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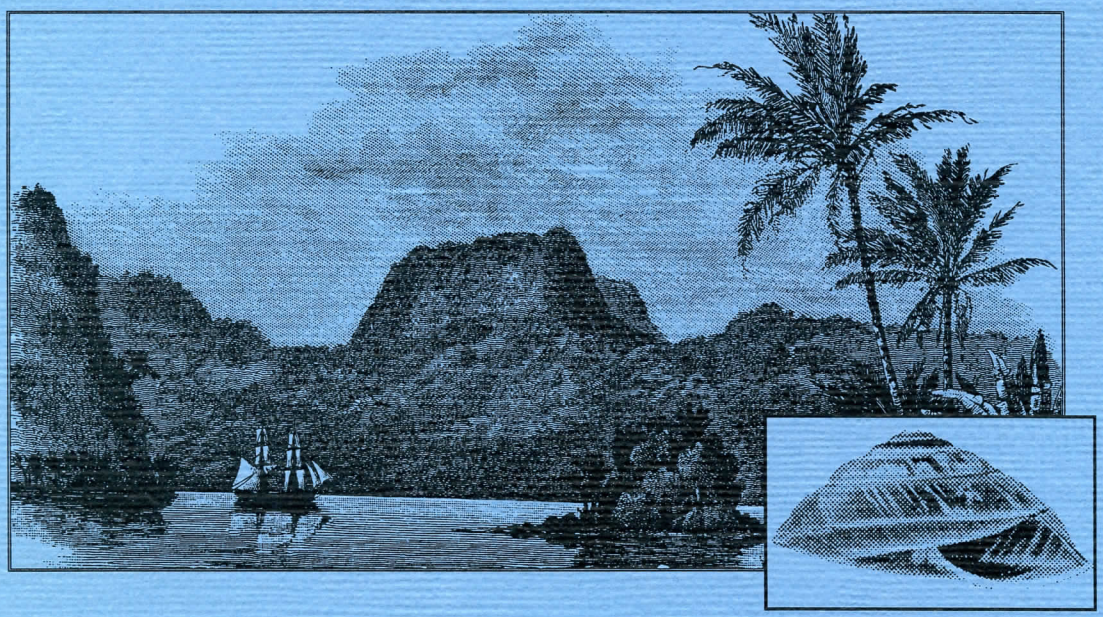
Catalog of the Nonmarine Snails and Slugs of the Samoan Islands

Robert H. Cowie



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Cover illustration: View of Pago Pago harbor near the turn of the 20th century. Digitized and edited from a woodcut originally in the 1897 "*Old Samoa*" by J.B. Stair. ©The Religious Tract Society. Inset depicts the shell of *Trochomorpha apia.*

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TABLE OF CONTENTS

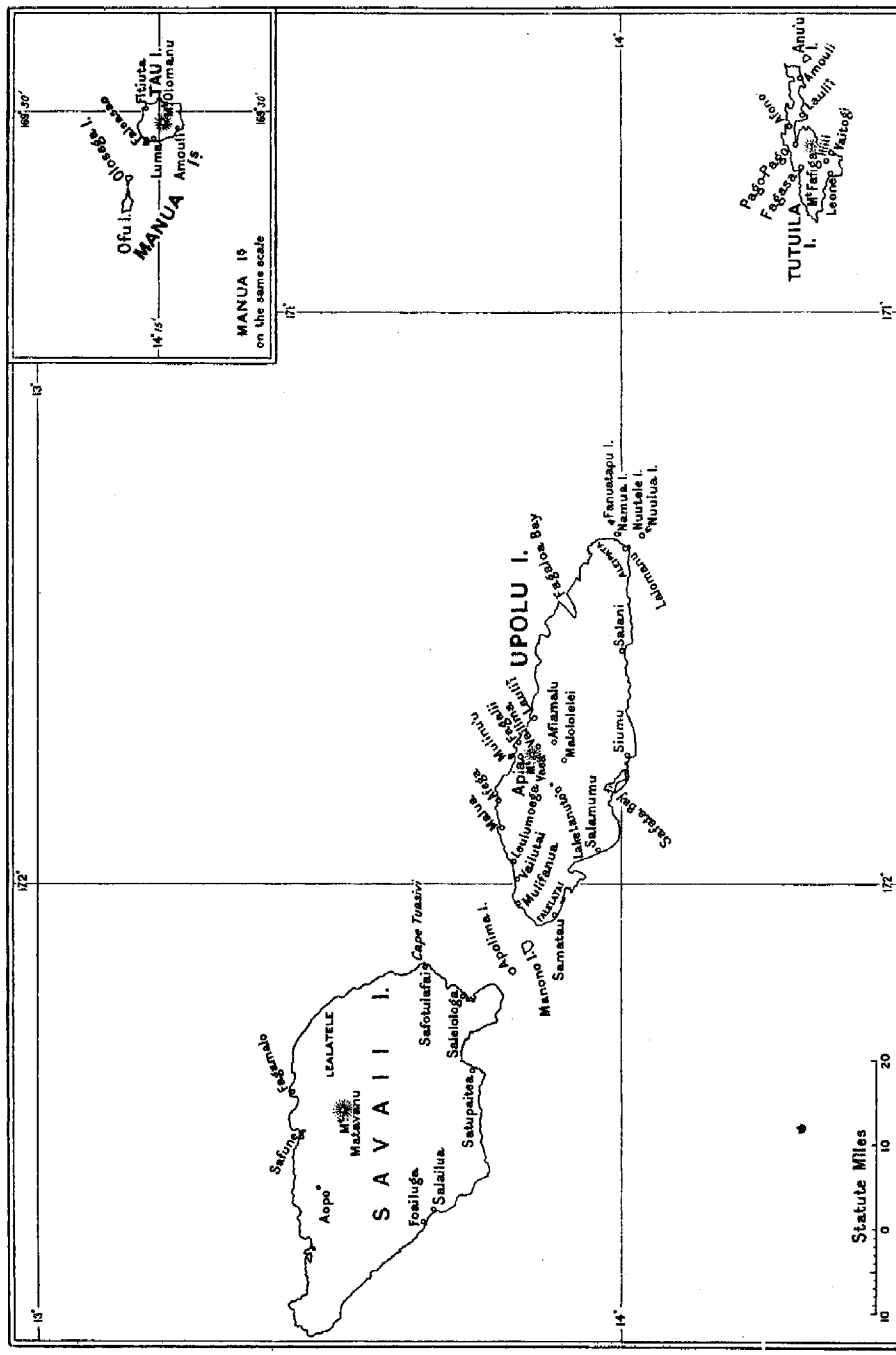

Fig. 1. Map of the Samoan Islands showing some of the islands and localities mentioned in the catalog. (redrawn from *Insects of Samoa. Maps*).

ACKNOWLEDGEMENTS

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I also thank the staff of the mollusc section of The Natural History Museum (London), including those already mentioned above, for facilitating my bibliographic research in their library, and the library staffs of The Natural History Museum, the Bishop Museum, and the National Museum of Natural History (Smithsonian Institution) for assisting me greatly in obtaining some of the more obscure literature.

ABSTRACT

This catalog lists all species-group and genus-group names that have been applied to the the nonmarine gastropod (snail and slug) fauna of the Samoan Archipelago. A total of 340 species-group names are listed. These names represent 172 species currently considered valid according to the most recent taxonomic works. Of the 130 terrestrial species, 59 are endemic to the archipelago, 35 are indigenous (occurring naturally in Samoa but also elsewhere), 22 are introduced, and the remaining 14 are of unknown status.

The status of the 42 fresh- and brackish-water species is less clear: tentatively, 3 are endemic, 34 are indigenous, 1 is introduced, and 4 are of unknown status. In addition to listing the names, the catalog provides information on type localities, deposition of type material, and a comprehensive, accurately dated bibliography.

The catalog is a nomenclatural not a taxonomic work and incorporates no revisionary treatment of the fauna. Many groups have not been treated recently, and modern revisionary study would certainly change the status of many taxa. Rather, the catalog is intended as a basic reference for future study of the Samoan fauna, not only by systematists but also by evolutionary biologists, ecologists, conservation biologists, and resource managers, all of whom can contribute to saving this unique and seriously threatened fauna.

INTRODUCTION

This catalog lists all published species-group and genus-group names that have been applied to the nonmarine gastropod fauna of the Samoan Islands. Politically, the archipelago is composed of Samoa (known until recently as Western Samoa) and American Samoa (see map). In this catalog, to avoid confusion, the use of "Western Samoa" is retained, with "Samoa" and "Samoan" referring to the entire group of islands. In overall format the catalog follows the Hawaiian catalog of Cowie *et al.* (1995). Full citations are given for the original proposal of each name. The current status of each name, according to the most recent authoritative revision, is indicated. The type locality and location of type material, if known, is given for all available species-group names. The island(s) within the Samoan Archipelago on which each valid taxon is known to occur is (are) indicated. Background information on each major group (family, genus) is provided, with an introduction to other relevant literature, making the catalog a basic source of reference for studies on the Samoan fauna. Following the main body of the catalog, a checklist of all the names is provided for ease of reference. Extralimital junior synonyms of Samoan taxa, i.e., names that have been applied to these taxa only outside Samoa, are excluded from the catalog, although sometimes they may be noted in Remarks sections for clarity.

Many of the early descriptions were published by Augustus Addison Gould, Constant Récluz (predominantly Neritidae), and Albert Mousson, between 1840 and 1871. Gould's material derived from the United States Exploring Expedition. All the names proposed by Gould have been listed by Johnson (1964), with details of type localities and type material. Récluz worked on material from a wide range of sources (see Kabat & Finet, 1992). Mousson's species were largely based on material from the Museum Godeffroy in Hamburg and due mostly to the collecting efforts of Édouard Graeffe. Catalogs of the Museum Godeffroy were published by J.D.E. Schmeltz around the same time as Mousson was publishing his descriptions. Dates of publication of the Schmeltz catalogs and of Mousson's publications (see Bibliography) reveal that in a large number of cases, names, although attributed to Mousson by Schmeltz, appeared first as *nomina nuda* in the catalogs. All these names are listed herein if Schmeltz gave a Samoan locality. Other authors of note who described significant numbers of Samoan taxa include Lovell Reeve in the *Conchologia Iconica*, Louis Pfeiffer, William Harper Pease (see Kay & Clench, 1975), and more recently for specific groups, William Clench and Elizabeth-Louise Girardi (Cyclophoroidea) and Alan Solem (Endodontoidea). Unfortunately, a number of groups have not been treated recently and it is likely that some taxa listed here will ultimately prove to be junior synonyms or misidentifications of other, extralimital or widely distributed taxa. Others, especially small species, await discovery or description.

The native Samoan land snail fauna includes 94 nomenclaturally valid species, including the supralittoral Ellobiidae (18 species), but excluding the Siphonariidae, which although pulmonates are intertidal and subtidal, and excluding those species that are recorded from Samoa with doubt (14 species). Of these 94 species, 59 are endemic to Samoa, with 34 of these 59 recorded only from single islands. A number of species of land snails and slugs have been introduced to the Samoan Archipelago through human activities, both inadvertently and deliberately. Those that have been reported in the literature (18 species) are listed. There is no recent treatment of the terrestrial fauna as a whole.

The fresh- and brackish-water snail fauna of Samoa has most recently been reviewed by Starmühlner (1992b, 1993, see also 1976). However, the major work (Starmühlner, 1993) focused almost entirely on his own material collected on Tutuila and 'Upolu, and a number of taxa known to occur on those islands were not included, although some were listed in the shorter paper

(Starmühlner, 1992a). Taxa known only from other islands were generally not dealt with. He included a number of littoral taxa that are treated here as marine and therefore excluded from this catalog. The only other major recent survey of the freshwater fauna is that of Haynes (1990), from whose paper additional records of taxa and distributions have been obtained. Her study is also based only on her own collecting activities on Savai'i, 'Upolu, and Tutuila and thus, from an archipelago-wide perspective, suffers from the same limitations as that of Starmühlner. This catalog lists 46 nomenclaturally valid species of fresh- and brackish-water snails. Only a very small proportion of this fauna is endemic to Samoa (3 species of Thiaridae), and even these taxa may ultimately prove to be junior synonyms or misidentifications of other extralimital or widely distributed taxa. For many of the species it is not at all clear whether they have been artificially introduced or whether they occur naturally in Samoa, although Haynes (1990) favored the latter for most species.

It must be stressed that this catalog is derived from the literature and incorporates no revisionary treatment of the fauna. It is a nomenclatural not a taxonomic work. Many groups have not been treated recently, and modern revisionary study would certainly change the status of many included taxa, especially in the freshwater fauna.

As is the case in much of the Pacific, the diverse and highly endemic terrestrial snail fauna of Samoa, and perhaps to a lesser extent the fresh- and brackish-water fauna, is severely threatened with extinction. Many species are no doubt already gone. Habitat destruction, due both to urban and agricultural development and to inadvertent but extensive replacement of native vegetation with introduced plant species, is of major significance. Introduced predators, including rats and ants, have also no doubt had an impact, but the recent introduction of the carnivorous snail *Euglandina rosea* in attempts to control the giant African snail, *Achatina fulica,* has had drastic consequences. At the time of writing, *E. rosea* has only been introduced to Tutuila and Tā'u. It is important that it is kept out of the other islands. This catalog is intended as a basic reference not only for systematists but also for evolutionary biologists, ecologists, conservation biologists, and resource managers, all of whom can contribute to saving this unique fauna.

SYNOPSIS OF THE FAUNA

The following table gives numbers of species and genera, by family, of endemic, indigenous (occurring naturally in Samoa but also elsewhere) and artificially introduced (or possibly introduced) species. The column headed "?" includes species not known for certain to occur in Samoa. Habitat is listed as freshwater (including brackish water) (fw.) or terrestrial (terr.).

Family	Habitat	Species (genera)				
		Endemic	Indigenous	?	Introduced	Total
Neritidae	fw.	—	23 (5)	3 (2)	—	26 (5)
Helicinidae[1]	terr.	8 (2)	4 (2)	2 (2)	—	14 (3)
Neocyclotidae	terr.	12 (1)	—	—	—	12 (1)
Diplommatinidae	terr.	1 (1)	—	—	—	1 (1)
Truncatellidae	terr.	—	1 (1)	—	—	1 (1)
Assimineidae	terr.	3 (3)[2]	7 (2)	2 (1)	—	12 (3)
Thiaridae[3]	fw.	3 (2)	11 (2)	1 (1)	1 (1)	16 (2)
Veronicellidae	terr.	—	—	—	2 (2)	2 (2)
Ellobiidae	terr.	1 (1)[2]	16 (6)	1 (1)	—	18 (6)
Physidae	fw.	—	—	—	1 (1)	1 (1)
Planorbidae	fw.	—	—	—	2 (2)[4]	2 (2)
Ancylidae	fw.	—	—	—	1 (1)	1 (1)
Achatinellidae	terr.	—	—	1(1)	3(2)	4 (3)
Pupillidae	terr.	1 (1)	—	2 (2)	1(1)	4 (3)
Partulidae	terr.	8 (2)	—	2 (1)	—	10 (2)
Subulinidae	terr.	—	—	—	5 (4)	5 (4)
Achatinidae	terr.	—	—	—	1 (1)	1 (1)
Spiraxidae	terr.	—	—	—	1 (1)	1 (1)
Streptaxidae	terr.	—	—	—	3 (3)	3 (3)
Rhytididae	terr.	—	1 (1)	—	—	1 (1)
Endodontidae	terr.	2 (2)	—	—	—	2 (2)
Charopidae	terr.	8 (2)	1(1)	—	—	9 (3)
Succineidae	terr.	3 (1)	1 (1)	—	—	4 (1)
Helicarionidae	terr.	6 (3)	4 (3)	3 (1)[2]	—	13 (4)
Ariophantidae	terr.	—	—	—	1 (1)	1 (1)
Zonitidae	terr.	5 (1)	—	1 (1)	—	6 (1)
Bradybaenidae	terr.	—	—	—	1 (1)	1 (1)
Incertae sedis	terr.	1 (1)	—	—	—	1 (1)
Totals		62 (23)	69 (24)	18 (13)	23 (21)	172 (60)

[1] Five Helicinidae are of unknown genus; four of them are included as endemics, one as "?".

[2] Includes a single, nomenclaturally valid species of unknown genus.

[3] Many of these species could be considered artificially introduced.

[4] Unidentified *Planorbis* spp. counted as one species.

EXPLANATORY INFORMATION

SCOPE

This catalog lists all published species-group and genus-group names found in the literature, whether available or unavailable according to the *International Code of Zoological Nomenclature* (ICZN, 1985), that have been applied to the nonmarine gastropod fauna of the Samoan islands. It includes indigenous (including endemic) and artificially introduced terrestrial, freshwater, and brackish-water taxa. The supralittoral Ellobiidae, as pulmonates, are included; but the Siphonariidae, although pulmonates, are intertidal and subtidal, and are therefore excluded as being marine. Extralimital synonyms and unavailable names, i.e., names that have never been applied to Samoan material, are excluded, except in instances where an extralimital name is recognized as a senior synonym of a name previously applied to Samoan material.

ARRANGEMENT AND TREATMENT OF TAXA

The sequence of families follows Vaught (1989), for ease of comparability with the Hawaiian catalog (Cowie *et al.*, 1995), without implying any phylogenetic opinion. Subfamilies (if recognized) appear in alphabetical order within families, as do genera within families/subfamilies, and subgenera within genera. No other supraspecific taxa are used. Assignment of subfamilies, genera, and subgenera within families follows appropriate revisionary works, as indicated under each group. Genus-group synonyms are listed chronologically under the genus-group heading. These synonymies are not exhaustive; extralimital names (i.e., names that as far as could be determined have not been used in combination with Samoan species-group names) are excluded. Misidentifications and incorrect spellings are listed only if confusion might be caused by their omission. All species-group names (valid and invalid, available and unavailable) are listed alphabetically within genera/subgenera. Treatment of species-group names follows the most recent authoritative revisions. Names proposed as "forms", "varieties", etc. and neither already synonymized nor raised to subspecific status are simply listed as infraspecific. Taxa of uncertain placement are listed at the end of the most appropriate taxon.

Strict application of the rules of nomenclature has necessitated the introduction of a very small number of new synonymies, indicated in boldface by "**N. syn.**". However, no other revisionary work has been attempted and no new taxonomic decisions have been made. For instance, nude names that have never been validated have not been placed in the synonymy of available names, as this would involve taxonomic decisions best left to the appropriate taxonomic specialists and inappropriate herein. This work is simply a nomenclatural catalog.

TYPOGRAPHICAL TREATMENT OF NAMES

Family-group and genus-group headings are centered in boldface upper case type. Valid genus-group names are listed flush left in boldface upper case type. Valid, available species-group names are listed flush left in boldface, infraspecific names preceded by a "+". Synonyms, both genus- and species-group, are listed in italics flush left, upper case for genus-group names, lower case for species-group names. In the species-group, junior homonyms for which no synonyms are available as replacement names and for which new names are not provided here are listed in boldface italics flush left. Nomenclaturally unavailable names are listed in plain Roman type, flush left, upper case for genus-group names, lower case for species-group names.

TAXONOMIC REFERENCES

The citation for the original proposal of a genus-group name follows the name. The reference

consists of author(s), date of publication and page number (and plate/figure number if these formed part of the original description). Bibliographic and nomenclatural information (citation, synonyms, type species, etc., see below) provided for the nominate subgenus is not repeated if already given for the genus. For species-group names, on the line following the name and indented, the name is given in its original generic combination (including subgenus if in the original description, and using the original spelling, even if incorrect) and with its original status indicated (e.g., subspecies, "var.", as necessary). The name is followed by its author(s), date of publication, page number, and plate/figure number(s). When an author published the same name as new for the same taxon in more than one place, the later citation is given in square brackets following the first citation.

The author/date citation acts as a reference to the work as listed in the Bibliography. If an author published more than one work in the same year, a suffix (a, b, c, etc.), indicating chronological order of publication, is attached to the date in both the catalog text and the Bibliography. Authors' names containing the terms "de", "le", "van", "von" are cited and alphabetized in the Bibliography by the main name, e.g., "*Nerita recluziana* Guillou, 1841" in the main body of the catalog, and "Guillou, E. Le. 1841" in the Bibliography.

The date given for a work cited in the catalog is the date of publication. If the date printed in the original work is incorrect, the correct date is placed in square brackets in the Bibliography (Recommendation 22A(5) of the *Code*), but the brackets are omitted in the text.

The page number cited is that on which the name first appeared. In some instances, the name first appeared in a list or key, with the actual description beginning on a subsequent page. The page numbers of both the list, key, etc., and of the description are cited.

If the current status of a species-group name differs from that in the original description, this is indicated, with appropriate references, in a Remarks section below the standard entry for the species.

If a taxon is mentioned but is not Samoan, e.g., a non-Samoan type species of a genus-group name, the name, author, and date are followed by "not Samoan" in square brackets. The reference is not listed in the Bibliography.

Type species

For nomenclaturally available genus-group names, the type species and its method of fixation (following *Code* Art. 68 and 69) are given following the literature citation. The type species is given in its original combination with correct authorship, date, and spelling. If its citation in fixation of the type species differs from this in any respect, how it differs is indicated in parentheses. The senior synonym, if any, of the type species is given in square brackets.

Homonyms and replacement names

Homonymy of species-group names is indicated in the Remarks section under the name. In most cases, the junior homonym has already been synonymized with another earlier name, or a replacement name has already been provided from synonymy. In 3 cases (*elongata* Mousson, 1869 and *laevis* Baird, 1873, both Assimineidae; *montana* Cooke & Crampton, 1930, Partulidae) in which a replacement name appears necessary but there are no synonyms, no replacement name is here provided, pending further research.

Unavailable names

Unavailable names are listed with full citation and a statement of why the name is unavailable, e.g., "*Nom. nud.*", "Incorrect original spelling of . . .", etc. No other information is provided except for explanatory details in the Remarks section, if necessary. Obviously incorrect subsequent spellings are not listed but may be mentioned in annotations, for clarity.

MISIDENTIFICATIONS

Misidentifications are excluded unless inclusion is deemed necessary for clarity (*Tornatellinops*, *Trochonanina*). Names of misidentified taxa are italicized but separated from authorship by a colon, e.g., "*TROCHONANINA*: authors, not Mousson, 1869, misidentification".

GENDER ENDINGS OF SPECIES-GROUP NAMES

Synonyms and unavailable names are cited in their original orthography. Valid names have been changed, if necessary, so that the ending agrees in gender with the genus with which the name is combined herein (*Code* Art. 31), but only if the species-group name can be construed definitively as adjectival in the original proposal of the name.

MISCELLANEOUS ANNOTATIONS

Under each family heading, explanatory and other useful information is given. If deemed necessary or useful, such information is also given for genus-group taxa, immediately under the genus-group synonymy. Annotations other than those indicated in the above paragraphs are placed in square brackets immediately following the item to be clarified or, in the case of species-group names if the annotations are more extensive, placed in a Remarks section following the standard entry for the species.

TYPE LOCALITIES AND TYPE MATERIAL

The type locality, quoted exactly as in the original publication, is given for each available species-group name immediately following the author and citation. Any additional or explanatory information regarding the type locality is placed in square brackets following the type locality. If no locality was given, this is simply stated, in square brackets. Location and catalog numbers of type material, if known, are given, following the type locality information. An exhaustive search for type material has not been made; the information provided is largely derived from the literature. This work is not intended as a comprehensive type catalog. Johnson (1964, 1994) provided information on type material for many of the taxa he listed, but ascertaining the true status of these specimens, in many cases probably as lectotypes and paralectotypes, is beyond the scope of this catalog.

ISLAND DISTRIBUTION AND INTRODUCED TAXA

Each valid name is followed, on the same line, by abbreviations (see below) in parentheses indicating the island(s) from which the taxon is known. If there is some question about the taxon's presence on a particular island, the abbreviation for that island is preceded by a "?". If it is not possible to specify particular islands, the catalog simply says "Samoa". If there is a question whether it occurs in Samoa at all, this is indicated by "?Samoan" or "?not Samoan". In some cases, the only locality information available is "Manua" or "Manua Islands". In this case, the catalog says "Manu'a", without specifying islands. Islands listed for a taxon include all islands for all synonyms as well as for the valid name. Many species that are widespread in the Pacific, as well as some that are more restricted, or perhaps endemic to Samoa, have only been recorded in Samoa from one or a few islands. Although they may occur on other Samoan islands, only those islands reported in the literature are listed. If a taxon has been artificially introduced to Samoa, this is indicated immediately following the list of islands. Island distributions are derived from the original descriptions and from the major monographs mentioned in the introductions to each family, genus, etc., with additional sources indicated under the specific taxa. Spelling of island names and use of diacriticals (except when quoting directly, as for type localities), both in Samoa and elsewhere in the Pacific, follows Motteler (1986).

ABBREVIATIONS

The following abbreviations are used throughout the catalog:

ISLANDS:

S	= Savai'i
Ap	= Apolima
M	= Manono
U	= 'Upolu
N	= Nu'utele
Nu	= Nu'ulua
T	= Tutuila
A	= 'Aunu'u
O	= Ofu
Ol	= Olosega
Ta	= Tā'u
R	= Rose
Sw	= Swains Island

OTHER ABBREVIATIONS:

AMS	= Australian Museum, Sydney
ANSP	= Academy of Natural Sciences, Philadelphia
Art.	= Article (of the *Code*)
Berlin	= Museum für Naturkunde der Humboldt-Universität, Berlin
BMNH	= The Natural History Museum, London
BPBM	= Bishop Museum, Honolulu
BSNH	= Boston Society of Natural History, Boston
Code	= *International Code of Zoological Nomenclature* (ICZN, 1985)
DMW	= National Museum of Natural History, Wellington
fig(s).	= figure(s)
FMNH	= Field Museum of Natural History, Chicago
ICZN	= International Commission on Zoological Nomenclature
MCZ	= Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts
MHNG	= Muséum d'Histoire Naturelle, Genève
MNHN	= Muséum National d'Histoire Naturelle, Paris
n.n.	= new name (replacement name)
Nom. dub.	= *Nomen dubium*
Nom. nud.	= *Nomen nudum*
N. syn.	= New synonymy
p.	= page
pl(s).	= plate(s)
sect.	= section
s.l.	= *sensu lato*
SMF	= Senckenberg Museum, Frankfurt-am-Main
s. str.	= *sensu stricto*
subg.	= subgenus
USNM	= United States National Museum of Natural History, Washington, D.C.
Zürich	= Zoologisches Museum der Universität, Zürich

SYSTEMATIC CATALOG

Family NERITIDAE Rafinesque, 1815

Neritidae are found in marine, brackish, and freshwater habitats. Many of the species are widespread in the Pacific, no doubt in large part as a result of their diadromous life-cycle (e.g., Cowie, 1997a; Haynes, 1990, 1993). Forms that are entirely marine are excluded from this catalog, although drawing the line between marine and brackish water or intertidal forms is somewhat arbitrary and an attempt has been made to err on the side of inclusion rather than exclusion. The Neritidae constitute the largest group of nonmarine aquatic snails in Samoa. The most recent treatment of the Samoan Neritidae was by Starmühlner (1993), who included a number of littoral forms that are excluded from this catalog as being marine, but whose systematic treatment is followed here. Island distributions are from Haynes (1990), Starmühlner (1976, 1992b, 1993), and the original descriptions; any additional sources are indicated under the individual species.

Subfamily NERITILIINAE Schepman, 1908

Genus NERITILIA Martens, 1875

NERITILIA Martens, 1875: 19 [1879: 241] (as *Neritina* subg.). Type species: *Neritina rubida* Pease, 1865, by monotypy.

The original proposal of the name *Neritilia* included only a single species, *rubida* Pease, 1865, which is thus the type by monotypy. Other species were included in the group by Martens but only in a subsequently published part of his monograph.

rubida. (U, T)

Neritina rubida Pease, 1865b: 514. Islands of the central Pacific [in publication title]. Lectotype BMNH 1964313, paralectotypes BMNH 1964314 (Kay, 1965: 82); paralectotypes MCZ 89902 (Johnson, 1994: 22); see also Baker (1964: 160).

Remarks. Recorded only from Tutuila by Haynes (1990: 243) and only from 'Upolu by Starmühlner (1993: 271; also Paetel, 1883: 84), but widespread extralimitally (Marquet, 1993: 160; Martens, 1879: 287; Pointier & Marquet, 1990: 218; Starmühlner, 1976: 550, 1992a: 383, 1993: 273).

Subfamily NERITINAE Rafinesque, 1815

Genus CLITHON Montfort, 1810

CLITHON Montfort, 1810: 326. Type species: *Nerita corona* Linnaeus, 1758 (as "*Clithon*"), by original designation.

Subgenus CLITHON Montfort, 1810

bougainvillei. (?not Samoan)

Neritina bougainvillei Récluz, 1850: 159. L'archipel de Bougainville ou des Navigateurs à Hamoa [= Bougainville or Samoa].

Remarks. Paetel (1888a: 519) recorded it from Samoa. Tentatively placed in *Clithon*, following Tryon (*in* Tryon & Pilsbry, 1888b: 72), who gave Samoa as locality. Apparently not recorded from Samoa by subsequent authors, nor synonymized with another Samoan or extralimital taxon.

brevispina.

Neritina brevi-spina Lamarck, 1822: 185. Rivières de l'île de Timor.

Remarks. Synonym of *corona* Linnaeus, *teste* Starmühlner (1976: 494). Reported from Tutuila by Couret *et al.* (1981: 18).

castanea. (U, T)

Neritina castanea Hombron & Jacquinot, 1852: mollusques pl. 17, figs. 24–26. Samoa.

Remarks. The description of this species (Rousseau, 1854: 68) was published after the plates (Hombron & Jacquinot, 1842–1853), although no accurate dating could be obtained for either (see Bibliography). Plate 17, with 3 figures, the name, and the locality, validated the name. Reported from Samoa ('Upolu and Tutuila) and the Caroline Islands by Starmühlner (1992a: 383, 1993: 238). Not reported by Haynes (1990).

chlorostoma. (U)

Neritina chlorostoma Sowerby *in* Broderip & Sowerby, 1833: 201. Ad Insulam Taheiten.

Remarks. Belongs "in the group *C.* [*Clithon*] *luctuosa-sidera* . . . found in the collection of the Field Museum, Chicago as *C. retropictus*" (Starmühlner, 1992a: 381, following Riech, 1937: 85). Recorded from Samoa by Starmühlner (1992a: 381, 383) without specifying from which island(s). Not recorded by Haynes (1990) or Starmühlner (1993). Widely distributed in the Pacific (Starmühlner, 1976: 509, 1992a: 383), although the taxonomy seems insecure (Starmühlner, 1976: 507, 509, 1992a: 383). See also *parvula* Guillou, 1841.

corona. (S, U, T)

Nerita corona Linnaeus, 1758: 777. In Asiae fluviis [= Asia].

Remarks. A variable and widespread species with numerous extralimital synonyms (e.g., Jutting, 1956: 275, 1963: 414; Starmühlner, 1976: 494–97, 1992a: 382, 1993: 242). Recorded from Savai'i and 'Upolu by Haynes (1990: 243) and from 'Upolu and Tutuila by Starmühlner (1993: 239).

diadema. (S, U, T)

Nerita diadema Récluz, 1841a: 277. Les îles de la mer du sud [= islands of the South Seas]. Whereabouts of type material unknown; no types listed by Kabat & Finet (1992: 233).

Remarks. Starmühlner (1976: 499, 1992a: 383) considered only the subspecies *recluziana* Guillou, 1841 to be found in Polynesia (including Samoa), with *diadema s. str.* in the Malayan Archipelago, the Philippines, and the Moluccas (see also Jutting, 1963: 415, for other localities). Subsequently (Starmühlner, 1993: 242), he treated the Samoan taxon as *diadema*, as did Haynes (1990: 243). A number of extralimital synonyms.

humerosa.

Neritina humerosa Schmeltz, 1865: 24. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson.

humerosa.

Neritina humerosa Mousson, 1865: 188. Upolu.

Remarks. Synonym of *ruginosa* Récluz, 1841, *teste* Schmeltz (1869: 98), Mousson (1869: 376), and Tryon (*in* Tryon & Pilsbry, 1888b: 65, 132); *ruginosa* treated here as a synonym of *corona* Linnaeus, 1758. Synonym of *corona* Linnaeus. **N. syn.**

inermis.

Neritina humerosa var. *inermis* Schmeltz, 1866: 28 [1869: 98, 1874: 143; in both cases as "*Clithon ruginosus* var. *inermis*"]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu and Ovalau (Fiji).

olivaceus. (T)

Nerita olivacea Récluz, 1843a: 172. Agoo, province of Pangasinan, island of Luçon [= Luzon, Philippines]. Lectotype MCZ 125695, paralectotypes MCZ, MNHN, MHNG (Kabat & Finet, 1992: 241).

Remarks. Not recorded from Samoa by Haynes (1990) or Starmühlner (1976, 1992a). Recorded from Tutuila by Starmühlner (1993: 244). Widely distributed with a number of extralimital synonyms (Riech, 1937: 84–85; Starmühlner, 1976: 500–02).

parvula.

Nerita parvula Guillou, 1841: 346. Lébouka (Viti) [= Levuka, Fiji, *teste* Haynes & Wawra, 1989: 34].

Remarks. Recorded from 'Upolu by Mousson (1869: 375); this record referred to *chlorostoma* Broderip, 1833 by Starmühlner (1992a: 381). Listed from 'Upolu by Paetel (1873: 69). Not recorded by Starmühlner (1976, 1993). Synonym of *chlorostoma* Broderip, 1833, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 66).

propinqua.

Neritina propinqua Schmeltz, 1866: 37 [1869: 98]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

propinquus.

Neritina (Clithon) propinquus Mousson, 1869: 373, pl. 15, fig. 8. Upolu, dans l'intérieur, jusqu'à une altitude de 800 mètres.

Remarks. Synonym of *castanea* Hombron & Jacquinot, 1852, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 67) and Starmühlner (1993: 237). Listed by Schaufuss (1869: 58).

rarispina.

Neritina rarispina Hombron & Jacquinot, 1852: mollusques pl. 17, figs. 36–38. Samoa.

Remarks. The description of this species (Rousseau, 1854: 69) was published after the plates (Hombron & Jacquinot, 1842–1853), although no accurate dating could be obtained for either (see Bibliography). Plate 17, with 3 figures, the name, and the locality, validated the name. Synonym of *souleyetana* Récluz, 1842 [not Samoan], *teste* Tryon (*in* Tryon & Pilsbry, 1888a: 64); *souleyetana* Récluz, 1842 treated here as a synonym of *diadema* Récluz, 1841, following Starmühlner (1993: 242). Synonym of *diadema* Récluz, 1841. **N. syn.**

+recluziana. (Samoa)

Nerita recluziana Guillou, 1841: 345. Taïti [= Tahiti].

Remarks. Treated as a synonym of *souleyetana* Récluz, 1842 [not Samoan] by Tryon (*in* Tryon & Pilsbry, 1888a: 64). Here treated as a subspecies of *diadema* Récluz, 1841, following Riech (1937: 82), Franc (1957: 17) and Starmühlner (1976: 499, 1992a: 383), pending further study.

ruginosa.

Nerita ruginosa Récluz, 1841b: 310. Les îles sandwich [= Hawaiian Islands]. Syntypes MHNG 15281; questionable syntype MHNG 15282 (Kabat & Finet, 1992: 244).

Remarks. Synonym of *corona* Linnaeus, 1758. Although Starmühlner (1993: 238–42) distinguished *ruginosa* Récluz, 1841 as a distinct form, he clearly did not treat it as a subspecies, including it in his synonymy of *corona* Linnaeus, 1758.

siderea.

Neritina siderea Gould, 1847f: 238. Feejees [= Fiji]. "Holotype" USNM 5590; "paratypes" USNM 612322, MCZ 169370, MCZ 73471 (Johnson, 1964: 149).

Remarks. Synonym of *cholorostoma* Broderip, 1833, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 66). Recorded from Samoa by Riech (1937: 85) and specifically from 'Upolu by Schmeltz (1869: 98).

subrugata.

Neritina subrugata Baird, 1873: 438, pl. 38, figs. 7–9. Upolu, Samoan group. "Types" [? syntypes] BMNH, Maidstone Museum (Chatfield, 1994: 101).

Remarks. Synonym of *ruginosa* Récluz, 1841, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 65); *ruginosa* Récluz, 1841 treated here as a synonym of *corona* Linnaeus, 1758. Synonym of *corona* Linnaeus, 1758. **N. syn.**

Subgenus PICTONERITINA Iredale, 1936

PICTONERITINA Iredale, 1936: 288. Type species: *Neritina oualaniensis* Lesson, 1831 (as "*oualanensis*"), by original designation.

oualaniensis. (T)

Neritina oualaniensis Lesson, 1831b: 379. l'île d'Oualan [= Kosrae]. Type material presumed lost (Smith, 1992: 64).

Remarks. Recorded by Haynes (1990: 243) from Tutuila, but not recorded from Samoa by Starmühlner (1976, 1992a, 1993). Widespread extralimitally (Starmühlner, 1976: 494).

Genus NERITINA Lamarck, 1816

NERITINA Lamarck, 1816: 11, pl. 455. Type species: *Nerita pulligera* Linnaeus, 1767 (as "*Neritina*") [not Samoan], by subsequent designation of Children (1823: 247) [see also ICZN (1931: 23), ICZN (1957: 166, 170, 187)].

Subgenus DOSTIA Gray, 1842

DOSTIA Gray *in* British Museum, 1840: 147. *Nom. nud.*

DOSTIA Gray *in* British Museum, 1842: 58, 89. Type species: *Neritina crepidularia* Lamarck, 1822 [not Samoan], by subsequent designation of Gray (1847: 148).

siquijorensis. (?U; ?not Samoan)

Nerita siquijorensis Récluz, 1844: 198. Isle of Siquijor.

Remarks. Included tentatively in this catalog on the basis of Schmeltz (1866: 37) and Schaufuss (1869: 58), who recorded it from 'Upolu. Placed in subg. *Dostia* as a synonym of *crepidularia* Lamarck, 1822 [not Samoan] by Tryon (*in* Tryon & Pilsbry, 1888b: 77), but retained here as a distinct species, following Jutting (1963: 423).

Subgenus NERIPTERON Lesson, 1831

NERIPTERON Lesson, 1831b: 384. Type species: *Neritina taitensis* Lesson, 1831 (as "1830") [= *Neritina auriculata* Lamarck, 1816], by subsequent designation of Baker (1923: 143).

auriculata. (S, U, T)

Neritina auriculata Lamarck, 1816: 11, pl. 455, figs. 6a, b. [No locality given. "New Guinea" given as type locality by Pointier & Marquet (1990: 217)].

Remarks. A variable and widespread species with a number of extralimital synonyms (Marquet, 1993: 160; Starmühlner, 1976: 511–514, 1992a: 382, 1993: 246–47).

marginata.

Neritina marginata Hombron & Jacquinot, 1852: mollusques pl. 17, figs. 22, 23. Samoa.

Remarks. The description of this species (Rousseau, 1854: 67) was published after the plates (Hombron & Jacquinot, 1842–1853), although no accurate dating could be obtained for either (see Bibliography). Plate 17, with 2 figures, the name, and the locality, validated the name. Synonym of *taitensis* Lesson, 1831, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 73; as "*tahitensis*"); *taitensis* Lesson, 1831 treated here as a synonym of *auriculata* Lamarck, 1816. Synonym of *auriculata* Lamarck, 1816. **N. syn.**

taitensis.

Neritina (*Neripteron*) *taitensis* Lesson, 1831b: 385. Pointe Vénus, baie de Matavai, à O-Taïti [= Tahiti].

Remarks. Retained as a distinct species by Starmühlner (1992a: 381), who recorded it from 'Upolu and Savai'i based on Mousson (1869: 381, as "*tahitensis*"; see also Schmeltz, 1869: 98). Synonym of *auriculata* Lamarck, 1816, *teste* Pointier & Marquet (1990: 217) and Starmühlner (1993: 246).

upolensis.

Neritina (*Neriptera*) *subauriculata* var. *upolensis* Mousson, 1869: 381. Upolu.

Remarks. Synonym of *auriculata* Lamarck, 1816, *teste* Starmühlner (1993: 246). The nominate subspecies *subauriculata* Récluz, 1843 has not been recorded from Samoa.

Subgenus NERITINA Lamarck, 1816

Most of the names in the present catalog were listed by Pace (1973: 16) as probable synonyms of *pulligera* Linnaeus, 1767. In reality there may only be one or two valid species.

aterrima. (?U; ?not Samoan)

Neritina aterrima Koch *in* Philippi, 1843a: 28, pl. II.2, fig. 11. [No locality given.]

Remarks. Recorded from 'Upolu by Paetel (1888a: 518), but Tryon (*in* Tryon & Pilsbry, 1888a: 40) stated "habitat unknown". Placed in *Neritina s. str.* by these authors, although Tryon said "this species has not been identified".

canalis. (U)

Neritina canalis Sowerby, 1825: 44 [name only], xi [description]. Islands of the South Seas.

Remarks. Possibly synonymous with the widespread *powisiana* Récluz, 1843 [not Samoan] (Starmühlner, 1976: 525, 1993: 255) or *pulligera* Linnaeus, 1767 (Jutting, 1963: 424; Pace, 1973: 16; Tryon *in* Tryon & Pilsbry, 1888a: 57) but retained as distinct in this catalog, following Haynes (1990: 242) and Starmühlner (1976: 524, 1993: 253), and also Pointier & Marquet (1990: 218) and Marquet (1993: 160) who recorded it widespread in French Polynesia.

graeffei.

Neritina gräffei Schmeltz, 1866: 37. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and reported it from 'Upolu.

graeffei.

Neritina græffei Mousson, 1869: 379. Unavailable name; proposed as a junior synonym of *porcata* Gould, 1847, not made available before 1961 (*Code* Art. 11(e)).

Remarks. Synonym of *porcata* Gould, 1847, *teste* Tryon (*in* Tryon & Pilsbry, 1888a: 60) and Starmühlner (1993: 258). Listed from 'Upolu by Schaufuss (1869: 58) and Paetel (1873: 69, 1883: 83).

+iris. (Samoa)

Neritina iris Mousson, 1849: 269. Java [in publication title].

Remarks. Only recorded from Samoa as its junior synonym, *testudinea* Oudart, 1853. Treated as a variety of *squamaepicta* Récluz, 1843 (as "*squamipicta* ") [not Samoan] by Tryon (*in* Tryon & Pilsbry, 1888a: 58). Considered a probable synonym of *pulligera* Linnaeus, 1767 by Pace (1973: 16).

petitii. (U, T)

Nerita petitii Récluz, 1841a: 273. Saint-Domingue. Holotype MNHN (Kabat & Finet, 1992: 242).

Remarks. Recorded only from 'Upolu by Haynes (1990: 242) and only from Tutuila by Starmühlner (1993: 258). Possibly a synonym of *pulligera* Linnaeus, 1767 (Pace, 1973: 16) but retained here as distinct, following Franc (1957: 24), Starmühlner (1976: 526, 1993: 255), and Haynes (1990: 242). Widely distributed extralimitally (Riech, 1937: 73; Starmühlner, 1976: 529, 1993: 256).

porcata. (S, U, T)

Neritina porcata Gould, 1847f: 237. [No locality given.] Lectotype MCZ 169307, paralectotypes MCZ 287926, 216777, USNM 19896 (Johnson, 1964: 130).

Remarks. Recorded only from Savai'i by Haynes (1990: 242) but from both 'Upolu and Tutuila by Starmühlner (1993: 257). Widely distributed in the Pacific with a number of extralimital synonyms (Riech, 1937: 74; Starmühlner, 1976: 529–31, 1993: 256–57). Considered a probable synonym of *pulligera* Linnaeus, 1767 by Pace (1973: 16).

pulligera. (T)

Nerita pulligera Linnaeus, 1767: 1253. In Indiae fluviis [= India].

Remarks. Recorded from Tutuila by Couret *et al.* (1981: 18).

samoensis.

Neritina petiti var. *samoensis* Schmeltz, 1869: 98. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson.

samoensis.

Neritina (*Clypeolum*) *petiti* var. *samoensis* Mousson, 1869: 377. Upolu.

Remarks. Synonym of *petitii* Récluz, 1841, *teste* Starmühlner (1993: 255; as "*petiti*").

+tenuicostata. (U)

Neritina (*Clypeolum*) *porcatum* var. *tenuicostata* Mousson, 1869: 380. Upolu.

tenuiplicata.

Neritina gräffei var. *tenuiplicata* Schmeltz, 1869: 98 [1874: 143; as "*Neritella porcata* var. *tenuiplicata*"]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. Probably an error for *tenuicostata* Mousson.

testudinea.

Neritina testudinea Hombron & Jacquinot, 1852: mollusques pl. 17, figs. 14–16. Samoa.

Remarks. The description of this species (Rousseau, 1854: 67) was published after the plates (Hombron & Jacquinot, 1842–1853), although no accurate dating could be obtained for either (see Bibliography). Plate 17, with 3 figures, the name, and the locality, validated the name. Synonym of *squamaepicta* var. *iris* Mousson, 1849 [not Samoan], *teste* Tryon (*in* Tryon & Pilsbry, 1888a: 58).

Subgenus NERITONA Martens, 1869

NERITONA Martens, 1869: 22. Type species: *Neritina labiosa* Sowerby, 1836 [not Samoan], by monotypy.

macgillivrayi. (U, T)

Neritina macgillivrayi Reeve, 1855b, pl. 4, species 16, figs. a, b. Port Carteret, Solomon's Island [= Solomon Islands].

Remarks. Also published by Reeve (1855c: pl. 15, species 72, figs. a, b), but misidentified, according to Starmühlner (1976: 535). Recorded from "Samoa" by Riech (1937: 71) but only from Tutuila by Haynes (1990: 243) and 'Upolu by Starmühlner (1976: 537). Recorded extralimitally and with a number of extralimital synonyms (Haynes, 1984: 16; Riech, 1937: 71; Starmühlner, 1976: 535–37).

planissimum.

Neritina (*Clypeolum*) *planissimum* Mousson, 1869: 378, pl. 15, fig. 9. Dans les montagnes d'Upolu, jusqu'à 800 mètres d'élévation.

Remarks. Synonym of *macgillivrayi* Reeve, 1855, *teste* Starmühlner (1976: 535).

Subgenus VITTINA Baker, 1923

VITTINA Baker, 1923: 132, 144. Type species: *Nerita roissyana* Récluz, 1841 [= *Nerita turrita* Gmelin, 1791], by original designation.

chrysocolla.

Neritina chrysocolla Gould, 1847f: 237. Upolu. Syntypes USNM 5588, MCZ 87927 (Johnson, 1964: 54).

Remarks. Synonym of *roissyana* Récluz, 1841, *teste* Starmühlner (1993: 249) (see also Mousson, 1865: 188, 1869: 372; Récluz, 1850: 151; Tryon *in* Tryon & Pilsbry, 1888a: 38); *roissyana* Récluz, 1841 subsequently synonymized with *turrita* Gmelin, 1791. Synonym of *turrita* Gmelin, 1791. **N. syn.**

helvola.

Neritina helvola Gould, 1847f: 225. Feejee Islands [= Fiji]. Type material not mentioned by Johnson (1964: 87).

Remarks. Synonym of *turtoni* Récluz, 1843, *teste* Tryon (*in* Tryon & Pilsbry, 1888a: 38) and Starmühlner (1976: 517). Paetel (1873: 69) listed *helvola* Gould from 'Upolu. Schmeltz (1869: 98) and Mousson (1869: 374) reported it from 'Upolu and Tutuila but kept it as a distinct "var." of *zelandica* Récluz, 1846 [not Samoan], although Récluz (1850: 151) had previously synonymized all three taxa, as did Tryon (*in* Tryon & Pilsbry, 1888a: 38) and Starmühlner (1976: 517). Tryon (1888a: 36) considered Mousson's record to be a misidentification of *variegata* Lesson, 1831.

navigatoria.

Neritina navigatoria Reeve, 1855c: pl. 23, species 102, figs. a, b. Navigators' Island [= Samoa].

Remarks. Synonym of *roissyana* Récluz, 1841, *teste* Tryon (*in* Tryon & Pilsbry, 1888a: 38), Riech (1937: 78), Franc (1957: 22), and Starmühlner (1993: 249); *roissyana* Récluz, 1841 here treated as a synonym of *turrita* Gmelin, 1791. Synonym of *turrita* Gmelin, 1791. **N. syn.**

rivula.

Neritina rivula Hombron & Jacquinot, 1852: mollusques pl. 17, figs. 27–29. Samoa.

Remarks. The description of this species (Rousseau, 1854: 67) was published after the plates (Hombron & Jacquinot, 1842–1853), although no accurate dating could be obtained for either (see Bibliography). Plate 17, with 3 figures, the name, and the locality, validated the name. Synonym of *roissyana* Récluz, 1841, *teste* Tryon (*in* Tryon & Pilsbry, 1888a: 38) and Franc (1957: 22); *roissyana* Récluz, 1841 subsequently synonymized with *turrita* Gmelin, 1791. Synonym of *turrita* Gmelin, 1791. **N. syn.**

roissyana.

Nerita roissyana Récluz, 1841c: 338. La Nouvelle Guinée [= New Guinea]. Type material possibly represented by syntypes of *Nerita cuprina* Récluz, 1843 [not Samoan] (Kabat & Finet, 1992: 244).

Remarks. Treated here as a synonym of the widespread *turrita* Gmelin, 1791, following Jutting (1963: 428), Starmühlner (1976: 514), and Pointier & Marquet (1990: 218), but contrary to Starmühlner (1992a: 383, 1993: 249) who retained *roissyana* Récluz as a valid species and did not record *turrita* Gmelin. Haynes (1990: 242) recorded *turrita* Gmelin from Savai'i, 'Upolu, and Tutuila, but did not record *roissyana* Récluz. The names *royssii* (introduced by Récluz, 1850: 151), *roissyi* (introduced by Mousson, 1865: 188, 1869: 372), and *royssiana* (introduced by Sowerby, 1849: 539) are considered incorrect subsequent spellings of *roissyana* Récluz, 1841.

turrita. (S, U, T)

Nerita turrita Gmelin, 1791: 3686. In insularum antillarum [= Antilles Islands; ?error].

Remarks. See *roissyana* Récluz.

turtoni. (U, T)

Nerita turtoni Récluz, 1843b: 71. [No locality given.] Whereabouts of type material unknown; types not listed by Kabat & Finet (1992: 248).

Remarks. Recorded from "Samoa" by Riech (1937: 79) and Starmühlner (1976: 519), but not recorded by Haynes (1990) or Starmühlner (1992a, 1993). The synonym *helvola* Gould, 1847 recorded from 'Upolu and Tutuila by Mousson (1869: 374). Recorded also from the Bismarck Archipelago, Solomon Islands, and Fiji (Starmühlner, 1976: 519).

vitiensis.

Neritina vitiensis Schmeltz (1869: 98). *Nom. nud.*

Remarks. Schmeltz listed it as a synonym of *chrysocolla* Gould, 1847, attributed it to Mousson and recorded it from 'Upolu; *chrysocolla* Gould here listed as a synonym of *turrita* Gmelin, 1791. Also listed by Schaufuss (1869: 58) from "Upola". Synonym of *turrita* Gmelin, 1791. **N. syn.**

Subgenus VITTOIDA Baker, 1923

VITTOIDA Baker, 1923: 132, 146 (as subg. *Vittina* sect.). Type species: *Neritina variegata* Lesson, 1831, by original designation.

variegata. (S, U, T)

Neritina variegata Lesson, 1831b: 378. Nouvelle-Irlande [= New Ireland].

Remarks. A widespread species with a number of extralimital synonyms (Franc, 1957: 23; Riech, 1937: 77; Starmühlner, 1976: 520–22, 1992a: 382, 1993: 250–53). Placed in *Vittina* by Riech (1937: 77).

Incertae sedis in NERITINA

granulosa.

Neritina granulosa Schmeltz, 1866: 37. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. Also listed by Paetel (1883: 83, 1888a: 522) from 'Upolu, in section *Neritella*, and attributed to Mousson.

granulum.

Neritella (*Vitta*) *granulum* Schmeltz, 1874: 144. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. Tentatively listed here under *Neritina* because *Vitta* has been treated as a subgenus of *Neritina* (Baker, 1923: 117; Vaught, 1989: 13).

turrita.

Neritina turrita Schmeltz, 1866: 37. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. May be *turrita* Gmelin, 1791.

Genus PUPERITA Gray, 1857

PUPERITA Gray, 1857: 137. Type species: *Nerita pupa* Linnaeus, 1767 (as "*P. pupa* Rossmässler") [not Samoan], by monotypy.

Treated as a subgenus of *Nerita* Linnaeus by Thiele (1929: 73), with *Heminerita* Martens as a section of *Puperita* Gray. Vaught (1989: 13) treated both *Puperita* and *Heminerita* as subgenera of *Nerita*. This catalog follows Wenz (1938b: 421) and Starmühlner (1993: 235) in treating *Heminerita* as a subgenus of *Puperita*.

Subgenus HEMINERITA Martens, 1887

HEMINERITA Martens, 1887: 9 [1889: 125] (as *Nerita* "Unterabtheilung"). Type species: *Nerita pica* Gould, 1859 [not Samoan] [= *Nerita japonica* Dunker, 1859 [not Samoan], *teste* Wenz (1938b: 421)], by monotypy.

The original proposal of the name *Heminerita* included only a single species, *pica* Gould, 1859, which is thus the type by monotypy. Other species were included only in a subsequently published part of Martens's monograph.

amoena. (U, T)

Neritina amœna Gould, 1847f: 238. [No locality given.] Syntypes USNM 5592, MCZ 169038, MCZ [no number] ex BSNH 3655 (Johnson, 1964: 40).

Remarks. Also from Fiji (Starmühlner, 1992a: 383, 1993: 237) and perhaps more widely if *guerini* Récluz, 1841 [not Samoan] should prove to be a synonym (cf. Starmühlner, 1993: 235; Tryon *in* Tryon & Pilsbry, 1888a: 43).

godeffroyana.

Neritina (*Vitta*) *godeffroyana* Schmeltz, 1869: 98. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson.

godeffroyanus.

Neritina (*Theodoxus*) *godeffroyanus* Mousson, 1869: 371, pl. 15, fig. 7. Upolu.

Remarks. Synonym of *amoena* Gray, 1847, *teste* Tryon (*in* Tryon & Pilsbry, 1888a: 43) and Starmühlner (1993: 219, 235).

Genus SEPTARIA Férussac, 1807

SEPTARIA Férussac, 1807: 60. Type species: *Septaria borbonica* Férussac, 1807 [not Samoan], by monotypy.

Species in this genus are usually found in fast flowing streams, attached to rocks (e.g., Haynes & Wawra, 1989). The reproductive systems of the four species of *Septaria* recognized from Samoa were described (from Fijiian material) by Haynes (1992).

Subgenus SEPTARIA Férussac, 1807

affinis.

Navicella affinis Reeve, 1856d: pl. 4, species 15, figs. a, b. [No locality given.]

Remarks. 'Upolu given as locality by Mousson (1865: 189), Schmeltz (1866: 37), Schaufuss (1869: 58), and Paetel (1873: 70). Synonym of *depressa* Lesson, 1831, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 78–79) (see also Starmühlner, 1993: 259).

decapitata.

Navicella scarabæus var. *decapitata* Mousson, 1869: 384. Upolu . . . jusque dans les montagnes.

Remarks. Considered a synonym of *macrocephala* Récluz, 1842 by Tryon (*in* Tryon & Pilsbry, 1888b: 79), but Tryon also included *sanguisuga* Reeve, 1856 as a synonym. Haynes & Wawra (1989) showed that *macrocephala* Récluz and *sanguisuga* Reeve are not synonymous. Further research is necessary to determine the correct placement of *decapitata* Mousson, although A. Haynes (*in litt.*, 22 March 1995) believed that it is probably a synonym of *sanguisuga* Reeve, 1856, or possibly of *suffreni* Récluz, 1842 [= *freycineti* Récluz, 1842].

+depressa. (U, T)

Navicella depressa Lesson, 1831b: 386. Nouvelle-Guinée [= New Guinea].

Remarks. Considered a synonym of *porcellana* Linnaeus, 1758 by Jutting (1956: 315, 1963: 430), Pointier & Marquet (1990: 219), and, implicitly, by Haynes (1992: 13). Retained as a distinct subspecies of *porcellana* Linnaeus by Haynes (1984: 18) and Starmühlner (1976: 537, 1993: 259), who recorded it from Tutuila. Not recorded by Haynes (1990), who only recorded *porcellana*. Alison Haynes (*in litt.*, 21 April 1995) considered *depressa* Lesson as probably a synonym of *porcellana* Linnaeus, and (*in litt.*, 22 March 1995) considered the *depressa* of Starmühlner (1993: 259) to be almost certainly *macrocephala* Récluz. True *porcellana* Linnaeus, as well as *depressa* Lesson, may neither be present in Samoa, as A. Haynes (*in litt.*, 22 March 1995) said that "the *S. porcellana* type specimen kept at the Linnaean [sic] Society, London is nothing like any *Septaria* found in Samoa, or Fiji for that matter." However, following the latest published works on the Samoan fauna (Haynes, 1990; Starmühlner, 1993), both *porcellana* Linnaeus *s. str.* and *depressa* Lesson are retained as distinct taxa in the Samoan fauna, pending further research. Both recorded

widely extralimitally with a number of extralimital synonyms (Chang, 1991b: 87; Franc, 1957: 27; Marquet, 1993: 160; Pointier & Marquet, 1990: 219; Riech, 1937: 65; Starmühlner, 1976: 542, 1992a: 382, 1993: 262).

fissa.

Navicella haustrum var. *fissa* Schmeltz, 1869: 97. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson.

fissa.

Navicella haustrum var. *fissa* Mousson, 1869: 383. Upolu à Apia; Tutuila à Taga-sa.

Remarks. Synonym of *depressa* Lesson, 1831, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 78–79) (see also Starmühlner, 1993: 259). The nominotypical *haustrum* Reeve, 1856 [not Samoan] was also considered a synonym of *depressa* Lesson, 1831 by Tryon (*in* Tryon & Pilsbry, 1888b: 78–79) (see also Starmühlner, 1993: 259).

freycineti. (S, U, T)

Navicella freycineti Récluz, 1842: 375. Les marais de Macassar [= Makassar (Ujung Pandang), Sulawesi]. Holotype MHNG 15099 (Kabat & Finet, 1992: 235).

Remarks. Senior synonym of *suffreni* Récluz, 1842, *teste* Martens (1881: 21) acting as first reviser, followed by Tryon (*in* Tryon & Pilsbry, 1888b: 80), and see Kabat & Finet (1992: 235), although *suffreni* has been the more commonly used name (e.g., Haynes, 1990: 243; Riech, 1937: 64; Starmühlner, 1976: 543, 1993: 265). Starmühlner (1976: 544) recorded *suffreni* from Vanuatu, Fiji, and Samoa.

haustrum.

Navicella haustrum Reeve, 1856d: pl. 4, species 18, figs. a, b. New Caledonia.

Remarks. Synonym of *depressa* Lesson, 1831, *teste* Tryon (1888b: 78–79) (see also Starmühlner, 1993: 259). Listed from 'Upolu by Paetel (1873: 70).

laperousei. (U)

Navicella laperousei Récluz, 1842: 378. Guam, à la source de la rivière de Umata . . . Les îles Fidgi [= Fiji], à Opoulo [= 'Upolu] dans l'île Hamoa [= Samoa]. Syntypes MNHN, MHNG 15111, 15112, 15113, 15114 (Kabat & Finet, 1992: 236).

Remarks. Probably a "variety" of *macrocephala* Récluz, 1842, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 80), but never formally reduced to subspecific status or synonymy. Alison Haynes (*in litt.*, 21 April 1995) suggested that *laperousei* Récluz, 1842 may be a synonym of *suffreni* Récluz, 1842 [= *freycineti* Récluz, 1842] but that it is not a synonym of *macrocephala* Récluz, 1842.

macrocephala. (?U, T)

Navicella macrocephala Récluz, 1842: 374. Lébouka, dans les Viti ou Fidgi [= Levuka, Fiji; see Haynes & Wawra, 1989: 34]. Syntypes MNHN, questionable syntypes MHNG 15201, MHNG 15202 (Haynes & Wawra, 1989: 34; Kabat & Finet, 1992: 238).

Remarks. Recorded from Samoa by Riech (1937: 68), Franc (1957: 27), and Starmühlner (1976: 543), and specifically from Tutuila by Haynes (1990: 243) and Haynes & Wawra (1989: 34). Also reported from Fiji, Vanuatu, and Tahiti (Haynes & Wawra, 1989: 34). Originally a manuscript name of Guillou. See *sanguisuga* Reeve, 1856.

magnifica.

Navicella magnifica Reeve, 1856d: pl. 4, species 16, figs. a, b. Hamond's Island, Australian Seas.

Remarks. Listed from 'Upolu by Paetel (1873: 70). Considered a synonym of *macrocephala* Récluz, 1842 by Tryon (*in* Tryon & Pilsbry, 1888b: 79), but Tryon also included *sanguisuga* Reeve, 1856 as a synonym. Haynes & Wawra (1989) have shown that *macrocephala* Récluz and *sanguisuga* Reeve are not synonymous. Further research is necessary to determine the correct placement of *magnifica* Reeve.

pala.

Navicella pala Mousson, 1865: 189. Upolu.

Remarks. Synonym of *freycineti* Récluz, 1842, *teste* Tryon (*in* Tryon & Pilsbry, 1888b: 80) and Starmühlner (1993: 265). Both 'Upolu and Tutuila given as localities by Mousson (1869: 382) and Schmeltz (1869: 97).

porcellana. (S, U, T)

Patella porcellana Linnaeus, 1758: 781. In O. Indiae [= East Indies]. "Type specimen kept at the Linnaean [sic] Society" (A. Haynes, *in litt.*, 22 March 1995).

Remarks. See *depressa* Lesson, 1831.

profunda.

Navicella pala var *profunda* Schmeltz, 1866: 37 [1869: 97]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson, but Mousson never published the name. Schmeltz (1866: 37) recorded it from 'Upolu, as did Schaufuss (1869: 58) and Paetel (1873: 70, 1883: 85, 1888a: 531). Tryon (*in* Tryon & Pilsbry, 1888b: 80) treated it as a synonym of *freycineti* Récluz, 1842.

sanguisuga. (S, U, ?T)

Navicella sanguisuga Reeve, 1856d: pl. 4, species 17, figs. a, b. New Caledonia. Syntypes BMNH 1974119 (Haynes & Wawra, 1989: 36).

Remarks. Frequently synonymized with *macrocephala* Récluz, 1841 (see Starmühlner, 1993: 262) but shown to be distinct by Haynes & Wawra (1989). Not recorded from Tutuila by Haynes (1990) or Haynes & Wawra (1989: 36), but considered definitely to be found in Samoa by Haynes (*in litt.*, 21 April 1995). Starmühlner (1993: 262–65) appeared to retain *sanguisuga* Reeve, 1856 as distinct, but did not record *macrocephala* Récluz, 1842 at all. Starmühlner (1992a: 382–83), in his biogeographic treatment of the Samoan fauna, dealt only with *macrocephala*, but in his ecological notes (p. 380) listed only *sanguisuga*, apparently interchanging the two names. Widespread in the southwest Pacific (Haynes & Wawra, 1989: 36).

suffreni.

Navicella suffreni Récluz, 1842: 374. Les îles Fidgi, à Lébouka [= Levuka, Fiji; see Haynes & Wawra, 1989: 34]. Probable syntypes MHNG 16385, MHNG 16386, MHNG 16397 (Kabat & Finet, 1992: 248).

Remarks. Junior synonym of *freycineti* Récluz, *teste* Martens (1881: 21) acting as first reviser (see also Kabat & Finet, 1992: 235), although frequently used as the senior synonym. Haynes (*in litt.*, 21 April 1995) prefers to retain *suffreni* Récluz as a valid taxon because of the disparity in their type localities.

truncata.

Navicella magnifica var. *truncata* Schmeltz, 1869: 97. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

truncata.

Navicella magnifica var. *truncata* Mousson, 1869: 385. Upolu.

Remarks. Considered a synonym of *macrocephala* Récluz by Tryon (*in* Tryon & Pilsbry, 1888b: 79), but Tryon also included *sanguisuga* Reeve as a synonym. Haynes & Wawra (1989) showed that *macrocephala* Récluz and *sanguisuga* Reeve are not synonymous. Further research is necessary to determine the correct placement of *truncata* Mousson, although A. Haynes (*in litt.*, 22 March 1995) believes it to be a synonym of *sanguisuga* Reeve.

Family HELICINIDAE Férussac, 1822

The family Helicinidae is one of several groups of operculate land snails that have diversified on Pacific islands. The most recent comprehensive revisions of the family were by Wagner (1905, 1907–1911). However, these works contained many errors and omissions (see Baker, 1922: 29; Fulton, 1915a, b; Solem, 1959: 166–67) and, combined with Baker's (1922: 43) invalid type species designation for *Sturanya* (see *Pleuropoma*, below), have led to much confusion. This catalog follows the generic concepts of Neal's (1934) revision of the Hawaiian fauna, as discussed by Cowie *et al.* (1995: 17, 19). Placement of species-group names in association with genera and subgenera generally follows Wagner (1905, 1907–1911). Paetel (1890: 496) listed *Helicina lineata* C.B. Adams, 1845 as possibly from Samoa. However, this species was described from Jamaica (Adams, 1845: 12); it has never been thought of as an artificial introduction in Samoa; and it is excluded from this catalog.

Genus OROBOPHANA Wagner, 1905

OROBOPHANA Wagner, 1905: 415. Type species: *Helicina uberta* Gould, 1847 [not Samoan], by subsequent designation of Baker (1922: 43).

musiva. (S, U, T, O, Ol, Ta)

Helicina musiva Gould, 1847b: 201. Manua and Upolu. "Holotype" USNM 5509, "paratypes" MCZ 216624 (Johnson, 1964: 113).

Remarks. Mousson (1869: 357) gave "Manua, Tutuila, Upolu, Savai" as localities. Reported from Tutuila and all three of the Manu'a Islands by Miller (1993: 11, 12). Recorded from Samoa, Fiji, and Tonga (Wagner, 1905: 429); also Tuvalu ["Ellis group"] (Garrett, 1887: 152).

oberwimmeri. (Samoa)

Orobophana oberwimmeri Wagner, 1910a: 230, pl. 45, figs. 14–18. Samoa-Inseln.

+uveana. (U, Manu'a)

Helicina musiva var. *uveana* Mousson, 1865: 178. Manua et Upolu . . . Uvea.

Genus PLEUROPOMA Möllendorff, 1893

PLEUROPOMA Möllendorff, 1893: 140 (as *Helicina* sect.). Type species: *Helicina dichroa* Möllendorff, 1893 [not Samoan], by original designation.

STURANYA Wagner, 1905: 383. Type species: *Helicina plicatilis* Mousson, 1865, by subsequent designation of Kobelt (1907: 234).

STURANYELLA Pilsbry & Cooke, 1934b: 54. Type species: *Helicina plicatilis* Mousson, 1865, by original designation.

STURYANELLA: Pilsbry & Cooke, 1934b: 54. Incorrect original spelling of *Sturanyella*.

Neal (1934: 38), Pilsbry & Cooke (1934b: 54), and Solem (1959: 168) incorrectly considered the type species of *Sturanya* to be *Helicina laciniosa* Mighels, 1845 [not Samoan], by subsequent designation of Baker (1922: 43). This has led to much confusion as to the correct status of *Sturanya*.

Whether it is best retained as a valid genus or placed in synonymy with *Pleuropoma* can only be decided by further study of the type species. This catalog follows Neal (1934: 38) and Cowie *et al.* (1995: 19) in placing it as a synonym of *Pleuropoma*.

Subgenus APHANOCONIA Wagner, 1905

APHANOCONIA Wagner, 1905: 388. Type species: *Helicina verecunda* Gould, 1859 [not Samoan], by subsequent designation of Gude (1921: 366).

SPHAEROCONIA Wagner, 1909b: 189. Type species: *Helicina verecunda* Gould, 1859 [not Samoan], by subsequent designation of Baker (1922: 43).

Cowie *et al.* (1995: 19) discussed the confusion over the type species designations for *Aphanoconia* and *Sphaeroconia*, and explained the rationale for treating *Aphanoconia* as a subgenus rather than a synonym of *Pleuropoma*.

altivaga.

Helicina altivaga Schmeltz, 1874: 99. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson. Also listed by Pfeiffer (1876: 287), Garrett (1887: 152), and Paetel (1890: 491).

altivaga. (U)

Helicina altivaga Ancey, 1889: 205. Montagnes de l'île d'Upolu.

Remarks. Placed in *Aphanoconia* by Wagner (1905: 411, 1909a: 165). Figured by Wagner (1905: pl. 7, figs. 3a–c, 1909a: pl. 32, fig. 11).

delicatula.

Helicina fulgora var. *delicatula* Schmeltz, 1869: 74 [1874: 98]. *Nom. nud.*

Remarks. Preoccupied by *delicatula* Shuttleworth, 1852 [not Samoan]. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. Also listed and attributed to Mousson by other authors, e.g., Paetel (1873: 125, 1890: 494, 495), Pfeiffer (1876: 287), Garrett (1887: 150), but apparently never validated.

fulgora. (S, U, T, O, Ol, Ta)

Helicina fulgora Gould, 1847b: 201. Upolu and Manua. "Holotype" USNM 5508, "paratypes" MCZ 169153, MCZ 216605 (Johnson, 1964: 80).

Remarks. See Neal (1934: 40, 51) for discussion of the confused status of this name. It is placed in the subgenus *Aphanoconia* following Wagner (1905: 408, 1909a: 163), although Neal (1934: 50–52) dealt with it in *Pleuropoma s. str.* Mousson (1869: 356) gave "Manua, Upolu, Savai, Tutuila" as localities. Wagner (1905: 408) gave only 'Upolu in the Samoan Archipelago but (p. 409) reiterated Mousson's (1870b: 198) records from Fiji. Solem (1975: 3, 4) reported it from Tutuila, Ofu, and Tā'u; Miller (1993: 11, 12) from Tutuila, Olosega, and Tā'u.

rogosiuscula. (Samoa)

Aphanoconia rogosiuscula Wagner, 1909a: 184, pl. 36, figs. 21–25. Samoa-Inseln.

Remarks. Name attributed to Ancey by Wagner (1909a: 184). However, there is no evidence of Ancey having published the name nor of his having provided characters to validate the name in Wagner's publication. Authorship is therefore Wagner alone.

samoana.

Aphanoconia samoana Wagner, 1908c: 159, pl. 31, figs. 9–13. Upolu.

Remarks. Synonym of *fulgora* Gould, 1847, *teste* Neal (1934: 51).

Subgenus PLEUROPOMA Möllendorff, 1893

beryllina. (?T; ?not Samoan)

Helicina beryllina Gould, 1847b: 202. Feejee Islands [= Fiji]. Syntypes USNM 5513, MCZ 169061 (Johnson, 1964: 46).

Remarks. Listed from Tutuila by Pease (1871b: 476) and Miller (1993: 23–29), but only from Fiji by Garrett (1887: 151) and Wagner (1905: 385, 1907b: 37).

flavida.

Helicina beryllina var. *flavida* Schmeltz, 1869: 74. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Tutuila.

+flavida. (T)

Helicina beryllina var. *flavida* Mousson, 1869: 357. Tutuila.

interna. (?S; ?not Samoan)

Helicina interna Mousson, 1869: 358. Savai [= Savai'i].

Remarks. Recorded only from Fiji by Wagner (1905: 384, 1907b: 42), although Garrett (1887: 151) also recorded it from Savai'i and Tonga.

jetschini. (U, T)

Sturanya jetschini Wagner, 1905: 384, pl. 3, figs. 14a–c, 21a, b. Upolu, Samoa-Inseln, Viti-Inseln [= Fiji].

Remarks. Tutuila and 'Upolu (also Fiji) given as localities by Wagner (1907b: 38).

plicatilis.

Helicina plicatilis Schmeltz, 1865: 23. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

plicatilis. (S, U)

Helicina plicatilis Mousson, 1865: 178. Upolu.

Remarks. Savai'i listed by Schmeltz (1869: 74) and Wagner (1905: 384).

+tutuilana. (T)

Sturanya beryllina tutuilana Wagner, 1907b: 38, pl. 5. figs. 22–24. Tutuila. "Die Originalexemplare im k. Museum zu Berlin" (Wagner, 1907b: 38).

zonata.

Helicina beryllina var. *zonata* Paetel, 1890: 492. *Nom. nud.*

Remarks. Locality given as "I. Samoa" by Paetel. Preoccupied by *zonata* Lesson, 1831 [not Samoan], *zonata* Sowerby, 1842 [not Samoan], and *zonata* Guppy, 1864 [not Samoan].

Incertae sedis in HELICINIDAE

altior.

Helicina altior Schmeltz, 1866: 30. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. However, it was apparently never published by Mousson and it was not treated by Wagner (1905, 1907–1911) nor listed by Fulton (1915a, b).

brenchleyi. (U)

Helicina brenchleyi Baird, 1873: 448, pl. 41, figs. 1, 2. Samoan group. "Types" [?syntypes] BMNH, Maidstone Museum (Chatfield, 1994: 101).

Remarks. Not treated by Wagner (1905, 1907–1911); listed by Fulton (1915b: 325), who gave 'Upolu as the locality.

fulgurata. (Samoa)

Helicina fulgurata Baird, 1873: 448, pl. 41, figs. 3, 4. Samoan group. Type material lost (Baird, 1873: 454; Chatfield, 1994: 101).

Remarks. Not treated by Wagner (1905, 1907–1911); listed by Fulton (1915b: 325).

leucochila.

Helicina leucochila Paetel, 1890: 496. *Nom. nud.*

Remarks. Name attributed to Mousson by Paetel and recorded from "I. Samoa". However, it was apparently never published by Mousson and it was not treated by Wagner (1905, 1907–1911) nor listed by Fulton (1915a, b).

multifasciata. (Samoa)

Helicina multifasciata Baird, 1873: 449, pl. 41, figs. 5, 6. Samoan group. Types material BMNH (Chatfield, 1994: 101).

Remarks. Not treated by Wagner (1905, 1907–1911); listed by Fulton (1915b: 325).

strigata. (U)

Helicina strigata Baird, 1873: 450, pl. 41, figs. 9, 10. Upolu, Samoan group. "Types" [? syntypes] BMNH, Maidstone Museum (Chatfield, 1994: 101).

Remarks. Not treated by Wagner (1905, 1907–1911); listed by Fulton (1915b: 325).

zebriolata. (?U; ?not Samoan)

Helicina zebriolata Pfeiffer, 1855b: 101. Lord Howe's Island, Australian Seas.

Remarks. Listed from 'Upolu by Paetel (1873: 126). Not treated by Wagner (1905, 1907–1911); listed by Fulton (1915a: 241).

The Cyclophoroid Families NEOCYCLOTIDAE and DIPLOMMATINIDAE

The Cyclophoroidea are terrestrial operculate snails. They have been treated variously as a single family (Cyclophoridae) or as a superfamily with as many as twelve distinct families (see Boss, 1982: 978). Two groups are represented in Samoa, here treated as families: Neocyclotidae [= Poteriidae] and Diplommatinidae, following Boss (1982: 978–80), Ponder & Warén (1988: 291), and Vaught (1989: 15, 16), but contrary to Thiele (1929: 102, 108). A brief history of the classification of the Cyclophoroidea is given by Girardi (1978: 192).

Family NEOCYCLOTIDAE Kobelt & Möllendorff, 1897

The family-group name Neocyclotidae is adopted here as it has priority over the frequently used name Poteriidae (see Baker, 1956b: 28; Ponder & Warén, 1988: 291).

Genus OSTODES Gould, 1862

OSTODES Gould, 1862: 283. Type species: *Cyclostoma strigatum* Gould, 1848, by original designation.

The most recent revision of this genus was by Girardi (1978), extending the earlier work of Clench (1949). Synonymies in this catalog follow Girardi (1978). The genus *Ostodes* is endemic to the Samoan Archipelago. Island distributions follow Girardi (1978).

adjunctus. (T)

Cyclophorus (*Ostodes*) *adjunctus* Mousson, 1869: 351, pl.14, fig. 9. Tutuila.

albida.

Cyclostoma albida Hombron & Jacquinot, 1852: mollusques pl. 12, figs. 25–28. Ile Samoa.

Remarks. The description of this species (Rousseau, 1854: 50) was published after the plates (Hombron & Jacquinot, 1842–1853), although no accurate dating could be obtained for either (see Bibliography). Plate 12, with 4 figures, the name, and the locality, validated the name. Synonym of *strigatus* Gould, *teste* Clench (1949: 13) and Girardi (1978: 222).

apiae.

Cyclostoma apiae Récluz, 1851: 213, pl. 6, figs. 10, 11. La baie Apia (île Opolu) [= 'Upolu].

Remarks. Synonym of *plicatus* Gould, *teste* Clench (1949: 15) and Girardi (1978: 216).

cookei. (U)

Ostodes cookei Clench, 1949: 10, fig. 3a. Upolu Is., Tiavi, alt. 2,100 ft. Holotype BPBM 9711, paratypes BPBM 186184, MCZ 140504 (Clench, 1949: 10).

exasperatus. (S, U)

Ostodes exasperatus Girardi, 1978: 227, figs. 19c, d, 20f, g, 21a, b. Station 34, approximately 8 km SE of Asau along main road, then inland about 8 km along a track to about 540 m elevation, in light upland forest, Savaii, W. Samoa. Holotype FMNH 170530 (Girardi, 1978: 228).

garretti. (S)

Ostodes garretti Clench, 1949: 18, fig. 7c. Savaii . . . Siavao-Auola, alt. 500 to 2,000 ft. Holotype BPBM 108334, paratypes BPBM 108216, BPBM 108198, MCZ 140524 (Clench, 1949: 18).

gassiesi. (S, U)

Cyclostoma gassiesi Souverbie, 1859: 294, pl. 8, figs. 6a, b. [No locality given.]

Remarks. Considered a synonym of *plicatus* Gould by Clench (1949: 16) but a valid species by Girardi (1978: 217) who recorded it from 'Upolu and Savai'i.

llanero. (S)

Ostodes llanero Girardi, 1978: 228, figs. 19b, 20d, e, 22a, b. Station 34, approximately 8 km SE of Asau along main road, then inland about 8 km along a track to about 540 m, in light upland forest; Savaii, W. Samoa. Holotype FMNH 152991 (Girardi, 1978: 230).

plicatus. (U)

Cyclostoma plicatum Gould, 1847c: 205. Upolu. "Holotype" USNM 5519, "paratypes" USNM 612303, MCZ 169300, 124901, 124905, 134718 (Johnson, 1964: 129).

pulverulentum.

Cyclostoma pulverulentum Pfeiffer, 1854a: 301, pl. 40, figs. 13, 14. Upolu.

Remarks. Synonym of *plicatus* Gould, *teste* Clench (1949: 16) and Girardi (1978: 216). A manuscript name of Philippi.

reticulatus. (U)

Ostodes reticulatus Girardi, 1978: 220, figs. 16a, 17a, b, 18a, b. Station 16, SE peak Tafua-Upolu, in undisturbed foothill forest at 480 m elevation, Upolu, W. Samoa. Holotype FMNH 170532, paratypes FMNH 152757 (Girardi, 1978: 222).

savaii. (S)

Ostodes savaii Clench, 1949: 14, figs. 5, 6. Savaii Is., Salailua, alt. 300 to 600 ft. Holotype BPBM 9710, paratypes BPBM 108230–42, MCZ 140501 (Clench, 1949: 15).

strigatus. (T)

Cyclostoma strigatum Gould, 1847c: 204. Upolu. "Holotype" USNM 5518, "paratypes" USNM 612302, MCZ 87876, 124904, 169387 (Johnson, 1964: 153), "cotype" MCZ 141006 (Clench, 1949: 14).

Remarks. Mousson (1865: 180) gave "Manua" as locality. Garrett (1887: 148), Mousson (1869: 350) and Schmeltz (1869: 74) gave 'Upolu, Savai'i, and Tutuila. Clench (1949: 9) and Girardi (1978: 224) considered this species to occur only on Tutuila.

tiara. (U)

Cyclostoma tiara Gould, 1847c: 204. Upolu. Holotype USNM 5517 (Johnson, 1964: 159; the original catalog entry in the USNM shows that the lot contained only a single specimen).

upolensis.

Cyclophorus upolensis Schmeltz, 1865: 18. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

upolensis. (S, U)

Cyclophorus upolensis Mousson, 1865: 180. Upolu (Samoa). Holotype MCZ 141001, paratypes MCZ 141002, BPBM 188848 (Clench, 1949: 12).

Family DIPLOMMATINIDAE Pfeiffer, 1856

Genus DIPLOMMATINA Benson, 1849

DIPLOMMATINA Benson, 1849: 193. Type species: *Bulimus folliculus* Pfeiffer, 1846 [not Samoan], by subsequent designation of Nevill (1878: 284).

Benson (1849) did not designate a type species (cf. Smith, 1992: 36). His use of the term "type" is interpreted here as meaning "kind of snail". He included two species in the new genus *Diplommatina*, viz., *folliculus* Pfeiffer, 1846 [not Samoan] (with Hutton's manuscript name "*costata*" as a synonym) and a new species, *costulatum* [not Samoan], which he described (also originally a Hutton manuscript name).

Subgenus MOUSSONIA Semper, 1865

MOUSSONIA Semper, 1865: 296. Type species: *Pupa problematica* Mousson, 1865, by monotypy.

At the time of its proposal, *Moussonia* Semper, 1865 contained a single species, *problematica* Mousson, 1865. Semper used *problematica* as the valid name, and introduced *typica* in its synonymy. The name *typica* was made available, retrospectively to 1865, by Garrett (1887: 146) (and perhaps earlier). However, although the use of "*typica*" takes precedence over monotypy (*Code* Art. 68(c)), by the time *typica* was made available, *problematica* Mousson, 1865 was already the type (P.K. Tubbs *in litt.*, 12 January 1995).

problematica.

Pupa problematica Schmeltz, 1865: 26. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

problematica. (U)

Pupa problematica Mousson, 1865: 176. Upolu, Samoa.

typica.

Moussonia typica Semper, 1865: 296. Upolu (Samoa).

Remarks. Proposed as a synonym of *problematica* Mousson, 1865; validated before 1961, e.g., by Garrett (1887: 146) and Wenz (1939: 484) (see *Code* Art. 11(e)); *problematica* has priority by several months.

Family TRUNCATELLIDAE Gray, 1840

The family-group name Rissoidae was given precedence over Truncatellidae by ICZN (1992a: 78), but only when their type genera are placed in the same family-group taxon. The family Truncatellidae is retained here as a distinct family within the superfamily Rissooidea, following Ponder & Warén (1988: 298).

Genus TRUNCATELLA Risso, 1826

TRUNCATELLA Risso, 1826: 124. Type species: *Truncatella costulata* Risso, 1826 [not Samoan] [= *Helix subcylindrica* Linnaeus, 1767 [not Samoan], *teste* ICZN (1992a: 78)], by subsequent designation of Lowe (1855: 217).

guerinii. (S)

Truncatella guerinii Villa & Villa, 1841: 59. In insulis Bourbon [= Réunion]. Lectotype MCZ 177264 (Clench & Turner, 1948: 168).

Remarks. Widespread in the Indo-Pacific (Clench & Turner, 1948: 168).

valida.

Truncatella valida Pfeiffer, 1846c: 182. In insulis Philippinis [= Philippines]. "Cotypes" MCZ 178649 (Clench & Turner, 1948: 209).

Remarks. Synonym of *guerinii* Villa & Villa, 1841, *teste* Clench & Turner (1948: 167, 209). Listed by Pease (1871b: 477) and Garrett (1887: 146) as from Samoa.

vitiana.

Truncatella vitiana Gould, 1847d: 208. Feejee Islands [= Fiji]. "Holotype" USNM 20617, "paratypes" MCZ 178664 (Johnson, 1964: 169).

Remarks. Synonym of *guerinii* Villa & Villa, 1841, *teste* Clench & Turner (1948: 167, 209). Savai'i given as locality by Mousson (1869: 356) and Schmeltz (1869: 75, 1874: 104).

Family ASSIMINEIDAE Adams & Adams, 1856

There has been much confusion over the correct usage of the family-group names Assimineidae, Synceridae, and Realiidae (see, e.g., Solem, 1959: 198). Following Ponder & Warén (1988: 298), Assimineidae is adopted here. Synceridae is based on *Syncera* Gray, which is considered a *nomen nudum* (see below under genus *Assiminea*). Realiidae is invalid (ICZN, 1971: 149).

The family Tutuilanidae was established for a single new genus and species by Hubendick (1952: 304), who placed it in or near the Rissooidea (p. 305). Ponder & Warén (1988: 298), whose treatment is adopted here, considered it equivalent to Assimineidae, listing it under the subfamily Assimineinae.

Subfamily ASSIMINEINAE Adams & Adams, 1856

Genus ASSIMINEA Fleming, 1828

SYNCERA Gray, 1821: 239 (as *Nerita* subg.). *Nom. dub.*

ASSIMINEA Fleming, 1828: 275. Type species: *Assiminea grayana* Fleming, 1828 [not Samoan], by monotypy.

This catalog maintains current usage in considering *Assiminea* Fleming, 1828 the valid name of the genus. Certain authors have considered *Syncera* Gray, 1821 a *nomen nudum* (e.g., Solem, 1959: 198–99); it is here treated as a *nomen dubium*, following Abbott (1958: 233). Abbott (1958) provided a nomenclatural catalog and Bibliography of the genus. The species level taxonomy of the genus is confused, with over 200 names proposed. Identification using shells alone is almost impossible (Solem, 1959: 199), although the taxa from Pacific islands can mostly be referred to the "*nitida*-complex" (Abbott, 1958; see also Abbott, 1949). According to Abbott (1958: 224), *Assiminea* spp. are estuarine and amphibious; they require at least a small degree of salinity in the water; some live at the edge of almost strictly marine waters. No *Assiminea* spp. were recorded from Samoa by Starmühlner (1993).

crosseana. (U)

Hydrocena crosseana Gassies, 1869: 77. Insula Art. (Nov. Caled.) [= Art, Belep Islands, New Caledonia].

Remarks. Recorded from 'Upolu by Haynes (1990: 243). Haynes (*in litt.*, 22 March 1995) implied that what she (Haynes, 1990: 243) considered to be *crosseana* Gassies was recorded by Starmühlner (1993: 274) from Tonga as cf. *nitida* Pease [= *parvula* Mousson]. Abbott (1958) did not list *crosseana* Gassies in his catalog.

nitida.

Hydrocena nitida Pease, 1865a: 674. Islands of the central Pacific [in publication title]. "Holotype" MNHN, "paratypes" MCZ 139120 (Johnson, 1994: 18) [Johnson incorrectly cited Fischer-Piette (1950: 72) as having identified the holotype; Fischer-Piette only indicated an "exemplaire figuré".]

Remarks. Junior synonym of *parvula* Mousson, 1865, although usually treated as the senior synonym (e.g., Abbott, 1958: 272; Garrett, 1884: 107, 1887: 152).

parvula.

Hydroceana parvula Schmeltz, 1865: 18. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Fiji.

parvula. (U, T, O, Ta)

Hydrocena parvula Mousson, 1865: 184. Upolu.

Remarks. Senior synonym of *nitida* Pease, 1865. Listed in *Omphalotropis* and *Assiminea* by Pease (1871b: 476), although Mousson only introduced the name once (see Ruhoff, 1980: 421). 'Upolu and Tutuila given as localities by Schmeltz (1869: 74); Uea [= Uvea] given by Mousson (1871: 29). Ofu and Tā'u as additional localities based on Solem's (1975: 3, 4) records of *nitida* Pease, 1865. Widespread in the Pacific (Garrett, 1887: 153).

similis. (U, T)

Hydrocena similis Baird, 1873: 440, pl. 39, figs. 1, 2. Samoan group. Type material BMNH (Chatfield, 1994: 101).

Remarks. Considered a synonym of *parvula* Mousson by Schmeltz (1874: 103) and of *nitida* Pease by Garrett (1887: 153) but retained here as a distinct taxon following Abbott (1958: 273). Recorded from Rarotonga, Uvea, Tutuila, and 'Upolu by Schmeltz (1874: 103).

Genus TUTUILANA Hubendick, 1952

TUTUILANA Hubendick, 1952: 304. Type species: *Tutuilana striata* Hubendick, 1952, by original designation.

Placed in subfamily Assimineinae following the listing of Tutuilanidae with Assimineinae by Ponder & Warén (1988: 298).

striata. (T)

Tutuilana striata Hubendick, 1952: 301, figs. 1, 2. Near Fagatoa Reservoir, Tutuila, Samoa . . . on a dripping wet, mossy cliff. Holotype BPBM 9719, paratypes BPBM 186519 (Hubendick, 1952: 304).

Subfamily OMPHALOTROPIDINAE Thiele, 1927

The family-group name has been spelled as "Omphalotropinae" (e.g., Smith, 1992: 28; Starmühlner, 1993: 275; Wenz, 1939: 635) and "Omphalotropidinae" (e.g., Ponder & Warén, 1988: 298; Thiele, 1929: 171; Vaught, 1989: 25). The latter is adopted here following ICZN (1971: 149).

Genus OMPHALOTROPIS Pfeiffer, 1851

REALIA Baird, 1850: 63. Type species: *Cyclostoma rubens* Quoy & Gaimard, 1832 [not Samoan], by subsequent designation of Iredale (1941: 59).

OMPHALOTROPIS Pfeiffer, 1851: 176. Type species: *Bulimus hieroglyphicus* Potiez & Michaud, 1838 (as "*O. hyeroglyphica*, Fér.") [not Samoan], by subsequent designation of Nevill (1878: 319).

The type species of *Omphalotropis* was discussed by Keen & Coan (1969: 100) and confirmed by ICZN (1971: 149). The name is masculine (ICZN, 1971: 149). The genus-group name *Realia* Baird was suppressed for the purposes of priority by ICZN (1971: 149).

Starmühlner (1993: 275) recorded the genus only from 'Upolu, as *Omphalotropis* sp.

angulata.

Omphalotropis angulata Schmeltz, 1866: 30. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and listed it from 'Upolu.

+angulosus. (S)

Realia (*Omphalotropis*) *conoidea* var. *angulosa* Mousson, 1869: 353. Savai [= Savai'i].

augulata.

Omphalotropis augulata Schaufuss, 1869: 96. *Nom. nud.*

Remarks. Schaufuss (and Paetel, 1873: 124, 1883: 189) attributed the name to Mousson and listed it from 'Upolu. Possibly just a misspelling of *angulata* Schmeltz, but listed here as a nude name, for completeness.

bifilaris.

Omphalotropis bifilaris Schmeltz, 1865: 18. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

bifilaris. (U, T)

Omphalotropis bifilaris Mousson, 1865: 183. Upolu (Samoa).

Remarks. Tutuila also given as locality by Garrett (1887: 150) and Schmeltz (1869: 75); the former also gave Tonga.

biliratus. (S, U, ?T)

Omphalotropis bilirata Mousson, 1865: 184. Upolu.

Remarks. Savai'i and Wallis Island also given as localities by Garrett (1887: 149); Savai'i only, by Schmeltz (1869: 75). Tentatively recorded from Tutuila (A.C. Robinson, *in litt.* 11 July 1994).

conoideus. (S, U, Ta)

Omphalotropis conoidea Mousson, 1865: 182. Upolu.

Remarks. Savai'i and Uvea (Wallis Islands) also given as localities by Schmeltz (1869: 75, 1874: 101). Solem (1975: 3) reported it from Ta'u.

+elongatus. (S)

Realia (*Omphalotropis*) *bilirata* var. *elongata* Mousson, 1869: 354. Savai [= Savai'i].

Remarks. Junior primary homonym of *Realia elongata* Pease, 1868 [not Samoan]. Mousson proposed it within a section under the heading "Genus *Realia*" so, although the binomen "*Omphalotropis bilirata*" appeared above the actual description, *Omphalotropis* must be treated as a subgenus in this instance (see also Keen & Coan, 1969: 101), hence the primary homonymy in *Realia*. No new name proposed here, pending further research.

+gracilior. (T)

Realia (*Omphalotropis*) *bifilaris* var. *gracilior* Mousson, 1869: 353. Tutuila.

laevis. (Samoa)

Realia (*Omphalotropis*) *laevis* Baird, 1873: 440, pl. 39, figs. 3, 4. Samoan group. Type material BMNH (Chatfield, 1994: 101).

Remarks. Junior primary homonym of *laevis* Pease 1865 [not Samoan; Pohnpei (Pease, 1871b: 476)]. No new name proposed here, pending further research.

navigatorum. (?not Samoan)

Hydrocena (*Omphalotropis*) *navigatorum* Pfeiffer, 1838: 113. Navigators' Islands [= Samoa].

Remarks. Listed with no locality by Mousson (1865: 183) and doubtfully as Samoan by Mousson (1869: 390) and Garrett (1887: 128). Listed as Samoan by Pease (1869: 146, 1871b: 476) and Paetel (1883: 189).

scitulus. (Manu'a)

Cyclostoma scitulum Gould, 1847c: 206. Taheiti and Eimeo [= Tahiti and Moorea], Manua [Samoa not Tubuai, *teste* Johnson, 1964: 146]. Syntypes USNM 5524, MCZ 169358 (Johnson, 1964: 146).

Remarks. Placed here in *Omphalotropis* following Garrett (1884: 95).

tectiformis.

Omphalotropis tectiformis Schmeltz, 1869: 75. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa. Probably a misspelling of *teretiformis* Mousso. Listed here for clarity.

+teretiformis. (T)

Realia (*Omphalotropis*) *bifilaris* var. *teretiformis* Mousson, 1869: 353. Samoa.

Remarks. Reported from Tutuila by Solem (1975: 5).

zebriolatus. (?U; ?Samoan)

Omphalotropis zebriolata Mousson, 1865: 181. Nucuiona. Uvea.

Remarks. Listed as a nude name by Schmeltz (1865: 18; as "*zebriolatus* Mss.") from Uvea but not from Samoa. Listed from 'Upolu by Pease (1871b: 476).

Incertae sedis in ASSIMINEIDAE

brazieri. (U)

Cyclostoma brazieri Cox, 1870: 85. Upolu, Navigator's Islands [= Samoa] . . . on the mountains. Holotype AMS C64837 (Girardi, 1978: 193).

Remarks. Placed tentatively in Assimineidae, following Girardi (1978: 193).

Family THIARIDAE Troschel, 1857

The name Thiaridae is retained in preference to Melaniidae, following Ponder & Warén (1988: 294). The taxonomy of the Thiaridae is confused and, perhaps because of their predominantly clonal mode of reproduction that can lead to extensive inter-population variation in morphology, many local forms and subspecies of rather doubtful validity have been proposed (Abbott, 1948; Franc, 1957; Jutting, 1956, 1963; Morrison, 1952, 1954; Pace, 1973). Generic limits are also poorly understood, with some authors raising certain subgenera to generic status (e.g., Morrison, 1954; Vaught, 1989: 28) and others preferring a less inflated classification (e.g., Pace, 1973). Pace (1973: 52) briefly summarized the history of the taxonomic treatment of the family. This catalog follows the generic and subgeneric arrangement of Starmühlner (1976, 1992a, 1993), the most recent author to treat the Samoan fauna in depth. Island distributions follow Haynes (1990), Starmühlner (1993), and the original descriptions, with additional sources indicated under the individual taxa.

Thiarids are worldwide in distribution, but with greatest diversity in the tropics. They are predominantly found in fresh waters of streams, rivers, ponds, lakes, and irrigation systems, but some species can inhabit brackish water (Pace, 1973). A number of thiarids are well known to have been introduced widely through human activities. For instance, *Melanoides tuberculata* (Müller), considered Asian by Morrison (1954: 378, 380) but of Middle Eastern and East African origin by Pointier & Marquet (1990: 220), is now so widespread (e.g., Chang, 1991b: 89; Dudgeon, 1989; Heller & Ehrlich, 1995: 237; Jutting, 1956: 415; Pace, 1973: 56; Pointier *et al.*, 1994; Pointier & Marquet, 1990: 220; Starmühlner, 1992a: 382; Vaate *et al.*, 1994) that its origins may well never be truly understood. It is listed herein as introduced, as considered probable by Haynes (1990: 245). The endemic, native, or introduced status of most of the species represented in Samoa is obscure, although Haynes (1990: 245) felt that most freshwater species on Pacific islands occurred there naturally. However, whether native or artificially introduced, most, if not all, of the thiarid taxa described from Samoa may well be conspecific with but a small number of widely occurring taxa. There are numerous extralimital synonyms that are excluded from this catalog, and it remains possible that certain taxa described from Samoa have not been recognized as junior synonyms of extralimital taxa.

Subfamily THIARINAE Troschel, 1857

Genus MELANOIDES Olivier, 1804

MELANOIDES Olivier, 1804: 69. Type species: *Melanoides fasciolata* Olivier, 1804 [not Samoan] [= *Nerita tuberculata* Müller, 1774, *teste* Morrison (1954: 380)], by monotypy.

STRIATELLA Brot, 1870: 290 (as *Melania* subg.). Type species: not yet fixed (see below).

Striatella Brot is placed as a synonym of *Melanoides* Olivier, following Wenz (1939: 713) and Vaught (1989: 28). Brot (1874: 7) designated two type species for *Striatella*, one for each of his unnamed subdivisions. Otherwise, no type designation for *Striatella* has been found. The name *Melanoides* is treated as feminine.

Subgenus MELANOIDES Olivier, 1804

gratiosa.

Melania gratiosa Schmeltz, 1866: 31 [1869: 78]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. It was never published by Mousson. Synonym of *laxa* Mousson, 1869, *teste* Schmeltz (1869: 78) and Starmühlner (1993: 280). Also listed by Paetel (1873: 58, 1883: 62, 1887: 375). Preoccupied by *gratiosa* Lea, 1861 [not Samoan].

laxa.

Melania laxa Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

laxa. (U)

Melania laxa Mousson, 1869: 368, pl. 15, fig. 6. Upolu.

Remarks. Considered endemic to 'Upolu by Starmühlner (1992a: 383, 1992b: 412; 1993: 281), although he included *cylindroides* Baird, 1873 [not Samoan], recorded from Niue, in its synonymy (see also Brot, 1877a: 242).

peregrina.

Melania peregrina Schmeltz, 1866: 31 [1869: 78]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

peregrina. (U)

Melania peregrina Mousson, 1869: 368, pl. 15, fig. 5. Upolu.

Remarks. Considered endemic to 'Upolu by Starmühlner (1992a: 383, 1992b: 412; 1993: 282). Listed by Schaufuss (1869: 50) from "Upola" and attributed to Mousson.

tuberculata. (S, U, T, ?A, ?Ta; introduced)

Nerita tuberculata Müller, 1774: 191. In littore Coromandel.

Remarks. An extremely widespread species with many extralimital synonyms (e.g., Jutting, 1956: 412–14; Marquet, 1993: 160; Starmühlner, 1976: 591–95, 1993: 283–87). Pointier & Marquet (1990: 220, 222) considered its introduction into French Polynesia to have taken place during early colonization of the islands by Polynesians. Tentatively recorded from 'Aunu'u and Tā'u (A.C. Robinson, *in litt.* 11 July 1994). Treated here as introduced.

Subgenus STENOMELANIA Fischer, 1855

STENOMELANIA Fischer, 1885a: 701 (as *Melania* sect.). Type species: *Melania aspirans* Hinds, 1847, by monotypy.

arthurii.

Melania arthurii Brot, 1870: 290. New Caledon. [= New Caledonia].

Remarks. Synonym of *subexusta* Mousson, *teste* Riech (1937: 58), and of *persulcata* Mousson (as "*subexusta*"), teste Starmühlner (1992a: 381), although both these authors treated *arthurii* Brot as the senior synonym; *subexusta* Mousson, 1870 treated here as a synonym of *persulcata* Mousson, 1869. Synonym of *persulcata* Mousson, 1869. **N. syn.**

aspirans. (S, U)

Melania aspirans Hinds, 1844a: 8. Feejee Islands [= Fiji].

Remarks. See also Hinds (1845: 55). Recorded from 'Upolu by Brot (1876: 140) and Savai'i by Haynes (1990: 242), but widespread in the southwest Pacific (Haynes, 1984: 10; Riech, 1937: 59; Starmühlner, 1976: 580, 1993: 276).

bifasciata.

Melania bifasciata Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

bifasciata.

Melania bifasciata Mousson, 1869: 364, pl. 15, fig. 3. Upolu, à Uafata et à Apia.

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 277).

brenchleyi. (U, T)

Melania brenchleyi Baird, 1873: 444, pl. 40, figs. 1, 2. Upolu, Samoan group, and Tongatabu, Friendly Islands. "Types" [? syntypes] Maidstone Museum, probably BMNH (Chatfield, 1994: 96, 101).

Remarks. Possibly a synonym of *languida* Mousson, *teste* Schmeltz (1874: 109). Recorded also from Tutuila by Schmeltz (1874: 151).

crassiuscula.

Melania lutosa var. *crassiuscula* Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

crassiuscula.

Melania lutosa var. *crassiuscula* Mousson, 1869: 362. Upolu.

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 276).

+delicatula. (T)

Melania brenchleyi var. *delicatula* Baird, 1873: 444, pl. 40, figs. 3, 4. Tutuila, Samoan group. "Types" [? syntypes] Maidstone Museum, probably BMNH (Chatfield, 1994: 96, 101).

funiculus. (U)

Melania funiculus Quoy & Gaimard, 1834: 158, pl. 56, figs. 43, 44. Moluques [= Moluccas].

Remarks. Recorded from 'Upolu by Starmühlner (1992a: 381).

graeffei.

Melania gräffei Schmeltz, 1865: iii [1869: 78 (as "*lutosa* var. *gräffei*")]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson. He did not give a Samoan locality but the name is included here for clarity, as Mousson's valid publication of the name included Samoa as a locality.

graeffei.

Melania lutosa var. *græffei* Mousson, 1869: 362. Upolu . . . les îles Viti [= Fiji].

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 277).

inserta.

Melania samoensis var. *inserta* Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

+inserta. (U)

Melania samoensis var. *inserta* Mousson, 1869: 365. Upolu.

Remarks. Variety of *lutosa* Gould, since *samoensis* Reeve, 1856 is a synonym of *lutosa* Gould, 1847.

interposita.

Melania interposita Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu, Futuna, and Vanua Balavu (Fiji).

interposita.

Melania lutosa var. *interposita* Mousson, 1869: 363. Upolu.

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 276).

languida.

Melania samoensis var. ? *languida* Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu and Tutuila.

+languida. (U, T)

Melania samoensis var. *languida* Mousson, 1869: 366. Upolu et Tutuila.

Remarks. Variety of *lutosa* Gould, since *samoensis* Reeve, 1856 is a synonym of *lutosa* Gould, 1847.

levis.

Melania lutosa var. *levis* Mousson, 1869: 361. Upolu.

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 276).

luctuosa. (U)

Melania luctuosa Hinds, 1844a: 9. Feejee Islands [= Fiji].

Remarks. See also Hinds (1845: 56). Brot (1877a: 225) gave 'Upolu and Fiji as localities.

lutosa. (U, T, O)

Melania lutosa Gould, 1847e: 223. Upolu. "Holotype" USNM 5559, "paratypes" MCZ 169257, 216803 (Johnson, 1964: 106).

Remarks. Also from Fiji, with a number of Fijian synonyms (Haynes, 1984: 10; Starmühlner, 1992a: 383, 1993: 277). The junior synonym *vainafa* Gould, 1847 recorded from Ofu by Morrison (1954: 380).

nigra.

Melania vainafa var. *nigra* Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

nigra.

Melania vainafa var. *nigra* Mousson, 1869: 367. Upolu.

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 276).

papuensis.

Melania papuensis Quoy & Gaimard, 1834: 157, pl. 56, figs. 45–47. Le havre Dorey, à la Nouvelle-Guinée [= New Guinea].

Remarks. Recorded by Brot (1876: 186) from 'Upolu, as well as New Guinea, the Solomon Islands, Ovalau, and possibly the Moluccas. Synonym of *punctata* Lamarck, *teste* Jutting (1963: 471) and Starmühlner (1976: 586).

persulcata.

Melania subexusta var. *persulcata* Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

persulcata. (U)

Melania subexusta var. *persulcata* Mousson, 1869: 369. Upolu.

Remarks. Validated by Mousson (1869: 369–70) even though he explicitly said that the diagnosis would be published in a later paper (i.e., Mousson, 1870b: 211). Mousson (1869: 369–70) gave no characters distinguishing *persulcata* from *subexusta*, so *subexusta* is a nude name in 1869. Thus, *persulcata* Mousson, 1869 has priority over *subexusta* Mousson, 1870, which was validated in the later publication, so *persulcata* should be treated as the nominotypical subspecies, with *subexusta* a subspecies of it. Recorded (as *arthurii* Brot) from Samoa by Riech (1937: 58), Franc (1957: 58), Starmühlner (1976: 577), and Haynes (1984: 10), and specifically from 'Upolu by Starmühlner (1992a: 381) based on Mousson's (1869: 369) description of *persulcata* Mousson, 1869 (as "*subexusta*"), but only from Waya (Fiji) by Haynes (1990: 242).

picea.

Melania bifasciata var. *picea* Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

+picea. (U)

Melania bifasciata var. *picea* Mousson, 1869: 364. Upolu.

Remarks. Variety of *lutosa* Gould, since *bifasciata* Mousson, 1869 is a synonym of *lutosa* Gould, 1847.

picta.

Melania picta Hinds, 1844a: 8. New Ireland.

Remarks. See also Hinds (1845: 56). Junior primary homonym of *picta* Lea, 1841 [not Samoan]. Synonym of *aspirans* Hinds, *teste* Starmühlner (1993: 275). Mousson (1869: 359) and Schmeltz (1874: 109) gave 'Upolu as locality.

plicaria. (U)

Helix plicaria Born, 1778: [82] (Unnumbered page in errata section) [1780: 389, pl. 16, fig. 14]. [No locality given.]

Remarks. See *plicata* Born, 1778. Recorded from 'Upolu by Starmühlner (1993: 278). Not recorded by Riech (1937) from Samoa. Widespread in the Indo-Pacific (Pace, 1973: 65).

plicata.

Helix plicata Born, 1778: 403. Incorrect original spelling of *plicaria* Born, 1778.

punctata. (?U; ?not Samoan)

Melania punctata Lamarck, 1822: 165. [No locality given.]

Remarks. Included because Brot (1876: 186) gave 'Upolu as a locality for the junior synonym *papuensis* Quoy & Gaimard, 1834. Not recorded from Samoa by Riech (1937), Starmühlner (1976, 1992a, 1993) or Haynes (1990).

samoensis.

Melania samoensis Reeve, 1859b: pl. 11, species 60. Isle of Samoe [= Samoa], Pacific.

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 277). Recorded from Apia by Laird (1956: 28, 95; as "*samoanus*").

scipio.

Melania scipio Gould, 1847e: 224. Samoa and Feejee [= Fiji] Islands. Lectotype USNM 5556, "paratypes" (i.e., paralectotypes) USNM 612313, 612317, MCZ 87882, 169356, Redpath Museum 4259 (Johnson, 1964: 146).

Remarks. Synonym of *aspirans* Hinds, *teste* Starmühlner (1993: 220, 275). Reported from 'Upolu by Schmeltz (1866: 31, 1869: 78) and Mousson (1869: 359).

subexusta.

Melania subexusta Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu and Ovalau (Fiji).

subexusta.

Melania subexusta Mousson, 1869: 369. *Nom. nud.*

Remarks. See *persulcata* Mousson, 1869.

subexusta.

Melania subexusta Mousson, 1870b: 210. Ovalau.

Remarks. See *persulcata* Mousson, 1869. Synonym of *arthurii* Brot, 1870, *teste* Riech (1937: 57) and Starmühlner (1992a: 381); *arthurii* Brot here treated as a synonym of *persulcata* Mousson. Synonym of *persulcata* Mousson. **N. syn.**

subfasciata.

Melania subfasciata Schmeltz, 1866: 31 [1869: 78]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 277). Also listed by Paetel (1873: 59, 1883: 64, 1887: 390). Apparently never validated.

sulcata.

Melania lutosa var. *sulcata* Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

+sulcata. (U)

Melania lutosa var. *sulcata* Mousson, 1869: 361. Upolu.

vainafa.

Melania vainafa Gould 1847e: 224. Falls of Vainafa, Upolu. "Holotype" USNM 5557, "paratypes" Redpath Museum 4360 (Johnson, 1964: 164).

Remarks. Synonym of *lutosa* Gould, *teste* Starmühlner (1993: 277; as "Mouss.").

Incertae sedis in MELANOIDES

acutespira. (S, U)

Melania acute-spira Mousson, 1869: 370, pl. 15, fig. 4. Upolu.

Remarks. Not mentioned by Starmühlner (1976, 1993) or Haynes (1990) but said to be found in Fiji and Samoa by Starmühlner (1992a: 383; as *Melanoides* "*acutospira*"). Recorded from Savai'i, 'Upolu, and Viti Levu by Brot (1877a: 232).

acutispira.

Melania acutispira Schmeltz, 1869: 78. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

Genus THIARA Röding, 1798

THIARA Röding, 1798: 109. Type species: *Helix amarula* Linnaeus, 1758 (as "*Tiara* Bolten"), by subsequent designation of Brot (1874: 7).

MELANIA Lamarck, 1799: 75. Type species: *Helix amarula* Linnaeus, 1758, by monotypy.

Morrison (1954: 378) and Cowie *et al.* (1995: 26) outlined the history of the type species designation for *Thiara*.

+**adjuncta**. (U)

Melania scitula var. *adjuncta* Mousson, 1869: 368. Upolu.

Remarks. Not treated by Starmühlner (1993), nor recorded by Haynes (1990).

amarula. (Samoa)

Helix amarula Linnaeus, 1758: 774. In Asiae fluviis [= Asia].

Remarks. Reported from Samoa by Riech (1937: 49), Franc (1957: 57), and Starmühlner (1976: 562, 1992a: 381), but not recorded by Haynes (1990) or Starmühlner (1993).

cybele.

Melania cybele Gould, 1847e: 222. Feejees, Navigators, &c [= Fiji, Samoa, etc.]. Syntypes USNM 45330, MCZ 78580, 169105 (Johnson, 1964: 65).

Remarks. Synonym of *amarula* Linnaeus, *teste* Starmühlner (1976: 558).

macrospira. (Samoa)

Melania macrospira Morelet, 1857: 32. Cum praecedente [i.e., *Navicella caledonica* Morelet, 1857 [not Samoan], the locality of which was given as "ad Sanctam-Mariam de Balade, Novae-Caledoniae ore occidentali"].

Remarks. Samoa given as locality by Franc (1957: 58), but not recorded by Haynes (1990) or Starmühlner (1993).

scitula. (U)

Melania scitula Gould, 1847e: 224. Upolu. "Holotype" USNM 5558, "paratypes" MCZ 87929, 169357 (Johnson, 1964: 146).

Remarks. Not treated by Starmühlner (1993) nor recorded by Haynes (1990).

terpsichore. (Samoa)

Melania terpsichore Gould, 1847e: 222. Feejee [= Fiji] and Samoa Islands. Lectotype MCZ 169397, "paratypes" (i.e., paralectotypes) MCZ 87931, 169398, USNM 611210 (Johnson, 1964: 158).

Remarks. Reported from Samoa by Starmühlner (1976: 569, 1992a: 381) and Haynes (1984: 9), but not by Haynes (1990) or Starmühlner (1993).

Family VERONICELLIDAE Gray, 1840

The family Veronicellidae [= Vaginulidae] includes a large number of species of terrestrial slugs distributed widely in the humid tropics and subtropics (e.g., Pilsbry, 1919; Hoffmann, 1925). The fullest single account of the family is that of Hoffmann (1925). Nomenclature at all levels in the family has been confused (e.g., Baker, 1925, 1931; Thomé, 1975a, b). The name Veronicellidae Gray, 1840 (*in* British Museum, 1840: 126, 149) has priority over Vaginulidae Martens, 1866 (p. 269; apparently the earliest publication of Vaginulidae), although both have been widely used. The systematics has most recently been worked on by J.W. Thomé in a series of over 30 papers that include detailed redescriptions of many of the type specimens (e.g., Thomé, 1971, 1975a, b, 1988a–c, 1994). The two species recorded from Samoa are widely distributed elsewhere (Alicata & McCarthy, 1964; Forcart, 1969; Franc, 1957; Grimpe & Hoffmann, 1925; Hoffman, 1925; Smith, 1992; Solem, 1959, 1964), probably in large part due to human activities (e.g., Baker, 1931). Forcart (1969) discussed the nomenclature of these two species and Bishop (1977) gave a detailed account of their anatomy.

Genus LAEVICAULIS Simroth, 1913

LAEVICAULIS Simroth, 1913: 147 (as *Vaginula* subg.), 202 (as *Eleutherocaulis* subg.). Type species: *Vaginula comorensis* Fischer, 1883 [not Samoan] [= *Vaginulus alte* Férussac, 1822, *teste* Solem (1959: 42)], by subsequent designation of Pilsbry (1919: 316).

The status of the genus-group names *Laevicaulis* Simroth, 1913 and *Eleutherocaulis* Simroth, 1913 was discussed by Forcart (1969: 148), who considered the latter the junior synonym. *Eleutherocaulis* has not been used in reference to the Samoan fauna.

alte. (U; ?introduced)

Vaginulus alte Férussac, 1822c: 14, pl. 8a, fig. 8, pl. 8b, fig. 5. Environs de Pondichéry [= Pondicherry]. Holotype MNHP (Hoffmann, 1925: 120; Smith, 1992: 318).

Remarks. The plates cited by Férussac (1822c: 14) were issued prior to the text, in livraisons 9 (6 April 1821) and 14 (16 February 1822) of Férussac's *Histoire*, but without figure legends (Kennard, 1942a; and see Bibliography). Possibly African in origin (Solem, 1964: 133), but widely distributed from Africa, through India, South East Asia, and Australia to the islands of the Pacific (Hoffman, 1925: 227–28). Reported, although only tentatively identified, from Apia by Alicata & McCarthy (1964: 608).

Genus VAGINULUS Férussac, 1822

VAGINULUS Férussac, 1822c: 13. Type species: *Vaginulus taunaisii* Férussac, 1822 [not Samoan], by subsequent designation of Woodward (1854: 170).

Férussac (1822c: 13) proposed the name as "*Vaginulus*", masculine. Both this masculine form and the feminine form "*Vaginula*", first introduced by Berthold (1827: 173) and soon after by Blainville (1828: 428), have subsequently been used almost interchangeably. It seems that Hoffmann (1925: 172) was the first to satisfy the provisions of *Code* Art. 33(b)(i) in making a formal

emendation. Smith (1992: 318) incorrectly attributed the emendation to Bishop (1977), who continued to use *Vaginulus*. Cowie (1997b: 38) considered the emendation to be justified. However, his interpretation of the emendation as justified seems to be mistaken. The gender of *Vaginulus* Férussac is determined under the provisions of *Code* Art. 30(a)(iv) as masculine even though it was derived from a feminine word, the diminutive "vaginula" of the Latin word "vagina". Thus, *Vaginulus*, masculine, remains the correct original spelling (*Code* Art. 32).

Further confusion surrounds the relationship of the genus *Veronicella* Blainville, 1817 [not Samoan] to *Vaginulus* Férussac. Thomé (1975a, b, 1988a) has discussed the history of these issues in more detail.

Woodward's (1854: 170) type designation predated that of Stoliczka (1873: 35), which in any case was not explicit (*Code* Art. 67(c)(3)) (cf. Baker, 1925: 13; Forcart, 1969: 149; Smith, 1992: 318; Thomé, 1975a: 158). Gray's (1847: 178) designation of "*Limax nudus*, Sloane, 1725" [= *Onchidium sloanii* Cuvier, 1816 and *Veronicella laevis* Blainville, 1817, *teste* Thomé (1988a: 17, 18, 21] [not Samoan] is considered invalid, following Baker (1925: 17) and Kennard (1942b: 118), because Férussac (1822c: 14) included this species with some doubt as a member of his new genus.

Subgenus SARASINULA Grimpe & Hoffmann, 1924

SARASINULA Grimpe & Hoffmann, 1924: 177 (as genus) [1925: 376 (as genus)]. Type species: *Vaginulus plebeius* Fischer, 1868 (as "*S. plebeja*"), by original designation.

Solem (1959: 41) gave the type species as *Vaginula grandidieri* Crosse & Fischer, 1871 [not Samoan] and placed *Sarasinula* Grimpe & Hoffman as a subgenus of *Angustipes* Colosi, 1922 [not Samoan] (see also Solem, 1964: 133). Thomé (1975b: 25) treated *Sarasinula* as a genus. It is here placed as a subgenus of *Vaginulus* Férussac, following Forcart (1969: 149), Smith (1992: 318), and Vaught (1989: 74), but without implying any taxonomic opinion.

plebeius. (?S, U; introduced)

Vaginulus plebeius Fischer, 1868: 145. Nova Caledonia [= New Caledonia]. Lectotype MNHP (Thomé, 1971: 34).

Remarks. Recorded from 'Upolu by Hoffman (1925: 252). Tentatively recorded from Savai'i (A.C. Robinson, *in litt.* 11 July 1994). Baker (1931: 135) considered it "accidentally introduced into the Pacific . . . during recent times".

samoana.

Vaginula samoana Simroth, 1918: 290. Apia. Type material SMF 45244, 45245 (J.W. Thomé, pers. comm., 8 April 1996).

Remarks. Grimpe & Hoffmann (1925: 379–80) seemed undecided as to whether it should be considered a "species spuria" or a variety of *plebeius* Fischer, 1868, but treated it as a subspecific local form of *plebeius* on p. 383. Treated here as a synonym of *plebeius* Fischer, 1868, following Hoffmann (1925: 251).

Family ELLOBIIDAE Adams & Adams, 1854

The Ellobiidae [= Auriculidae] are pulmonates, but their placement within the Pulmonata has differed among authors (e.g., Bieler, 1992; Boss, 1982; Zilch, 1959a). They are supralittoral in habitat, with some taxa (notably Pythiinae in Samoa) being found among the terrestrial vegetation just inland of the zone of immediate marine influence (or in some cases much further inland; Martins, 1995c). The family has a worldwide distribution and most of the Samoan species are widely distributed extralimitally. There is considerable intra-specific morphological variation that has led to numerous extralimital synonyms. There has been no recent treatment specifically of the Samoan fauna and its nomenclature is not stable. However, a series of recent papers by Martins (1992, 1995a–c, 1996a, b; Martins & Tristão da Cunha, 1992) has treated the family widely and includes discussion of some of the Samoan taxa (see also Harbeck; 1996).

Treatment of genus- and family-group names differs somewhat among authors; this catalog follows Morton (1955) and Martins (1995a–c, 1996b), contrary to Cowie *et al.* (1995), who followed Zilch (1959a). The use of the family-group name Ellobiidae Adams & Adams (*in* Pfeiffer, 1854d: 146) is retained, following accustomed usage (*Code* Art. 40(b)), although Auriculidae Lamarck, 1809 (p. 321) (first latinized from "Auriculacées", as "Auriculadae", by Gray (1824: 107); *Code* Art. 11f(iii)) has priority (see Martins, 1996a: 285).

Subfamily ELLOBIINAE Adams & Adams, 1854

Genus AURICULASTRA Martens, 1880

AURICULASTRA Martens *in* Möbius, Richters & Martens, 1880: 207 (as *Marinula* subg.). Type species: *Auricula subula* Quoy & Gaimard, 1832, by subsequent designation of Zilch (1959a: 76).

Cowie *et al.* (1995: 28) stated that the type species was *Auricula elongata* Küster, 1844 [not Samoan], by monotypy. Martins (1995a: 80) stated that Martens (1897: 158) designated *Auricula subula* Quoy & Gaimard, 1832 as the type species. In fact, Martens (*in* Möbius, Richters & Martens, 1880) included both *subula* Quoy & Gaimard, 1832 and *elongata* Küster, 1844, and Martens (1897) did not designate either as the type. Zilch (1959a: 76) appears to be the first to designate a type species.

subula. (U)

Auricula subula Quoy & Gaimard, 1832: 171, pl. 13, figs. 39, 40. Le havre Carteret, à la Nouvelle-Irlande [= New Ireland]. Lectotype MNHN, paralectotypes MNHN (Martins, 1995a: 81).

Remarks. Widespread in the Indo-Pacific (Franc, 1957: 67; Martins, 1995a: 86). Garrett (1887: 145) recorded it from 'Upolu.

Genus ELLOBIUM Röding, 1798

ELLOBIUM Röding, 1798: 105. Type species: *Ellobium midae* Röding, 1798 [= *Bulla aurismidae* Linnaeus, 1758] [not Samoan], by subsequent designation of Gray (1847: 179).

AURICULA Lamarck, 1799: 76. Type species: *Bulla aurismidae* Linnaeus, 1758 (as "*Voluta*") [not Samoan], by monotypy.

Cowie *et al.* (1995: 28) incorrectly stated that the type species fixation for *Auricula* was by subsequent designation of Children (1823: 241). They also incorrectly cited *Bulla aurismidae* Linnaeus, 1758 as *Voluta aurismidae* Linnaeus, 1767.

Subgenus AURICULODES Strand, 1928

AURICULINA Kobelt, 1898a: 77. Type species: *Auricula gangetica* Pfeiffer, 1855 [not Samoan], by original designation. [Preoccupied, Grateloup, 1838].

AURICULODES Strand, 1928: 64. Type species: *Auricula gangetica* Pfeiffer, 1855 [not Samoan], automatic. [n.n. for *Auriculina* Kobelt, 1898].

The name *Auriculina* Kobelt has not been used in reference to the Samoan fauna, but is listed here for completeness. See also Martins (1996b: 179).

semisculptum. (U)

Ellobium semisculptum Adams & Adams, 1854: 9. Gambier's [= Gambier] Islands, South Seas.

Remarks. Recorded from 'Upolu, Wallis, and Fiji by Garrett (1887: 145), and elsewhere by other authors (e.g., Franc, 1957: 82; Smith, 1992: 214). Placed in subg. *Auriculodes* following Smith (1992: 214).

Subfamily MELAMPODINAE Stimpson, 1851

Various authors have spelled the family-group name as "Melampinae" (or "Melampidae") (e.g., Baker, 1963a: 34; Harbeck, 1996: 86; Kay, 1979: 490; Martins, 1996b: 243); others have used "Melampodinae" (e.g., Vaught, 1989: 75; Zilch, 1959a: 65). Montfort (1810: 318), in his proposal of *Melampus*, did not give its derivation. According to a number of Latin dictionaries (Oxford, Harpers', Cassell's, Smith's "Smaller" dictionary) and W. McCarty (pers. comm.), Melampus, with genitive Melampodis, was the son of Amythaon, and a celebrated physician, soothsayer, and healer (Cicero, Virgil); also the son of Atreus (Cicero); also the name of a dog, "Blackfoot" (Ovid). However, Baker (1963a: 34) noted a Latin dictionary (Ainsworth's dictionary of 1830) that gave the physician's name as Melampus, but with the genitive Melampi (also in Ainsworth's abridged dictionary of 1808; G. Rosenberg, pers. comm.). In fact, Montfort may have been referring to the dog, for the following reason. Melampus is one of the dogs in Ovid's story of Actaeon, and *Acteon* [sic] Montfort, 1810 (p. 314) is the genus name directly preceding *Melampus* (p. 318). Arguably, Melampi could be a mistaken inference of the dictionary compiler(s). Nevertheless, both Melampidae and Melampodinae could be construed as correct (Code *Art.* 26). But since most dictionaries seem to retain Melampodis as the genitive, and if the name (of the literary figures and the dog) is taken to mean black foot, it seems more appropriate to use Melampodinae, which reflects the original meaning of the word more closely. The issue may require a ruling from the ICZN.

The family-group name Conovulinae Clarke, 1850, although having priority over Melam-

podinae Stimpson is based on a junior synonym of *Melampus* (see Baker, 1956a: 130). Melampodinae has won general acceptance over Conovulinae and so is retained (*Code* Art. 40(b)).

Genus MELAMPUS Montfort, 1810

MELAMPUS Montfort, 1810: 318. Type species: *Bulimus coniformis* Bruguière, 1789 [= *Voluta coffea* Linnaeus, 1767 *teste* Zilch (1959a: 65) and Martins (1996b: 258)] [not Samoan], by original designation.

brevior.

Melampus fasciatus var. *brevior* Schmeltz, 1866: 28. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and reported it from "Insel Manua".

castaneus. (U, ?N, ?Nu)

Voluta castanea Megerle von Mühlfeld, 1816: 4, pl. 1, fig. 2. Ostindien [= East Indies]. Type material presumed lost (Smith, 1992: 217).

Remarks. Recorded from 'Upolu by Schmeltz (1869: 68). Tentatively recorded from Nu'utele and Nu'ulua (A.C. Robinson, *in litt.* 11 July 1994).

fasciatus. (S, U, T, O, Ta, Manu'a)

Auricula fasciata Deshayes, 1830: 90. [No locality given.] Syntypes MNHN (Smith, 1992: 217).

Remarks. "Insel Manua" given as locality by Schmeltz (1866: 28), 'Upolu and Savai'i by Schmeltz (1869: 68), Savai'i by Mousson (1869: 348) and Paetel (1883: 171), Tutuila, Ofu, and Tā'u by Miller (1993: 11, 12); also Ovalau (Fiji) by Mousson (1870a: 135). A number of extralimital synonyms (see, e.g., Garrett, 1887: 139).

+**fortis**. (Manu'a)

Melampus fasciatus var. *fortis* Mousson, 1869: 348. Manua.

gracilior.

Melampus fasciatus var. *gracilior* Schmeltz, 1866: 28 [1869: 68, 1874: 88]. *Nom. nud.*

Remarks. Name attributed to Mousson and reported from "Insel Manua" by Schmeltz (1866: 28) and from 'Upolu and Savai'i by Schmeltz (1869: 68, 1874: 88). Not published by Mousson.

luteus. (U, T, Manu'a)

Auricula lutea Quoy & Gaimard, 1832: 163, pl. 13, figs. 25–27. La petite île de Nanoun-ha, qui touche Vanikoro [= Vanikolo, Santa Cruz Islands, Solomon Islands]. Syntypes MNHN (Smith, 1992: 217).

Remarks. "Manua, Upolu" given as localities by Mousson (1869: 346); also Fijian localities by Mousson (1870a: 134). Recorded from Tutuila by Miller (1993: 11). Widespread in the Pacific (Franc, 1957: 71; Garrett, 1884: 89, 1887: 139).

minor.

Melampus fasciatus var. *minor* Schmeltz, 1869: 68 [1874: 88]. *Nom. nud.*

Remarks. Reported from 'Upolu and Savai'i by Schmeltz.

parvulus.

Melampus parvulus Pfeiffer, 1854d: 147. *Nom. nud.*

parvulus. (Samoa)

Melampus parvulus Pfeiffer, 1856b: 24. Oahu. "Type" ANSP 22353a (Baker, 1964: 151).

Remarks. Recorded from Samoa by Garrett (1887: 140) and Kay (1979: 491). Widespread in the Pacific.

philippii. (U)

Auricula philippii Küster, 1845: 50. Der Insel Otahaiti [= Tahiti].

Remarks. 'Upolu given as locality by Mousson (1865: 177, 1869: 348); "Samoa I." by Schaufuss (1869: 90).

semisulcatus.

Melampus semisulcatus Schmeltz, 1869: 68. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

semisulcatus. (U)

Melampus semisulcatus Mousson, 1869: 347, pl. 15, fig. 2. Upolu.

Remarks. Occurs extralimitally, e.g., in Tonga and Fiji (Garrett, 1887: 141).

striatus. (U)

Melampus (*Tralia*) *striatus* Pease, 1861b: 244. Tahiti. Lectotype ANSP 22356a (Baker, 1964: 151 [not Kay, 1965: 72]).

Remarks. Recorded from 'Upolu by Garrett (1887: 141).

tongaensis. (Samoa)

Melampus tongaensis Mousson, 1871: 22, pl. 3, fig. 8. Tangatabou [= Tongatapu].

Remarks. Recorded from Samoa by Garrett (1887: 140).

Subfamily PYTHIINAE Odhner, 1925

Genus ALLOCHROA Ancey, 1887

ALLOCHROA Ancey, 1887: 288. Type species: *Auricula bronnii* Philippi, 1846 (as "*Melampus Bronni*") [not Samoan], by original designation.

layardi. (U)

Ophicardelus (*Laimodonta*) *layardi* Adams & Adams, 1855: 35. Ceylon [= Sri Lanka]. Lectotype BMNH 196980/1, paralectotypes BMNH 196980/2–3 (Martins, 1995b: 5).

Remarks. Recorded from 'Upolu by Garrett (1887: 142). Placed in *Allochroa* following Martins (1995b), who provided a detailed account of this species.

Genus CASSIDULA Férussac, 1821

CASSIDULA Férussac, 1821e: 105 (as *Auricula* subg.). Type species: *Auricula felis* Lamarck, 1816 (as "*V. auris felis*") [= *Bulimus aurisfelis* Bruguière, 1789, *teste* Zilch (1959a: 76)] [not Samoan], by subsequent designation of Gray (1847: 179).

Although the heading of Férussac's "troisième groupe" of the genus *Auricula* is in the vernacular, i.e., "Les Cassidules, Cassidulae", the first listed species latinizes the name, i.e., "*Auricula* (*Cassidula*) *felis* Lamarck", thereby validating *Cassidula*.

crassiuscula.

Cassidula crassiuscula Schmeltz, 1869: 69, pl. 15, fig. 1. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu and Fiji.

crassiuscula. (U)

Cassidula crassiuscula Mousson, 1869: 343. Upolu.

Remarks. Also recorded from "Uea" [= Uvea, Wallis Islands] and Tongatapu (Mousson, 1871: 19), as "var. *vitiensis*" from Fiji (Mousson, 1870a: 131), and from "Tonga, Viti and the islands in Melanesia" (Garrett, 1887: 142).

intuscarinata.

Cassidula intuscarinata Schmeltz, 1869: 69 [1874: 88]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Savai'i.

intuscarinata. (?S; ?not Samoan)

Auricula (*Cassidula*) *intuscarinata* Mousson, 1870a: 132, pl. 7, fig. 9. Natroga, dans l'île de Viti-Levu.

Remarks. Included only on the basis of the nude name *intuscarinata* Schmeltz, 1869.

paludosa. (U)

Ophicardelus paludosus Garrett, 1872: 220, pl. 19, fig. 3. Viti [= Fiji], Wallis and Samoa Islands.

Remarks. Recorded from 'Upolu by Garrett (1887: 143).

Genus PYTHIA Röding, 1798

PYTHIA Röding, 1798: 105. Type species: *Pythia helicina* Röding, 1798 [= *Helix scarabaeus* Linnaeus, 1758, *teste* Zilch (1959a: 72)], by monotypy.

Following Mousson (1869: 390), *pyramidata* Reeve, 1842 is excluded from this catalog as not Samoan.

savaiensis. (S, Manu'a)

Pythia savaiensis Mousson, 1869: 345. Savai [= Savai'i] et Manua.

Remarks. Known also from Wallis and Fiji (Mousson, 1870a: 133; Garrett, 1887: 144). Closely related to *scarabaeus* Linnaeus, *teste* Martins (1995c: 66).

scarabaeus. (?S, ?U, ?N, ?Nu, T, O, Ta)

Helix scarabaeus Linnaeus, 1758: 768. In Asiae montibus [= Asia]. Type material presumed lost (Smith, 1992: 219).

Remarks. Widespread in the Pacific, possibly at least in part artificially (Harry, 1966: 215; Martins, 1995c: 66). Recorded from Tutuila, Ofu, and Tā'u by Miller (1993: 11, 12). Tentatively recorded from Savai'i, 'Upolu, Nu'utele, and Nu'ulua (A.C. Robinson, *in litt*. 11 July 1994).

tortuosa. (U)

Pythia tortuosa Mousson, 1871: 19, pl. 3, fig. 6. Les deux îles d'Uea et de Futuna.

Remarks. Recorded from 'Upolu by Garrett (1887: 143).

Incertae sedis in ELLOBIIDAE

ovuloides. (T)

Melampus (*Tifata*) *ovuloides* Baird, 1873: 442, pl. 39, figs. 9, 10. Tutuila, Samoan group. "Types" [? syntypes] Maidstone Museum, probably BMNH (Chatfield, 1994: 96, 101).

Family PHYSIDAE Fitzinger, 1833

Physidae in the Pacific are poorly known. There may be more than one species, probably all introduced (e.g., in the Hawaiian Islands; Cowie, 1997b: 8).

Genus PHYSA Draparnaud, 1801

PHYSA Draparnaud, 1801: 31. Type species: *Bulla fontinalis* Linnaeus, 1758 [not Samoan], by subsequent designation of Children (1823: 243).

A single physid, in the genus *Physa s. str.*, has been recorded in the literature from Samoa (Tutuila only) but has not been identified to species; it may have been artificially introduced (Starmühlner, 1993: 288, 293, 1995: 401).

Family PLANORBIDAE Gray, 1840

Authorship and date of Planorbidae was attributed to Gray, 1840 by ICZN (1955: 484, 488). This authorship must stand (until corrected) according to the *Code* (Art. 78(f)(iii)), although the name was first introduced by Rafinesque in 1815. Planorbidae in the Pacific are poorly known. They may well have been introduced, perhaps in part via the aquarium trade (e.g., Cowie, 1997b: 9).

Subfamily PLANORBINAE Gray, 1840

Genus PHYSASTRA Tapparone Canefri, 1883

PHYSASTRA Tapparone Canefri, 1883l: 245 (as *Physa* sect.). Type species: *Physa vestita* Tapparone Canefri, 1883 [not Samoan], by monotypy.

Treated as a genus following Haynes (1990: 243), Starmühlner (1976: 613, 1993: 293), and Zilch (1959a: 107).

nasuta. (T; ?introduced)

Physa nasuta Morelet, 1857: 28. Ad Sanctam-Mariam de Balade, Novae-Caledoniae ore occidentali [= New Caledonia].

Remarks. Recorded from Tutuila by Haynes (1990: 243). Associated with taro patches and probably artificially introduced (Haynes, 1990: 245). Not recorded from Samoa by Starmühlner (1976, 1993) but mentioned as Samoan by Starmühlner (1992a: 383). Many extralimital synonyms (Starmühlner, 1976: 615–16).

Genus PLANORBIS Müller, 1773

PLANORBIS Müller, 1773: [unnumbered page xxvi] [1774: 152]. Type species *Planorbis carinatus* Müller, 1774 [not Samoan], by subsequent designation of Baker (1930: 42).

The first valid publication of *Planorbis* is usually cited as Müller (1774: 152) but the introductory material to this work (Müller, 1773) includes a key to genera that includes characters that validate the genus-group name, although not including any species. The type species is often cited as *Helix planorbis* Linnaeus, 1758 [not Samoan], by tautonomy (e.g., Baker, 1945: 48, 51; Zilch, 1959a: 108). However, this species was not actually cited by name (although it was referred to as "Lin. Syst. 662") among the originally included nominal species (Müller, 1774) and is therefore not eligible as the type (*Code* Art. 68(e), Art. 69(a)(i)). Baker (1930: 42) seems to have been the first to designate a type species from those named species originally included by Müller (1774). See also Kennard & Woodward (1924: 9).

Laird (1956: 46, 95) recorded unidentified "*Planorbis* spp." from 'Upolu. These species (one or more) have not been identified further, but are probably artificially introduced.

Family ANCYLIDAE Rafinesque, 1815

This catalog follows Hubendick (1967), Vaught (1989: 78), Smith (1992: 93), and Cowie *et al.* (1995: 34) in using the family name Ancylidae for the genus *Ferrissia*, which is placed in the subfamily Ferrissiinae. Zilch (1959a: 127) and Starmühlner (1976: 625, 1993: 290) raised Ferrissiinae to full family status. Hubendick (1967) was the most recent to review Pacific ancylids. He indicated the difficulty of distinguishing the few, poorly known species. The only Samoan records of Ancylidae are due to Starmühlner (1992a: 383, 1993: 290) who recorded but a single species.

Subfamily FERRISSIINAE Walker, 1917

Genus FERRISSIA Walker, 1903

FERRISSIA Walker, 1903: 15 (as *Ancylus* sect.). Type species: *Ancylus rivularis* Say, 1817 [not Samoan], by original designation.

Subgenus PETTANCYLUS Iredale, 1943

PETTANCYLUS Iredale, 1943: 228 (as genus). Type species: *Ancylus tasmanicus* Tenison-Woods, 1876 [not Samoan], by original designation.

noumeensis. (T; ?introduced)

Ancylus noumeensis Crosse, 1871: 203. In vicinio civitatis Noumea dictae Novae Caledoniae [= New Caledonia].

Remarks. Starmühlner (1992a: 383, 1993: 290) considered his single ancylid species (from Tutuila only) either very close to or identical with *Ferrissia* (*Pettancylus*) *noumeensis* (Crosse, 1871) from New Caledonia, Fiji, and perhaps Tahiti and New Guinea (Haynes, 1984: 17; Starmühlner, 1976: 625–26, 1993: 292). It is listed here as *noumeensis* Crosse, 1871, with the caveat that this name may be incorrect. Starmühlner (1993: 293, 1995: 402) suggested that it might have been introduced. Solem (1964: 133) considered *noumeensis* Crosse, 1871 to be of doubtful distinction, and probably to have been introduced artificially to New Caledonia. Pointier & Marquet (1990: 222) and Marquet (1993: 166) also considered the unidentified species of *Ferrissia* in French Polynesia to have been recently introduced.

Family ACHATINELLIDAE Gulick, 1873

The Achatinellidae are widespread in the Pacific Basin. A number of species have also been recorded from Australia, South East Asia, and the islands of the Indian Ocean but these are probably introductions (Cooke & Kondo, 1961: 219; Solem, 1964: 133, 1989: 469; Zimmerman, 1948). The Achatinellidae are thus one of four land snail families endemic to the Pacific basin, the others being Partulidae, Endodontidae (both represented in the Samoan fauna; see below), and Amastridae (endemic to the Hawaiian Islands; Cowie *et al.*, 1995). The phylogenetic and biogeographic relationships and origins of the Achatinellidae are unclear, but the family is certainly ancient, perhaps of Pangean origin, and seems to lie close to the Pupillidae, Valloniidae, and Pyramidulidae (Cowie, 1992, 1997a; Tillier, 1989). The most recent systematic review (Cooke & Kondo, 1961) focused on the non-achatinelline subfamilies. For details of the Achatinellinae, which are Hawaiian endemics, see Cowie *et al.* (1995). The Achatinellinae, mostly tree snails, are replaced ecologically elsewhere in the Pacific, at least in some respects, by the Partulidae (Cowie, 1992). The taxonomic arrangement adopted here follows Cowie *et al.* (1995).

Subfamily PACIFICELLINAE Steenberg, 1925

The status of the family-group names Pacificellinae Steenberg, 1925 and Lamellideinae Cooke & Kondo, 1961 and of the genus-group names *Pacificella* Odhner, 1922 and *Tornatellinops* Pilsbry & Cooke, 1915 were discussed by Cowie *et al.* (1995: 78, 80–81).

Genus LAMELLIDEA Pilsbry, 1910

LAMELLINA Pease, 1861a: 439. Type species: *Lamellina serrata* Pease, 1861 [not Samoan] [= *Partula pusilla* Gould, 1847, *teste* Cooke & Kondo (1961: 184)], by monotypy. [Preoccupied, Bory de Saint-Vincent, 1826].

LAMELLARIA Liardet, 1876: 101. Type species: *Lamellaria perforata* Liardet, 1876 [not Samoan] [= *Partula pusilla* Gould, 1847, *teste* Cooke & Kondo (1961: 185)], by monotypy. [Preoccupied, Montagu, 1816].

LAMELLIDEA Pilsbry, 1910b: 123 (as *Tornatellina* sect.). Type species: *Pupa peponum* Gould, 1847 (as "*Tornatellina*") [not Samoan], by original designation.

The names *Lamellina* Pease and *Lamellaria* Liardet, appear not to have been used in reference to the Samoan fauna. However, they are included here for completeness. The history of these names, and of *Lamellidea* Pilsbry, is outlined by Cowie *et al.* (1995: 79).

Subgenus LAMELLIDEA Pilsbry, 1910

Schmeltz (1966: 29) recorded *peponum* Gould, 1847 from 'Upolu, but this species is a Hawaiian endemic (Cooke & Kondo, 1961: 210; Cowie *et al.*, 1995: 80) and is excluded from this catalog.

bacillaris.

Tornatellina bacillaris Schmeltz, 1869: 69. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Tutuila.

bacillaris.

Tornatellina bacillaris Mousson, 1871: 16, pl. 3, fig. 5. Futuna.

Remarks. Synonym of *oblonga* Pease, *teste* Cooke & Kondo (1961: 196). Tutuila given as locality by Schmeltz (1869: 69, 1874: 89).

bucollaris.

Tornatellina bucollaris Schmeltz, 1869: 70. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Tutuila.

conica.

Tornatellina conica Schmeltz, 1869: 70. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu and Tutuila as well as a number of other islands in the Pacific.

conica.

Tornatellina conica Mousson, 1869: 342, pl. 14, fig. 8. Upolu, Tutuila.

Remarks. Junior secondary homonym of *Strobilus conicus* Anton, 1838 [not Samoan], now in *Tornatellina* (see Cooke & Kondo, 1961: 236). Replaced with the new name *normalis* by Pilsbry & Cooke (1915b: 174). Synonym of *pusilla* Gould, *teste* Cooke & Kondo (1961: 184).

normalis.

Tornatellina impressa var. *normalis* Pilsbry & Cooke, 1915b: 174. [n.n. for *conica* Mousson, 1869].

Remarks. Synonym of *pusilla* Gould, *teste* Cooke & Kondo (1961: 167).

oblonga. (T, Ol, Ta; ?introduced)

Tornatellina oblonga Pease, 1865a: 673. Islands of the central Pacific [in publication title]. Lectotype MCZ 154941, paralectotypes MCZ 297947 (Johnson, 1994: 18; see also Cooke & Kondo, 1961: 197).

Remarks. Widespread in the Pacific, probably in large part due to human activities, including introduction by early Polynesian colonizers (Cooke & Kondo, 1961: 196–209). Island distribution in Samoa from Cooke & Kondo (1961: 199), but probably more widely distributed.

pusilla. (U, T, O, Ol, Ta, Sw; ?introduced)

Partula pusilla Gould, 1847a: 197. Matea Island [= Makatea, *teste* Cooke & Kondo (1961: 188)]. Holotype USNM 5492 (Johnson, 1964: 136; the original catalog entry in the USNM shows that the lot contained only a single specimen).

Remarks. Widespread in the Pacific, probably in large part due to human activities, including introduction by early Polynesian colonizers (Cooke & Kondo, 1961: 185–88). Island distribution in Samoa from Cooke & Kondo (1961: 187). The type specimen seems lost (Cooke & Kondo, 1961: 185; Johnson, 1964: 136; Pilsbry & Cooke, 1915b: 176).

Genus PACIFICELLA Odhner, 1922

PACIFICELLA Odhner, 1922: 249. Type species: *Pacificella variabilis* Odhner, 1922, by monotypy.

TORNATELLINOPS: Cooke & Kondo, 1961, not Pilsbry & Cooke, 1915, misidentification.

See Cowie *et al.* (1995: 80–81) for a discussion of the status of the genus-group names *Pacificella* and *Tornatellinops*.

variabilis. (?T; ?introduced)

Pacificella variabilis Odhner, 1922: 249, pl. 8, figs. 15–17. Easter Island. Holotype Riksmuseum, Stockholm, paratypes BPBM 115358, 189707 (Cooke & Kondo, 1961: 172).

Remarks. Widespread in the Pacific, probably in large part as a result of human activities (Cooke & Kondo, 1961: 166, 172–75; Solem, 1964: 133). The distribution map of Cooke & Kondo (1961: 166) includes the entire Samoan Archipelago, but the only more specific information is a tentative record from Tutuila (A.C. Robinson, *in litt.* 11 July 1994).

Subfamily TORNATELLININAE Sykes, 1900

Genus ELASMIAS Pilsbry, 1910

ELASMIAS Pilsbry, 1910b: 122. Type species: *Tornatellina aperta* Pease, 1865, by original designation.

Cooke & Kondo (1961) gave no records of *Elasmias* spp. from Samoa, although their map (p. 220) included Samoa in the distribution of the genus, with the recorded distribution of one species, *aperta* Pease, 1865, extending from the Marquesas and Society Islands to Rotuma and Tongatapu (p. 223). It was probably transported widely by Polynesian voyagers (Cooke & Kondo, 1961: 223; Solem, 1964: 133). Miller (1993: 11, 29) recorded *Elasmias* sp. on Tutuila but did not identify it to species; it may be *aperta* Pease, 1865, and should probably be considered artificially introduced in Samoa. Bishop Museum holds collections labeled *Elasmias* sp. from 'Upolu, Tutuila, and Tā'u. No species-group name is listed here in the absence of a definitive identification.

Family PUPILLIDAE Turton, 1831

The pupillids have a world-wide distribution and are one of the major groups of land snails in the Pacific. Family-level classifications of various authors differ considerably (e.g., Boss, 1982; Solem, 1989, 1991; Tillier, 1989; Vaught, 1989; Zilch, 1959a), as do assignments of genera to families and subfamilies. The conservative approach of Solem (1989, 1991) and Thompson & Dance (1983: 103), adopted by Cowie *et al.* (1995: 130), is also adopted here, following Pilsbry (1935: vii–xii) who included in the Pupillidae a number of subfamilies raised to family status by some later authors.

Subfamily GASTROCOPTINAE Pilsbry, 1918

Genus GASTROCOPTA Wollaston, 1878

GASTROCOPTA Wollaston, 1878: 515 (as *Pupa* subg.). Type species: *Pupa acarus* Benson, 1856 (as "*G. acarus*") [not Samoan], by subsequent designation of Pilsbry (1916: 7) [see also ICZN (1957: 167)].

Cowie *et al.* (1995: 130, 131) recognized the subgenera *Gastrocopta s. str.* and *Sinalbinula* Pilsbry, 1916 in the Hawaiian fauna. However, following Solem (1989: 480), these subgeneric divisions are ignored here, the single species being placed in *Gastrocopta s.l.*

pediculus. (U, T; ?introduced)

Pupa pediculus Shuttleworth, 1852: 296. Cum praecedente [i.e., *Pupa pleurophora* Shuttleworth, 1852 [not Samoan], the locality of which was given as "Marquesas et Taite"].

Remarks. Widespread extralimitally with a number of extralimital synonyms and possibly artificially introduced through much of its range (Harry, 1966: 215; Pilsbry, 1917a: 146; Solem, 1959: 58–59, 1964: 133, 1989: 487). Samoan island distribution from Pilsbry (1917a: 146).

samoensis.

Pupa pediculus var. *samoensis* Schmeltz, 1865: iii, 26. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

samoensis.

Pupa pediculus var. *samoensis* Mousson, 1865: 175. Upolu, Samoa.

Remarks. Synonym of *pediculus* Shuttleworth, *teste* Pilsbry (1917a: 146). Recorded also from Tutuila by Schmeltz (1869: 69).

Subfamily NESOPUPINAE Steenberg, 1925

Genus NESOPUPA Pilsbry, 1900

PTYCHOCHILUS Boettger, 1881: 47 (as *Vertigo* subsect.). Type species: *Pupa* (*Vertigo*) *tantilla* Gould, 1847 [?not Samoan], by original designation.

PTYCHOCHYLUS: incorrect original spelling of *Ptychochilus* Boettger (Boettger, 1881: 48).

NESOPUPA Pilsbry, 1900: 431. Type species: *Pupa* (*Vertigo*) *tantilla* Gould, 1847 [?not Samoan], automatic. [Unnecessary n.n. for *Ptychochilus* Boettger, 1881].

Ptychochilus Boettger and *Ptychochylus* Boettger were suppressed by ICZN (1996: 53), following the application of Cowie *et al.* (1994).

Subgenus NESOPUPA Pilsbry, 1900

godeffroyi. (?T; Samoa)

Pupa tantilla var. *godeffroyi* Boettger, 1881: 53, pl. 10, fig. 5. Samoa-Inseln.

Remarks. Treated as a full species, following Pilsbry (*in* Pilsbry & Cooke, 1920: 324, 330). The only more specific distributional information is a tentative record from Tutuila (A.C. Robinson, *in litt.* 11 July 1994).

tantilla. (?U; ?not Samoan)

Pupa (*Vertigo*) *tantilla* Gould, 1847a: 197. Taheiti [= Tahiti], 2000 feet elevation. "Holotype" USNM 5505, "paratype" MCZ 86025 (Johnson, 1964: 156).

Remarks. Reported from 'Upolu by Schmeltz (1869: 69) and Paetel (1873: 108, 1883: 160, 1890: 306) and widely in the Pacific by others (see Pilsbry *in* Pilsbry & Cooke, 1920: 325), but Pilsbry (*in* Pilsbry & Cooke, 1920: 326) considered "typical *tantilla*" to be "known positively from Tahiti only".

Genus PUPISOMA Stoliczka, 1873

PUPISOMA Stoliczka, 1873: 32 (as *Pupa* subg.). Type species: *Pupa lignicola* Stoliczka, 1871 [not Samoan], by original designation.

orcula. (?T)

Helix orcula Benson, 1850: 251. In agro Bengalensi et Baharico, necnon versus occidentem usque ad ripas fluvii Goomty . . . a day's march from Jounpore, and on the road thence to Benares . . . at Dinpore, near Patna . . . the whole route from Barrackpore, in Bengal, to the borders of Sikkim, and thence to Chuprah in Bahar.

Remarks. A widespread species (Solem, 1989: 473), possibly in part as a result of human activities (Pilsbry, 1920: 33). The only specific information recording it in Samoa is a tentative record from Tutuila (A.C. Robinson, *in litt.* 11 July 1994).

Family PARTULIDAE Pilsbry, 1900

With the exception of some doubtful records from New Guinea, the Partulidae are endemic to the islands of the Pacific. Their distribution extends from Belau and the Marianas in the north west to the Marquesas, Austral, and Society Islands in the south east; they are absent from Hawaii (Cowie, 1992). The precise phylogenetic relationships and geographic origins of the family are unknown, although they may be related to the Enidae and to the New Caledonian genus *Draparnaudia* Montrouzier (see Cowie, 1992, 1997a; Tillier & Mordan, 1995). The family is usually divided into three genera (e.g., Cowie, 1992; Kondo, 1968; Richardson, 1990), although Vaught (1989: 85), listed just the single genus *Partula*, with 12 subgenera (including *Partula s. str.*). Cowie (1992) reviewed the biology of the family and Richardson (1990) provided a nomenclatural catalog of the genus-group and species-group names. Together with the review of Johnson *et al.* (1993), these works constitute the basic sources of reference for the Partulidae. The most recent comprehensive systematic revision, entirely conchological, is that of Pilsbry (1909b, 1910a) in the *Manual of Conchology*. A major anatomical treatment of the family remains unpublished (Kondo, 1955).

Extensive work on the evolution and population genetics of partulids has been undertaken, in particular on the species of Moorea in the Society Islands (reviewed by Johnson *et al.*, 1993). Tragically, these species are now extinct in the wild, largely as a result of predation by the introduced carnivorous snail *Euglandina rosea* (Férussac, 1821) (see Murray *et al.*, 1989). The partulids of Guam and the Marianas are succumbing to a similar fate (Hopper & Smith, 1992).

The Samoan fauna consists of just 8 species, 3 in *Eua* and 5 in *Samoana*. The species of American Samoa, at least, are under severe threat of extinction from habitat loss and rat predation, and especially from predation by *E. rosea* (see Cowie, 1993; Miller, 1993; Miller *et al.*, 1993a, b; Trail, 1993).

Following Kondo (1968) and Richardson (1990), *Eua* and *Samoana* are treated as genera, not as subgenera of *Partula* (cf. Vaught, 1989; Zilch, 1959a, 1962). Island distributions are from Kondo (1968: 75). The following taxa, listed by various authors as from Samoa (e.g., Mousson, 1869: 388–89; Paetel, 1883: 153, 1890: 266–68) are in fact not Samoan (Kondo, 1968; Pilsbry, 1909b) and are excluded from this catalog: *amabilis* Pfeiffer, 1846, *decussatula* Pfeiffer, 1850, *filosa* Pfeiffer, 1853, *navigatoria* Pfeiffer, 1850, *nodosa* Pfeiffer, 1853, *purpurascens* Pfeiffer, 1857.

Genus EUA Pilsbry & Cooke, 1934

EUA Pilsbry & Cooke, 1934a: 4. Type species: *Eua globosa* Pilsbry & Cooke, 1934 [not Samoan], by original designation.

The Samoan species of *Eua* are placed in subg. *Nesanassa*, following Pilsbry & Cooke (1934a: 19).

Subgenus NESANASSA Pilsbry & Cooke, 1934

NESANASSA Pilsbry & Cooke, 1934a: 18. Type species: *Partula zebrina* Gould, 1846, by original designation.

actor.

Partulus actor Albers, 1850: 187. [No locality given.]

Remarks. Synonym of *zebrina* Gould, *teste* Pilsbry (1909b: 268).

expansa. (S, U)

Partula expansa Pease, 1871a: 26, pl. 9, fig. 3. In Insula Tutuila [error]. Holotype ANSP 59841 (Baker, 1963b: 205) [ANSP 59453, error (Johnson, 1994: 12)].

extensa.

Partula extensa Pease, 1871b: 473. *Nom. nud.*

Remarks. Considered an error for *expansa* Pease by Pilsbry (1909b: 270) and Richardson (1990: 3).

montana. (U)

Partula montana Cooke & Crampton, 1930: 7, pl. 1, fig. D. High forest of the Afiamalu region, altitude about 2500 feet, near Tiapapala Pass, 5.75 miles south of Apia, Upolu, Samoa.

Remarks. Junior primary homonym of *montana* Möllendorff, 1900 [not Samoan], which is an unnecessary replacement name for *guamensis* Pfeiffer, 1846 [not Samoan]. No new name proposed here, pending further research.

+recluziana. (T)

Partula recluziana Petit de la Saussaye, 1850: 170, pl. 7, fig. 5. [No locality given.]

Remarks. The original locality was given only tentatively as "une des îles Salomon?". Mousson (1869: 339), Schmeltz (1869: 71, 1874: 91, 96), and Paetel (1883: 153) recorded it from Tutuila. Pease (1871b: 474) and Pilsbry (1909b: 269) considered it a variety of *zebrina* Gould, from Tutuila. Not listed by Kondo (1968).

tryoni.

Partula tryoni Hartman, 1885: 204, unnumbered text fig. Solomon Islands [error; see Pilsbry, 1909b: 269]. Lectotype Carnegie Museum 4261 (Pilsbry, 1909b: 269).

Remarks. Synonym of *zebrina* Gould, *teste* Pilsbry (1909b: 268).

zebrina. (T)

Partula zebrina Gould, 1847a: 196. Tutuilla [= Tutuila], Samoa Islands. "Holotype" USNM 5491, "paratype" MCZ 169428 (Johnson, 1964: 170).

Remarks. Erroneously recorded from 'Upolu by various authors, including Gould (1852: 83), Mousson (1865: 173, 1869: 339), Schmeltz (1869: 71, 1874: 91, 97), and Paetel (1883: 153, 1890: 268).

Genus SAMOANA Pilsbry, 1909

EVADNE Hartman, 1881: 12 (as *Partula* subg.). Type species: *Partula bulimoides* Lesson, 1831 [misidentification; = *Partula canalis*, Mousson, 1865, *teste* Pilsbry (1909b: 264, 305) and Richardson (1990: 71)], by original designation. [Preoccupied, Lovén, 1836 (Crustacea)].

SAMOANA Pilsbry, 1909b: 165, 263 (as *Partula* sect.). Type species: *Partula canalis* Mousson, 1865, by original designation.

abbreviata.

Partula abbreviata Schmeltz, 1869: 71. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Tutuila.

abbreviata. (T)

Partula abbreviata Mousson, 1869: 339, pl.14, fig. 7. Tutuila. Syntypes SMF 164994 (Zilch, 1962: 90).

+biconica. (Samoa)

Partula (*Samoana*) *canalis* var. *biconica* Pilsbry, 1909b: 264, pl. 31, figs. 6, 7. Samoan

Islands [in title of section; the introductory paragraph states that "Samoan Partulae . . . [have] been collected only on Upolu and Tutuila"]. Holotype ANSP 59844a (Baker, 1963b: 204).

Remarks. Not listed by Kondo (1968).

canalis.

Partula canalis Schmeltz, 1865: 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

canalis. (S, U)

Partula canalis Mousson, 1865: 172. Upolu, Samoa. Syntypes SMF 157957 (Zilch, 1962: 90).

Remarks. Retained as a valid species, following Kondo (1968: 75), although Richardson (1990: 71, 87), treated it as either a synonym or subspecies of *conica* Gould.

conica. (U, T)

Partula conica Gould, 1847a: 196. Samoa Islands, Raraka island. "Holotype" USNM 5490 (Johnson, 1964: 59; see also Baker, 1963b: 204).

Remarks. Pilsbry (1909b: 266) considered Gould's locality "Raraka", which is in the Tuamoto Archipelago, as almost certainly incorrect.

semilineata.

Partula canalis var. *semilineata* Schmeltz, 1869: 71. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Tutuila.

+semilineata. (T)

Partula canalis var. *semilineata* Mousson, 1869: 338. Tutuila.

Remarks. Not listed by Kondo (1968).

stevensoniana. (S, U)

Partula (*Samoana*) *stevensoniana* Pilsbry, 1909b: 266, pl. 31, fig. 12, pl. 32, figs. 4, 9, 11. Samoan Is.: Apia, Upolu. Holotype ANSP 77306a (Baker, 1963b: 205).

thurstoni. (O)

Partula thurstoni Cooke & Crampton, 1930: 6, pl. 1, fig. C. Ofu Island, Samoa, near the summit of the highest peak. Holotype BPBM 10853, paratypes BPBM 83121.

upolensis.

Partula conica upolensis Schmeltz, 1865: iii, 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson, recorded it from Samoa, and considered it a synonym of *conica* Gould. Listed by various authors (e.g., Garrett, 1887: 134; Hartman, 1881: 13, 1885: 222; Paetel, 1873: 104, 1883: 153, 1890: 268), often in the synonymy of *conica* Gould, although its true identity seems unclear (Pilsbry, 1909b: 266). The name was apparently never validated.

Incertae sedis in PARTULIDAE

brazieri. (?not Samoan)

Partula brazieri Pease, 1871a: 27. pl. 9, fig. 5. In Insula Tutuila. Holotype ANSP 59846 (Baker, 1963b: 204; see also Garrett, 1887: 135).

Remarks. Placed in *Partula* sect. *Samoana* by Pilsbry (1909b: 271). Retained in the genus *Partula* by Richardson (1990: 30). Almost certainly not a Samoan species (Garrett, 1887: 135; Pilsbry, 1909b: 271). Not listed by Kondo (1968).

gonochila. (?not Samoan)

Bulimus gonochilus Pfeiffer *in* Menke & Pfeiffer, 1847: 82. [No locality given.]

Remarks. Placed in *Partula* sect. *Samoana* by Pilsbry (1909b: 272). Retained in the genus *Partula* by Richardson (1990: 30). Samoa given as locality by various authors (e.g., Paetel, 1883: 153, 1890: 267; Pfeiffer, 1868: 160; Reeve, 1850c: pl. 4, species 19), but this was doubted by Pilsbry (1909b: 273). Frequently misspelled as "*gonocheila*". Not listed by Kondo (1968).

Family SUBULINIDAE Thiele, 1931

Authorship and date of Subulinidae was attributed to Thiele, 1931 by ICZN (1955: 484, 488). This authorship must stand (until corrected) according to the *Code* (Art. 78(f) (iii)), although the name was first introduced by Fischer & Crosse in 1877.

A number of subulinids are now widespread in the tropics and subtropics as a result of human activities, as well as being established greenhouse aliens in temperate regions (Cowie, 1997b: 33–37; Ho, 1995: 97–100; Kerney *et al.*, 1979: 211–12; Pilsbry, 1906b: 124–41; Proschwitz, 1994: 184; Smith, 1992: 308; Solem, 1959: 118, 1964: 134, 1989: 520). In the Pacific, one species at least (*Allopeas gracile* (Hutton)) appears to have been dispersed by Pacific islanders prior to European exploration (Christensen & Kirch, 1986: 60), while others are more recent introductions (Christensen & Kirch, 1981: 82; Cooke, 1928: 2279; Solem, 1959: 118, 1964: 134, 1978: 43). They are often extremely abundant (Cooke, 1928: 2279). Their taxonomy is difficult, with much intra-specific conchological variation (e.g., Naggs, 1994: figs. 2–7) that, combined with their wide distributions, has resulted in numerous synonyms (Pilsbry, 1906b: 125). Many misidentifications of these introductions have probably been made (Kerney *et al.*, 1979: 211–12; Naggs, 1994: 187; Solem, 1989: 520–24).

Characterization of subulinid genera is not well understood (Naggs, 1994: 175). However, following Naggs (1994), *Allopeas* Baker and *Paropeas* Pilsbry are treated here as genera, not as subgenera, respectively, of *Lamellaxis* Strebel & Pfeiffer and *Prosopeas* Mörch.

Genus ALLOPEAS Baker, 1935

ALLOPEAS Baker, 1935: 84 (as *Lamellaxis* subg.). Type species *Bulimus gracilis* Hutton, 1834 (as "*Lamellaxis*"), by original designation.

ICZN (1994: 162) conserved *Allopeas* Baker, 1935 with the type designation as above. See also Naggs (1994). Garrett (1887: 131) recorded *Eremopeas tuckeri* (Pfeiffer, 1846) from Samoa, with *junceus* Gould, 1846 and *upolensis* Mousson, 1865 among its synonyms. This record is treated here as a misidentification of *junceus* Gould, 1846 [= *gracile* Hutton, 1834] (cf. Pilsbry, 1906b: 121).

bacillaris.

Stenogyra bacillaris Paetel, 1873: 104. *Nom. nud.*

Remarks. Treated here as possibly applying to *gracile* Hutton, following Pilsbry (1906c: 184). Listed from Tutuila by Paetel, who attributed the name to Mousson.

clavulinum. (?T; introduced)

Bulimus clavulinus Potiez & Michaud, 1838: 136, pl. 14, figs. 9, 10. L'île Bourbon [= Réunion, *teste* Solem (1989: 523)].

Remarks. The only specific information recording it in Samoa is a tentative record from Tutuila (A.C. Robinson, *in litt.* 11 July 1994). Placed in *Allopeas* following Naggs (1994: 178).

gracile. (U, T; introduced)

Bulimus gracilis Hutton, 1834: 84 [description], 93 [name]. Mirzapoor . . . Futtehpoor Sikra . . . in the rocky hills between Agra and Neemuch.

Remarks. Placed in *Allopeas* following Naggs (1994: 187) and Cowie *et al.* (1995: 141). May well be more widespread in Samoa.

junceus.

Bulimus junceus Gould, 1846e: 191. Society and Sandwich islands. Holotype USNM 5489, paratypes MCZ 169204, 169209, 216795 (Johnson, 1964: 96; the original catalog entry for the USNM lot shows that it contained only a single specimen).

Remarks. Schmeltz (1869: 70) gave 'Upolu and Tutuila as localities. Mousson (1871: 16) also reported it from Samoa. Synonym of *gracile* Hutton, *teste* Cowie *et al.* (1995: 141).

oparanus.

Bulimus oparanus Pfeiffer, 1846a: 34. Island of Opara [= Rapa].

Remarks. Synonym of *gracile* Hutton, *teste* Cowie *et al.* (1995: 141). Recorded from 'Upolu by Laird (1956: 25, 95; as "*Opeas oparum*") and considered introduced.

upolensis.

Stenogyra upolensis Schmeltz, 1865: iii, 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

upolensis.

Stenogyra upolensis Mousson, 1865: 175. Upolu, Samoa.

Remarks. Synonym of *junceus* Gould, *teste* Schmeltz (1865: iii, 1874: 90), Mousson (1869: 340), Pease (1871b: 473), and Paetel (1883: 156); *junceus* Gould subsequently treated as a synonym of *gracile* Hutton by Cowie *et al.* (1995: 141). Synonym of *gracile* Hutton, 1834. **N. syn.**

Genus OPEAS Albers, 1850

OPEAS Albers, 1850: 175. Type species: *Helix goodallii* Miller, 1822 (as "*Stenogyra goodalli*") [preoccupied, Férussac, 1821; = *Helix hannensis* Rang, 1831, *teste* Proschwitz (1994: 184; as "*O. goodalli* (Miller)"], by subsequent designation of Martens (1860: 265).

hannense. (U, ?T; introduced)

Helix hannensis Rang, 1831: 41, pl. 3, fig. 8. Au village de Hann sur la presqu'île du Cap-Verd [= Cap Vert, Senegal].

Remarks. The junior synonym *pumilus* Pfeiffer, 1840 was recorded from 'Upolu by Solem (1989: 524). Tentatively recorded from Tutuila (A.C. Robinson, *in litt.* 11 July 1994). Also as "*hanuensis*" on pl. 3, fig. 8; *hannensis* selected here as the correct original spelling.

hanuensis.

Helix hanuensis Rang, 1831: pl. 3, fig. 8. Incorrect original spelling of *hannensis* Rang, 1831.

pumilus.

Bulimus pumilus Pfeiffer, 1840: 252. Cuba [in publication title].

Remarks. Synonym of *hannensis* Rang, *teste* Proschwitz (1994: 184).

Genus PAROPEAS Pilsbry, 1906

PAROPEAS Pilsbry, 1906a: 14 (as *Prosopeas* subg.). Type species *Bulimus acutissimum* Mousson, 1857 (as "*P. acutissimum*") [not Samoan], by original designation.

achatinaceum. (?S, ?U, ?T; introduced)

Bulimus achatinaceus Pfeiffer, 1846b: 82. Java. Lectotype Berlin Moll 65746 (Naggs, 1994: 176), possible paralectotypes BMNH 1987041 (Naggs, 1994: 176).

Remarks. A widespread synanthropic species, especially in the tropical Indo-Pacific (Naggs, 1994: 175). The only specific information recording it in Samoa is a tentative record from Tutuila, and tentative records of the junior synonym *javanica* from Savai'i and 'Upolu (A.C. Robinson, *in litt.* 11 July 1994).

javanica.

Achatina javanica Reeve, 1849f: pl. 17, species 79. Java. Lectotype and paralectotype BMNH 1950.3.20.1–2 (Naggs, 1994: 176).

Remarks. Synonym of *achatinaceum* Pfeiffer, *teste* Jutting (1952: 387), Solem (1989: 524), and Naggs (1994: 176).

Genus SUBULINA Beck, 1837

SUBULINA Beck, 1837: 76 (as *Achatina* subg.). Type species: *Bulimus octonus* Bruguière, 1789 (as "*Helix octona*"), by subsequent designation of Gray (1847: 178).

octona. (?U, T, O, Ol, Ta; introduced)

Bulimus octonus Bruguière, 1789: 325. Les îles Antilles [specifically mentioning Guadeloupe and Saint-Domingue].

Remarks. Recorded from Tutuila and all three Manu'a Islands by Miller (1993: 23–29); tentatively recorded from 'Upolu (A.C. Robinson, *in litt.* 11 July 1994).

Family ACHATINIDAE Swainson, 1840

The Achatinidae are native to Africa and include some of the largest land snails known. Their taxonomy has been treated in detail by Bequaert (1950). The single species in Samoa, *Achatina fulica* Bowdich, 1822, was first reported in American Samoa in 1977, subsequently spreading rapidly throughout Tutuila (Eldredge, 1988). Eldredge (1988) reported it from the Manu'a Islands (not specifying which) but considered it to have been eradicated. However, in 1992 it was recorded on Ta'u, as well as on Tutuila, although not on Ofu or Olosega (Cowie, 1993; Miller, 1993). It was first reported from 'Upolu in 1990 (Cowie, 1995: 16) but seems not yet to have reached other islands of Western Samoa (see also Anonymous, 1996a, b). *Achatina fulica* has been introduced widely in the humid tropics (Cowie, 1997b: 15; Mead, 1979), frequently becoming an agricultural and garden pest. Its pest status has led to the introduction of predatory snails in attempts at biological control, with resultant serious impacts on native snail faunas (see Partulidae, Spiraxidae, Streptaxidae).

Genus ACHATINA Lamarck, 1799

ACHATINA Lamarck, 1799: 75. Type species: *Bulla achatina* Linnaeus, 1758 [not Samoan], by monotypy.

Subgenus LISSACHATINA Bequaert, 1950

LISSACHATINA Bequaert, 1950: 49. Type species: *Achatina fulica* Bowdich, 1822, by original designation.

fulica. (U, T, Ta; introduced)

Achatina fulica Bowdich, 1822: pl. 13, fig. 3. [No locality given. Probably Mauritius, *teste* Bequaert (1950: 63)]. Type material lost (Bequaert, 1950: 63; Smith, 1992: 89).

Remarks. Bequaert (1950: 63) discussed the validity of the name.

Family SPIRAXIDAE Baker, 1939

Spiraxidae are carnivorous snails native to the southeastern United States through Central America and the Caribbean to Brazil and Peru (Boss, 1982: 1071; Thompson, 1995: 45–89). The family-group name was proposed, as Spiraxinae, by Baker (1939: 9; cf. Emberton *et al.*, 1990: 341).

Subfamily EUGLANDININAE Baker, 1941

Genus EUGLANDINA Crosse & Fischer, 1870

EUGLANDINA Crosse & Fischer *in* Fischer & Crosse, 1870: 97. Type species: *Achatina lignaria* Reeve, 1849 (as "*E. aurata* var. *lignaria* Rve.") [not Samoan], by subsequent designation of Pilsbry (1907c: 175).

The carnivorous snail *Euglandina rosea* (Férussac, 1821) has been widely introduced throughout the tropics and subtropics for control of *Achatina fulica* Bowdich, 1822 (see Griffiths *et al.*, 1993). While there is no good evidence that it has provided effective control of *A. fulica* (e.g., Christensen, 1984), despite claims to the contrary (e.g., Tauili'ili & Vargo, 1993), there is ample evidence of its devastating effects on native land snail faunas, especially in the Pacific (Cowie, 1992, 1997a, b; Hadfield, 1986; Hadfield *et al.*, 1993; Murray *et al.*, 1989). It will even go under water to attack freshwater snails (Kinzie, 1992). It was first introduced to Samoa in 1980. By 1992 it appeared only to have been introduced to Tutuila and Tā'u (Miller, 1993; Smith, 1992), but it has been a major contributor to the decline of native snail populations on those islands (Cowie, 1993; Eldredge, 1988; Miller, 1993; Miller *et al.*, 1993a, b; Trail, 1993).

rosea. (T, Ta; introduced)

Achatina rosea Férussac, 1821c: 50. Les Florides [= Florida].

Remarks. Illustrated subsequently in pl. 136, figs. 8, 9, of Férussac's *Histoire*; this plate issued in livraison 18 (1 March 1823) with the name *rosea* given on the wrapper. The wrapper of livraison 21 (27 September 1823) also lists pl. 135, figs. 1–3, as being *rosea* but this appears to be a misidentification. See Kennard (1942a, b) and the Bibliography.

Family STREPTAXIDAE Gray, 1860

Emberton *et al.* (1990: 341) gave 1840 as the date for the family-group name Streptaxidae, but the source for this is unknown and 1860 is taken as the date of publication of this name (Philippe Bouchet, pers. comm., 21 February 1997).

Streptaxids are carnivorous snails, widely distributed throughout the tropics and subtropics, in part due to human activities (Smith, 1992). Frequently, they have been introduced deliberately for use in attempts at biological control of *Achatina fulica* Bowdich, 1822 (Cowie, 1997b; Eldredge, 1988; Godan, 1983; Krauss, 1964). Notwithstanding reports to the contrary (e.g., Godan, 1983), there is no satisfactory evidence that they have had a significant impact on populations of *A. fulica* (e.g., Christensen, 1984). In general, streptaxids introduced for biological control have not become as abundant as *Euglandina rosea* (Férussac, 1821) (see above, Spiraxidae), but they nevertheless pose a significant threat to native land snail faunas (Solem, 1989: 531). They have been implicated in the recent decline of native Samoan land snails (Cowie, 1993; Miller, 1993; Miller *et al.*, 1993a, b).

Arrangement of subfamilies, genera and subgenera follows Vaught (1989: 90–91) and Zilch (1960a: 555–78).

Subfamily ENNEINAE Bourguignat, 1883

Genus GULELLA Pfeiffer, 1856

GULELLA Pfeiffer, 1856a: 173 (as *Ennea* subg.). Type species: *Pupa menkeana* Pfeiffer, 1853 [not Samoan], by subsequent designation of Martens (1860: 298).

The single species recorded from Samoa, *Gulella bicolor* (Hutton, 1834), has been introduced widely and is now circumtropical in distribution (Clench, 1964: 142–43; Harry, 1966: 216; Solem: 1989: 531–32). Its possible origin is on the Indian subcontinent (Naggs, 1989: 167). Its nomenclature and distribution, and their taxonomic implications, have been discussed in detail by Naggs (1989). There is no consensus in assigning this species to genus nor in the status of the subgenus *Huttonella*, of which it is the type species (Naggs, 1989: 167; Solem, 1989: 531).

Solem (1989: 530) considered *G. bicolor* to have been introduced to Melanesia and Polynesia. It is not known when it first arrived in Samoa, nor whether it was accidentally or deliberately introduced. Other *Gulella* spp. have been introduced elsewhere in the Pacific in programs attempting to control *Achatina fulica* (e.g., Krauss, 1964: 23) but none of them has been reported from Samoa.

Subgenus HUTTONELLA Pfeiffer, 1856

HUTTONELLA Pfeiffer, 1856a: 174 (as *Ennea* subg.). Type species: *Pupa bicolor* Hutton, 1834 (as "*E. bicolor*"), by subsequent designation of Stoliczka (1871: 169).

The type species designation was discussed by Naggs (1989: 166).

bicolor. (?T; introduced)

Pupa bicolor Hutton, 1834: 86 [description], 93 [name]. Mirzapur . . . and at the base of the

walls of my Bungalow . . . between Agra and Neemuch. Possible syntypes BMNH 1856.9.15.75, Zoological Survey of India, Calcutta (Naggs, 1989: 165), contrary to Smith (1992: 306) who considered the whereabouts of the type material unknown and presumed lost.

Remarks. The only specific information recording it in Samoa is a tentative record from Tutuila (A.C. Robinson, *in litt.* 11 July 1994).

Genus STREPTOSTELE Dohrn, 1866

STREPTOSTELE Dohrn, 1866: 118, 128. Type species: *Bulimus fastigiatus* Morelet, 1848 (as "*S. fastigiata*") [not Samoan], by subsequent designation of Smith (1890: 96).

Subgenus TOMOSTELE Ancey, 1885

TOMOSTELE Ancey, 1885: 143. Type species: *Achatina musaecola* Morelet, 1860 (as "*muscola*"), by original designation.

The single, introduced species was first collected in Polynesia in 1973, with the first published record of its occurrence in the Pacific, including Samoa, by Solem (1989: 530; see also the unpublished report by Solem, 1975: 6). Whether it was accidentally or deliberately introduced to Samoa is unknown. Its impact on native snail populations is also unknown, although Miller (1993) conjectured that it may have been implicated in at least the extinction of *Samoana abbreviata* (Mousson, 1869) (Partulidae—see above).

musaecola. (T; introduced)

Achatina musaecola Morelet, 1860: 190. Guinea.

Remarks. Recorded from Tutuila by Solem (1989: 532) and Miller (1993: 10).

Subfamily STREPTAXINAE Gray, 1840

Genus GONAXIS Taylor, 1877

GONAXIS Taylor, 1877: 252. Type species: *Gonaxis gibbonsi* Taylor, 1877 [not Samoan], by monotypy.

Various *Gonaxis* spp. have been introduced to Pacific islands in attempts to control *Achatina fulica* Bowdich, 1822 (e.g., Eldredge, 1988; Hopper & Smith, 1992; Krauss, 1964). As yet, only one of these species, introduced in 1977 to Tutuila (Eldredge, 1988; Tauili'ili & Vargo, 1993), has been recorded from Samoa.

kibweziensis. (T; introduced)

Streptaxis kibweziensis Smith, 1894: 165, fig. 1. Kibwezi [Kenya].

Family RHYTIDIDAE Pilsbry, 1893

The family-group name Paryphantidae Godwin-Austen has also been used for this group, e.g., by Thiele (1931: 724), Kondo (1943: 230), Solem (1959: 147), and Smith (1971: 55). Zilch (1960a: 549), Boss (1982: 1072), Vaught (1989: 92), and Smith (1992: 299) used Rhytididae. The latter name has priority according to Baker (1957: 142) but contrary to Solem (1959: 147; see also Baker, 1956a: 134, 1956c: 34) and is used here. In fact, Rhytididae Pilsbry, 1893 is dated 25 February, while Paryphantidae Godwin-Austen, 1893 is dated October (Philippe Bouchet, pers. comm., 14 February 1997).

The Rhytididae are carnivorous snails but otherwise poorly known ecologically (e.g., Smith, 1971). They are found in New Zealand, Australia, islands of the western Pacific, Indonesia, South Africa, and the Seychelles (Boss, 1982: 1072; Smith, 1992: 299; Solem, 1959: 147). Their generic level taxonomy was reviewed by Solem (1959: 147–51) and Climo (1977) but remains somewhat insecure. A generic revision of the family is being undertaken by B.J. Smith (see Smith, 1992: 299).

Genus OUAGAPIA Crosse, 1895

OUAGAPIA Crosse, 1895: 203. Type species: *Helix raynali* Gassies, 1863 [not Samoan], by monotypy.

gradata. (S, U, T, O, Ta)

Helix gradata Gould, 1846a: 172. Tongataboo [= Tongatapu]. Type material not mentioned by Johnson (1964: 86).

Remarks. Island distribution from Cooke (1942: 92) and Kondo (1943: 241). Generic placement is uncertain (Kondo, 1943: 229).

Family ENDODONTIDAE Pilsbry, 1895

The Endodontidae, *sensu* Solem (1976), are endemic to the Pacific basin and the most diverse land snail family of the Pacific. The only major monographic treatment of the group is that of Solem (1976), which includes many new genera and species. Combined with the subsequent monograph (Solem, 1983) of the other Pacific island endodontoid families, Charopidae (see below) and Punctidae (not recorded from Samoa), which deals also with biogeographical issues, this work provides the basic source of reference for the Endodontidae. A brief summary of patterns of endodontoid diversity in Samoa was given by Solem (1983: 290–92).

Endodontidae have been severely affected by human activities and much of the once huge diversity has now disappeared. They are essentially ground-dwelling snails and many species have the curious habit of depositing their eggs in the shell umbilicus. Both these characteristics have been suggested as making them highly susceptible to habitat degredation and predation by introduced ants (on eggs and juveniles especially) (Solem, 1976: 100–01, 1983: 45). Their relatively low diversity in Western Samoa may be related to the presence of endemic ants (Solem, 1976: 101).

Genus MINIDONTA Solem, 1976

MINIDONTA Solem, 1976: 126. Type species: *Minidonta hendersoni* Solem, 1976, by original designation.

manuaensis. (Ol, Ta)

Minidonta manuaensis Solem, 1976: 130, figs. 62a–c. Tau, Utumanua ridge at 350 ft. elevation. Holotype BPBM 187207, paratypes BPBM 186758, 186774, 188720 (Solem, 1976: 130).

Remarks. Also recorded from Olosega by Solem (1976: 130).

Genus THAUMATODON Pilsbry, 1893

THAUMATODON Pilsbry, 1893: 26 (as *Endodonta* sect.). Type species: *Pitys multilamellata* Garrett, 1872 [not Samoan], by subsequent designation of Solem (1976: 444).

Solem (1976: 444) regarded the type species to have been designated by Pilsbry. However, although Pilsbry (1893: 26) probably intended *multilamellata* Garrett, 1872 as the type species, he did not explicitly designate it as such.

histricelloides.

Patula histricelloides Schmeltz, 1865: 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

hystricelloides. (U)

Patula hystricelloides Mousson, 1865: 169. Upolu (Samoa). Lectotype Zürich 502959 (Solem, 1976: 455).

Remarks. Figured by Crosse (1865: pl. 14, fig. 6). Solem (1976: 455) considered Mousson's (1871: 11) record from Tonga to be a misidentification.

Family CHAROPIDAE Hutton, 1884

The endodontoid family Charopidae, thought to be derived from the Endodontidae by Solem (1983) but considered as a possible "stem" group of the Endodontoidea by Tillier (1989: 88), is not confined to Pacific islands as are the Endodontidae. Outside the Pacific they are found in New Zealand, Australia, South America, South Africa, and St. Helena (Solem, 1983: 268). They exhibit particular diversity in New Zealand (e.g., Solem & Climo, 1985) and Australia (e.g., Stanisic, 1990). The monograph of Solem (1983) is a comprehensive treatment of the Pacific fauna and provides the essential entry into the scattered literature.

Charopids are to some extent arboreal, in contrast to the exclusively ground-dwelling endodontids, and they generally do not adopt the umbilical egg-laying habit of the endodontids (Solem, 1983: 45). Solem (1983: 45) suggested that they may as a result be less susceptible to ground-level habitat degredation and ant predation than are the endodontids, and hence appear to have persisted in relatively fair diversity.

Island distributions in Samoa are from Solem (1983).

Genus DISCOCHAROPA Iredale, 1913

DISCOCHAROPA Iredale, 1913: 379 (as *Charopa* subg.). Type species: *Charopa exquisita* Iredale, 1913 [not Samoan], by original designation.

aperta. (A, Ol, Ta)

Patula aperta Möllendorff, 1888: 89. Prope vicum Montalban provinciae Manila [Philippines].

Remarks. Ranges from South East Asia and Australia through Melanesia and Polynesia (Solem, 1983: 77). Lectotype SMF 165358 (Solem, 1983: 77).

Genus GRAEFFEDON Solem, 1983

GRAEFFEDON Solem, 1983: 200. Type species: *Endodonta graeffei* Mousson, 1869, by original designation.

graeffei.

Patula graeffei Schmeltz, 1866: 29 [1869: 72; as "*Gräffei*"]. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

graeffei. (U)

Patula (*Endodonta*) *graeffei* Mousson, 1869: 332, pl. 14, fig. 3. Upolu. "Holotype" [in text], "lectotype" [in figure legend] Zürich [no catalog number given] (Solem, 1983: 201).

savaiiensis. (S)

Graeffedon savaiiensis Solem, 1983: 202, figs. 88a–c. Samoa: Savaii, near Mataulano Lake . . . on a hillside. Holotype BPBM 95758 (Solem, 1983: 205).

Genus SINPLOYEA Solem, 1983

SINPLOYEA Solem, 1983: 81. Type species: *Sinployea peasei* Solem, 1983 [not Samoan], by original designation.

allecta. (S, U)

Helix allecta Cox, 1870: 81. Upolu, Navigator's Islands [= Samoa] . . . on the mountains. Lectotype AMS C.63458 (designated by Solem, 1983: 125).

aunuuana. (A, ?Ta)

Sinployea aunuuana Solem, 1983: 122, figs. 52a–c, 53a–c. Samoa: Aunuu Island (off Tutuila), Station 14, 500 yd. from shore at 200 ft. elevation. Holotype BPBM 83256, paratypes BPBM 83242, ex BPBM 182444 (Solem, 1983: 122).

clausa. (Ta)

Sinployea clausa Solem, 1983: 119, figs. 51d–f. Samoa: Tau, Station 188, Faleasao, 700 ft. inland at 12 ft. elevation. Holotype BPBM 187736, paratypes see Solem (1983: 119).

clista. (U, T)

Sinployea clista Solem, 1983: 119, figs. 51a–c, 53d–e. Samoa: Tutuila, Olomoana. Holotype BPBM 84372, paratypes BPBM 84372, 185879, 186642, FMNH 153081, 153177, DMW MF3992 (Solem, 1983: 122).

complementaria. (U)

Patula complementaria Mousson, 1865: 168. Upolu (Samoa). Lectotype Zürich [figured and designated, but without giving a catalog number] (Solem, 1983: 129), paralectotypes Zürich (Solem, 1983: 129).

Remarks. Figured by Crosse (1865: pl. 14, fig. 5).

intermedia. (Sw)

Sinployea intermedia Solem, 1983: 131, figs. 52d–f, 53f–h. Swains Island: 200 yd. inland on west side at 20 ft. elevation. Holotype BPBM 186666, paratypes BPBM 186666–8, 186679 (Solem, 1983: 131).

+tauensis. (Ta)

Sinployea allecta tauensis Solem, 1983: 127, figs. 54d–e. Samoa: Tau, Station 188, Faleasao, 700 ft. inland at 12 ft. elevation. Holotype BPBM 187753, paratypes see Solem (1983: 128).

Family SUCCINEIDAE Beck, 1837

Succineidae are found worldwide and constitute a major part of the land snail fauna of the Pacific, exhibiting particular diversity in the Hawaiian Islands (Cowie *et al.*, 1995). Generic and subgeneric divisions are uncertain; further anatomical study is needed to define them more precisely. Likewise, placement of species in particular genera and subgenera can rarely be done on the basis of shell characters alone and relies mainly on anatomical characters. Thus, unless species have been dissected, they have generally, but not always, remained in *Succinea*. Two species, *manuana* Gould, 1846 and *modesta* Gould, 1846, were placed in the genus *Catinella* Pease, 1870 by Solem (1975: 3, 5) in an unpublished report. They appear not to have been formally published in this combination and are listed here under *Succinea*, pending further research. Reflecting this uncertainty, no subfamilial groupings are adopted here.

Genus SUCCINEA Draparnaud, 1801

SUCCINEA Draparnaud, 1801: 32, 55. Type species: *Helix putris* Linnaeus, 1758 [not Samoan], by subsequent designation of Fleming (1818: 312, implicitly; 1822: 574, explicitly).

ICZN (1926: 13) and ICZN (1957: 164, 185) indicated that the subsequent designation of *putris* Linnaeus as the type species was by Gray (1847: 171).

cheynei.

Succinea cheynei Garrett, 1887: 137. *Nom. nud.*

Remarks. Name attributed to Dohrn and considered a synonym of *modesta* Gould.

crocata. (?S, U, T)

Succinea crocata Gould, 1846c: 183. Upolu. "Holotype" USNM 5421, "paratypes" MCZ 39642, 169102 (Johnson, 1964: 170).

Remarks. Tutuila also given as locality by Mousson (1869: 343). Tentatively recorded from Savai'i (A.C. Robinson, *in litt.* 11 July 1994).

manuana. (Ta, Manu'a)

Succinea manuana Gould, 1846d: 185. Manua. "Holotype" USNM 5423, "paratypes" MCZ 216597 (Johnson, 1964: 108).

Remarks. Reported from Tā'u by Solem (1975: 3; as "*Catinella manua*").

modesta. (U, T)

Succinea modesta Gould, 1846d: 186. Upolu. Syntypes USNM 5424, MCZ 181926 (Johnson, 1964: 111).

Remarks. Tutuila also given as locality by Mousson (1869: 343) and Schmeltz (1869: 69). Also recorded from Tonga (Mousson, 1871: 17). Reported from Tutuila by Solem (1975: 5; as "*Catinella*").

putamen. (U)

Succinea putamen Gould, 1846c: 182. Upolu. "Holotype" USNM 5416, "paratypes" MCZ 169328 (Johnson, 1964: 137).

The "zonitoid" families HELICARIONIDAE, ARIOPHANTIDAE, and ZONITIDAE

Treatments of what might loosely be called the "zonitoid" families have differed widely among authors (e.g., Baker, 1938, 1940, 1941; Boss, 1982; Riedel, 1980; Smith, 1992; Thiele, 1931; Tillier, 1989; Vaught, 1989; Zilch, 1959b). In general, the arrangement of taxa in this catalog follows Baker (1938, 1940, 1941), the most recent to revise the Pacific fauna comprehensively (cf. Cowie *et al.*, 1995: 153; Solem, 1989: 543). The "zonitoids", although not endemic to the region, are one of the major land snail groups to have diversified widely on Pacific islands.

Island distributions in Samoa follow the original descriptions, Baker (1938, 1941), and other sources as indicated under the individual species. The listing of "*Trochonanina* sp." by Miller (1993: 24–30) is a misidentification.

Family HELICARIONIDAE Godwin-Austen, 1882

Correct spelling, authorship and date of Helicarionidae were clarified by ICZN (1992b), as corrected by ICZN (1993).

Subfamily EUCONULINAE Baker, 1928

Genus CONEUPLECTA Möllendorff, 1893

CONEUPLECTA Möllendorff, 1893: 64. Type species: *Helix scalarina* Pfeiffer, 1851 (as "*Euplecta*") [not Samoan], by original designation.

Subgenus SITALINA Thiele, 1931

SITALINA Thiele, 1931: 635 (as genus). Type species: *Conulus circumcinctus* Reinhardt, 1883 (as "*S. circumcincta*") [not Samoan], by monotypy.

microconus. (T)

Nanina microconus Mousson, 1865: 192. Lomma-Lomma (Viti) [= Fiji].

Remarks. Distribution given as "Samoa to Fiji and westward" by Baker (1941: 234) without mentioning individual Samoan islands except by reference to Schmeltz (1869: 70) who gave Tutuila. Garrett (1887: 126) did not mention specific islands.

Subfamily MICROCYSTINAE Thiele, 1931

Genus DIASTOLE Gude, 1913

DIASTOLE Gude, 1913b: 391. Type species: *Helix conula* Pease, 1861 [not Samoan], by original designation.

TROCHONANINA: authors, not Mousson, 1869, misidentification.

"*Trochonanina* Mousson, 1869" has frequently been used for this genus, but was restricted to an African group by the type designation of Nevill (1878: 45) (see Baker, 1938: 45).

Subgenus DIASTOLE Gude, 1913

matafaoi. (T)

Diastole (*Diastole*) *matafaoi* Baker, 1938: 51, pl. 5, fig. 7, pl. 17, figs. 4, 5). Tutuila (central) . . . alt. 1,500–1,600 feet, below sub-peak on connecting ridge to Matafao. Holotype BPBM 11402 (Baker, 1938: 101).

Subgenus TROCHONANITA Baker, 1938

TROCHONANITA Baker, 1938: 45. Type species: *Nanina schmeltziana* Mousson, 1865 (as "*Diastole*"), by original designation.

lamellaxis. (S)

Diastole (*Trochonanita*) *lamellaxis* Baker, 1938: 54, pl. 5, fig. 14, pl. 15, figs. 11, 12. Samoa: Savaii: . . . hillside, alt. 1,000–2,000 feet, one to three miles behind Salealua. Holotype BPBM 75769 (Baker, 1938: 100).

savaii. (S)

Diastole (*Trochonanita*) *savaii* Baker, 1938: 53, pl. 5, fig. 13, pl. 17, figs. 9, 10. Samoa: Savaii: . . . hillside, alt. 900 feet, two miles behind Salealua. Holotype BPBM 75807 (Baker, 1938: 101).

schmeltzana.

Nanina schmeltzana Schmeltz, 1865: 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

schmeltziana. (U, T, O)

Nanina schmeltziana Mousson, 1865: 167. Upolu.

Remarks. Baker (1938: 52, 53) considered this species to be distributed throughout Samoa, but questioned Mousson's (1871: 9) record from Futuna. Miller (1993: 12) recorded it from Tutuila and Ofu.

usurpata.

Nanina schmeltziana var. *usurpata* Schmeltz, 1869: 71. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Savai'i and Futuna. Baker (1938: 52) questioned the record from Futuna.

+usurpata. (S, U, O, Ta)

Nanina (*Trochonanina*) *schmeltziana* var. *usurpata* Mousson, 1869: 330. Savai [= Savai'i].

Remarks. The distinction of this "variety" from the nominotypical *schmeltziana* Mousson, 1865 seems doubtful (Baker, 1938: 52–53).

Genus LAMPROCYSTIS Pfeffer, 1883

LAMPROCYSTIS Pfeffer, 1883: 20. Type species: *Nanina excrescens* Mousson, 1870 [not Samoan] (as "*Lamprocystis*"), by subsequent designation of Pilsbry (1928: 67).

Subgenus KERAKYSTIS Baker, 1938

KERAKYSTIS Baker, 1938: 69. Type species: *Nanina perpolita* Mousson, 1869 (as "*Lamprocystis*"), by original designation.

perpolita.

Nanina perpolita Schmeltz, 1869: 71. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from 'Upolu.

perpolita. (S, U)

Nanina (*Microcystis*) *perpolita* Mousson, 1869: 326, pl. 14, fig. 1. Upolu.

Remarks. Garrett (1887: 125) recorded it from 'Upolu and said it was also known from Tonga and Fiji. However, the record from Viti Levu by Mousson (1870a: 113) was questioned by Baker (1938: 76), who only recorded it from 'Upolu and Savai'i (see also Mousson, 1871: 8).

Subgenus LAMPROCYSTIS Pfeffer, 1883

ensifera.

Nanina ensifera Schmeltz, 1869: 71. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

ensifera. (Samoa)

Nanina (*Gastrodonta*) *ensifera* Mousson, 1869: 328, pl. 14, fig. 2. Samoa.

Remarks. Widely distributed, with a number of extralimital synonyms, i.e., *futunaana* Mousson, 1870 (*nom. nud.*), *futunaensis* Mousson, 1871, *stearnseana* Garrett, 1887 (see Baker, 1938: 86).

laqueata.

Helix laqueata Baird, 1873: 446, pl. 40, figs. 8, 9. Samoan group. "Types" [? syntypes] BMNH, Maidstone Museum (Chatfield, 1994: 101).

Remarks. Synonym of *unisulcata* Mousson, *teste* Baker (1938: 82). Only tentatively considered Samoan by Baker (1938: 83).

oneataensis. (?S; ?not Samoan)

Nanina (*Microcystis*) *upolensis* var. *oneataensis* Mousson, 1870a: 114. Oneata et Vanua-Balavo [= Vanua Balavu; Lau Group, Fiji].

Remarks. Reported from Savai'i by Schmeltz (1874: 90; as "*Zonites*") but not recorded from Samoa by Baker (1938: 80). Treated as a full species by Baker (1938: 80).

oneatensis.

Nanina upolensis var. *oneatensis* Schmeltz, 1869: 71. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and reported it from Savai'i.

samoensis.

Helix samoensis Baird, 1873: 447, pl. 40, figs. 12, 13. Samoan group. "Types" [? syntypes] BMNH, Maidstone Museum (Chatfield, 1994: 101).

Remarks. Synonym of *upolensis* Mousson, *teste* Baker (1938: 79).

unisulcata. (?Samoan)

Nanina unisulcata Mousson, 1865: 191. Ile Lomma-Lomma (Viti) [= Fiji].

Remarks. Only tentatively considered Samoan by Baker (1938: 83) on the basis of synonymy with *laqueata* Baird.

upolensis.

Nanina upolensis Schmeltz, 1865: 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

upolensis. (S, U, T)

Nanina upolensis Mousson, 1865: 166. Upolu. Possible syntypes ANSP 49160 (Baker, 1938: 79).

Remarks. Savai'i and Tutuila given as additional localities by Schmeltz (1869: 71). Garrett (1887: 124) recorded it from 'Upolu and Fiji.

Genus LIARDETIA Gude, 1913

LIARDETIA Gude, 1913a: 326. Type species: *Helix clayi* Liardet, 1876 (as "*Nanina*") [not Samoan] [= *Helix striolata* Pease, *teste* Baker (1938: 12)], by original designation.

The type species fixation was not by monotypy (cf. Baker, 1938: 12).

Subgenus LIARDETIA Gude, 1913

samoensis.

Nanina samoensis Schmeltz, 1865: 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Samoa.

samoensis. (U, T, O)

Nanina samoensis Mousson, 1865: 165. Upolu.

Remarks. Widespread in the Pacific and elsewhere, with a number of extralimital synonyms (Baker, 1938: 22–24, 1940: 190; Garrett, 1887: 126; Ho, 1995: 103; Solem, 1964: 131). Reported specifically from Tutuila and Ofu by Solem (1975: 4).

striolata.

Helix striolata Pease, 1861a: 439. Ebon, Marshall's group [= Marshall Islands]. Lectotype MCZ 11563, paralectotypes MCZ 298474 (Johnson, 1994: 25).

Remarks. Junior primary homonym of *striolata* C. Pfeiffer, 1828 [not Samoan]. Synonym of *samoensis* Mousson, *teste* Baker (1938: 22, 1940: 190).

tutuillae. (T)

Helix tutuillae Cox, 1870: 83. Tutuilla [= Tutuila], Navigator's Islands [= Samoa] . . . on the mountains.

Remarks. Synonymized only questionably with *samoensis* Mousson by Baker (1938: 23) and so retained here as valid, pending further research.

Incertae sedis in HELICARIONIDAE

difficilis.

Nanina difficilis Schmeltz, 1866: 29. *Nom. nud.*

Remarks. Tentatively placed in Helicarionidae. Schmeltz attributed the name to Mousson and recorded it from 'Upolu. Not treated by Baker (1938, 1941).

fiemastyla.

Nanina fiemastyla Schmeltz, 1865: 25. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Uvea. Almost certainly intended as "*firmostyla*" and included here only for completeness.

firmostyla. (?Samoan)

Nanina firmostyla Mousson, 1865: 166. Nukuiona (Uvea) [= Uvea, Wallis Islands].

Remarks. Tentatively placed in Helicarionidae. See Baker (1941: 335–36) for discussion of its possible affinities. Samoa given as locality by Paetel (1883: 114) and Tryon (1886b: 125).

Family ARIOPHANTIDAE Godwin-Austen, 1888

Some authors (e.g., Boss, 1982) place this group as a subfamily of Helicarionidae (see above). Ariophantidae are found in southern Asia (Boss, 1982). Many species are semi-slugs, that is, they have a shell but cannot withdraw the body fully into it, and the mantle frequently covers much of the shell.

Subfamily PARMARIONINAE Godwin-Austen, 1908

The name Parmarioninae was proposed conditionally by Godwin-Austen (*in* Blanford & Godwin-Austen, 1908: 180), but this does not render it unavailable (*Code* Art. 11(d) and 15).

Genus PARMARION Fischer, 1856

PARMARION Fischer, 1856: 395. Type species: *Limax problematica* Férussac & Deshayes, 1839 (as "*problematicus*") [not Samoan], by subsequent designation of Humbert (1863: 112).

martensi. (U, T; introduced)

Parmarion martensi Simroth, 1893: 107. Cambodja [= Cambodia].

Remarks. Reported from Tutuila by Miller (1993: 10) but only very tentatively identified (S.E. Miller, personal communication). Appears to be a widely introduced species (e.g., Chang, 1991a: 37; Cowie, 1997b; Ho, 1995: 105).

Family ZONITIDAE Mörch, 1864

Subfamily TROCHOMORPHINAE Möllendorff, 1890

Genus TROCHOMORPHA Albers, 1850

TROCHOMORPHA Albers, 1850: 116. Type species: *Helix trochiformis* Pfeiffer, 1842 (as "*Nanina trochiformis* Fér.") [= *Trochomorpha typus* Baker, 1941] [not Samoan], by subsequent designation of Martens (1860: 60).

Pfeiffer (1842: 40) was the first to validate *trochiformis* Férussac, 1821, which is a *nomen nudum* (see Baker, 1941: 314; Pease, 1871b: 456). Baker (1941: 285, 314) provided the replacement name *typus* for the type species, because *trochiformis* Férussac, 1821 is preoccupied by *trochiformis* Montagu, 1803 [not Samoan].

Gould (1846b: 176; and others, e.g., Mousson, 1865: 171; Paetel, 1883: 118, 1888b: 75) gave "Samoa" as one of the localities for his new species *cressida.* However, Baker (1941: 319; and see Garrett, 1884: 26, Mousson, 1869: 336) considered this locality "undoubtedly erroneous" and *cressida* Gould, 1846 is excluded from this catalog. Also excluded are *eurydice* Gould, 1846 and *tumulus* Gould, 1846. Baker (1941: 312) treated Mousson's (1865: 170–71) report of *eurydice* from 'Upolu and Savai'i (see also Pease, 1871b: 474; Schmeltz, 1865: 25, 1869: 73 [Savai'i and Tutuila]) as a misidentification of *apia* Hombron & Jacquinot, 1852. Schmeltz (1865: 25) gave Samoa as locality for *tumulus* and later (Schmeltz, 1866: 30, 1869: 73, 1874: 94) gave 'Upolu. However, Baker (1941: 300) only recorded it from Fiji.

Subgenus LAUHALA Baker, 1941

LAUHALA Baker, 1941: 285. Type species: *Trochomorpha savaii* Baker, 1941 (as subspecies of *troilus* Gould), by original designation.

The type species is cited as *Trochomorpha savaii* Baker, rather than *Trochomorpha troilus savaii* Baker, following *Code* Art. 61(d).

luteocornea.

Helix luteo-cornea Pfeiffer, 1855a: 56. Navigators' Islands [= Samoa].

Remarks. Pfeiffer's paper was intended as the original description, was entitled "Descriptions of . . . new species . . .", and was referred to by Reeve (1854d) as the original description. However, Reeve's work was published first so Pfeiffer's name is a junior primary homonym of Reeve's. Synonym of *luteocornea* Reeve, *teste* Baker (1941: 307).

luteocornea. (Samoa)

Helix luteocornea Reeve, 1854d: pl. 186, species 1287. Navigators' Islands [= Samoa].

Remarks. Synonymized only tentatively with *troilus* Gould by Baker (1941: 307). Not treated individually as a species in the main body of his text, but distinguished as a species in both his key and his table of shell dimensions (Baker, 1941: 309). It has not strictly been synonymized with *troilus* Gould and is therefore retained here as a valid species, pending further research.

navigatorum.

Helix navigatorum Pfeiffer, 1855a: 55. Navigators' Islands [= Samoa].

Remarks. Pfeiffer's paper was intended as the original description, was entitled "Descriptions of .

. . new species . . .", and was referred to by Reeve (1854d) as the original description. However, Reeve's work was published first so Pfeiffer's name is a junior primary homonym of Reeve's. Synonym of *troilus* Gould, *teste* Baker (1941: 307).

navigatorum.

Helix navigatorum Reeve, 1854d: pl. 187, species 1303. Navigators' Islands [= Samoa].

Remarks. Synonymized with *troilus* Gould, 1846 by Baker (1941: 307) and not treated individually as a species in the main body of his text, even though he distinguished it as a species in both his key and his table of shell dimensions (Baker, 1941: 309). Treated here as a synonym of *troilus* Gould.

samoa. (U)

Helix samoa Hombron & Jacquinot, 1841: 63. L'île Opoulou (archipel Samoa) [= 'Upolu].

+savaii. (S)

Trochomorpha (Lauhala) troilus savaii Baker, 1941: 310, pl. 50, figs. 17, 18, pl. 57, figs. 12, 13. Samoa: Savaii: . . . damp hillside, 3 to 4 miles inland, alt. 4,100–4,200 ft., between camp and crater of 1905–11. Holotype BPBM 75764 (Baker, 1941: 344).

troilus. (U)

Helix (Caracolla) troilus Gould, 1846b: 176. Samoa Islands. Possible syntypes MCZ 169405, USNM 5457 (both "var. a"), MCZ 169404 ("var. b"), MCZ 169406 ("var. c"), MCZ 169407 ("var. d"), MCZ 169403 ("var. e"), also MCZ 87867, 156386 (Johnson, 1964: 161).

tuber. (U)

Trochomorpha tuber Mousson, 1869: 334, pl. 14, fig. 5. Upolu.

Subgenus LUDIFICATOR Baker, 1941

LUDIFICATOR Baker, 1941: 285. Type species: *Helix apia* Hombron & Jacquinot, 1852 (as "*T. apia*"), by original designation.

apia. (S, U, T)

Helix apia Hombron & Jacquinot, 1852: mollusques pl. 7, figs. 9–13. I. Samoa.

Remarks. The description of this species (Rousseau, 1854: 23) was published after the plates (Hombron & Jacquinot, 1842–1853), although no accurate dating could be obtained for either (see Bibliography). Plate 7, with 5 figures, the name, and the locality, validated the name. Pfeiffer (1853b: 273) and Reeve (1854g: pl. 199, species 1402) attributed the name to Hombron & Jacquinot, citing their plate and figure numbers, but not the text page number, with Pfeiffer explicitly listing *apia* among his "species deficiente descriptione incertae".

subtrochiformis.

Helix subtrochiformis Schmeltz, 1869: 73. *Nom. nud.*

Remarks. Schmeltz attributed the name to Mousson and recorded it from Savai'i and Tutuila.

subtrochiformis.

Trochomorpha subtrochiformis Mousson, 1869: 335, pl. 14, fig. 6. Upolu et Savai [= Savai'i].

Remarks: Synonym of *apia* Hombron & Jacquinot, *teste* Baker, 1941: 312.

tentoriolum. (?U; ?not Samoan)

Helix tentoriolum Gould, 1846b: 176. Upolu. Only specimen known ANSP 1935 (Baker, 1941: 313) [although Garrett (1887: 128) stated that Gould described it from "examples", plural].

Remarks: Placed only tentatively in subgenus *Ludificator* by Baker (1941: 313). Garrett (1887: 128) questioned its presence in Samoa.

Family BRADYBAENIDAE Pilsbry, 1934

The Bradybaenidae are predominantly Asian, with their greatest diversity in eastern Asia. A single species reaches western Europe (Kerney *et al.*, 1979: 174) and there are a few African species (Boss, 1982). A number of species, including the single species recorded from Samoa, have been widely dispersed by human activities (Smith, 1992: 99; Solem, 1959: 119).

Subfamily BRADYBAENINAE Pilsbry, 1934

Genus BRADYBAENA Beck, 1837

BRADYBAENA Beck, 1837: 18. Type species: *Helix similaris* Rang, 1831, by subsequent designation of Gray (1847: 173).

similaris. (S, U, T, O)

Helix similaris Rang, 1831: 15. Bourbon [= Réunion] . . . Cuba . . . Rio-Janeiro et particulièrement au jardin de Saint-Christophe. Syntypes MNHP (Smith, 1992: 99).

Remarks. Rang cited Férussac (1821b: 43) as author of the name, but *similaris* Férussac, 1821 is a *nom. nud.* Férussac gave Timor as locality. Considered native to southern China, South East Asia, and Indonesia, this species is now widespread in tropical and subtropical regions, including many Pacific islands (Solem, 1959: 119, 1964: 135, 1978: 43). Recorded from 'Upolu by Alicata & McCarthy (1964: 608) and from Tutuila and Ofu by Miller (1993: 24, 27). Tentatively recorded from 'Aunu'u and Tā'u (A.C. Robinson, *in litt.* 11 July 1994).

Incertae sedis in the Samoan Land Snail Fauna

crouanii. (Samoa)
Helix crouanii Guillou, 1842: 138. Hamoa [= Samoa].

CHECKLIST

This checklist includes all the names listed in the main body of the catalog except mis-identifications and incorrect spellings. Family-group and genus-group names appear in the same sequence as in the main catalog. Valid species are listed alphabetically within genera/subgenera. Within a species, valid infraspecific taxa are listed alphabetically, with no distinction of subspecies, varieties, color forms, etc., without implying any taxonomic judgement regarding their true status. Synonyms, homonyms and unavailable names (*nomina nuda*, etc.) are listed chronologically under the appropriate species-group name where justified. Otherwise they are listed at the end of the appropriate subgenus, genus, family, etc. For full explanation of the treatment of the names in this list, refer to the main body of the catalog.

If a taxon was described as an infraspecific taxon of a species now synonymized with or considered a subspecies of another species, it is listed here as a subspecies of the latter.

Valid genus-group names are printed in boldface. Valid species-group names are printed in plain Roman type. Synonyms and unavailable names are in italics, indented. In 3 cases (*elongata* Mousson and *laevis* Baird, both Assimineidae; and *montana* Cooke & Crampton, Partulidae) junior homonyms have not been replaced, so remain the names of valid taxa, although as homonyms they appear in italic.

NERITIDAE
- Neritiliinae
  - **Neritilia** Martens, 1875
    - rubida Pease, 1865
- Neritinae
  - **Clithon (Clithon)** Montfort, 1810
    - bougainvillei Récluz, 1850
    - castanea Hombron & Jacquinot, 1852
      - *propinqua* Schmeltz, 1866
      - *propinquus* Mousson, 1869
    - chlorostoma Broderip, 1833
      - *parvula* Guillou, 1841
      - *siderea* Gould, 1847
    - corona Linnaeus, 1758
      - *brevispina* Lamarck, 1822
      - *ruginosa* Récluz, 1841
      - *humerosa* Schmeltz, 1865
      - *humerosa* Mousson, 1865 **N. syn.**
      - *subrugata* Baird, 1873 **N. syn.**
    - diadema diadema Récluz, 1841
      - *rarispina* Hombron & Jacquinot, 1852 **N. syn.**
    - diadema recluziana Guillou, 1841
    - olivaceus Récluz, 1843
  - *Incertae sedis* in **Clithon (Clithon)**
    - *inermis* Schmeltz, 1866

Clithon (Pictoneritina) Iredale, 1936
oualaniensis Lesson, 1831
Neritina (Dostia) Gray, 1842
Dostia Gray, 1840
siquijorensis Récluz, 1844
Neritina (Neripteron) Lesson, 1831
auriculata Lamarck, 1816
taitensis Lesson, 1831
marginata Hombron & Jacquinot, 1852 **N. syn.**
upolensis Mousson, 1869
Neritina (Neritina) Lamarck, 1816
aterrima Koch, 1843
canalis Sowerby, 1825
petitii Récluz, 1841
samoensis Schmeltz, 1869
samoensis Mousson, 1869
porcata porcata Gould, 1847
graeffei Schmeltz, 1866
graeffei Mousson, 1869
porcata tenuicostata Mousson, 1869
pulligera Linnaeus, 1767
squamaepicta iris Mousson, 1849
testudinea Hombron & Jacquinot, 1852
Incertae sedis in **Neritina (Neritina)**
tenuiplicata Schmeltz, 1869
Neritina (Neritona) Martens, 1869
macgillivrayi Reeve, 1855
planissimum Mousson, 1869
Neritina (Vittina) Baker, 1923
turrita Gmelin, 1791
roissyana Récluz, 1841
chrysocolla Gould, 1847 **N. syn.**
rivula Hombron & Jacquinot, 1852 **N. syn.**
navigatoria Reeve, 1855 **N. syn.**
vitiensis Schmeltz, 1869 **N. syn.**
turtoni Récluz, 1843
helvola Gould, 1847
Neritina (Vittoida) Baker, 1923
variegata Lesson, 1831
Incertae sedis in **Neritina** *s.l.*
granulosa Schmeltz, 1866
turrita Schmeltz, 1866
granulum Schmeltz, 1874
Puperita (Heminerita) Martens, 1887
amoena Gould, 1847
godeffroyana Schmeltz, 1869
godeffroyanus Mousson, 1869
Septaria (Septaria) Férussac, 1807
freycineti Récluz, 1842
suffreni Récluz, 1842
pala Mousson, 1865

profunda Schmeltz, 1866
laperousei Récluz, 1842
macrocephala Récluz, 1842
porcellana depressa Lesson, 1831
affinis Reeve, 1856
fissa Schmeltz, 1869
fissa Mousson, 1869
porcellana porcellana Linnaeus, 1758
sanguisuga Reeve, 1856
Incertae sedis in **Septaria** *s. str.*
truncata Schmeltz, 1869
decapitata Mousson, 1869
truncata Mousson, 1869
HELICINIDAE
Orobophana Wagner, 1905
musiva musiva Gould, 1847
musiva uveana Mousson, 1865
oberwimmeri Wagner, 1910
Pleuropoma (Aphanoconia) Wagner, 1905
Sphaeroconia Wagner, 1909
altivaga Ancey, 1889
altivaga Schmeltz, 1874
fulgora Gould, 1847
samoana Wagner, 1908
rogosiuscula Wagner, 1909
Incertae sedis in **Pleuropoma (Aphanoconia)**
delicatula Schmeltz, 1869
Pleuropoma (Pleuropoma) Möllendorff, 1893
Sturanya Wagner, 1905
Sturanyella Pilsbry & Cooke, 1934
beryllina beryllina Gould, 1847
beryllina flavida Mousson, 1869
flavida Schmeltz, 1869
beryllina tutuilana Wagner, 1907
interna Mousson, 1869
jetschini Wagner, 1905
plicatilis Mousson, 1865
plicatilis Schmeltz, 1865
Incertae sedis in **Pleuropoma** *s. str.*
zonata Paetel, 1890
Incertae sedis in HELICINIDAE
altior Schmeltz, 1866
brenchleyi Baird, 1873
fulgurata Baird, 1873
leucochila Paetel, 1890
multifasciata Baird, 1873
strigata Baird, 1873
zebriolata Pfeiffer, 1855

NEOCYCLOTIDAE
- **Ostodes** Gould, 1862
  - adjunctus Mousson, 1869
  - cookei Clench, 1949
  - exasperatus Girardi, 1978
  - garretti Clench, 1949
  - gassiesi Souverbie, 1859
  - llanero Girardi, 1978
  - plicatus Gould, 1847
    - *apiae* Récluz, 1851
    - *pulverulentum* Pfeiffer, 1854
  - reticulatus Girardi, 1978
  - savaii Clench, 1949
  - strigatus Gould, 1847
    - *albida* Hombron & Jacquinot, 1852
  - tiara Gould, 1847
  - upolensis Mousson, 1865
    - *upolensis* Schmeltz, 1865

DIPLOMMATINIDAE
- **Diplommatina (Moussonia)** Semper, 1865
  - problematica Mousson, 1865
    - *problematica* Schmeltz, 1865
    - *typica* Semper, 1865

TRUNCATELLIDAE
- **Truncatella** Risso, 1826
  - guerinii Villa & Villa, 1841
    - *valida* Pfeiffer, 1846
    - *vitiana* Gould, 1847

ASSIMINEIDAE
- Assimineinae
  - **Assiminea** Fleming, 1828
    - *Syncera* Gray, 1821
      - crosseana Gassies, 1869
      - parvula Mousson, 1865
        - *parvula* Schmeltz, 1865
        - *nitida* Pease, 1865
      - similis Baird, 1873
  - **Tutuilana** Hubendick, 1952
    - striata Hubendick, 1952
- Omphalotropidinae
  - **Omphalotropis** Pfeiffer, 1851
    - *Realia* Baird, 1850
      - bifilaris bifilaris Mousson, 1865
        - *bifilaris* Schmeltz, 1865
      - bifilaris gracilior Mousson, 1869
      - bifilaris teretiformis Mousson, 1869
      - biliratus biliratus Mousson, 1865
      - biliratus *elongatus* Mousson, 1869
      - conoideus angulosus Mousson, 1869
      - conoideus conoideus Mousson, 1865
      - *laevis* Baird, 1873

navigatorum Pfeiffer, 1838
scitulus Gould, 1847
zebriolatus Mousson, 1865
Incertae sedis in **Omphalotropis**
angulata Schmeltz, 1866
tectiformis Schmeltz, 1869
Incertae sedis in ASSIMINEIDAE
brazieri Cox, 1879
THIARIDAE
Thiarinae
Melanoides (Melanoides) Olivier, 1804
Striatella Brot, 1870
laxa Mousson, 1869
gratiosa Schmeltz, 1866
laxa Schmeltz, 1869
peregrina Mousson, 1869
peregrina Schmeltz, 1866
tuberculata Müller, 1774
Melanoides (Stenomelania) Fischer, 1885
aspirans Hinds, 1844
picta Hinds, 1844
scipio Gould, 1847
brenchleyi brenchleyi Baird, 1873
brenchleyi delicatula Baird, 1873
funiculus Quoy & Gaimard, 1834
luctuosa Hinds, 1844
lutosa inserta Mousson, 1869
inserta Schmeltz, 1869
lutosa languida Mousson, 1869
languida Schmeltz, 1869
lutosa lutosa Gould, 1847
vainafa Gould, 1847
samoensis Reeve, 1859
graeffei Schmeltz, 1865
subfasciata Schmeltz, 1866
bifasciata Schmeltz, 1869
crassiuscula Schmeltz, 1869
interposita Schmeltz, 1869
nigra Schmeltz, 1869
bifasciata Mousson, 1869
crassiuscula Mousson, 1869
graeffei Mousson, 1869
interposita Mousson, 1869
levis Mousson, 1869
nigra Mousson, 1869
lutosa picea Mousson, 1869
picea Schmeltz, 1869
lutosa sulcata Mousson, 1869
sulcata Schmeltz, 1869
persulcata Mousson, 1869

persulcata Schmeltz, 1869
subexusta Schmeltz, 1869
subexusta Mousson, 1869
subexusta Mousson, 1870 **N. syn.**
arthurii Brot, 1870 **N. syn.**
plicaria Born, 1780
punctata Lamarck, 1822
papuensis Quoy & Gaimard, 1834
Incertae sedis in **Melanoides** *s. l.*
acutespira Mousson, 1869
acutispira Schmeltz, 1869
Thiara Röding, 1798
Melania Lamarck, 1799
amarula Linnaeus, 1758
cybele Gould, 1847
macrospira Morelet, 1857
scitula adjuncta Mousson, 1869
scitula scitula Gould, 1847
terpsichore Gould, 1847
VERONICELLIDAE
Laevicaulis Simroth, 1913
alte Férussac, 1822
Vaginulus (Sarasinula) Grimpe & Hoffmann, 1924
plebeius Fischer, 1868
samoana Simroth, 1918
ELLOBIIDAE
Ellobiinae
Auriculastra Martens, 1880
subula Quoy & Gaimard, 1832
Ellobium (Auriculodes) Strand, 1928
Auriculina Kobelt, 1898
semisculptum Adams & Adams, 1854
Melampodinae
Melampus Montfort, 1810
castaneus Megerle von Mühlfeld, 1816
fasciatus fasciatus Deshayes, 1830
brevior Schmeltz, 1866
minor Schmeltz, 1869
gracilior Schmeltz, 1866
fasciatus fortis Mousson, 1869
luteus Quoy & Gaimard, 1832
parvulus Pfeiffer, 1856
parvulus Pfeiffer, 1854
philippii Küster, 1845
semisulcatus Mousson, 1869
semisulcatus Schmeltz, 1869
striatus Pease, 1861
tongaensis Mousson, 1871
Pythiinae
Allochroa Ancey, 1887
layardi Adams & Adams, 1855

Cassidula Férussac, 1821
crassiuscula Mousson, 1869
crassiuscula Schmeltz, 1869
intuscarinata Mousson, 1870
intuscarinata Schmeltz, 1869
paludosa Garrett, 1872
Pythia Röding, 1798
savaiensis Mousson, 1869
scarabaeus Linnaeus, 1758
tortuosa Mousson, 1871
Incertae sedis in ELLOBIIDAE
ovuloides Baird, 1873
PHYSIDAE
Physa (Physa) Draparnaud, 1801
sp.
PLANORBIDAE
Planorbinae
Physastra Tapparone Canefri, 1883
nasuta Morelet, 1857
Planorbis Müller, 1774
spp.
ANCYLIDAE
Ferrissiinae
Ferrissia (Pettancylus) Iredale, 1943
noumeensis Crosse, 1871
ACHATINELLIDAE
Pacificellinae
Lamellidea (Lamellidea) Pilsbry, 1910
Lamellina Pease, 1861
Lamellaria Liardet, 1876
oblonga Pease, 1865
bacillaris Schmeltz, 1869
bacillaris Mousson, 1871
pusilla Gould, 1847
conica Schmeltz, 1869
conica Mousson, 1869
normalis Pilsbry & Cooke, 1915
Incertae sedis in **Lamellidea** *s. str.*
bucollaris Schmeltz, 1869
Pacificella Odhner, 1922
variabilis Odhner, 1922
Tornatellininae
Elasmias Pilsbry, 1910
sp.
PUPILLIDAE
Gastrocoptinae
Gastrocopta Wollaston, 1878
pediculus Shuttleworth, 1852
samoensis Schmeltz, 1865
samoensis Mousson, 1865

Nesopupinae
Nesopupa Pilsbry, 1900
Ptychochilus Boettger, 1881
godeffroyi Boettger, 1881
tantilla Gould, 1847
Pupisoma Stoliczka, 1873
orcula Benson, 1850
PARTULIDAE
Eua (**Nesanassa**) Pilsbry & Cooke, 1934
expansa Pease, 1871
extensa Pease, 1871
montana Cooke & Crampton, 1930
zebrina recluziana Petit de la Saussaye, 1850
zebrina zebrina Gould, 1847
actor Albers, 1850
tryoni Hartman, 1885
Samoana Pilsbry, 1909
Evadne Hartman, 1881
abbreviata Mousson, 1869
abbreviata Schmeltz, 1869
canalis biconica Pilsbry, 1909
canalis canalis Mousson, 1865
canalis Schmeltz, 1865
canalis semilineata Mousson, 1869
semilineata Schmeltz, 1869
conica Gould, 1847
stevensoniana Pilsbry, 1909
thurstoni Cooke & Crampton, 1930
Incertae sedis in **Samoana**
upolensis Schmeltz, 1865
Incertae sedis in PARTULIDAE
brazieri Pease, 1871
gonochila Pfeiffer, 1847
SUBULINIDAE
Allopeas Baker, 1935
clavulinum Potiez & Michaud, 1838
gracile Hutton, 1834
junceus Gould, 1846
oparanus Pfeiffer, 1846
upolensis Schmeltz, 1865
upolensis Mousson, 1865 **N. syn.**
bacillaris Paetel, 1873
Opeas Albers, 1850
hannense Rang, 1831
pumilus Pfeiffer, 1840
Paropeas Pilsbry, 1906
achatinaceum Pfeiffer, 1846
javanica Reeve, 1849
Subulina Beck, 1837
octona Bruguière, 1789

ACHATINIDAE
- **Achatina (Lissachatina)** Bequaert, 1950
  - fulica Bowdich, 1822

SPIRAXIDAE
- Euglandininae
  - **Euglandina** Crosse & Fischer, 1870
    - rosea Férussac, 1821

STREPTAXIDAE
- Enneinae
  - **Gulella (Huttonella)** Pfeiffer, 1856
    - bicolor Hutton, 1834
  - **Streptostele (Tomostele)** Ancey, 1885
    - musaecola Morelet, 1860
- Streptaxinae
  - **Gonaxis** Taylor, 1877
    - kibweziensis Smith, 1894

RHYTIDIDAE
- **Ouagapia** Crosse, 1895
  - gradata Gould, 1846

ENDODONTIDAE
- **Minidonta** Solem, 1976
  - manuaensis Solem, 1976
- **Thaumatodon** Pilsbry, 1893
  - hystricelloides Mousson, 1865
    - *histricelloides* Schmeltz, 1865

CHAROPIDAE
- **Discocharopa** Iredale, 1913
  - aperta Möllendorff, 1888
- **Graeffedon** Solem, 1983
  - graeffei Mousson, 1869
    - *graeffei* Schmeltz, 1866
  - savaiiensis Solem, 1983
- **Sinployea** Solem, 1983
  - allecta allecta Cox, 1870
  - allecta tauensis Solem, 1983
  - aunuuana Solem, 1983
  - clausa Solem, 1983
  - clista Solem, 1983
  - complementaria Mousson, 1865
  - intermedia Solem, 1983

SUCCINEIDAE
- **Succinea** Draparnaud, 1801
  - crocata Gould, 1846
  - manuana Gould, 1846
  - modesta Gould, 1846
    - *cheynei* Garrett, 1887
  - putamen Gould, 1846

HELICARIONIDAE
Euconulinae
Coneuplecta (Sitalina) Thiele, 1931
microconus Mousson, 1865
Microcystinae
Diastole (Diastole) Gude, 1913
matafaoi Baker, 1938
Diastole (Trochonanita) Baker, 1938
lamellaxis Baker, 1938
savaii Baker, 1938
schmeltziana schmeltziana Mousson, 1865
schmeltziana Schmeltz, 1865
schmeltziana usurpata Mousson, 1869
usurpata Schmeltz, 1869
Lamprocystis (Kerakystis) Baker, 1938
perpolita Mousson, 1869
perpolita Schmeltz, 1869
Lamprocystis (Lamprocystis) Pfeffer, 1883
ensifera Mousson, 1869
ensifera Schmeltz, 1869
unisulcata Mousson, 1865
laqueata Baird, 1873
oneataensis Mousson, 1870
oneatensis Schmeltz, 1869
upolensis Mousson, 1865
upolensis Schmeltz, 1865
samoensis Baird, 1873
Liardetia (Liardetia) Gude, 1913
samoensis Mousson, 1865
striolata Pease, 1861
samoensis Schmeltz, 1865
tutuillae Cox, 1870
Incertae sedis in HELICARIONIDAE
difficilis Schmeltz, 1866
fiemastyla Schmeltz, 1865
firmostyla Mousson, 1865
ARIOPHANTIDAE
Parmarioninae
Parmarion Fischer, 1856
martensi Simroth, 1893
ZONITIDAE
Trochomorphinae
Trochomorpha (Lauhala) Baker, 1941
luteocornea Reeve, 1854
luteocornea Pfeiffer, 1855
samoa Hombron & Jacquinot, 1841
troilus savaii Baker, 1941
troilus troilus Gould, 1846
navigatorum Reeve, 1854
navigatorum Pfeiffer, 1855

tuber Mousson, 1869
Trochomorpha (Ludificator) Baker, 1941
apia Hombron & Jacquinot, 1852
subtrochiformis Schmeltz, 1869
subtrochiformis Mousson, 1869
tentoriolum Gould, 1846
BRADYBAENIDAE
Bradybaeninae
Bradybaena Beck, 1837
similaris Rang, 1831
Incertae sedis in the Samoan land snail fauna
crouanii Guillou, 1842

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Lieferung	Pages	Plates	Date of publication
229	1–32	1–6	1874
235	33–80	7–12	1875a
244	81–128	13–18	1875b
249	129–192	19–24	1876
259	193–272	25–30	1877a
264	273–352	31–36	1877b
271	353–400	37–42	1878
280	401–456	43–48	1879a
283	457–488	49	1879b

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Part	Livraison	Pages	Date of publication
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2	48	345–757	13 February 1792

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Part	Livraison	Pages	Date of publication
1	101	1–256	31 January 1830
2	101	1–444	31 January 1830
2	102 [part]	145–594	29 September 1832

Livraison 102 also included volume 3, with pages 595–1152.

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This book was issued in the livraisons of the author's *Histoire naturelle générale et particulière des mollusques terrestres et fluviatiles . . .* , although the texts of the two publications are quite distinct. The text of the *Tableaux* (often cited as the *Prodrome*) appeared in two parts, the first including title page and introductory material, the second consisting of the actual *Tableaux* of the *Limaçons, Limaces* and *Auricules*. This second part was described as "*Deuxième partie. (Première section.)*"; but there was no second section. The plates associated with both the *Tableaux* and the *Histoire* were also issued in the same series of livraisons; all plates cited in the text of the *Tableaux*, except pl. 121 (livraison 19), were issued before livraison 15. Dates of publication of the text of the *Tableaux* are as follows:

Première partie. Tableaux systématiques généraux de l'embranchement des mollusques, divisés en familles naturelles. Table alphabétique générale et synonymique de toutes les dénominations génériques connues.

Livraison	Pages	Date of publication
14	i–xxiv	16 February 1822a
5	xxv–xlvii + [i]	13 April 1822b

Deuxième partie. (Première section.). Tableaux particuliers des mollusques terrestres et fluviatiles, présentant pour chaque famille les genres et espèces qui la composent. Classe des gastéropodes. Ordre des pulmonés sans opercules.

I. Tableau systématique de la famille des Limaces, Limaces, servant de supplément provisoire a notre histoire naturelle de ces animaux.

Livraison	Pages	Date of publication
16	1–27	16 July 1822c

II. Tableau systématique des Limaçons, Cochleae.

III. Tableau systématique des pulmonés géhydrophiles. [also entitled *Tableau de la famille des Auricules*].

Two versions of these sections are known; one in folio (dated January 1821) and one in quarto (dated

June 1821). The actual dates of issue of both versions are given below. The *Auricules* starts on p. 91 in the quarto version. Pages cited in the catalog text refer to the quarto version.

Livraison	Folio Pages	Quarto Pages	Date of publication
9	1–32	1–24	6 April 1821a
10	33–56	25–48	26 May 1821b
11	57–76	49–72	13 July 1821c
12	77–92	73–88	21 September 1821d
13	93–114	89–111	10 November 1821e

Férussac, J.B.L. d'A. de. 1807. *Essai d'une méthode conchyliologique appliquée aux mollusques fluviatiles et terrestres d'après la considération de l'animal et de son test. Nouvelle édition augmentée d'une synonymie des espèces les plus remarquables, d'une table de concordance systématique de celles qui ont été décrites par Géoffroy, Poiret et Draparnaud, avec Müller et Linné, et terminée par un catalogue d'espèces observées en divers lieux de la France.* Delance, Paris. xvi + 142 p.

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Fascicle	Pages	Date of publication
1	1–112	21 September 1880
2	113–192	16 March 1881a
3	193–304	28 July 1881b
4	305–416	5 May 1882
5	417–512	21 February 1883a
6	513–608	20 December 1883b
7	609–688	30 June 1884
8	689–784	29 January 1885a
9	785–896	31 August 1885b
10	897–1008	30 April 1886
11	1009–1369	15 June 1887

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Livraison	Feuilles	Pages	Plates	Date of publication
1	1–17	1–136	I–VI	1870
-	18–19	137–154	-	-
2	20–38	155–304	VII–XII	1872
3	39–48	305–386	XIII–XVI	1873a
4	49–58	387–464	XVII–XX	1873b
5	59–68	465–544	XXI–XXIV	1875
6	69–78	545–624	XXV–XXVIII	1877
7	79–88	625–702	XXIX–XXXI	1878

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Part	Pages	Date of publication
1	1-47	1844b
2	48-72	1845

Ho, W.H. 1995. A review of the land-snail fauna of Singapore. *Raffles Bulletin of Zoology* **43**(1): 91–113. [30 June]

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vidual livraisons or plates, except as follows. Pl. 12 was cited by Pfeiffer (1852: 316); pl. 7 was cited by Pfeiffer (1853b: 273); pl. 24 was published between December 1851 and December 1852. Plates cited in this catalog are therefore dated to 1852, in the absence of additional information.

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30		3	1841b
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This is the second part of the entire work. The third part (not cited here) was published as Lieferungen 15–17, p. 1–240, 1890, and Lieferung 18, p. 241–256, 1891. The title page of the second part is dated 1889. Published in Lieferungen as follows:

Lieferung	Pages	Date of publication
9	1–80	1888b
10	81–160	1889
11–14	161–505	1890

Pease, W.H. [1861]a. Descriptions of six new species of land shells, from the island of Ebon, Marshall's group, in the collection of H. Cuming. *Proceedings of the Zoological Society of London* **2**3[1860]: 439–40. [31 March]

———. 1861b. Descriptions of new species of Mollusca from the Pacific islands. *Proceedings of the Zoological Society of London* **1861**(2): 242–47. [September]

———. [1865]a. Descriptions of new species of land shells from the islands of the central Pacific. *Proceedings of the Zoological Society of London* **1864**(3): 668–74. [May]

———. 1865b. Descriptions of new genera and species of marine shells from the islands of the central Pacific. *Proceedings of the Zoological Society of London* **1865**(2): 512–16. [October]

———. 1869. Monographie de la famille des Realiea, Pfeiffer. *Journal de Conchyliologie* **17**: 131–60. [26 April]

———. 1870. Observations sur les espèces de coquilles terrestres qui habitent l'île de Kauai (îles Hawaii), accompagnées de descriptions d'espèces nouvelles. *Journal de Conchyliologie* **18**: 87–97. [10 January]

———. 1871a. Descriptions of new species of land shells. *American Journal of Conchology* **7**(1): 26–27. [1 August]

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Petit de la Saussaye, S. 1850. Description de coquilles nouvelles. *Journal de Conchyliologie* **1**(2): 169–71. [15 April]

Pfeffer, G. 1883. Beiträge zur Naturgeschichte der Lungenschnecken. *Abhandlungen aus dem Gebiete der Naturwissenschaftlichen Vereins in Hamburg* **7**(2): 3–24.

Pfeiffer, L. [1838]. Descriptions of thirty-one new species of land-shells from Mr. Cuming's collection. *Proceedings of the Zoological Society of London* **5**[1837]: 107–13. [14 June]

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———. 1842. *Symbolae ad historiam heliceorum. Sectio altera.* T. Fischer, Cassel. 147 p. [March]

This is the second of three parts, the entire work being published 1841–1846.

———. 1843–1854. Die gedeckelten Lungenschnecken. (Helicinacea et Cyclostomacea.). In Abbildungen nach der Natur mit Beschreibungen. Cyclostomaceen. *In*: Küster, H.C., ed., *Systematisches Conchylien-Cabinet von Martini und Chemnitz.* Band 1. Abtheilung 19. Theil 2. Baur & Raspe, Nürnberg [= Nuremberg]. 400 + iv p., 51 pls.

Published in Lieferungen as follows:

Lieferung	Pages	Plates	Date of publication
44		4	1843
61	1–24	1–3, 5–7	1846d
64	25–40	8, 10, 12–14, 17	1847a
70	41–56	9, 11, 15, 16, 18, 19	1847b
74	57–96	20–25	1848
82	97–144	26–30	

Lieferung	Pages	Plates	Date of publication
85	145–176		1849
87	177–208		
95	209–228		1850
128	229–268	31–36	1853a
133	269–308	37–42	1854a
136	309–356	43–48	1854b
137	357–400	49–50	1854c

———. 1846a. Descriptions of thirty new species of Helicea, belonging to the collections of H. Cuming, Esq. *Proceedings of the Zoological Society of London* **14**: 28–34. [May]

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This is the last of three parts, the entire work being published 1841–1846.

———. 1846c. Monographische Versuch über die Gattung *Truncatella* Risso. *Zeitschrift für Malakozoologie* **3**(12): 177–90. [December]

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This is the third of four parts of this article, the entire work being published in *Zeitschrift für Malakozoologie*, vol. 8, parts 9–12; the last part published after 15 January 1852.

———. 1852. *Monographia pneumonopomorum viventium. Sistens descriptiones systematicas et criticas omnium hujus ordinis generum et specierum hodie cognitarum, accedente fossilium enumeratione.* T. Fischer, Cassel. xviii + 439 p.

———. 1853b. *Monographia heliceorum viventium. Sistens descriptiones systematicas et criticas omnium huius familiae generum et specierum hodie cognitarum. Volumen tertium. Supplementum. Sistens enumerationem auctam omnium huius familiae generum et specierum hodie cognitarum, accedentibus descriptionibus novarum specierum et enumeratione fossilium.* F.A. Brockhaus, Lipsiae [= Leipzig]. viii + 711 p. [after May]

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———. [1855a]. Descriptions of forty-two new species of *Helix*, from the collection of H. Cuming, Esq. *Proceedings of the Zoological Society of London* **22**[1854]: 49–57. [10 January]

———. 1855b. Descriptions of a new genus and twenty-three new species of Pneumonopoma, from the collection of H. Cuming, Esq. *Proceedings of the Zoological Society of London* **23**: 101–06, pl. 32. [Publication split: p. 101–04, 23 July; p. 105–106, 13 August]

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This is the concluding part of this article. The first part was published, 1855, *Malakozoologische Blätter* **2**: 112–44.

———. 1856b. *Monographia auriculaceorum viventium. Sistens descriptiones systematicas et criticas omnium hujus familiae generum et specierum hodie cognitarum, nec non fossilium enumeratione. Accedente proserpinaceorum nec non generis truncatellae historia.* T. Fischer, Cassel. xiii + 209 p. [after May]

———. 1868. *Monographia heliceorum viventium. Sistens descriptiones systematicas et criticas omnium huius familiae generum et specierum hodie cognitarum. Volumen sextum. Supplementum tertium. Sistens enumerationem auctam omnium huius familiae generum et specierum hodie cognitarum. Accedentibus descriptionibus novarum specierum. Volumen secundum.* F.A. Brockhaus, Lipsiae [= Leipzig]. 598 p. [December]

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Cassel. x + 479 p.

Philippi, R.A. 1842–1844. *Abbildungen und Beschreibungen neuer oder wenig gekannter Conchylien . . .* .. Vol. 1. T. Fischer, Cassel. 204 + [8] p., 48 pls.

Published in Lieferungen as follows:

Lieferung	Pages	Plates	Date of publication
1	1–20	I.1–I.6	1842
2	21–46	II.1–II.6	1843a
3	47–76	III.1–III.6	1843b
4	77–102	IV.1V–I.6	1844a
5	103–130	V.1–V.6	1844b
6	131–158	VI.1–VI.6	1844c
7	159–178	VII.1–VII.6	1844d
8	179–204	VIII.1–VIII.6	1844e
-	title, index		1844f

The title page carries the date "1845", but it appears it was published in 1844.

Pilsbry, H.A. 1893–1895. *Manual of conchology: structural and systematic. With illustrations of the species. By George W. Tryon, Jr. Second series: Pulmonata.* Vol. IX. (Helicidae, vol. 7.). Guide to the study of helices. Academy of Natural Sciences, Philadelphia. xlviii + 366 p., [1] + 71 pls.

The series was begun by Tryon. Pilsbry continued it after Tryon's death and is the sole author of the material contained in this volume. Published in parts as follows:

Part	Pages	Date of publication
33	1–48	16 November 1893
34	49–112	19 March 1894a
35	113–160	27 July 1894b
36	161–336	2 February 1895a
33a	i–xlviii	2 February 1895b

An "Index to the Helices" (126 p.) was published in April 1895.

———. 1900. Note on Polynesian and East Indian Pupidae. *Proceedings of the Academy of Natural Sciences of Philadelphia* **52**: 431–33. [Publication split: p. 431–32, 9 August; p. 433, 14 August]

———. 1906–1907. *Manual of conchology. Structural and systematic. With illustrations of the species. Founded by George W. Tryon, Jr. Second series: Pulmonata.* Vol. XVIII. Achatinidae: Stenogyrinae and Coeliaxinae. Academy of Natural Sciences, Philadelphia. xii + 357 p., 51 pls.

Published in parts as follows:

Part	Pages	Plates	Date of publication
69	1–64	1–10	20 January 1906a
70	65–160	11–20	10 April 1906b
71	161–272	21–34	2 October 1906c
72	273–357, i–xii	35–51	January 1907

———. 1907–1908. *Manual of conchology. Structural and systematic. With illustrations of the species. Second series: Pulmonata.* Vol. XIX. Oleacinidae, Ferussacidae. Academy of Natural Sciences, Philadelphia. xxvii + 366 p., 52 pls.

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Part	Pages	Plates	Date of publication
73	1–64	1–10	26 June 1907a
74	65–128	11–20	31 August 1907b
75	129–192	21–30	9 December 1907c
76	193–366, i–xxvii	31–52	July 1908

———. 1908–1910. *Manual of conchology. Structural and systematic. With illustrations of the species. Second series: Pulmonata.* Vol. XX. *Caecilioides, Glessula* and Partulidae. Index to Vols. XVI–XX. Academy of Natural Sciences, Philadelphia. viii + 336 p., 43 pls.

Published in parts as follows:

Part	Pages	Plates	Date of publication
77	1–64	1–10	19 November 1908
78	65–154	11–21	18 May 1909a
79	155–314	22–36	29 September 1909b
80	315–336, i–viii	37–43	February 1910a

———. 1910b. Notes on the classification of the Tornatellinidae. *The Nautilus* **23**(10): 122–24. [8 March]

———. 1916–1918. *Manual of conchology. Second series: Pulmonata.* Vol. XXIV. Pupillidae (Gastrocoptinae). Academy of Natural Sciences, Philadelphia. xii + 380 p., 49 pls.

Published in parts as follows:

Part	Pages	Plates	Date of publication
93	1–112	1–13	18 December 1916
94	113–176	14–29	18 July 1917a
95	177–256	30–38	9 November 1917b
96	257–380, i–xii	39–49	March 1918

———. 1919. A review of the land mollusks of the Belgian Congo chiefly based on the collections of the American Museum Congo Expedition, 1909–1915. *Bulletin of the American Museum of Natural History* **40**: 1–370, pls. 1–23. [18 December]

———. 1920–1921. *Manual of conchology. Second series: Pulmonata.* Vol. XXVI. Pupillidae (Vertigininae, Pupillinae). Academy of Natural Sciences, Philadelphia. iv + 254 p., 24 pls.

Published in parts as follows:

Part	Pages	Plates	Date of publication
101	1–64	1–8	23 December 1920
102	65–128	9–13	13 May 1921a
103	129–192	14–18	4 August 1921b
104	193–254, i–iv	19–24	November 1921c

———. 1927–1935. *Manual of conchology. Second series: Pulmonata.* Vol. XXVIII. Geographic distribution of Pupillidae; Strobilopsidae, Valloniidae and Pleurodiscidae. Academy of Natural Sciences, Philadelphia. xii + 226 p., 31 pls.

Pilsbry is the sole author of the material contained in this volume except as noted below. Published in parts as follows (stamped dates are those on which each part was mailed from the Academy):

Part	Pages	Plates	Printed date	Stamped date
109	1–48	1–8	November 1927	11 November 1927
110	49–96	9–12	April 1931	2 April 1931
111	97–160	13–23	14 June 1934	14 June 1934
112	161–226, i–xii	24–31	November 1935	7 November 1935

The article, "Review of the anatomy of Pupillidae and related groups", p. 191–209, is by H.B. Baker.

———. 1928. Types of *Lamprocystis* and *Pseudhelicarion*. *The Nautilus* **42**(2): 67. [25 October]

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Published in parts as follows:

Part	Pages	Plates	Date of publication
89	1–48	1–13	23 October 1914
90	49–128	14–23	4 August 1915a
91	129–256	24–38	1 December 1915b
92	257–302, i–xi	39–55	February 1916

———. **& Cooke, C.M., Jr.** 1918–1920. *Manual of conchology. Second series: Pulmonata.* Vol. XXV. Pupillidae (Gastrocoptinae, Vertigininae). Academy of Natural Sciences, Philadelphia. ix + 401 p., 34 pls.

Published in parts as follows:

Part	Pages	Plates	Date of publication
97	1–64	1–5	5 November 1918
98	65–144	6–10	20 February 1919a
99	145–224	11–18	30 June 1919b
100	225–401, i–ix	19–34	April 1920

———. **& Cooke, C.M., Jr.** 1934a. Partulidae of Tonga and related forms. *Bernice P. Bishop Museum Occasional Papers* **10**(14): 1–22. [30 March]

———. **& Cooke, C.M., Jr.** 1934b. Notes on the nomenclature of Hawaiian Helicinidae. *The Nautilus* **48**(2): 53–54. [15 October]

Pointier, J.-P., Incani, R.N., Balzan, C., Chrosciechowski, P. & Prypchan, S. 1994. Invasion of the rivers of the littoral central region of Venezuela by *Thiara granifera* and *Melanoides tuberculata* (Mollusca: Prosobranchia: Thiaridae) and the absence of *Biomphlaria glabrata*, snail host of *Schistosoma mansoni*. *The Nautilus* **107**(4): 124–128. [16 March]

———. **& Marquet, G.** 1990. Taxonomy and distribution of freshwater mollusks of French Polynesia. *Venus* **49**(3): 215–31. [November]

Ponder, W.F. & Warén, A. 1988. Classification of the Caenogastropoda and Heterostropha—a list of the family-group names and higher taxa. *Malacological Review, Supplement* 4: 288–326. [20 December]

Potiez, V.-L.-V. & Michaud, A.-L.-G. 1838. *Galerie des mollusques, ou catalogue méthodique, descriptif et raisonné des mollusques et coquilles du Muséum de Douai.* Tome premier. J.-B. Baillière, Paris. xxxvi + 560 + [4] + [56] p. [27 October]

Proschwitz, T. von. 1994. *Lamellaxis clavulinus* (Potiez & Michaud) as a greenhouse species in Sweden. *Journal of Conchology* **35**(2): 184–85. [30 November]

Quoy, J.R.C. & Gaimard, J.P. 1832–1833. *Voyage de découvertes de l'Astrolabe. Exécuté par ordre du Roi, pendant les années 1826–1827–1828–1829, sous le commandement de M.J. Dumont d'Urville. Zoologie.* Tome second. J. Tastu, Paris. 686 p., pls. 1–45.

Published in parts as follows:

Part	Pages	Date of publication
1	1–320	5 May 1832
2	321–686	1833

———. **& Gaimard, J.P.** 1834–1835. *Voyage de découvertes de l'Astrolabe. Exécuté par ordre du Roi, pendant les années 1826–1827–1828–1829, sous le commandement de M.J. Dumont*

d'Urville. Zoologie. Tome troisième. J. Tastu, Paris. 954 p., pls. 46–93 [mollusques], 1–20 [poissons], 1–8 [supplementaires].

Published in parts as follows:

Part	Pages	Date of publication
1	1–366	1834
2	367–954	17 March 1835

Rang, S. 1831. Description des coquilles terrestres recueillies pendant un voyage à la côte occidentale d'Afrique, et au Brésil. *Annales des Sciences Naturelles* **24**(93): 5–63, pl. 3. [September]

Récluz, C.A. 1841a. Description de quelques nouvelles espèces de nérites vivantes (2e partie). *Revue Zoologique, par la Société Cuvierienne* **4**(9): 273–78. [3 October]

———. 1841b. Description de quelques nouvelles espèces de nérites vivantes (2e partie, suite). *Revue Zoologique, par la Société Cuvierienne* **4**(10): 310–18. [3 November]

———. 1841c. Description de quelques espèces de nérites vivantes (2e partie, suite et fin). *Revue Zoologique, par la Société Cuvierienne* **4**(11): 337–43. [3 December]

———. [1842]. Prodrome d'une monographie du genre navicelle. *Revue Zoologique, par la Société Cuvierienne* **4**(12)[1841]: 369–82. [3 January]

———. [1843]a. [Descriptions of new species of nerites, collected by Mr. Cuming in the Philippine Islands]. *Proceedings of the Zoological Society of London* **10**[1842]: 168–76. [February]

———. 1843b. [Descriptions of various new species of shells belonging to the genus *Nerita*, from Mr. Cuming's collection]. *Proceedings of the Zoological Society of London* **11**: 71–73. [November]

———. [1844]. Descriptions of new species of *Navicella*, *Neritina*, *Nerita*, and *Natica*, in the cabinet of H. Cuming, Esq. *Proceedings of the Zoological Society of London* **11**[1843]: 197–214. [June]

———. 1850. Notice sur le genre nérita et sur le S.-G. *Neritina*, avec le catalogue synonymique des néritines. *Journal de Conchyliologie* **1**(2): 131–64. [15 April]

———. 1851. Description de quelques coquilles nouvelles. *Journal de Conchyliologie* **2**(2): 194–216. [15 April]

Reeve, L.A. 1848–1850. *Conchologia Iconica: or, illustrations of the shells of molluscous animals. Volume V. Containing the monographs of the genera* Bulimus. Achatina. Dolium. Cassis. Turritella. Mesalia. Eglisia. Cassidaria. Oniscia. Eburnia. Reeve, Benham & Reeve, London.

This is a lambda book (a book in which plates were published separately, along with unnumbered pages of explanatory text, as the plates were ready). After all plates were completed, they were bound into volumes. Dates of publication, as given at the bottom of the explanatory text for each page, are as follows for *Achatina*:

Plates	Date of publication
1–8	February 1849a
9–13	March 1849b
14	April 1849c
15–16	May 1849d
17–19	June 1849f
20–23	March 1850a

Reeve, L.A. 1849–1851. *Conchologia Iconica: or, illustrations of the shells of molluscous animals. Volume VI. Containing the monographs of the genera* Voluta. Fissurella. Partula. Achatinella. Artemis. Lucina. Hemipecten. Oliva. Strombus. Pterocera. Rostellaria. Struthiolaria. Reeve & Benham, London.

See Reeve (1848–1850) above for details of the publication methods of this series. Dates of publication, as given at the bottom of the explanatory text for each page, are as follows for *Partula*:

Plates	Date of publication
1	May 1849e
2–3	April 1850b
4	May 1850c

———. 1851–1854. *Conchologia Iconica: or, illustrations of the shells of molluscous animals. Volume VII. Containing a monograph of the genus* Helix. L. Reeve, London.

See Reeve (1848–1850) above for details of the publication methods of this series. Dates of publication, as given at the bottom of the explanatory text for each page, are as follows for *Helix*:

Plates	Date of publication
1–6	March 1851a
7–14	April 1851b
15–22	May 1851c
23–30	June 1851d
31–38	July 1851e
39–46	September 1851f
47–54	October 1851g
55–62	December 1851h
63–70	January 1852a
71–78	February 1852b
79–86	March 1852c
87–94	April 1852d
95–102	May 1852e
103–110	June 1852f
111–126	August 1852g
127–134	October 1852h
135–142	November 1852i
143–146	December 1852j
147–150	February 1853a
151–154	April 1853b
155–162	May 1853c
163–166	June 1853d
167–170	July 1853e
171–174	October 1853f
175–176	April 1854a
177	May 1854b
178–185	June 1854c
186–189	July 1854d
190–193	August 1854e
194–195	September 1854f
196–210	December 1854g

———. 1855–1856. *Conchologia Iconica: or, illustrations of the shells of molluscous animals. Volume IX. Containing monographs of the genera* Spondylus. Neritina. Natica. Navicella. Siphonaria. Nerita. Latia. L. Reeve, London.

See Reeve (1848–1850) above for details of the publication methods of this series. Dates of publication, as given at the bottom of the explanatory text for each page, are as follows for *Neritina* and *Navicella*:

Genus	Plates	Date of publication
Neritina	2	August 1855a
	3–10	October 1855b

Genus	Plates	Date of publication
Neritina	11–26	November 1855c
	27–30	January 1856a
	31–34	February 1856b
	1, 35–37	March 1856c
Navicella	1–8	June 1856d

———. 1859–1861. *Conchologia Iconica: or, illustrations of the shells of molluscous animals. Volume XII. Containing monographs of the genera* Argonauta. Nautilus. Terebra. Aspergillum. Thracia. Melania. Hemisinus. Anculotus. Metatoma. Io. Pirena. Melanopsis. Scarabus. Trigonia. Myochama. L. Reeve, London.

See Reeve (1848–1850) above for details of the publication methods of this series. Dates of publication, as given at the bottom of the explanatory text for each page, are as follows for *Melania*:

Plates	Date of publication
2–9	November 1859a
10–17	December 1859b
18–25, 28–29	January 1860a
26–27, 30	February 1860b
31–33	May 1860c
34–45	September 1860d
46–47	November 1860e
48–49	December 1860f
50–51	March 1861a
52–53	April 1861b
54–59	May 1861c
1	June 1861d

Richardson, C.L. 1990. Partulidae: catalog of species. *Tryonia* **19**: i, 1–96. [15 September]

Riech, E. 1937. Systematische, anatomische, ökologische und tiergeographische Untersuchungen über die Süßwasser-mollusken Papuasiens und Melanesiens. *Archiv für Naturgeschichte* (N.F.) **6**(1): 37–153.

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Risso, A. 1826. *Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et des Alpes Maritimes.* Tome quatrième. F.-G. Levrault, Paris. vii + 439 p., 12 pls. [8 November]

Röding, P.F. 1798. *Museum Boltenianum.* Pars Secunda. J.C. Trapp, Hamburg. viii + 199 p. [September]

Authorship of this work determined by ICZN Direction 48.

Rousseau, L. 1854. Description des mollusques, coquilles et Zoophytes. *In: Voyage au Pole Sud et dans l'Océanie sur les corvettes l'Astrolabe et la Zélée; exécuté par ordre du roi pendant les années 1837–1838–1839–1840, sous le commandement de M. J. Dumont-d'Urville, capitaine de vaisseau; publié par ordre du gouvernement, sous la direction supérieure de M. Jacquinot, capitaine de Vaisseau, commandant de la Zélée. Zoologie par Mm. Hombron et Jaquinot.* Tome cinquième. G. & J. Baudry, Paris. viii + 132 p. [before 4 November]

Rousseau provided the descriptions although many of the species had previously been validated in the *Atlas*, authorship of which is attributed to Hombron & Jacquinot (1842–1853) as editors of the *Zoologie* volumes. Both the text and the *Atlas* appeared in livraisons. Receipt of individual livraisons was not noted by the *Bibliographie de la France*, although the publication was listed as complete in the issue of the *Bibliographie* for 4 November 1854.

Ruhoff, F.A. 1980. Index to the species of Mollusca introduced from 1850 to 1870. *Smithsonian Contributions to Zoology* **294**: i–iii, 1–640. [9 December]

Schaufuss, L.W. 1869. *Molluscorum Systema et Catalogus. System und Aufzählung sämmtlicher Conchylien der Sammlung von Fr. Paetel.* Oscar Weiske, Dresden. [iii] + xiv + 119 p.

Schmeltz, J.D.E. 1865. *Catalog II der zum Verkauf stehenden Doubletten aus dem naturhistorischen Expeditionen der Herren Joh. Ces. Godeffroy & Sohn in Hamburg.* [no publisher given], Hamburg. iv + 33 p. [between 24 and 31 March]

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———. 1869. *Museum Godeffroy. Catalog IV, nebst einer Beilage, enthaltend: topographische Notizen; Beschreibung neuer Bryozoen von Senator Dr. Kirchenpauer zu Hamburg und einer neuen Asteriden-Gattung von Dr. Chr. Lütken zu Kopenhagen.* Wilhelm Mauke Söhne, vormals Perthes-Besser & Mauke, Hamburg. xxxix + [iii] + 139 + [ii] p. [between 18 and 31 May]

———. 1874. *Museum Godeffroy Catalog V. Nebst einer Beilage enthaltend topographische und zoologische Notizen.* L. Friedrichsen & Co., Hamburg. xxxvi + [ii] + 215 p. [February]

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1	1–16	1883a
2	17–32	25 May 1883b
3	33–48	26 May 1883c
4	49–64	16 June 1883d
5, 6	65–80, 81–96, fold-out table	20 June 1883e
10	145–160	4 July 1883f
11	161–176	5 July 1883g
12	177–[192]	6 July 1883h
13	[193]–208	8 July 1883i
14, 20	209–224, [305]–313	11 July 1883j
15	225–240	12 July 1883k
16	[241]–256	13 July 1883l
17, 18	257–272, 273–288	14 July 1883m
19	289–304	16 July 1883n
7, 8	97–112, 113–128	25 July 1883o
9	129–144	26 July 1883p

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1	1–376	between 4 September and 22 October 1929
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38	65–144	13–30	1 July 1888b
39	145–208	31–45	1 October 1888c
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522	33–72	7–12	1907b
526	73–104	13–18	1908a
530	105–136	19–24	1908b
534	137–160	25–30	1908c
535	161–184	31–36	1909a
538	185–216	37–42	1909b
541	217–248	43–48	February 1910a
542	249–272	49–54	May 1910b
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544	297–328	61–66	October 1910d
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7	1507–1639, i–xii	November 1944

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3	401–600	30 March 1960a
4	601–834, i–xii	15 August 1960b

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INDEX OF LISTED TAXA

Taxa treated in the catalog are listed here in alphabetical order by name, author and (for species-group names) current generic combination. Original generic combination for species-group names, if different from the current combination, is listed in parentheses. Family-group names are in **BOLDFACE** capitalized letters. Genus-group names are in all CAPITALIZED letters. Unavailable names, *nomina nuda*, and misidentifications are listed in *italics*. Page numbers in boldface refer to entries in the catalog proper; those in plain Roman type refer to listings of taxa in the checklist.