



SANTA BARBARA MUSEUM
OF NATURAL HISTORY

Contributions in Science

Number 3



Sample Pages of

Checklist of the Land Snails and Slugs of California

Barry Roth and Patricia S. Sadeghian





SANTA BARBARA MUSEUM OF NATURAL HISTORY
Contributions in Science

Number 3

Checklist of the Land Snails and Slugs of California

Barry Roth and Patricia S. Sadeghian



SANTA BARBARA MUSEUM OF NATURAL HISTORY

© 2003

(all rights reserved)



INTRODUCTION

This checklist presents an inventory and classification of the land snails and slugs of California and reports their distribution by county as known to us from examination of approximately 12,000 specimen lots in museum and private collections. All mollusks listed here are terrestrial, not aquatic, although sometimes that distinction is rather arbitrary, as with some semi-aquatic Succineidae (included) or the marine-margin Truncatellidae (excluded). County occurrences of each taxon are listed from north to south, with the California Channel Islands grouped at the end. Distribution outside the state is summarized briefly. Late Quaternary (Pleistocene and early Holocene) fossil distributional records are included. Many of these are outside the species' Recent ranges and document the fluid character of land mollusk distribution through time.

A supraspecific taxonomy of the land snails and slugs of California precedes the checklist and serves as a synopsis of its contents.

The locations of name-bearing type specimens (holotypes, syntypes, lectotypes, and neotypes; see International Commission on Zoological Nomenclature [ICZN], 1999: Article 72.1), as far as we have been able to determine them, are presented. The taxon names in these entries are those of the original proposals of the taxa. These listings include type material of valid taxa and their synonyms, except that extralimital synonyms of very widespread taxa (for example, *Vallonia pulchella*; cf. Gerber, 1996: 48-49) are excluded. Holotypes and lectotypes of 64 land snail taxa described by S. Stillman Berry (1887-1984), deposited in the Santa Barbara Museum of Natural History, are illustrated by photographs, most for the first time.

The following abbreviations are used: AMNH, American Museum of Natural History, New York; ANSP, Academy of Natural Sciences, Philadelphia; BMNH, The Natural History Museum, London; CAS, California Academy of Sciences, San Francisco; ChM, The Charleston Museum, Charleston, South Carolina; CM, Carnegie Museum, Pittsburgh, Pennsylvania; CU, Cornell University, Ithaca, New York; LACM, Natural History Museum of Los Angeles County, Department of Invertebrates; LACMIP, Natural History Museum of Los Angeles County Department of Invertebrate Paleontology; LSL, Linnean Society of London; MCZ, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; MNHN, Muséum National d'Histoire Naturelle, Paris; NHMG, Naturhistoriska Museet,



SUPRASPECIFIC TAXONOMY OF THE LAND SNAILS AND SLUGS OF CALIFORNIA

Gastropoda Cuvier, 1795

Pulmonata Ehrenberg, 1831

"Archaeopulmonata" Morton, 1955

CARYCHIIDAE Jeffreys, 1829

Genus *Carychium* Müller, 1774

Stylommatophora Schmidt, 1855

"Non-achatinoïd clade" Wade, Mordan & Clarke, 2001

Clade A [comprising Patuloidea + Ceriidae + Haplotrematoidea + Helicoidea *sensu lato*]

Patuloidea Tryon, 1866

PATULIDAE Tryon, 1866

Genus *Discus* Fitzinger, 1833

Subgenus *Discus, sensu stricto*

Subgenus *Nematodiscus* Pilsbry, 1948

Subgenus *Patula* Held, 1837

Genus *Speleodiscoides* A. G. Smith, 1957

OREOHELICIDAE Pilsbry, 1939

Genus *Oreohelix* Pilsbry, 1904

Genus *Radiocentrum* Pilsbry, 1905

HELICODISCIDAE Baker, 1927

Genus *Lucilla* Lowe, 1852

[Unnamed clade comprising Haplotrematoidea + Helicoidea *sensu lato*]

Haplotrematoidea Baker, 1925

HAPLOTREMATIDAE Baker, 1925

Genus *Ancotrema* Baker, 1931

Genus *Haplotrema* Ancey, 1881

Subgenus *Ancomena* Baker, 1931

Subgenus *Geomene* Pilsbry, 1927

Subgenus *Haplotrema, sensu stricto*

SPIRAXIDAE Baker, 1939

Genus *Euglandina* Fischer & Crosse, 1870

Subgenus *Euglandina, sensu stricto*

Helicoidea *sensu lato*

HELICELLIDAE Ihering, 1909

Genus *Cerņuella* Schlüter, 1838

Subgenus *Cerņuella, sensu stricto*



CHECKLIST OF THE LAND SNAILS AND SLUGS OF CALIFORNIA

Gastropoda Cuvier, 1795

Pulmonata Ehrenberg, 1831¹

"Archaeopulmonata" Morton, 1955²

CARYCHIIDAE Jeffreys, 1829

Genus *Carychium* Müller, 1774

**Carychium minimum* Müller, 1774

Native to Europe and Central Asia; introduced to San Francisco Bay area.

Counties: San Francisco, Alameda.

Type material: location unknown.

Carychium occidentale Pilsbry, 1891

Pacific coast from Vancouver Island, British Columbia, to northern California.

Counties: Del Norte, Humboldt, Mendocino.

Type material: *Carychium exiguum* var. *occidentalis* Pilsbry, 1891, lectotype (designated by Pilsbry, 1948: 1061) ANSP 22539a. *Carychium magnificum* Hanna, 1923, holotype CAS 066281.

Stylommatophora Schmidt, 1855

"Non-achatinoïd clade" Wade, Mordan & Clarke, 2001³

Clade A [comprising Patuloidea + Ceriidae + Haplotrematoidea + Helicoidea *sensu lato*]⁴

Patuloidea Tryon, 1866⁵

PATULIDAE Tryon, 1866

Genus *Discus* Fitzinger, 1833

Subgenus *Discus, sensu stricto*

Discus (Discus) whitneyi (Newcomb, 1864)

Widespread in North America, from Alaska and Labrador south to the mountains of southern California, Arizona, and New Mexico; absent from the southeastern states and (except as a Pleistocene fossil) the southern Great Plains and Mississippi Valley. Counties: Siskiyou, Modoc, Trinity, Lassen, Plumas, Butte, Yuba, Nevada, El Dorado, Mono, Tuolumne, Mariposa, Fresno, Inyo, Tulare, Kern, San Bernardino. Late Pleistocene: Los Angeles.

Type material: *Helix whitneyi* Newcomb, 1864, lectotype (designated by Roth, 1987a: 129) UCMP 10619. *Helix cronkhitei* Newcomb, 1865, syntypes CU 26391 (5).

* = Introduced species

Subgenus *Nematodiscus* Pilsbry, 1948

Discus (Nematodiscus) selenitoides (Pilsbry, 1890)

County: Mariposa,

Type material: *Zonites selenitoides* Pilsbry, 1890, holotype ANSP 60010a.

Subgenus *Patula* Held, 1837

**Discus (Patula) rotundatus* (Müller, 1774)

Native to western and central Europe; northern Africa. Introduced to eastern North America (Massachusetts, New York, Newfoundland) and California.

Counties: Santa Barbara, Ventura, Los Angeles, Orange, San Diego.

Type material: *Helix rotundata* Müller, 1774, location unknown.

Genus *Speleodiscoides* A. G. Smith, 1957

Speleodiscoides spirellum A. G. Smith, 1957

Counties: El Dorado, Amador, Calaveras, Marin, Contra Costa, Alameda.

Type material: holotype CAS 055398.

OREOHELICIDAE Pilsbry, 1939

Genus *Oreohelix* Pilsbry, 1904

Oreohelix californica Berry, 1931

County: San Bernardino.

Type material: holotype SBMNH 34184 (**Figure 1**).

Oreohelix handi Pilsbry, 1917

Recent in southern Nevada; in California only as a Pleistocene fossil. Late Pleistocene: San Bernardino.

Type material: lectotype (designated by Baker, 1962: 10) ANSP 115527a.

Genus *Radiocentrum* Pilsbry, 1905

Radiocentrum avalonense (Hemphill in Pilsbry, 1905)

Santa Catalina Island.

Type material: *Oreohelix (Radiocentrum) avalonensis* Hemphill in Pilsbry, 1905, lectotype (designated by Hochberg et al., 1987: 3) ANSP 86671a.⁶ *Helix* var. *avalonensis* Hemphill, 1911, possible syntypes CAS 029012 (18), CAS 032996 (4), CAS 058942 (51), CM 6160 (3), SBMNH 33996 (9), SDNHM 1376 (5), UCM 20746 (8), UCM 21273 (4), USNM 174685 (6).

HELICODISCIDAE Baker, 1927

Genus *Lucilla* Lowe, 1852⁷

**Lucilla singleyana* (Pilsbry, 1890)

Native to eastern and southern North America, west to the Rocky Mountains and Sonora, Mexico; Europe. Introduced to California. Counties: Alameda, Santa Clara.

Type material: *Zonites singleyanus* Pilsbry, 1890, holotype ANSP 160058a.

* = Introduced species



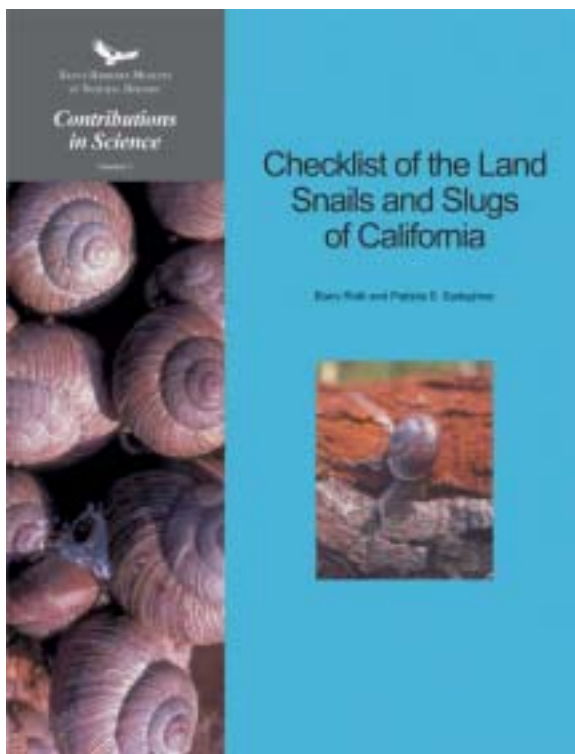
Figures 1-5. 1, *Oreohelix californica* Berry, 1931, holotype, SBMNH 34184, diameter 9.9 mm. 2, *Haplotrema (Geomene) caelatum* (Mazýck, 1886), holotype, ChM 43.28.9990, diameter 5.6 mm. 3, *Monadenia (Corynadenia) tuolumneana* Berry, 1955, holotype, SBMNH 34276, diameter 20.6 mm. 4, *Monadenia (Monadenia) callipeplus* Berry, 1940, holotype (damaged), SBMNH 34253, diameter 23.3 mm. 5, *Monadenia (Monadenia) chaceana* Berry, 1940, holotype, SBMNH 34256, diameter 22.7 mm.

Just Released

Checklist of the Land Snails and Slugs of California

by

Barry Roth and Patricia S. Sadeghian



The long awaited **Checklist of the Land Snails and Slugs of California** is the modern guide to terrestrial mollusks of the region.

This work presents an inventory and classification of the land snails and slugs of California and reports their **distribution by county**, based on examination of about 12,000 specimen lots in museum and private collections. It reports **279 species** known to be living in the state. Thirty-seven species are not native to California but have been introduced from elsewhere. Six additional taxa are known only as late **Quaternary fossils**. The locations of primary type specimens are presented.



Type specimens of 64 land snail taxa described by S. Stillman Berry and others are **illustrated by photographs**, most for the first time.

The suprageneric taxonomy employs mainly taxa that have been demonstrated to be monophyletic by studies using the principles of phylogenetic systematics, including current work on DNA sequences. Where this has not been possible, the basis for non-cladistic

judgments is described. **New generic assignments and other innovations** that are not simply the consequences of previously published literature are fully annotated.

This is a **“must have publication”** for malacologists, paleontologists, archeologists, libraries, conservation and resource managers, and museum collection managers. ISBN 0-936494-34-4, First Edition, 81 pages, 192 color images, US\$29.00.



SANTA BARBARA MUSEUM OF NATURAL HISTORY

Contributions in Science: Number 3

Order online today at www.sbnature.org/estore

INVERTEBRATE ZOOLOGY PUBLICATIONS ORDER FORM

Name: _____

Institution: _____

Mailing address: _____

Phone: _____ Fax: _____

E-mail: _____

Bivalve Seashells of Western North America

Quantity	Item	Price Each	Total
	Bivalve Seashells of Western North America	\$99.00 US	
	Shipping and handling for bivalve book only (for checklist and atlas series see s & h rates below)	\$12.00 each within US call for outside US	

Contributions in Science

Quantity	Item	Price Each	Total
	Checklist of the Marine Bivalves of the Eastern Pacific	\$12.00	
	Checklist of the Land Snails and Slugs of California	\$29.00	

Taxonomic Atlas of the Santa Barbara Channel

Quantity	Item	Price Each	Total
	Volume 1 Introduction, Nemertea, Platyhelminthes, Revised	\$34.00	
	Volume 2 The Porifera, Revised Edition	\$19.00	
	Volume 3 The Cnidaria	\$21.00	
	Volume 4 Annelida, Part 1, Revised Edition	\$39.00	
	Volume 5 Annelida, Part 2	\$39.00	
	Volume 6 Annelida, Part 3	\$39.00	
	Volume 7 Annelida, Part 4 (anticipated August 2000)	\$39.00	
	Volume 8 Mollusca, Part 1	\$39.00	
	Volume 9 Mollusca, Part 2, Gastropoda	\$39.00 (perfect bound)	
	Volume 10 Crustacea, Part 1	\$29.00	
	Volume 11 Crustacea, Part 2	\$34.00	
	Volume 12 Crustacea, Part 3, Revised Edition	\$34.00	
	Volume 13 The Bryozoa	\$34.00	
	Volume 14 Miscellaneous Taxa	\$39.00	

Credit Card Payment (Visa or Mastercard)

Card #: _____

Expiration Date: _____

Signature: _____

Subtotal for all publications

CA sales tax (7.75%)*

s & h (checklist or atlas)
@ \$4.50 per volume in US
call for Non-US postage

Total Enclosed (in \$US only)

**California mailing address only*

Please return Museum Store
order to: Santa Barbara Museum of Natural History
2559 Puesta del Sol Road, Santa Barbara, CA 93105 USA
FAX 805-563-0574



SANTA BARBARA MUSEUM OF NATURAL HISTORY

2559 Puesta del Sol Road, Santa Barbara CA 93105

Phone (805) 682-4711, ext. 335 • Fax (805) 563-0574 • email: pvscott@sbnature2.org

Or order online at: <http://www.sbnature.org/estore>