which he referred to *Semisalsa*. This genus was also recorded from Romania by Bernasconi (1991) and Turkey (the Anatolian Plateau) by Schütt (1990). Burch and Bruce (1992:34–35) redescribed the Levantine species referred to this taxon.

Davis, Mazurkiewicz, and Mandracchia (1982:169–170), Giusti and Pezzoli (1984:140), and Hershler and Thompson (1992) all considered *Semisalsa* to be a junior synonym of the South American *Heleobia* Stimpson, 1865. However, Bank and Butot (1984) maintained *Semisalsa* as a valid European genus, with *Falsihydrobia* Chukhchin, 1975, as a junior synonym. Inexplicably, Anistratenko (1992) listed *Semisalsa* as a junior synonym of *Thalassobia* Mabille, 1877 (q.v.). See also the discussion under *Ventrosia* Radoman, 1977.

Shadinia Akramovski, 1976:96–97. *Pyrgula terpoghassiani* Zhadin, 1952 (ex Akramovskij, 1952; nomen nudum); OD. Recent, freshwater, Aiger-Lich Lake, Armenia.

Sheitanok Schütt and Sesen, 1991:175. *Sheitanok amidicus* Schütt and Sesen, 1991; OD. Recent, freshwater, springs, southeastern Anatolia (various localities), Turkey.

Sibirobythinella Ioganzen and Starobogatov, 1982:1142. *Sibirobythinella kuznetzkiana* Ioganzen and Starobogatov, 1982; OD. Recent, freshwater, Tome Basin near Kazir, Kuznetzky Alatau foothills, Siberia, Russia. Placed in the Triculidae by Ioganzen and Starobogatov; they also used the "superfamily" Littoridinoidea for the Littordinidae, Triculidae, Pomatiopsidae, and Stenothyridae; the Iravadiidae and Rehderiellidae were also tentatively included. Transferred to the Belgrandiellinae (of the Hydrobiidae] by Izzatullaev, Sitnikova, and Starobogatov, 1985:56. Davis et al. (1992:153) overlooked the conclusions of Izzatullaev et al. (1985) and independently questioned the triculine affinities of *Sibirobythinella;* they noted that Ioganzen and Starobogatov did "not provide sufficient data to differentiate their taxon from European Hydrobiidae: Littoridininae, Amnicolinae, or Pomatiopsidae: Pseudobythinellini [= Erhaini]."

Sibiropyrgula Lindholm, 1932:11, 24. *Pyrgula (Siboropyrgula) multicarinata* Lindholm, 1932; OD. Pliocene, Lezhanka, north of Omsk, Siberia, Russia. This monotypic taxon was described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Popova (1964:170–171) referred a second (new) species from the Neogene of Siberia to this taxon.

Similiana Fagot, 1892:24; 1893:139. Nomen nudum. Described as a "groupe des *similiana*" for several southern France species of *"Amnicola."* See *Mercuria* Boeters, 1971.

Sinusicola Kuroda and Habe, 1950:16. *Turbonilla (Careliopsis) filiola* Yokoyama, 1927; OD. Upper Musashino Formation, near Koyashu and Tokyo (also Recent), Japan. Kuroda and Habe referred this monotypic genus to the Hydrobiidae based on "radular and opercular features" (which were not specified); they also stated that *Rissoina yendoi* Yokoyama,

1927, might be a synonym of *filiola*.

Sioliella Haas, 1949:308. *Sioliella effusa* Haas, 1949; OD. Recent, freshwater, Rio Tapajóz at Beterra, Pará, Brasil. Haas (1949:309) compared *Sioliella* with certain other South American littoridines, viz. *Potamolithus* Pilsbry, 1896, and *Pterides* Pilsbry, 1909. Is a junior synonym of *Aroapyrgus* H.B. Baker, 1931 (fide Hershler and Thompson, 1992).

Socenia Jekelius, 1944:66. *Socenia soceni* Jekelius, 1944; OD. Sarmatian, Late Miocene, near Soceni, Banat, Romania. Jekelius (1944:66–67, 124–125) referred seven species (six new) to this taxon, which was placed in the Caspiinae. Roshka (1973:175–178) ranked *Socenia* as a subgenus of *Caspia* Clessin and W. Dybowski, 1888, and referred three species (two new) to this taxon.

Sogdamnicola Izzatullaev, Sitnikova and Starobogatov in Izzatullaev, 1984:172. *Hydrobia pallida* von Martens, 1874; OD. Recent, springs, Urgut, Sarafschan Valley, near Samarkand, Uzbekistan. Placed in the subfamily Orientalininae Radoman, 1978, of the "family" Horatiidae Radoman, 1973, by Izzatullaev, Sitnikova, and Starobogatov (1985:58).

Solia Senes, 1955:89, 127–128, 155. *Hydrobia (Solia) suturatocostata* Senes, 1955; OD. Miocene, near Presov, eastern Slovakia. This monotypic taxon was described as a subgenus of *Hydrobia* Hartmann, 1821.

Somatogyra Tryon, 1864:104. Error for *Somatogyrus* Gill, 1863.

Somatogyrus Gill, 1863:34. *Amnicola depressa* Tryon, 1862; OD. Recent, freshwater, Mississippi River, Iowa, Illinois, and Wisconsin, U.S.A. Stimpson (1865b:21–23, 51–52) described the anatomy of *depressus*, the type species. Tryon (1883:271) suggested that *Gillia* Stimpson, 1865, was "probably a synonym" of *Somatogyrus*. *Walkerilla* Thiele, 1928, was described as a section (= subgenus) of *Somatogyrus*. Thompson (1984:115–119, 127, 130–132) redescribed *Somatogyrus* and concluded that *Gillia* was a valid taxa; both genera were placed in the Lithoglyphinae. *Somatogyra* Tryon, 1864; *Somatopyrus* Yen, 1951, and *Stomatogyrus* Cossmann, 1921; errors.

Somatopyrus Yen, 1951b:6. Error for *Somatogyrus* Gill, 1863.

Spilochlamys Thompson, 1968:107–109. *Spilochlamys conica* Thompson, 1968; OD. Recent, freshwater, northern peninsular Florida (various localities), U.S.A. Originally described in the "*Somatogyrus* Tribe" of the Hydrobiinae (Hydrobiidae). Thompson (1979:47) subsequently transferred this genus in the Nymphophilinae.

Spiralix Boeters, 1972:100. *Lartetia rayi* Locard, 1883. Recent, freshwater, springs (various localties), central and southern France. Described as a subgenus of *Paladilhia* Bourguignat, 1865.

Spirogyrus Thompson and Hershler, 1991a:62. *Lyogyrus (Spirogyrus) latus* Thompson and Hershler, 1991; OD. Recent, freshwater, Ogeechee River, Screven County, Georgia, U.S.A. (also elsewhere in southern Georgia). This monotypic taxon was described as a subgenus of *Lyogyrus* Gill, 1863, and referred to the subfamily Amnicolinae.

Spurwinkia Davis and Mazurkiewicz in Davis, Mazurkiewicz, and Mandracchia, 1982:162ff. *Paludestrina salsa* Pilsbry, 1905; OD. Recent, estuarine, Maine southwards to Connecticut (possibly to Maryland), U.S.A. Described as a monotypic genus and placed in the Littoridininae in contrast to the other North American *Hydrobia* species (Hydrobiinae). Bryant (1908:82) noted that *P. salsa* was native to fresh (or barely brackish) water. Hershler and Thompson (1992:95–96) redescribed this taxon, which was placed in the Cochliopinae.

Srilankiella Bole and Velkovrh, 1986:205. *Srilankiella horanae* Bole and Velkovrh, 1986; M. Recent, freshwater, wells, Pokonwita, south of Horana, Sri Lanka. Genus and species are nomina nuda.

Staadtia Schlickum, 1961:63. *Stalioa allardi* Roman, 1910; OD. Sarmatian and Sannosian, Oligocene, Gard, France.

Staadtiella Schlickum, 1968a:42, 45. *Nystia (Staadtiella) lenoiri* Schlickum, 1968; OD. Pliocene, Tilles valley, near Dijon, France. Described as a subgenus of *Nystia* Tournouer, 1869.

Staadtiellopsis Schlickum, 1968a:45. *Cyclostoma rubeschi* Reuss, 1849; OD. Burdigalian, Miocene, Kolosoruk and Prunerov, Bohemia, Czech Republic. Described as a subgenus of *Nystia* Tournouer, 1869.

Staja Brusina, 1897:20. *Staja adiaphora* Brusina, 1897; SD, Wenz, 1926:2085. However, *adiaphora* is a nomina nudum; Brusina also referred four other species to this taxon, one of which must actually serve as the type species, viz., *Bythinia obtusecarinata* Fuchs, 1870, *Hydrobia vidovici* Brusina, 1892, *Hydrobia taediosa* Brusina, 1892, and (tentatively referred) *Valvata variabilis* Fuchs. "Congerienschichten," Pontian, Upper Miocene, Lepavina, Croatia. Dollfus (1912:225–226) provided a full description of *Staja adiaphora*. Wenz (1926:2085–2088) provided comprehensive synonymies for the fossil species referred to *Staja*, which he ranked as a subgenus of *Amnicola* Gould and Haldemann, 1840. Roshka (1973:156–160) ranked *Staja* as a subgenus of *Turricaspia* B. Dybowski and Grochmalicki, 1917, and recorded four species (three undescribed) from the Maeotian (Miocene) of Ukraine. Because *Staja* antedates *Turricaspia*, then the former can not be a subgenus of the latter. Willmann (1982) ranked *Staja* as a subgenus of *Pseudamnicola* Paulucci, 1878; the Neogene species from the Aegean Sea islands were reviewed.

Stalioa Brusina, 1870:937. *Paludina desmaresti* Prévost, 1821; SD, Wenz, 1926:2177. Bartonian and Lutetian, Eocene, France. Brusina (1874:59–61) provided further discussion of this genus. Clessin (1880:183) dated this genus to Brusina, 1874, and indicated the type species as "*Stalioa valvatoides* Brusina, 1872," which is obviously not an originally included species. Tryon (1883:267) listed "*Stalion* [sic] Brusina" as a junior synonym of *Belgrandia* Bourguignat, 1869. Cossmann (1921:146, 151) and Volkova and Pchelintsev (in Pchelintsev and Korobkov, 1960:150) listed *Stalioa* in the family

Bithiniidae. Wenz (1926:2177–2191) provided comprehensive synonymies for the numerous fossil species (Paleocene–Pliocene) referred to *Stalioa*. Wenz (1939:602) listed *Stalioa* as a valid taxon in the Micromelaniidae (= Hydrobiidae). *Euchilus* Sandberger, 1872 (partim), and *Staliopsis* Rzehak, 1893; junior synonyms (fide Wenz, 1926:2177). Schlickum (1961–1968b) maintained *Euchilus* and *Staliopsis* as valid taxa. However, Schlickum (1965:102) had stated the type of *Euchilus* to be *desmaresti;* hence *Euchilus* sensu Schlickum is a junior objective synonym of *Stalioa*. Schlickum subsequently (1968b) described *Sandbergeriella* as a replacement name for *Euchilus* sensu Schlickum, 1965, non Sandberger. *Stalioia* Fischer, 1885, *Staliola* Eastman, 1900, *Stalion* von Martens, 1875, and *Stalivia* Plateau, 1898; errors or unnecessary emendations.

Stalioia Fischer, 1885:731 (also, Dollfus, 1912:205–206). Error for *Stalioa* Brusina, 1870.

Staliola Eastman, 1900:464. Error for *Stalioa* Brusina, 1870.

Stalion von Martens, 1875:166 (also, Tryon, 1883:267). Error for *Staliola* Brusina, 1897.

Staliopsis Rzehak, 1893:171–172. *Staliopsis moravica* Rzehak, 1893; SD, Woodward, 1894:66. Miocene, Oslawan and Rakschitz, Moravia, Czech Republic. Cossmann (1921:146, 163) listed *Staliopsis* as a section of *Stalioa* Brusina, 1870; both taxa were placed in the Bithiniidae (see also Volkova and Pchelintsev in Pchelintsev and Korobkov, 1960:150). Wenz (1926:2177) considered *Staliopsis* to be a junior synonym of *Stalioa* Brusina, 1870. However, Schlickum (1965:102–103) recognized *Staliopsis* as a valid subgenus of *Euchilus* Sandberger, 1872.

Stalivia Plateau, 1898:100. Error for *Stalioa* Brusina, 1870.

Stankovicia Polinski, 1929:133, 143–144, 180–181. *Stankovicia baicaliiformis* Polinski, 1929; OD. Recent, freshwater, Lake Baikal. Described in the subfamily Baicaliinae (Micromelaniidae). Polinski (1932:625–626) provided further discussion of this taxon and its relationships with the Baicaliinae.

Stantonogyra Yen, 1946b:10. *Goniobasis silberlingi* Stanton, 1903. Lower Cretaceous, Kootenai Formation, Montana (and Sand Creek, Fremont County, Wyoming), U.S.A. The type species of this monotypic genus was originally questionably referred to the Pleuroceridae (as *"Goniochilus?"*); Yen transferred the species to the Amnicolidae (= Hydrobiidae). *Glantonogyra* Salisbury, 1947:58; error.

Stimpsonia Clessin, 1878:151, non Girard, 1853 (Enteropneusta) nec Bate and Westwood, 1862 (Crustacea); see *Fontigens* Pilsbry, 1933. *Paludina nickliniana* Lea, 1838; M. Recent, freshwater, Bath County, Virginia, U.S.A. Tryon (1883:266) states that this was proposed for the North American species hitherto referred to *"Bithynella."*

Stiobia Thompson in Thompson and McCaleb, 1978:350–351. *Stiobia nana* Thompson in Thompson and McCaleb, 1978; OD. Recent, freshwater, Coldwater Spring, Calhoun County, Alabama, U.S.A. Thompson and McCaleb referred this monotypic genus to the hydrobiid subfamily Nymphophilinae.

Stomatogyrus Cossmann, 1921:111. Error for *Somatogyrus* Gill, 1863.

Strobeliella Cazzaniga, 1981:3–6. *Littoridina hatcheri* Pilsbry, 1911; OD. Recent, freshwater, Santa Cruz, Argentina. Cazzaniga (1981:8–9) enumerated other localities in Argentina and Chile from which this genus was recorded. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Strombopoma Haas, 1955:296–297. *Littoridina (Heleobia) ortoni* Pilsbry, 1924; OD. Recent, freshwater, Lake Titicaca, South America. Hubendick (1955:324) briefly described the anatomy of this genus. Taylor (1966b:182, 196) placed *Strombopoma* in the Littoridininae. Is a junior synonym of *Heleobia* Stimpson, 1865 (fide Hershler and Thompson, 1992).

Strugia Radoman, 1973a:10, 25. *Strugia ohridana* Radoman, 1973; M. Recent, freshwater, cave near Sum Spring, Struga, Ohrid Basin, Macedonia. Originally described in the Pseudohoratiinae (Orientaliidae).

Sturanyia Radoman, 1962:76, non Wagner, 1905 (Mollusca); see *Polinskiola* Radoman, 1973. *Hydrobia sturanyi* Westerlund, 1902; OD. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Pseudamnicola* Paulucci, 1878.

Stygopyrgus Hershler and Longley, 1986:156–157. *Stygopyrgus bartonensis* Hershler and Longley, 1986; OD. Recent, freshwater, Barton Springs (Edwards Aquifer), Travis County, Texas, U.S.A. This monotypic genus was referred to the Littoridininae (Cochliopinae, fide Hershler and Thompson, 1992:96–99).

Subcochliopa Morrison, 1946:25. *Subcochliopa trochus* Morrison, 1946; OD. Recent, freshwater, Rio Tribique and Rio Colabre (= Rio Culebra?), Panama (and Costa Rica?). Taylor (1966b:175, 179) placed *Subcochliopa* in the tribe Cochliopini (Cochliopinae); see also Hershler and Thompson (1992:99–102).

Subliosarmata B. Dybowski and Grochmalicki, 1920:94, 109. *Hydrobia (Subliosarmata) hoernesiana* B. Dybowski and Grochmalicki, 1920; M. Sarmatian, Miocene, Zemendorf, near Mattersburg, eastern Austria. Described as a subgenus of *Hydrobia* Hartmann, 1821.

Subtilistriata Pan in Pan and Yü, 1980:151. *Subtilistriata operculo[m]phalus* Pan in Pan and Yü, 1980; OD. Mesozoic, China. This monotypic genus was described in the family Amnicolidae.

Subulina Schmidt, 1851:332, non Beck, 1837 (Mollusca: Pulmonata). *Cyclostoma acutum* Draparnaud, 1805; OD. Recent, brackish-marine, Europe. Proposed as a subgenus of *Paludinella* "Rossm." Pfeiffer, 1841. Kennard and Woodward (1926a:18) as a junior objective synonym of *Paludestrina* d'Orbigny, 1840 (= *Hydrobia* Hartmann, 1821).

Sumbaria Kolesnikov, 1950:101. *Clessinia intermedia* Andrusov, 1902; OD. Neogene, Caspian Basin. Described as a

subgenus of *Clessiniola* Lindholm, 1924. Kolesnikov (1950:102–105) referred four other species to *Sumbaria.*

Syrofontana Schütt, 1983a:37–38. *Syrofontana kinzelbachi* Schütt, 1983; OD. Recent, freshwater, spring, Ain Taqua, Syria. A second species was described by Schütt (1988: 134–135) from the Upper Pliocene of Syria.

Tacitiana Bourguignat, 1880:6, 81. Type species not indicated in original; presumably *Emmericia (Tacitiana) taciti* Bourguignat, 1880; "tautonymy." Recent, freshwater, springs, Cattaro (various localities), Montenegro. Described as a "séries" (= subgenus) of *Emmericia* Brusina, 1870. Bourguignat (1880) referred six species to this new taxon.

Tanousia Bourguignat in Servain, 1881:64–65. *Limnaea zrmanjae* Brusina, 1866; SD, Wenz, 1930:3042. Recent, freshwater, Lake Balaton, Hungary. Originally described in the Lymnaeidae (Gastropoda: Pulmonata); Hubendick (1951:114) thought it "probably is a synonym of *Radix* [Montfort, 1810]." Schlickum (1974b) provided an extensive review of this genus and the eight included species. Meijer (1990:162–163) provided several further notes and indicated that a thorough revision of this taxon was needed. *Andrussowiella* Wenz, 1939, *Lithoglyphulus* Schlickum and Schütt, 1971, and *Sandria* Brusina, 1885, are junior objective synonyms (Wenz, 1930:3042; Schlickum, 1974b).

Tasmaniella Ancey, 1898:148. Unnecessary replacement name for *Beddomeia* Petterd, 1889, non *Beddomea* Nevill, 1878 (Mollusca). *Amnicola launcestonensis* Johnston, 1879; SD, Iredale, 1943:203 (of *Beddomeia* Petterd, 1889). Recent, freshwater, South Esk, Tasmania, Australia. Ancey (1898) erroneously thought that Petterd's name was spelled *"Beddomea,"* hence he renamed this perceived homonym. Cotton (1943a:124) briefly reviewed the included species and suggested that it may be a junior synonym of *Petterdiana* Brazier, 1895. McMichael (1967:132) pointed out that this was an unnecessary replacement name (because *Beddomeia* and *Beddomea* are not homonyms); hence *Beddomeia* remains valid. Placed in the *"Fluviopupa*-tribe" of the Hydrobiinae by Climo (1974:255).

Tatea Tenison-Woods, 1879:72. *Bythinia huonensis* Tenison-Woods, 1876; OD. Recent, freshwater, Huon River, Tasmania, Australia. Smith (1882:268–269) synonymized the type species with *Diala rufilabris* A. Adams, 1862, which was then also known from Port Lincoln (South Australia), Clarence River (New South Wales) and Melbourne (Victoria). Petterd (1889:78) provided additional locality records in for this species, including a marine record (North-West Bay, Tasmania, alive in 5–7 fathoms, 300 to 400 yards offshore). Tate (1893) synonymized *Tatea* with *Eatoniella* Dall, 1876 (Rissoidae). Pilsbry (1897b:360–363; 1898) reviewed the systematic history of *Tatea,* concluded that it belonged to the Hydrobiidae and was not related to *Eatoniella* Dall, 1876. Thiele (1925:80) erected the subfamily Tateinae (of the Rissoidae); this was elevated to a full family (comprising solely *Tatea*) by Iredale and McMichael (1962:43). Ioganzen and Starobogatov (1982:1145) further elevated this to the superfamily Tateoidea comprising the "Clenchiellidae" and "Tateidae." Cotton (1942:81–82) and Iredale (1943:205) reviewed this genus, which they regarded as hydrobiid; both authors kept *huonensis* and *rufilabris* as separate species. Cotton (1959:354) placed *Tatea* into the "family" Hemistomiidae, which was classified between the Rissoidae and the Rissoinidae. Coan (1964:170) classified *Tatea* as a subgenus of *Eatoniella* ("Rissoinidae"; now in the Eatoniellidae). Ponder (1967:221) described the anatomy of *rufilabris* and concluded (as had Pilsbry) that *"Tatea* belongs to the Hydrobiidae and is closely allied to *Potamopyrgus."* McMichael (1967:130) briefly reviewed the nomenclatural history of *Tatea* and thought *Pupiphryx* Iredale, 1943, to be a junior synonym. Placed in the *"Hemistomia*-tribe" of the Hydrobiinae by Climo (1974:254). Ponder et al. (1991) provided a thorough redescription of this genus and its two Australian species; relationships with certain other Australasian genera were indicated.

Teratobaicalia B. Dybowski, 1911:976. An unnecessary emendation for *Teratobaikalia* Lindholm, 1909.

Teratobaikalia Lindholm, 1909:41, 43. *Baikalia (Teratobaikalia) macrostoma* Lindholm, 1909; M. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baikalia* Dall, 1877. B. Dybowski and Grochmalicki (1923) and Kozhov (1936:102–103) redescribed the type species; see also Sitnikova (1991:286–288). *Teratobaicalia* B. Dybowski, 1911; an unnecessary emendation. *Teteralobaicalia* Preston, 1926; error.

Terranigra Radoman, 1978a:28. *Terranigra kosovica* Radoman, 1978; OD. Recent, freshwater, springs near Crna Zemlja, west of Nerodimlje (and other localities), Kosovo, Serbia. This monotypic genus was described in the "Orientaliininae" (emendation for Orientaliinae).

Terrestribythinella Sitnikova, Starobogatov and Anistratenko, 1992:10. *Terrestribythinella baidashnikovi* Sitnikova, Starobogatov, and Anistratenko, 1992; OD. Recent, near Tyachev, Carpathian Mountains, southwestern Ukraine. One other new species was referred to this genus, which was considered to be an *"Hydrobia*-similar terrestrial gastropod." We list this taxon here pending further study of its systematic position.

Teteralobaicalia Preston, 1926:57. Error for *Teratobaikalia* Lindholm, 1909.

Texadina Abbott and Ladd, 1951:335. *Littoridina (Texadina) sphinctostoma* Abbott and Ladd, 1951; OD. Recent, estuarine, San Antonio Bay (and adjacent regions), Texas, U.S.A. Described as a subgenus of *Littoridina* Eydoux and Souleyet, 1852. Taylor (1966b:182, 196) placed *Texadina* (as a full genus) in the Littoridininae; and suggested that *Texadina* might be a senior synonym of *Littoridinops* Pilsbry, 1952. Hershler and Thompson (1992:102–105) maintained the separate identities of these taxa, both of which were placed in the Cochliopinae.

Texapyrgus Thompson and Hershler 1991b:680–681. *Texapyrgus longleyi* Thompson and Hershler, 1991; OD. Recent, freshwater, spring by Slaughter Bend, Devils River, Val Verde County, Texas, U.S.A. This monotypic genus was referred to the Cochliopinae (see also Hershler and Thompson, 1992:105–107).

Thalasobia Volkova and Pchelintsev in Pchelintsev and Korobokov, 1960:149. Error for *Thalassobia* Mabille, 1877.

Thalassiobia Vaught, 1989:20. Error for *Thalassobia* Mabille, 1877.

Thalassobia Mabille, 1877:214, 220 (ex Bourguignat, ms.). *Paludestrina moitessieri* Bourguignat, 1876: SD, Anistratenko, 1991:79. Recent, marine, near Narbonne, southern France. Described as a subgenus of *Paludestrina* d'Orbigny, 1840. Tryon (1883:267) listed *Thalassobia* as a junior synonym of *Paludestrina* d'Orbigny, 1840 (= *Hydrobia* Hartmann, 1821). Anistratenko (1992) listed *Semisalsa* Radoman, 1974 as a junior synonym of *Thalassobia;* this is not concordant with other interpretations of *Semisalsa* (q.v.). *Thalasobia* Volkova and Pchelintsev in Pchelintsev and Korobokov, 1960; *Thalassiobia* Vaught, 1989, and *Tihalassobia* Anistratenko, 1991; errors.

Thaumasia Westerlund, 1902:104, non Perty, 1833 (Arachnida), nec Albers, 1850 (Mollusca). *Buliminus (Napaeus?) goebeli* Westerlund, 1896; OD. Recent, near Mangyshlak, Caspian Basin, Kazakhstan. Originally described in the Bulimulidae (Pulmonata). In the initial species description Westerlund (1896:188–189) noted the uncertainty of von Martens (in litt.) as to the buliminid affinities of this taxon; von Martens thought it closer to *Rissoina (Zebina),* a marine taxon. Wenz (1938:595) in his description of *Gyromelania* (q.v.) indicated that this might be equivalent to *Thaumasia.* Zilch (1959–1960) did not mention Westerlund's *Thaumasia.*

Thermhydrobia Paulucci, 1878:19, 48. *Turbo thermalis* Linnaeus, 1767; OD. Recent, freshwater, near hot springs, Italy. Nevill (1885:46) stated the type to be *Hydrobia aponensis* von Martens, 1867; Nevill incorrectly thought that Paulucci's usage of *"thermalis"* did not correspond to that of Linnaeus. Dollfus (1912:215) erroneously selected *Paludina marginata* Michaud, 1831, as the type species; this taxon was not listed by Paulucci and is not available for this purpose. Clessin (1878b:129; 1882b:137) concluded that *Thermhydrobia* was a junior synonym of *Belgrandia* Bourguignat, 1869 (q.v.). This synonymy was further discussed by Paulucci (1879), Prete (1879:83–84) and Stefani (1881). Dodge (1959:235–236) reviewed the confused nomenclatural history of *T. thermalis,* but stated that "it is now placed in the genus *Paladilhia* Bourguignat, 1865..."; Dodge was apparently unaware of *Thermhydrobia* Paulucci. Giusti (1970; Giusti and Pezzoli, 1980:51–52) referred *thermalis* to *Belgrandia* Bourguignat, 1869. Vaught (1989:22) erroneously listed *Thermhydrobia* as a junior synonym of *Semisalsa* Radoman, 1974. *Thermohydrobia* Vaught, 1989; error.

Thermohydrobia Vaught, 1989:22. Error for *Thermhydrobia* Paulucci, 1878.

Tihalassobia Anistratenko, 1991:76. Error for *Thalassobia* Mabille, 1877.

Tournoueria Brusina, 1870:937, non Munier-Chalmas, 1884 (Mollusca). *Paludina draparnaudi* Nyst, 1836; SD, Dollfus, 1912:202. Eocene-Oligocene, France and Belgium. Cossmann (1921:96) treated *Tournoueria* as a section of *Hydrobia (Hydrobia).* Wenz (1926:1863) listed *Tournoueria* as a junior synonym of *Hydrobia* Hartmann, 1821.

Tournouerina Schlickum, 1971:163. *Nematurella lugdunensis* Tournouer, 1879; OD. Pliocene, Miribel, Ain, France. Schlickum (1978) redescribed this taxon and three other referred species, all from the Plio-Pleistocene of central France. Meijer (1990:163–164) reviewed the status of the species placed in this taxon and only recognized two such as valid.

Toxosoma Conrad, 1874:31. *Toxosoma eborea* Conrad, 1874; M. Pliocene, Pebas, Peru. Conrad suggested that this "is probably a land shell." Parodiz (1969:120–121, 1982:41–42) and Kadolsky (1980:372–373) redescribed this taxon and its type species; it was tentatively referred to the Hydrobiidae rather than the Lacunidae (Littorinoidea). Nuttall (1990:219–222) also discussed this monotypic taxon which he tentatively referred to the Lithoglyphinae (see also Hershler and Thompson, 1992:130). *Alycaeodonta* Etheridge, 1879, *Liosoma* Conrad, 1874, and *Pseudolacuna* Boettger, 1878; junior objective synonyms.

Trachybaicalia von Martens, 1876:183. Replacement name for *Ligea* Dybowski, 1875, non Illiger, 1801, nec Cory, 1884. Recent, freshwater, Lake Baikal. Emended to *Trachybaikalia* by Dall, 1877; Dall also treated *Ligea* (= *Trachybaicalia*) as an objective junior synonym of *Baicalia* von Martens, 1876 (= *Limnorea* W. Dybowski, 1875).

Trachybaikalia Dall, 1877:45. An unnecessary emendation for *Trachybaicalia* von Martens, 1876. Crosse and Fischer (1879:152) recognized *Trachybaikalia* as a subgenus of *Baikalia;* they also stated the type species of the former taxon to be *Limnorea (Ligea) carinato-costato* W. Dybowski, 1875. Nevill (1885:63) also recognized *Baikalia* and *Trachybaikalia* as separate genera; he designated the type of the latter genus as *Limnorea (Ligea) costata* W. Dybowski, 1875 (see also Lindholm, 1909:68–72). However, Dall's treatment of *Trachybaikalia* as an objective junior synonym of *Baikalia* (= *Baicalia*) precluded the actions of these latter authors. B. Dybowski and Grochmalicki (1914b) redescribed the Baikal taxa of *"Trachybaicalia";* they recognized three species comprising a supposed 21 varieties.

Trachybaikalia Nevill, 1885:63, non Dall, 1877 (Mollusca: Hydrobiidae). Recent, freshwater, Lake Baikal. Proposed as an emendation for *Trachybaicalia* Martens, 1876 (q.v.). Nevill stated the type of *Trachybaikalia* to be *"costata";* hence Nevill's taxon is actually a junior objective synonym of *Maackia* Clessin, 1880.

Trachybaikalia Westerlund, 1902:127, non Dall, 1877, nec Nevill, 1884 (both Mollusca: Hydrobiidae). *Limnorea (Ligea) turriformis* W. Dybowski, 1875; OD. Recent, freshwater, Lake Baikal. Is a junior objective synonym of *Godlewskia* Crosse and Fischer, 1879 (see also Lindholm, 1924b:223).

Trachycaspia B. Dybowski and Grochmalicki, 1917:22. *Rissoa dimidiata* Eichwald, 1838; SD, Wenz, 1939:595. Recent, freshwater, Caspian Sea. Described as a section ("Gelielte Arten. Carinatae, Trachycaspia") of the subgenus *Turricaspia* B. Dybowski and Grochmalicki, 1917. These authors placed six species (including five varieties) into *Trachycaspia.* Kolesnikov (1947:108, 111) ranked *Trachycaspia* as a subgenus of *Turricaspia* B. Dybowski and Grochmalicki, 1917. Logvinenko and Starobogatov (1968:352, 358–359) ranked *Trachycaspia* as a subgenus of *Pyrgula* Cristofori and Jan, 1832; and referred three species from the Caspian Sea to this taxon.

Trachyochridia Polinski, 1929:133, 142, 180. *Micromelania (Trachyochridia) filocincta* Polinski, 1929; OD. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Micromelania* Brusina, 1874. Polinski (1932:623–624) provided a more extensive description of this monotypic taxon. Vaught (1989:23) listed this as a "?" subgenus of *Turricaspia* Dybowski and Grochmalicki, 1917. *Trachyohridia* Jovanovic, 1991; error.

Trachyohridia Jovanovic, 1991:242. Error for *Trachyochridia* Polinksi, 1929.

Trachypyrgula Cossmann, 1921:115, non Radoman, 1955 (Mollusca). *Hydrobia pagoda* Neumayr, 1875; OD. Sarmatian, Pliocene, Transylvania, Romania and Hungary. Described as a section of *Pyrgula* Cristofori and Jan, 1832.

Trachypyrgula Radoman, 1955a:85, non Cossmann, 1921 (Mollusca); see *Macedopyrgula* Radoman, 1973. *Pyrgula pavlovici* Polinski, 1929; SD, Radoman, 1973a:12 (for *Macedopyrgula*). Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Radoman (1955a:85), in his list of the subgenera of *Pyrgula,* inadvertently used *"Ochridopyrgula"* twice; once in place of *Trachypyrgula.*

Triasamnicola Yen and Reeside, 1946a:49–50. *Triasamnicola pilsbryi* Yen and Reeside, 1946; OD. Triassic, Chinle Formation ("in the south part of the Cove between Colorado and Fremont Rivers, about 8 1/2 miles northeast of their junction"), southern Utah, U.S.A. Yen and Reeside stated that this genus "superficially resembles" *Pachydrobia, Littoridina* and *Bulimus;* although the actual relationships were uncertain. Yen (1951a) referred a new species from the Triassic of Arizona to this taxon.

Trichiobaicalia B. Dybowski, 1911:976. An unnecessary emendation for *Trichiobaikalia* Lindholm, 1909.

Trichiobaikalia Lindholm, 1909:42, 59. *Limnorea (Ligea) duthiersii* W. Dybowski, 1875; M. Recent, freshwater, Lake Baikal. Described as a subgenus of *Baikalia* Dall, 1877. Kozhov (1936:97–99) redescribed the type species. *Trichiobaicalia* B. Dybowski, 1911; an unnecessary emendation.

Trichonia Radoman, 1973a:8, 21–22. *Trichonia kephalovrissonia* Radoman, 1973; OD. Recent, freshwater, Kephalovrisson spring, northern Greece. Originally placed in the Orientaliinae (Orientaliidae). Schütt (1980) erroneously thought the genus and species to be nomina nuda; see *Trichonia* Schütt, 1980.

Trichonia Schütt, 1980:120. *Trichonia trichonica* Radoman, 1973; OD. Recent, freshwater, Trichonia Lake, Greece. A junior homonym and (probably) a junior synonym of *Trichonia* Radoman, 1973.

Trochidrobia Ponder, Hershler, and Jenkins, 1989:59–64. *Trochidrobia punicea* Ponder, Hershler, and Jenkins; OD. Recent, freshwater, springs, between Marree and Oodnadatta, northern South Australia, Australia. The authors described four new species in this genus.

Trochispira Yen, 1954:53. *Trochispira wyomingensis* Yen, 1954; OD. Late Cretaceous, Bear River Formation, near Cokeville, Uinta County, Wyoming, U.S.A.

Tropidebora Pilsbry, 1944:150. *Pachytoma tertiana* Conrad, 1874; OD. Pliocene, "Pébas Beds," Peru. Parodiz (1965b:18) noted that its possible relationship with *Potamolithus* Pilsbry, 1896, remained uncertain. Nuttall (1990:218–219) redescribed this monotypic genus.

Truncatus Mao and Xia, 1990:98, 110. *Truncatus quadratus* Mao and Xia, 1990; OD. Paleogene, Jiyang Sag, coastal region of Bohai, China. Three other new species were referred to this genus which was placed in the family Bohaispiridae.

Tryonia Stimpson, 1865a:54. *Tryonia clathrata* Stimpson, 1865; OD. Recent (or sub-fossil), freshwater, "California" (Nevada, fide Taylor, 1966b:197). Stimpson (1865b:48–49) provided a more extensive description of this genus. Tryon (1883:268) ranked *Tryonia* as a subgenus of *Baikalia* von Martens, 1876; this is both nomenclaturally and systematically incorrect. Taylor (1966b:182, 196–198) placed *Tryonia* in the Littoridininae and enumerated the 29 species referred to this genus. Hershler and Sada (1987:810–831) described an endemic radiation of *Tryonia* from springs in Ash Meadows, Nevada; a similar radiation from the Death Valley System was described by Hershler (1989a:202–222). The Arizonan *Tryonia* were described by Hershler (in Hershler and Landye, 1988). Hershler and Thompson (1987) and Taylor (1987) reviewed this genus and enumerated its North American species; the generic allocation of the Central/South American species referred (by Taylor, 1966b) remained uncertain. Hershler and Thompson (1992:107–111) enumerated the numerous species referred to *Tryonia,* which was placed in the Cochliopinae. Kirch et al. (1992:175) reported specimens of *"Tryonia"* adhering to taro plants (*Colocasia*) in Mangaia, Cook Islands; it is likely that these snails are actually referrable to the Pomatiopsidae. *Calipyrgula* Pilsbry, 1934, *Conradia* Wenz, 1925, and *Isaea* Conrad, 1871, are

junior synonyms. Taylor (1966b:196) also listed as junior synonyms *Liris* Conrad, 1871, *Dyris* Conrad, 1871 (but see Hershler and Thompson, 1992). *Hyalopyrgus* Thompson, 1968; junior synonym (fide Hershler and Thompson, 1987:26). *Paupertryonia* Taylor, 1987; junior synonym (fide Hershler and Thompson, 1992:107).

Turcorientalia Radoman, 1973a:8. *Turkorientalia* [sic] *anatolica* Radoman, 1973; M. Recent, freshwater, Yercey Spring, near Yercey Lake, Turkey. Originally placed in the Orientaliinae (Orientaliidae). Schütt (1980) erroneously thought the genus and species to be nomina nuda; see *Turcorientalia* Schütt, 1980. *Turkorientalia* Radoman, 1973; error. Reischütz (1988a:347) dated Radoman's taxon to 1983 (rather than 1973); he therefore proposed *Pavleradomania* as a replacement name for *Turcorientalia* "Radoman, 1983," non Schütt, 1980.

Turcorientalia Schütt, 1980:126–127. *Paludina byzanthina* Küster, 1853; OD. Recent, freshwater, springs, Greece, Turkey and Aegean Sea islands. Described as a subgenus of *Belgrandiella* Wagner, 1927. A junior homonym of *Turcorientalia* Radoman, 1973.

Turkmenamnicola Izzatullaev, Sitnikova, and Starobogatov, 1985:57–58. *Pseudamnicola lindholmi* Shadin, 1952; OD. Recent, Shar-Arab spring, near Kushka, Turkmenistan. Placed in the new subfamily Turkmenamnicolinae in the "family" Sadlerianidae Radoman, 1973.

Turkorientalia Radoman, 1973a:22. Error for *Turcorientalia* Radoman, 1973.

Turribaicalia B. Dybowski and Grochmalicki, 1917:22; nomen nudum. Although the authors used this taxon as a full genus (with *Trachybaicalia* as the subgenus), it was not validly described and is equivalent to the older *Trachybaicalia*. B. Dybowski and Grochmalicki (1913:277) had previously established the new subfamily "Turribaicaliinae" for *Gerstfeldtia, Godlewskia* and *Trachybaicalia;* as the genus *Turribaicalia* was not then described, then this family-level name was invalidly described. Lindholm (1927:143, footnote) designated the type of *Turribaicalia* as *carinata* W. Dybowski, 1875; hence he considered *Turribaicalia* to fall into synonymy of *Trachybaicalia* (= *Baicalia*).

Turricaspia B. Dybowski and Grochmalicki, 1917:5. *Micromelania turricula* Clessin and W. Dybowski, 1888; SD, Wenz, 1939:595. Recent, freshwater, Caspian Sea. Described as a subgenus of *Micromelania* Brusina, 1874. B. Dybowski and Grochmalicki (1913:277) had previously established the new subfamily "Turricaspiinae" for *Micromelania;* as the genus *Turricaspia* was not described until 1917, then this family-level name was invalidly described and is a junior synonym of the Micromelaniinae. Golikov and Starobogatov (1966:359) ranked *Turricaspia* as a subgenus of *Pyrgula* Cristofori and Jan, 1832, and discussed four species (two new) from the Azov-Black sea basin, which they referred to this taxon. Logvinenko and Starobogatov (1968:354, 359–367) reviewed this genus and referred 15 species (seven new) from the Caspian Sea to *Turricaspia*. Golikov and Starobogatov (1972:100–105) ranked *Turricaspia* as a full genus and referred 18 species from the Azov-Black sea basin to this taxon. Although both *Laevicaspia* and *Trachycaspia* were described as sections of the subgenus *Turricaspia,* these three taxa were subsequently recognized as valid genera (or subgenera) by Russian authors.

Ulskia Logvinenko and Starobogatov, 1968:351, 379. *Caspia ulskii* Clessin and W. Dybowski in W. Dybowski, 1888; OD. Recent, freshwater, Caspian Sea. Described as a section (= subgenus) of *Pyrgula* Cristofori and Jan, 1832. Logvinenko and Starobogatov (1968:379–380) referred four other species (three new) to *Ulskia*. Roshka (1973:165–174) ranked *Ulskia* as a subgenus of *Caspia* Clessin and W. Dybowski, 1888, and described seven new species from the Maeotian (Miocene) of Ukraine.

Valvatamnicola Izzatullaev, Sitnikova, and Starobogatov in Izzatullaev, 1984:173–174. *Pseudamnicola archangelskii* Zhadin, 1952; OD. Recent, freshwater, spring betwen Vozadil and Shakmardan, Uzbekistan. This genus was placed in the subfamily Pseudohoratiinae Radoman, 1973, of the "family" Horatiidae Radoman, 1973, by Izzatullaev, Sitnikova, and Starobogatov (1985:58).

Valvatasma Iredale, 1943:203. *Valvata tasmanica* Tenison-Woods, 1876; OD. Recent, freshwater, Gould's Country, Tasmania, Australia. Placed in the *"Fluviopupa*-tribe" of the Hydrobiinae by Climo (1974:255). Is a junior synonym of *Beddomeia* Petterd, 1889 (fide Ponder in Smith, 1992:44).

Vancleaveia F.C. Baker, 1930:189. *Paludina emarginata* "Küster" (Say, 1821); SD, Pilsbry, 1935:562. Recent, freshwater, North America. Is a junior objective synonym of *Probythinella* Thiele, 1928. See Pilsbry (1935:562, footnote) and Morrison (1947c) for further discussion.

Ventriosa Grossu, 1986:9, 11. Error for *Ventrosia* Radoman, 1977.

Ventrosia Radoman, 1977:208. *Helix stagnorum* Gmelin, 1791; OD. Recent, marine, northern Europe. Radoman (1977:209–210) referred three other species, from the Black Sea and the Balkan Peninsula, to this taxon. Butot et al. (1979:54) and Giusti and Pezzoli (1984:131) stated that the Radoman's usage of the type species was not equivalent to Gmelin's; hence they concluded that *Helix stagnorum* sensu Radoman was actually *Turbo ventrosus* Montagu, 1803. In contradistinction, Radoman (1979b) synonymized *ventrosa* with *stagnorum* despite the neotype designations of Butot et al. (1979), which had decisively precluded any such action. Bank and Butot (1984) again rejected Radoman's interpretations and referred *stagnorum* to *Semisalsa* Radoman, 1974 (see also Hoeksema et al., 1991). However, Giusti and Pezzoli (1984:140) placed both *Semisalsa* and *Falsihydrobia* Chukhchin, 1975, into synonymy of the South American *Heleobia* Stimpson, 1865; thus they referred *stagnorum* to *Heleobia*. Then, Giusti and Pezzoli (1984) used *Ventrosia* for certain species hitherto placed in *Hydrobia* Hartmann, 1821 (e.g., *ventrosa* Montagu; *totteni* Morrison (= *truncata*

Vanatta, 1924)). Davis et al. (1989:341–342, 347) compared *Ventrosia* with *Hydrobia* s.s.; they suggested that the North American *H. truncata* (Vanatta, 1924) was introduced from Europe and would then possibly be a synonym of *H. ventrosa*. In fact, Oskarsson et al. (1977:15) had already concluded that *truncata* (as *"totteni"*) was a junior synonym of *ventrosa*, which they considered to have "a wide boreal amphi-atlantic distribution." If *ventrosa* is indeed congeneric with *stagnorum*, then *Ventrosia* is a junior subjective synonym of *Ecrobia* Stimpson, 1865 (q.v.). Gorbushin (1992) discussed the general anatomy and trematode parasitism of *"Hydrobia" ventrosum* from the White Sea. See also *Pseudocaspia* Starobogatov, 1972. *Ventriosa* Grossu, 1986; error.

Viascalba Thompson, 1968:1. Error for *Vioscalba* Morrison, 1965.

Vinodolia Radoman, 1973a:7, 20. *Vinodolia fiumana* Radoman, 1973; M. Recent, freshwater, Glogi spring, Bribir, Vinodol, Croatia. Originally placed in the Orientaliinae (Orientaliidae). Radoman (1974c:42–44) subsequently provided a more extensive description of this taxon.

Vioscalba Morrison, 1965:217. *Vioscalba louisianae* Morrison, 1965; OD. Recent, brackish water, Lake Ponchartrain, Louisiana, U.S.A. Morrison also transferred *Probythinella protera* Pilsbry, 1953 (Pliocene, Tampa Bay, Florida) to *Vioscalba*. Heard (1979) reanalyzed *Vioscalba* and concluded that it was a junior synonym of *Probythinella* Thiele, 1928; Heard tentatively maintained *louisianae* as a valid species. *Viascalba* Thompson, 1968; error.

Vitreana Fagot, 1892:29, 1893:144. Type species not indicated; five freshwater species from southern France were referred. Described as a group (= subgenus) of *Belgrandia*.

Vitrella Clessin, 1877:321, 334–335, non Swainson, 1840 (Mollusca: Opisthobranchia); see *Bythiospeum* Bourguignat, 1882. *Paludina pellucida* Seckendorf, 1846 (ex Benz, ms.); SD, Westerlund, 1902:128. Recent, springs in caves, southern and central Europe. This genus was further discussed by Clessin (1882a, 1890:625–631). Pilsbry (1909:47) thought that *Vitrella* was a junior synonym of *Lartetia* Bourguignat, 1869. Zilch (1970b:320) reviewed the nomenclature of these taxa and listed *"Lartetia"* sensu Boettger, 1905 (non Bourguignat, 1869), as a synonym. *ICZN*, Opinion 539 (1959), placed *Vitrella* Clessin, 1877, and of Swainson, 1840, on the "Official Index of Rejected and Invalid Generic Names in Zoology"; Swainson's name was a junior objective synonym of *Akera* Müller, 1776 (Akeridae).

Vrania Radoman, 1978a:35. *Valvata wagneri* Kuscer, 1928; OD. Recent, freshwater, Vranja Pec cave, north of Sevnica, Slovenia. Described as a monotypic subgenus of *Hauffenia* Pollonera, 1898, and placed in the Pseudohoratiinae (Orientaliidae).

Vrazia Brusina, 1897:17, and caption to pl. 10. *Vrazia acme* Brusina, 1897; M. "Congerienschichten," Pontian, Upper Miocene, Gregetek, Slovenia. Genus and species are nomina nuda; only the locality and two illustrations were provided.

Vrazia Dollfus, 1912:226 (ex Brusina, ms.). *Vrazia acme* Dollfus, 1912 (ex Brusina, ms.); M. "Congerienschichten," Pontian, Upper Miocene, Gregetek, Slovenia.

Walkerilla Thiele, 1928:372, 379. *Somatogyrus coosaensis* Walker, 1904; M. Recent, freshwater, Wetumpka, Coosa River, Alabama, U.S.A. Described as a section of *Birgella (Somatogyrus)* Gill, 1863. Thompson (1970:260) ranked *Walkerilla* as a subgenus of *Somatogyrus* Gill, 1863. Thompson (1984:127) concluded that *Walkerilla* "is polyphyletic and artificial in concept."

Wolfgangia Ponder, Hershler, and Jenkins, 1989:55. *Fonscochlea (Wolfgangia) zeidleri* Ponder, Hershler, and Jenkins, 1989; OD. Recent, freshwater, springs, Oodnadatta, northern South Australia, Australia. This monotypic taxon was described as a subgenus of *Fonscochlea* Ponder, Hershler, and Jenkins, 1989.

Wystia Tournouer, 1869b:1068 (footnote). Error for *Nystia* Tournouer, 1869.

Xestolyrgula Radoman, 1983:253. Error for *Xestopyrgula* Polinski, 1929.

Xestopyrgula Polinski, 1929:134, 147, 180. *Pyrgula (Xestopyrgula) dybowskii* Polinski, 1929; OD. Recent, freshwater, Lake Ohrid, Macedonia. Described as a subgenus of *Pyrgula* Cristofori and Jan, 1832. Polinski (1932:629–632) redescribed the type species. Schütt (1965:59–61) placed this taxon, as a full genus, in the Micromelaniidae and redescribed *X. pfeiferi* (Weber, 1927) from the Anatolian Plateau. *Xestolyrgula* Radoman, 1983; error.

Xestopyrguloides Willmann, 1981:161. *Xestopyrguloides neumayri* Willmann, 1981; OD. Neogene, Irakli-Tal, Kos, Aegean Sea, Greece. This monotypic genus was placed in the Pyrgulidae, and compared with *Falsipyrgula* and *Xestopyrgula* (q.v.).

Xinjiangospira Yu and Zhu, 1990:56, 60. *Xinjiangospira rotundata* Yu and Zhu, 1990; OD. Upper Permian, Xiaolongkou Formation, Jimsar, Junggar Basin, Xinjiang, China. *Hydrobia gondwanica* Cox, 1953, from the Upper Permian Karroo Beds, Madumabisa Shale, southern Rhodesia (= Zimbabwe) was referred to this genus by Yu and Zhu; see also Solem and Yochelson (1979:28).

Yaquicoccus Taylor, 1987:34. *Yaquicoccus bernardinus* Taylor, 1987; OD. Recent, freshwater, spring near Rio San Bernardino, Cochise County, Arizona, U.S.A. This monotypic genus was placed in the Hydrobiinae.

Yonganospira Youluo, 1978:112. *Yonganospira costata* Youluo, 1978; OD. Lower Tertiary, Bohai, China. Placed in the family "Bohaispiridae"; see also under *Bohaispira*. Huang (1983) described *Bohaispirella* as a subgenus of *Yonganospira*.

Yongkangia Yü in Pan and Yü, 1980:153. *Yongkangia biconvexa* Yü in Pan and Yü, 1980; OD. Mesozoic, China. This genus was described in the family Amnicolidae; one other new species was also referred to this taxon.

Yongningospira Yu, 1983:341, 350–351. *Yongningospira ornata* Yu, 1983; OD. Tertiary, Guangxi, China. This

monotypic genus was of uncertain familial placement; the Bohaispiridae was tentatively indicated.

Zagrabica Brusina, 1884:171 [47]. *Zagrabica naticina* Brusina 1884; SD, Wenz, 1923:1337. Pleistocene, Croatia, Slovenia and Hungary. Brusina (1884:171–173) was uncertain as to the familial placement of his new genus; it was compared with a number of prosobranch and pulmonate genera of various families. The Lymnaeidae (Pulmonata) was thought to be the most probable allocation by Brusina and by W. Dybowski (1888) who extended this genus to the Caspian Sea. Hubendick (1951:114–115) rejected the lymnaeid placement of this taxon. Vaught (1989:20) listed *Zagrabica* as a "?" synonym of *Lithoglyphoides* Sturany and Wagner, 1914; this is incorrect because *Zagrabica* is the older name.

Zaumia Radoman, 1973a:8. *Horatia kusceri* Hadzisce, 1956; OD. Recent, freshwater, springs, Sveti Naum, near Lake Ohrid, Macedonia. Originally placed in the Orientaliinae (Orientaliidae).

Zavalia Radoman, 1973a:7, 20. *Zavalia vjetrenicae* Radoman, 1973; M. Recent, freshwater, Vjetrenica cave, near Zavala, Popovo, Bosnia and Herzegovina. Originally placed in the Orientaliinae (Orientaliidae). Radoman (1973d:235–236) provided a more extensive description of this taxon.

Zetekella Morrison, 1946:11, non Drake, 1944 (Hemiptera); see *Zetekina* Morrison, 1947. *Littoridina frenata* Pilsbry, 1935; OD. Recent, freshwater, San José Islands and the mainland, Panama. Morrison (1946:11) stated that *Zetekella* and *Cochliopa* "are the closest morphological relatives, in the Panamá region, of the Asiatic genera *Oncomelania* and *Katayama*." However, the latter two taxa are actually in the Pomatiopsidae.

Zetekina Morrison, 1947b:102. *Littoridina frenata* Pilsbry, 1935; OD (of *Zetekella* Morrison, 1946). Recent, freshwater, San José Islands and the mainland, Panama. Replacement name for *Zetekella* Morrison, 1946, non Drake, 1944. Taylor (1966a:121–122, 130) referred *Littoridina woodringi* Pilsbry, 1934 (Pliocene of California) to *Zetekina*. Taylor (1966b:182, 198) placed *Zetekina* in the Littoridinae and enumerated the eight species (seven Recent, one fossil) referred to this genus. Hershler and Thomspon (1992:112–115) reviewed this taxon, which was referred to the Cochliopinae. *Zetikina* Salisbury, 1950; error.

Zetikina Salisbury, 1950:78. Error for *Zetekina* Morrison, 1947.

Zilcheuchilus Schlickum, 1965:104. *Emmericia jenkiana* Brusina, 1874; OD. "Levantian," Pliocene, Slovenia and Romania (various localities). Described as a subgenus of *Euchilus* Sandberger, 1872.

Taxa Originally or Subsequently Placed in the Hydrobiidae and Now Known Not to Belong in This Family

We have only included those genera which were recently moved out of the Hydrobiidae or erroneously placed in the Hydrobiidae.

Assiminella Monterosato, 1906:129. *Helix littorina* della Chiaje, 1828; M (of *Paludinella* Pfeiffer, 1841). Monterosato correctly thought that *Paludinella* Pfeiffer, 1841, was actually related to *Assiminea* rather than to *Paludina;* therefore he emended *Paludinella* to indicate its affinities. An unnecessary replacement name and a junior objective synonym of *Paludinella* Pfeiffer, 1841. Vaught (1989:20) erroneously listed *Assiminella* in the Hydrobiinae.

Erhaia Davis and Kuo in Davis, Kuo, Hoagland, Chen, Yang, and Chen, 1985:66–67. *Erhaia daliensis* Davis and Kuo in Davis, Kuo, Hoagland, Chen, Yang, and Chen, 1985; OD. Recent, freshwater, Lake Erhai, Yunnan Province, China. Davis, Kuo, Hoagland, Chen, Yang, and Chen (1985:69) established the monogeneric tribe Erhaiini in the Pomatiopsinae (Pomatiopsidae) and noted the considerable resemblences of this taxon to *Bythinella* and the Amnicolidae. Their phenetic analyses could not determine whether *Erhaia* should be referred to the Pomatiopsidae, Hydrobiidae, or Amnicolidae (see also Hershler and Thompson, 1992:129). Davis et al. (1992) considered *Erhaia* to be a junior synonym of *Pseudobythinella* Liu and Zhang, 1979 (non Melville, 1956); due to the generic homonymy, *Erhaia* in fact remains valid.

Hypsobia Heude, 1889:173. *Hypsobia humida* Heude, 1889; M. Recent, freshwater, Tchen-Keou, China. Davis (1979:113) placed *Hypsobia* as a junior synonym of *Tricula* Benson, 1843, of the Pomatiopsidae (Triculinae). This was overlooked by Vaught (1989:21), who listed *Hypsobia* in the Lithoglyphinae of the Hydrobiidae. *Hsypobia* Davis, 1979:111, 113; error.

Leucostele Thiele, 1927:123, 126, 129. *Paludinella (Leucostele) vitrea* Thiele, 1927; OD. Recent, freshwater, "Palaos" (= Palau or Belau Islands), Pacific Ocean. Thiele (1927) also listed this name as of "Semper"; it may have been a manuscript name of that author. Is in the Assimineidae; however, Vaught (1989:20) inexplicably listed *Leucostele* in the Hydrobiinae.

Lithoglyphopsis Thiele, 1928:366, 379. *Lithoglyphus modestus* Gredler, 1887; OD. Recent, freshwater, Hen-kiou-fu, Peshang, China. Brandt and Temcharoen (1971:130) briefly contrasted *Lithoglyphopsis* with *Lithoglyphus* Hartmann, 1821; however, the Mekong River species (*L. aperta* Temcharoen, 1971) of the former genus was subsequently removed from *Lithoglyphopsis* to an uncertain generic allocation by Davis et al. (1975). Davis (1979:130) transferred *Lithoglyphopsis* to the Pomatiopsidae (Triculinae). Vaught (1989:21) overlooked this action and listed *Lithoglyphopsis* in the Lithoglyphinae (Hydrobiidae). *Lythoglyphopsis* Thiele, 1928 (caption to fig. 17); error.

Manningiella Brandt, 1970:194–195. *Manningiella polita* Brandt, 1970; OD. Recent, freshwater, Mekong River, southeastern Asia. Brandt (1970) referred two other new species to this genus, which he compared with *Hubendickia* Brandt, 1970, and *Pachydrobia* Crosse and Fischer, 1876. Brandt and Temcharoen (1971:124–126) referred eight

Mekong River species to *Manningiella*. Davis (1979:114) concluded that *Manningiella* was a junior synonym of *Hubendickia* Brandt, 1968 (Pomatiopsidae: Triculinae). Vaught (1989:22) inexplicably placed *Manningiella* back in the Hydrobiidae (Lithoglyphinae).

Mesochilina Yen, 1951b:1, 7. *Mesochilina cretacea* Yen, 1951; OD. Kootenai Formation, Cretaceous, near Harlowtown, Montana, U.S.A. On page 1 of Yen (1951b) this taxon was listed under "Amnicolidae," but on page 7 it was described in the Ellobiidae (Pulmonata); the generic name indicated its similarity to the South American *Chilina* (Chilinidae). Zilch (1959–1960) overlooked *Mesochilina;* we list it here to indicate that it was described as a pulmonate and not as a hydrobiid.

Paludinella Pfeiffer, 1841:227, non Beck, 1847, nec Rossmassler, 1851, nec Lowe, 1852 (all Mollusca). *Helix littorina* della Chiaje, 1828; M. Recent, brackish-marine (freshwater?), Europe. Fischer (1878:155) placed *Paludinella* into the synonymy of *Assiminea;* Tryon (1883:273) listed this as a subgenus of *Assiminea* (Assinineidae). Thiele (1929:170) ranked *Paludinella* as a full genus in the Assimineidae. Vaught (1989:20) erroneously listed *Paludinella* in the Hydrobiinae.

Parapyrgula Annandale and Prashad, 1919:420. *Parapyrgula coggni* Annandale and Prashad, 1919; OD. Described as a monotypic subgenus of *Paraprososthenia* Annandale, 1919. Recent, freshwater, Tali-fu Lake (= Lake Er-hai), Yunnan, China. Davis (1979:113) transferred *Parapyrgula* into the Pomatiopsidae (Triculinae). However, Vaught (1989:21) overlooked this and listed *Parapyrgula* in the Lithoglyphinae of the Hydrobiidae.

Pseudobythinella Liu and Zhang, 1982:132–133, 135, non Melville, 1956 (Gastropoda: Hydrobiidae). *Pseudobythinella jianouensis* Liu and Zhang, 1982; OD. Recent, freshwater, Jian'ou, Fujian, China. Liu and Zhang compared their new genus with *Bythinella* Moquin-Tandon, 1855, and noted that this taxon served as the first intermediate host of the lung fluke. Davis et al. (1992:154, 162–183) transferred this genus to the Pomatiopsidae, noted that *Erhaia* Davis and Kuo, 1985 was a junior synonym, and established the new tribe "Pseudobythinellini" Davis and Chen in Davis et al. (1992:154) to encompass both *Pseudobythinella* and the Chinese species questionably referred to the Japanese *Akiyoshia (Saganoa).* Unfortunately, this created several problems: (1) *Pseudobythinella* Liu and Zhang is itself a junior homonym; (2) because "Erhaini" Davis et al., 1985, already existed as a validly described family-level name, it has precedence (despite the synonymy of the genera) and there was no need to create a new tribe name; and (3) the Chinese species of *"Akiyoshia (Saganoa)"* are probably not congeneric with the Japanese type species of that genus, as noted by Davis et al. (1992:155). We conclude that the "Erhaini" should be used as a tribe within the Pomatiopsidae (Pomatiopsinae) comprising *Erhaia* and one other Chinese genus, probably new.

Rehderiella Brandt, 1974:70. *Pachychilus parvum* Lea, 1856; OD. Recent, brackish-freshwater, Klong Premprachakon, Bangkok, Thailand (type locality designated by Brandt, 1974:71). Brandt (1974:70–72) referred one other, new, species to this taxon and erected the new monogeneric subfamily Rehderiellinae (of the Hydrobiidae), known only from southeast Asia. Ioganzen and Starobogatov (1982:1145) established the superfamily Rehderielloidea for the Rehderiellidae and Jullieniidae (= Pomatiopsidae). Vaught (1989:22) listed this genus in the Hydrobiidae; Ponder and Warén (1988:298) transferred the Rehderiellidae to the Pomatiopsidae.

Rufolacuna Ponder, 1976:112. *Cyclostrema bruniensis* Beddome, 1883; OD. Recent, marine, Cloudy Bay Lagoon, South Bruny Island, Tasmania, Australia (also known from elsewhere in Tasmania, Victoria, and South Australia, fide Ponder, 1976:113). This monotypic genus was described in the Littorinidae (Littorinoidea); Vaught (1989:21) inadvertently listed this in the Littoridininae (Hydrobiidae).

Rupacilla Thiele, 1927:123, 126. *Omphalotropis filocincta* Quadras and Möllendorff, 1896; OD. Recent, freshwater, Luzon, Philippines. Described as a section (= subgenus) of *Paludinella* Pfeiffer, 1841. Is in the Assimineidae; however, Vaught (1989:20) listed *Rupacilla* (as a subgenus of *Paludinella*) in the Hydrobiinae.

Sabanaea Gray, 1847a:270 (ex Leach, ms.). *Sabanaea paucicostata* "Leach" Gray, 1847; subsequent desgination, Kennard and Woodward, 1926b:41. Gray (1847b:151) later cited this genus as *"Sabinea* Leach MSS, 1828, Sow. 1842." A junior synonym of *Paludestrina* d'Orbigny, 1840 (= *Hydrobia* Hartmann, 1821), fide Kennard and Woodward (1926a:18). However, Kennard and Woodward (1926b) through their type species designation, which they stated to be a junior synonym of *Rissoa parva* (da Costa, 1778), actually transferred the genus *Sabanaea* to the Rissoidae. Verduin (1976:22–23) "selected" *Turbo cingillus* Montagu, 1803, as the type species of *Sabanaea*, which he thus considered to be a junior objective synonym of *Cingula* Fleming, 1828; Verduin had overlooked the previous selection by Kennard and Woodward.

Saduniella Brandt, 1970:199. *Saduniella planispira* Brandt, 1970; OD. Recent, freshwater, Mekong River ("between Khong Island in South Laos and Sambor in North Cambodia"), southeast Asia. Brandt placed *Saduniella* in the Lithoglyphinae (of the Hydrobiidae). Subsequently transferred to the Pomatiopsidae: Triculinae by Davis (1979:113). Vaught (1989:21) erroneously placed *Saduniella* back in the Hydrobiidae (Lithoglyphinae).

Schuttiella Brandt, 1974:154. *Paludinella daengsvangi* Brandt, 1968; OD. Recent, freshwater, near Bangkok (and elsewhere), Thailand. Described as a subgenus of *Paludinella* Pfeiffer, 1841, of the Assimineidae. However, Vaught (1989:20) erroneously listed *Schuttiella* in the Hydrobiinae.

Soapitia Binder, 1961:11–12. *Soapitia dageti;* OD. Recent, Kaleta rapids, near Soapiti, Konkouré River, Guinea (Africa). Binder compared his new genus with *Chilopyrgula* Brusina, 1896, and *Bithynia* Leach, 1819, which he considered to be hydrobiid. Brown (1988:345–348) subsequently transferred *Soapitia* to the Bithyniidae and compared it with *Sierraia* Connolly, 1929.

Solenomphala Heude, 1882:82, 83. *Assiminea scalaris* Heude, 1882; M. Recent, freshwater, Shanghai, China. Described as a subgenus of *Assiminea* Fleming, 1829. Originally spelled as *"Solenomphalae"* (i.e., the Latin genitive). Boettger (1887:152) erroneously stated the type species to be *Assiminea carinata* Lea, 1856; this species was actually included by Heude under *Pseudomphala.* Is a junior synonym of *Paludinella* Pfeiffer, 1841 (Assimineidae) (fide Thiele, 1927:170). However, Vaught (1989:20) listed these taxa in the Hydrobiinae; she attributed *Solenomphala* to Boettger, 1887.

Taihua Annandale, 1924:277, 280. *Hypsobia miniscula* Annandale, 1918; M. Recent, freshwater, Tai-Hua Lake, Kiangsu, China. This taxon was originally described in the Triculinae (of the Rissoidae). Davis (1979:113) transferred the Triculinae (including *Taihua*) to the Pomatiopsidae. However, Vaught (1989:21) listed *Taihua* in the Lithoglyphinae of the Hydrobiidae.

Wuconchona Kang-Zaibin, 1983:501, 504–505. *Wuconchona niuzhuangensis* Kaing-Zaibin, 1983; OD. Recent, freshwater, Niuzhuang, Wufeng County, Hubei Province, China. Kang-Zaibin compared this genus with *Bythinella* Moquin-Tandon, 1855 and *Halewisia* Davis, 1979. Vaught (1989:22) listed this genus in the Hydrobiidae (uncertain placement). Davis and Kang (1990:119–142) placed this taxon in the Pomatiopsidae: Pachydrobini.

Wykoffia Brandt, 1968:245. *Lacunopsis tricostata* Deshayes, 1874; OD. Recent, freshwater, Mekong River, southeast Asia. Brandt placed this genus in the "Delavayidae." Temcharoen (1971:92–93) and Brandt and Temcharoen (1971:132) referred three Mekong River species to *Wykoffia.* Davis (1979:114) placed *Wykoffia* into synonymy of *Jullienia* Crosse and Fischer, 1876 (Pomatiopsidae: Triculinae). However, Vaught (1989:21) inexplicably listed *Wykoffia* (with a "?") in the Lithoglyphinae (Hydrobiidae).

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Appendix I

Geographical Index

The following index lists the valid genera by the region or country from which each was originally described. This is based upon the distribution of the type species; some genera have an extended range as noted in the generic catalog. We emphasize that this indexing is not comprehensive, but rather is limited to the type species. Thus, although each genus is only listed under one country or region, many have a broader distribution.

For North American genera, we have used the geomorphic (= physiographic) provinces, which are well-defined and correspond to biogeographic regions. These provinces are taken from Graf (1987:3; see also Strahler, 1971:676, and Hunt 1974:3–15), with slight modifications.

In contrast, for the Eurasian and Australasian taxa, there are several conflicting physiographic or biogeographic schemes (e.g., Banarescu, 1992:526; Illies, 1978:xv; Udvardy, 1975); none of which are entirely satisfactory for our purposes. Therefore, for the non-North American taxa, we have merely indexed them by country within each region. Furthermore, several high-diversity water bodies (e.g., Baikal, Caspian, Cuatro Ciénegas; Ohrid, Prespa, Titicaca) are listed separately.

1. EURASIA.

Several countries specified (sometimes more than one "region"): *Belgrandiella; Bythiospeum; Emmericia; Horatia; Iglica; Lithoglyphus; Litthabitella; Marstoniopsis; Mohrensternia; Pontohydrobia; Prasinoglyphus; Pseudamnicola; Pyrgula; Trachypyrgula; Ventrosia; Zagrabica; Zilcheuchilus.*

Western Europe

Austria: *Lobaunia; Microliopalaeina; Subliosarmata.*
Belgium: *Goniatogyra.*
France: *Acrophlyctis; Anatiniana; Avenionia; Belgrandia; Briartia; Bugesia; Bythinella; Cirsomphalus; Cylindrica; Dieretostoma; Fissuria; Gibbiana; Ginolensiana; Glibertiella; Hydrobia; Kuiperia; Lapparentia; Lartetella; Lartetia; Lavansia; Martinietta; Mercuria; Moitessieria; Montjavoultia; Nystia; Palacanthilhiopsis; Paladilhia; Parhydrobia; Polycirsus; Pseudopaludinella; Reynesiana; Sandbergerierella; Schuettemmericia; Sellia; Spiralix; Staadtia; Staadtiella; Stalioa; Tournouerina; Vitreana.*
Germany: *Acrostele; Cherusciola; Ctyrokya; Goergesia.*
Italy: *Alzoniella; Arganiella; Hauffenia; Pauluccinella; Pezzolia; Phreatica; Pseudavenionia.*
Mediterranean Sea (general): *Botryphallus.*
Spain: *Corrosella.*
Switzerland: *Lemanica; Nematurella.*
United Kingdom: *Bernicia; Peringia; Potamaclis; Pseudobythinella.*

Balkan Peninsula and Southeastern Europe

[Albania: see Lake Ohrid and Lake Prespa.]
Bosnia and Herzegovina: *Dabriana; Dalmatella; Islamia; Marticia; Narentiana; Plagigeyeria; Sarajana; Zavalia.*
Bulgaria: *Cavernisa; Insignia; Pontobelgrandiella.*
Croatia: *Adrioinsulana; Baglivia; Bania; Costellina; Dalmatinella; Fossarulus; Gyromelania; Istriana; Lisinskia; Micromelania; Orygoceras; Rhaphica; Scalimelania; Staja; Vinodolia.*
"Dalmatia": *Adriolitorea; Brusiniana; Cilgia; Lanzaia; Prososthenia.*
Greece: *Clameia; Daphniola; Dianella; Graecamnicola; Graecoanatolica; Graecorientalia; Iraklimelania; Limnidia; Mikrogoniochilus; Pseudoislamia; Rhodopyrgula; Salakosia; Trichonia; Xestopyrguloides* [see also Lake Prespa].
Lake Ohrid: *Chilopyrgula; Dolapia; Ginaia; Gocea; Karevia; Lyhnidia; Macedopyrgula; Micropyrgula; Neofossarulus; Ochridopyrgula; Ohridohauffenia; Ohridohoratia; Ohridosturanya; Ohrigocea; Polinskiola; Pseudohoratia; Pyrgohydrobia; Rotondia; Trachyochridia; Xestopyrgula.*
Lake Prespa: *Albaniana; Malaprespia; Parabythinella; Prespiana; Prespolitorea; Prespopyrgula.*
Macedonia: *Naumia; Strugia; Zaumia* [see also Lake Ohrid and Lake Prespa].
Montenegro: *Adriohydrobia; Anagastina; Antibaria; Bracenica; Orientalina; Saxurinator; Tacitiana.*
Serbia: *Beogradica; Grossuana; Odontohydrobia; Terranigra.*
Slovenia: *Banneina; Boleana; Charydrobia; Erythropomatiana; Hadziella; Kerkia; Lanzaiopsis; Mervicia; Neohoratia; Paladilhiopsis; Ptychotropis; Robicia; Sadleriana; Vrania; Vrazia.*

Eastern Europe (including Russia west of Urals)

Black and Azov Seas: *Caspiohydrobia.*
Czech Republic: *Staadtiellopsis; Staliopsis.*
Hungary: *Goniochilus; Gypsobia; Hungarica; Microbeliscus; Pannona; Parateinostoma; Tanousia.*
Poland: *Falniowskia.*
Romania: *Aluta; Barassia; Carasia; Moesia; Socenia.*
Russia (west of Urals): *Coelacanthia; Maeotidia.*
Slovakia: *Solia.*
Ukraine (including Crimea): *Andrussowiella; Iljinella; Terrestribythinella.*

Near East

Israel: *Mienisiella.*
Syria: *Syrofontana.*
Turkey: *Bessadrobia; Daudebardiella; Falsibelgrandiella; Falsipyrgula; Kirelia; Pseudorientalia; Pyrgorientalia; Sheitanok; Turcorientalia.*

Siberia and Central Asia.

Armenia: *Shadinia.*
Azerbaijan: *Alizadella; Avardaria; Azeria.*
Caspian Sea: *Abeskunus; Caspia; Caspiella; Caspiohoratia; Caspiopyrgula; Celekenia; Clathrocaspia; Clessiniola; Eldaria; Eurycaspia; Laevicaspia; Oxypyrgula; Sumbaria; Trachycaspia; Turricaspia; Ulskia.*
Kyrgyzstan: *Pseudocaspia.*
Lake Baikal: *Baicalia; Baicalocochlea; Baikaliella; Benedictia; Dalainoria; Dybow-*

skia; Eubaicalia; Godlewskia; Kobeltocochlea; Korotnewia; Liobaicalia; Maackia; Microbaicalia; Parabaikalia; Pseudobaikalia; Pseudobenedictia; Stankovicia; Teratobaikalia; Trichiobaikalia.

Mongolia: *Aenigmapyrgus; Palaeobaicalia.*

Siberia: *Kolhymamnicola; Probaicalia; Sibirobythinella; Sibiropyrgula.*

Tajikistan: *Bucharamnicola; Nurekia; Pyrgobaicalia.*

Turkmenistan: *Chazarella; Kainarella; Martensamnicola; Turkmenamnicola.*

Uzbekistan: *Sogdamnicola; Valvatamnicola.*

South and Southeast Asia

Andaman Islands: *Indopyrgus.*

China: *Bohaispira; Bohaispirella; Bohaispiropsis; Fuxinia; Haihenia; Kaingxianospira; Labrosa; Liaoheniella; Liaohenia; Luofuspira; Lyobasis; Lysiogyrus; Mirolaminatus; Miromphalus; Nanningospira; Nannopyrgula; Nodilirata; Pingyispira; Pycnanema; Renistoma; Subtilistriata; Truncatus; Xinjiangospira; Yonganospira; Yongkangia; Yongningospira.*

Japan: *Akiyoshia; Moria; Saganoa; Sinusicola.*

Philippines: *Clenchiella.*

2. OCEANIA.

Australia (including Lord Howe and Norfolk Islands): *Ascorhis; Beddomeia; Fluvidona; Fonscochlea; Jardinella; Phrantela; Posticobia; Pseudotricula; Tatea; Trochidrobia; Wolfgangia.*

New Zealand: *Catapyrgus; Hadopyrgus; Kuschelita; Opacuincola; Paxillostium; Potamopyrgus.*

Pacific Islands: *Fluviopupa; Hemistomia; Heterocyclus.*

3. NORTH AMERICA.

Cuba: *Nanivitrea.*

Mexico: *Durangonella; Emmericiella; Pterides.*

Cuatro Ciénegas: *Coahuilix; Mexipyrgus; Mexithauma; Nymphophilus; Paludiscala* [all but *Nymphophilus* are endemic to this basin].

United States.

Appalachian Mountains and Plateaus (including Piedmonts and Alleghenies): *Antrorbis; Clappia; Fontigens; Holsingeria; Lepyrium; Stiobia; Walkerilla.*

Atlantic (and Gulf) Coastal Plain (including New England): *Aphaostracon; Balconorbis; Cochliopina; Dasyscias; Gillia; Heleobops; Littoridinops; Lyogyrus; Notogillia; Onobops; Pyrgophorus; Rhapinema; Spilochlamys; Spirogyrus; Spurwinkia; Stygopyrgus; Texadina.*

Central Lowland: *Birgella; Cincinnatia; Hoyia; Somatogyrus.*

Colorado Plateau: *Triasamnicola.*

Great Basin [= Basin and Range]: *Apachecoccus; Heathilla; Lacunorbis; Pilsbryus; Pyrgulopsis; Savaginius; Tryonia; Yaquicoccus.*

Great Plains: *Micropyrgus; Phreatoceras; Phreatodrobia; Texapyrgus.*

Interior Low Plateaus: *Antroselates.*

Ozark Plateau: *Antrobia.*

Pacific Rim: *Brannerillus; Fluminicola.*

Rocky Mountains: *Carinulorbis; Mesocochliopa; Mesopyrgium; Protamnicola; Sagia; Stantonogyra; Trochispira.*

U.S.A. (general—widespread taxa): *Amnicola; Probythinella.*

4. CENTRAL AMERICA.

Costa Rica: *Rachipteron.*
Honduras: *Mesobia.*
Panama: *Cochliopa; Subcochliopa; Zetekina.*

5. SOUTH AMERICA.

Colombia: *Andesipyrgus* (and Ecuador).
Dominican Republic: *Antillobia.*
Ecuador: *Lithococcus; Littoridina; Potamolithoides.*
Lake Titicaca: *Heleobia.*
Peru: *Cyclocheila; Dyris; Eubora; Toxosoma; Tropidebora.*
Uruguay: *Parodizia; Potamolithus.*
Venezuela: *Aroapyrgus* (also Central America).

6. AFRICA.

Algeria: *Lhotelleria.*
Morocco: *Heideella.*
Zaire: *Lobogenes.*

Appendix II

Stratigraphical Index

The following index is self-explanatory. However, we should note that this is limited to the type species of each genus. Some genera were subsequently extended to earlier or later time periods based upon the inclusion of other species; these references have often been noted in the generic catalog. In particular, *Hydrobia* and *Amnicola* have been indiscrimately used for extinct taxa; we have not considered such usages. The compilations of Wenz (1926–1928, 1938–1944) provide numerous citations to these usages, but these references should be critically rechecked to confirm their generic allocations.

Paleozoic. Carboniferous. *Bernicia.*
Permian. *Xinjiangospira.*

Mesozoic. Triassic. *Triasamnicola.*
Jurassic. *Cherusciola; Fuxinia; Mesocochliopa; Mesopyrgium; Pseudobythinella.*
Cretaceous. *Gypsobia; Kaingxianospira; Lavansia; Palaeobaicalia; Parateinostoma; Protamnicola; Sagia; Stantonogyra; Trochispira.*
"Mesozoic" (no era indicated). *Probaicalia; Pycnanema; Subtilistriata; Yongkangia.*

Cenozoic. Paleocene. *Carinulorbis; Goniatogyra; Lyobasis; Micropyrgus; Truncatus.*
Eocene. *Acrophlyctis; Briartia; Cirsomphalus; Dieretostoma; Glibertiella; Lapparentia; Lartetella; Montjavoultia; Nystia; Parhydrobia; Pingyispira; Polycirsus; Renistoma; Sandbergeriella; Sellia; Stalioa.*
Oligocene. *Acrostele; Bohaispirella; Goergesia; Kuiperia; Potamaclis; Staadtia.*
Miocene. *Andrussowiella; Beogradica; Bessadrobia; Carasia; Coelacanthia; Ctyrokya; Fossarulus; Goniochilus; Iljinella; Lisinskia; Maeotidia; Marticia; Martinietta; Microbeliscus; Microliopalaeina; Micromelania; Moesia; Mohrensternia; Nematurella; Odontohydrobia; Orygoceras; Pannona; Pontohydrobia; Potamolithoides; Robicia; Scalimelania; Schuettemmericia; Socenia; Solia; Staadtiellopsis; Staja; Staliopsis; Subliosarmata; Vrazia.*
"Neogene" [= Miocene to Pliocene]. *Aenigmapyrgus; Bania; Eldaria; Graecamnicola; Iraklimelania; Limnidia; Mikrogoniochilus; Rhodopyrgula; Salakosia; Sumbaria; Xestopyrguloides.*
Pliocene—Pleistocene. *Alizadella; Aluta; Avardaria; Azeria; Barassia; Brannerillus; Celekenia; Chazarella; Cyclocheila; Dyris; Eubora; Gyromelania; Lacunorbis; Nanningospira; Pilsbryus; Prososthenia; Savaginius; Sibiropyrgula; Staadtiella; Tournouerina; Toxosoma; Trachypyrgula; Tropidebora; Zagrabica; Zilcheuchilus.*
"Tertiary" (without further specification). *Baglivia; Banneina; Bohaispira; Bohaispiropsis; Charydrobia; Haihenia; Labrosa; Liaoheniella; Liaohenia; Luofuspira; Lysiogyrus; Mirolaminatus; Miromphalus; Nannopyrgula; Nodilirata; Ptychotropis; Yonganospira; Yongningospira.*
Quaternary. *Lartetia.*

Recent. *Abeskunus; Adriohydrobia; Adrioinsulana; Adriolitorea; Akiyoshia; Albaniana; Alzoniella; Amnicola; Anagastina; Anatiniana; Andesipyrgus; Antibaria; Antillobia; Antrobia; Antrorbis; Antroselates; Apachecoccus; Aphaostracon; Arganiella; Aroapyrgus; Ascorhis; Avenionia; Baicalia; Baicalocochlea; Baikaliella;*

Balconorbis; Beddomeia; Belgrandia; Belgrandiella; Benedictia; Birgella; Boleana; Botryphallus; Bracenica; Brusiniana; Bucharamnicola; Bugesia; Bythinella; Bythiospeum; Caspia; Caspiella; Caspiohoratia; Caspiohydrobia; Caspiopyrgula; Catapyrgus; Cavernisa; Chilopyrgula; Cilgia; Cincinnatia; Clameia; Clappia; Clathrocaspia; Clenchiella; Clessiniola; Coahuilix; Cochliopa; Cochliopina; Corrosella; Costellina; Cylindrica; Dabriana; Dalainoria; Dalmatella; Dalmatinella; Daphniola; Dasyscias; Daudebardiella; Dianella; Dolapia; Durangonella; Dybowskia; Emmericia; Emmericiella; Erythropomatiana; Eubaicalia; Eurycaspia; Falniowskia; Falsibelgrandiella; Falsipyrgula; Fissuria; Fluminicola; Fluvidona; Fluviopupa; Fonscochlea; Fontigens; Gibbiana; Gillia; Ginaia; Ginolensiana; Gocea; Godlewskia; Graecoanatolica; Graecorientalia; Grossuana; Hadopyrgus; Hadziella; Hauffenia; Heathilla; Heideella; Heleobia; Heleobops; Hemistomia; Heterocyclus; Holsingeria; Horatia; Hoyia; Hungarica; Hydrobia; Iglica; Indopyrgus; Insignia; Islamia; Istriana; Jardinella; Kainarella; Karevia; Kerkia; Kirelia; Kobeltocochlea; Kolhymamnicola; Korotnewia; Kuschelita; Laevicaspia; Lanzaia; Lanzaiopsis; Lemanica; Lepyrium; Lhotelleria; Liobaicalia; Lithococcus; Lithoglyphus; Litthabitella; Littoridina; Littoridinops; Lobaunia; Lobogenes; Lyhnidia; Lyogyrus; Maackia; Macedopyrgula; Malaprespia; Marstoniopsis; Martensamnicola; Mercuria; Mervicia; Mesobia; Mexipyrgus; Mexithauma; Microbaicalia; Micropyrgula; Mienisiella; Moitessieria; Moria; Nanivitrea; Narentiana; Naumia; Neofossarulus; Neohoratia; Notogillia; Nurekia; Nymphophilus; Ochridopyrgula; Ohridohauffenia; Ohridohoratia; Ohridosturanya; Ohrigocea; Onobops; Opacuincola; Orientalina; Oxypyrgula; Palacanthilhiopsis; Paladilhia; Paladilhiopsis; Paludiscala; Parabaikalia; Parabythinella; Parodizia; Pauluccinella; Paxillostium; Peringia; Pezzolia; Phrantela; Phreatica; Phreatoceras; Phreatodrobia; Plagigeyeria; Polinskiola; Pontobelgrandiella; Posticobia; Potamolithus; Potamopyrgus; Prasinoglyphus; Prespiana; Prespolitorea; Prespopyrgula; Probythinella; Pseudamnicola; Pseudavenionia; Pseudobaikalia; Pseudobenedictia; Pseudocaspia; Pseudohoratia; Pseudoislamia; Pseudopaludinella; Pseudorientalia; Pseudotricula; Pterides; Pyrgobaicalia; Pyrgohydrobia; Pyrgophorus; Pyrgorientalia; Pyrgula; Pyrgulopsis; Rachipteron; Reynesiana; Rhaphica; Rhapinema; Rotondia; Sadleriana; Saganoa; Sarajana; Saxurinator; Shadinia; Sheitanok; Sibirobythinella; Sinusicola; Sogdamnicola; Somatogyrus; Spilochlamys; Spiralix; Spirogyrus; Spurwinkia; Stankovicia; Stiobia; Strugia; Stygopyrgus; Subcochliopa; Syrofontana; Tacitiana; Tanousia; Tatea; Teratobaikalia; Terranigra; Terrestribythinella, Texadina; Texapyrgus; Trachycaspia; Trachyochridia; Trichiobaikalia; Trichonia; Trochidrobia; Tryonia; Turcorientalia; Turkmenamnicola; Turricaspia; Ulskia; Valvatamnicola; Ventrosia; Vinodolia; Vitreana; Vrania; Walkerilla; Wolfgangia; Xestopyrgula; Yaquicoccus; Zaumia; Zavalia; Zetekina.

Index to Species

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