# José Julián Bravo (1874-1927), a hitherto unknown conchologist from Peru

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The recent finding of a private shell collection from Peru, dating from the early 20th century, sheds some new light on the history of Neotropical malacology. The collection of J.J. Bravo is partly reconstructed and some data is given on his life and conchological activities. It shows that, in the early 20th century, connections did exist between amateur conchologists from Peru, the United Kingdom and the United States of America.

El reciente hallazgo de los restos de una colección privada de moluscos en el Perú, echa algunas luces sobre la Malacología Neotropical. Debido a esto, ahora podemos reconstruir parcialmente, la colección de J.J. Bravo, y aportar datos sobre su vida y actividades malacológicas. Todo indica que a comienzos del siglo XX, ya existían conexiones entre malacológos aficionados del Perú, el Reino Unido y los Estados Unidos de Norteamérica.

#### Introduction

The number of malacologists active in the Neotropics, past and present, is relatively low. Of the more than 7000 malacologists listed by Coan et al. (2007), just over 250 are either native to or have lived a substantial part of their life in Latin America (excluding relatively well-known collectors, such as Hugh Cuming). Four are known in connection with Peru: Dávila, Ramírez, Tomicic and Weyrauch. Although this is an underestimation of the actual number, it is clear that data on Peruvian malacologists are scanty. By chance, we have found information about one such malacologist (or rather conchologist) who appears to have been unknown hitherto, José Julián Bravo. Parts of his collection came into our hands, together with some documents. The aim of this paper is to reconstruct his land-shell collection, based on some correspondence and some of his shells.

Since Bravo seems to have dealt only with shells, we use here the terminology 'conchologist' in accordance with Dance (1966: Appendix III). Study of the documents and remnants of his collection revealed unexpected details, shedding more light on the history of Neotropical malacology in the beginning of the 20th century. Biographical data have been taken from Anonymous (1984), Clarke & Wallis (1933), García (1928) and Visker (1968, 1970). Material of the Bravo collection has been deposited in the private collection of the first author (Lima, Peru) and in the National Museum of Natural History (Leiden, The Netherlands). Historical documentation is in the possession of the first author.

## **Biography**

José Julián Bravo (fig. 1) was born on 17 April 1874 in Lima into a family of scientists and physicians. He studied at the Universidad Nacional Mayor de San Marcos in Lima,

one of the oldest universities in South America, where he was a pupil of Antonio Raimondi. He was the first to recognize the importance of the vanadium deposits in Minas Ragra, Dept. Pasco, Peru. Bravo, an energetic man, was the driving force behind several scientific meetings, e.g., the National Congress of Mines in 1917 and the Pan American Scientific Congress in 1924, both held in Lima. Besides being director of the Peruvian bureau of the international organisation Unification of Specifications [presumably a precursor of the ISO, International Organisation for Standardisation], he was a professor of physical geography at the Universidad Nacional Mayor de San Marcos in Lima. He also gave courses and published several papers and books on paleontology and mineralogy. In 1907 a nickel-rich variety of pyrite was named in his honor, bravoite (Hillebrand, 1907).

As a mineralogist Bravo made explorations to various parts of Peru, which at



Fig. 1. Portrait of J.J. Bravo (after Anonymous, 1984).

the beginning of the 20th century was largely inaccessible. It must have been during these journeys that he began collecting shells. Judging from the data presented in this paper, his main interest was marine shells. Nevertheless, he was able to collect a substantial number of land molluscs, as well as some freshwater species. Moreover, he established some contacts with foreign conchologists, facilitating the exchange of material.

On 25 May 1927, during a visit to Washington, U.S.A., to represent Peru at the Congress of Standards and Commerce, he was killed in a car accident. Because his wife had died the year before, his premature death orphaned his three sons. The eldest, also named José Julián and then aged 13, later bequeathed his collection to the Universidad Nacional Agraria La Molina in Lima.

### Correspondents

The documents contain some letters, from which it is clear that Bravo had contact with several other amateur conchologists. Although these letters are undoubtedly only part of a – presumably larger – correspondence, they provide a glimpse of what was exchanged and of the spirit of the times. In total seven letters are preserved, all addressed to Bravo or his son; no replies are known.

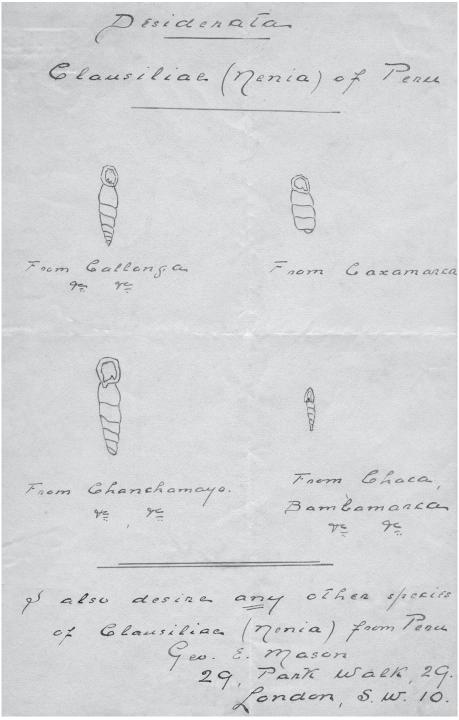


Fig. 2. Letter from G.E. Mason, 24.iii.1924, second page (13.7 × 22.1 mm).

## Geo[rge] E. Mason (18??-19??; U.K.)

Number of documents: 1, London, 24.iii.1924, letter, 2 pages.

We have been unable to find any biographical information on Mason. It is known from registers in the National Museum of Natural History in Leiden and the Natural History Museum in London, that other material from Mason had been either acquired or presented to these collections.

The letter is clearly addressed to Bravo for the first time, since it begins formally and the wording is reserved. It is a request for specimens of *Nenia*, with free-hand sketches of outlines of the desired shells (fig. 2). It is peculiar that the figures are upside down, the apertures uppermost, as was often the practice during the first half of the 19th century. The species are indicated by their localities only. They represent, from left to right, first row: *Incania pilsbryi* (Sykes, 1901); *Steeria cajamarcana* Weyrauch & Zilch, 1954; second row: *Peruinia* sp.; *Incania chacaensis* Lubomirski, 1879. As far as we know, with the exception of *Peruinia*, Bravo never collected the species depicted here.

#### John L. Staid (1886-1969; U.K./France)

Number of documents: 6, London, 1.iv.1927-29.i.1930, 18 pages in total. Details: 1-2.iv.1927, List of determinations, numbers 225-309 + a selection of numbers referring to previous consignments (8A, 9A, 13A, 30A, 40bis, 43A, 90A, 136A, 164A, B, 165bis, 184bis, 209B) [6 pages]; 2.iv.1927, letter [4 pages]; 27.iii.1928, letter addressed to Bravo Jr. [2 pages]; undated, classification of shells received 26.vii.1928, numbers 175, 474-486 [2 pages]; 25.ix.1928, letter addressed to Bravo Jr. [2 pages]; 29.i.1930, letter addressed to Bravo Jr. [2 pages].

John Staid (also spelled Staadt or Staid-Staadt) may have been a volunteer for a number of years at the Natural History Museum in London, although we have found no confirmation of this; all the letters bear his private London address. According to Visker (1968, 1970), Staid moved to Reims in France "after the First World War". This may be an error for the Second World War, as the letters clearly indicate that Staid lived in London during the years 1927-1930. An ardent shell collector, he started his private collection at the age of 10 and accumulated about 54,000 species of marine and terrestrial shells (Fischer-Piette, 1969). His collection is now in the Muséum national d'Histoire naturelle in Paris, and traces of the Bravo material are deposited there (V. Héros, personal communication). It is beyond the scope of this paper to present any details on the Staid-Staadt collection here.

The first document (fig. 3) is a list of identifications of shells that apparently had been sent by Bravo to London. Species of land, freshwater and marine shells are listed. No localities are mentioned, but from the identifications given by Staid it can be inferred that many specimens originate from the coastal area of Peru. A substantial number are from inland localities, especially in the Departments of Cajamarca, Cuzco, Huancavelica and Junín. No species are listed definitely originating from the Amazonian part of the country.

The second document (and first letter) was dated 2 April 1927 and presumably accompanied the list of determinations (which has the same date on its last page). The beginning of the letter expresses friendship and refers to a letter from Bravo of 4 March that year, in which he says he has not received a box with shells and the list of determinations

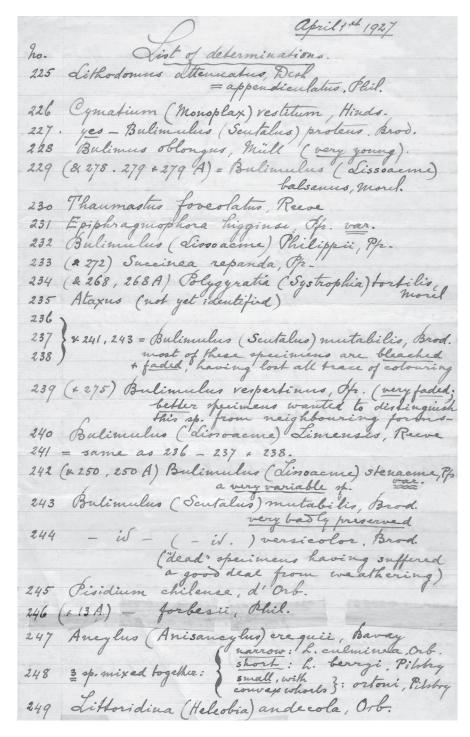


Fig. 3. Document from J.L. Staid, 1.iv.1927, list of identifications, first page (21.1 × 33.9 mm).

(225-309) sent by Staid on 12 November 1926. From the letter it is apparent that Bravo not only sent specimens for identification to Staid, but also geographical information and notes concerning the distribution of Peruvian land snails. An interesting paragraph, showing the accurate knowledge that Staid already had acquired, is one in which he states "One of the great difficulties concerning the identification of the S. American mollusca is, on one hand, that there having never been nearly as many shell collectors in the S. American States as in Europe or Northern America, the material available has always been scanty + often defective + consequently many sp. have *not been clearly defined*; on the other hand, also owing to this very scarcity of material, species have been described as distinct which evidently are *but colour variations*, as can be ascertained by studying large series of specimens showing gradations from type to type – most of the Bulimidae [Bulimulidae, now Orthalicidae] vary, indeed, greatly in colour + markings within the same sp. + faded, bleached or subfossil specimens are almost impossible to identify with accuracy". Shortly after this letter was written, Bravo died.

Nearly a year later, on 27 March 1928, Staid sent a letter of condolence to Bravo Jr. He refers to having had "for several years a most pleasant correspondence" with his father. There is also reference made in this letter to correspondence with Julio C. Tello, who was in close connection with the Bravo family. He had informed Staid "that you are desirous of continuing the exchange of mollusca which your father was effecting with me". The letter also contains a request for several species, specifically of the family Orthalicidae,

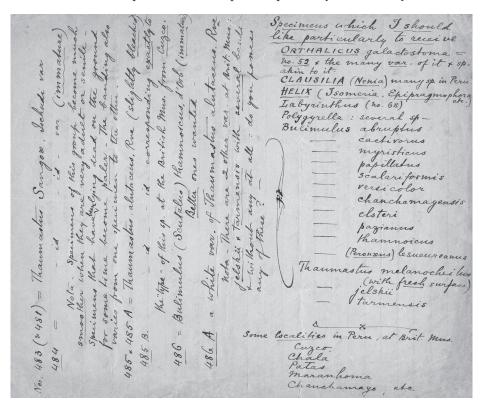


Fig. 4. Second page of letter from J.L. Staid, 27.iii.1928, requesting several species (20.2 x 25.3 mm).

viz. "O[rthalicus] labeo, sublabeo, meobambensis, galactostoma, kelletti, etc." These are Sultana taxa occurring in the Amazonian part of northern Peru and in Ecuador. Staid also expressed his wish to obtain specimens of a number of other land snail genera, belonging to the Orthalicidae and other families (fig. 4).

The next document is a list of identifications, numbered 474 to 486, successively; only two of these are marine species, the remainder being terrestrial ones mainly from the Andean part of Peru. Seemingly as an afterthought, Staid repeated his earlier request for specimens, at the end of the list (fig. 5). From this it can be inferred that when Bravo Jr. sent the specimens for identification, he must have ignored the request for

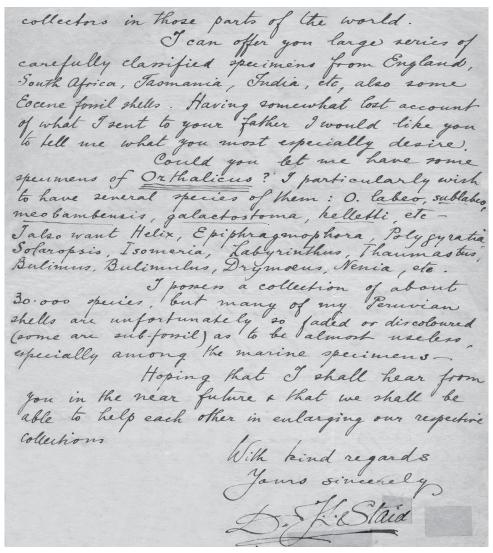


Fig. 5. Second page of document from J.L. Staid, undated, with list of identifications and repeated request  $(20.0 \times 25.3 \text{ mm})$ .

species desired by Staid. The gap in numbering with the previous list – accounting for 173 lots – is explained in the letter of 25 September; the specimens must have been sent by Bravo Sr. shortly before his death, as Staid writes "I expect the names of all the species previously addressed to me by your father up to No. 473 reached you allright as I sent them to him". This letter starts with a friendly beginning, thanking Bravo Jr. for sending another parcel with 13 species. "Two species were so badly broken that I am returning the debris for you to see how roughly treated are the packets during transit". Evidently this was a signal to improve the packaging. In a postscript Staid reveals that Bravo Sr. had acknowledged the receipt of determinations 1-225 and 309-342, but not 225-309 [sent 12 November 1926; re-sent 2 April 1927] and 342-473.

The last letter is dated 27 January 1930 and – in contrast to the previous one – the beginning is more formal. Staid expresses his regret that he has received no news "for such a long time" and hopes that Bravo Jr. is still interested in the study of shells. From the letter it can be concluded that Staid had lost contact with Tello, referring to a final letter from him, sent on 24 February 1928.

Walter F. Webb (1869-1957; U.S.A.) and Walter J. Gyngell (1857-1933, a conchologist from Scarborough, U.K.) were also correspondents of Bravo, but only during a brief period, presumably only one or two years. No letters have been found, but the material exchange lists (see below) indicate that considerable numbers of molluscs were sent.

#### Collection reconstruction

The legacy of Bravo also contains several documents related to his collection. They either served for his personal use (viz. excerpts from literature) or contain information on material in his collection.

Number of documents: 15, undated or vii-ix.1926, 101 pages in total. Details: Excerpts from literature (Hupé, 1857; Philippi, 1845-1851, 1860) [5+4+3 pages]. List of land-snails with references to literature and localities [3 pages]. List of species [in Bravo collection]: A, Peruvian shells (nrs. 1-450, with names, localities and number of specimens [partim], nrs. 213-486A, ibidem [15+7 pages]; B, non-Peruvian shells (nrs. 1-379, with names and localities) [14 pages]; C, selections from the previous lists [3+15+6 pages]. Lists of material sent to correspondents: A, Webb, [sent] 11.vii.1926, 112 lots of marine shells [2 pages]; B, Webb, [sent] 1.xi.1926, 128 lots of marine and land shells [4 pages]; C, Gyngell, [sent] 1.xi.1926, 184 lots of marine and land shells [4 pages]. Notes on species on the basis of identifications received from Gyngell, Staid and Webb [3 pages]. Unfinished manuscript on marine molluscs [11 pages].

Together with the documents mentioned above, there is evidence that in less than 20 years, Bravo had gathered a considerable collection. For practical reasons, the analysis in this paper focuses on the land molluscs from his collection. We include, however, general data on the collection (Appendix 1 and 2). Since there is no evidence of money transfers, it is assumed that Bravo sent mainly Peruvian marine and land shells in exchange for predominantly marine shells from different parts of the world. His list enumerates many species, especially from eastern and southern Africa, India, Indonesia, Australia, the Caribbean and Europe. The unfinished manuscript deals with Peruvian marine molluscs and is based on his own material.

Although the remnants of the Bravo collection are few, his material is evidence that Bravo must have travelled extensively in the Andean parts of Peru. It contains material

. C				
Wolf Noviguele	10 926		igns.	
1 Surpura ep	Cancos	393	1	3
	nd .	393 A	2	5
3 "	id.	393B	3.	1
4	Bopapan	404	4	3
5	Cancos	405	5	4
6 Columbella	rd	406.	6	3
7 Eymnea	(magdalena	402	7	8
8 Columbella	Laita	-	-	1
9 Donaso of.	mancora	-	-	1
16 Donaso of	Saita	403 A	10	3.
11 Columbella	Canen	-	19	3. permida a 406.
12 Lurpura	Paita	_	12	2
13 Colimbella (clies)	Cancas	-	20	3
14 Bulinipus	Chinchao	356	22	ð.
15 Imax. of	Dalavary	90 B.	25	2
16 acanthina pp. bren dentata	Gray Concas	192 A	1	2 a 59. colección
17 Surpeira	' rid	370	26	2
18 Bulinumus omy Joven indet	abancoy	361	27	3.
11 200	Amaneres	363A	19	1
20 Siplionaria sp.	Cancas	368.	33	5
21 Terebra strigala Sow. (var)	rid	440	53	10.
22 in it is aprice	id	44.A	34	5
23 id id id (vor	) id	44C	35	6.
24 Bulimindous treviendus	Auffe Amancas	363	37	1 +
25 Lurpura polloomis	Cances	193A	36	3. à 193
26 Bulinuius orophilus Mon	e Auodiscolps	366	38	2
27 is evagulatus Rr		364	39	5
28 Fissurella of asperella &		220 A	28	3 (142 ed.).
29 Salella ep	id	377	29	3
50 Bulinuinus muy foren in 51 Bulinnulus Virgulato orum M 53 Bulinnulus affinis Brod	det aboncay	361 A	45	3
31 Bulinoulus virgulato anna M	ne Guadiocolpa	365 A	47	1 (56. Golección)
53 Buliquelus affinis Brod	id	365	_	1
53 Thais callacensis (vor)	Cancas	193B	48	2 a 193.
34 Terebra strigata (var)	rid	44 B	49	3
35 id id (norblanes	) rid	200 A.	50	2
36 Merilina sp		371		2
36 Nerilina of Brighyreus 37 Bullinus of prophyreus	Sfr. abancay	298		1
38 Donase ep	Salaverny	91 A	59	3.
39 Fissurella peruriana I		222 A	65	2 a 320
40 Bul. (Scutalus) limense Re		9 A	68	3 (58 colescins)
	V			

Fig. 6. List of material sent to W.F. Webb, 1.xi.1926, with cross-references to numbers sent to J.L. Staid and W.J. Gyngell ( $22.5 \times 27.9$  mm).

collected in Depts. Arequipa, Huancavelica, Junín, and Puno. Furthermore, we have found in his documents a listing of species in his collection showing that Bravo also collected in other parts of southern Peru (Apurimac, Ayacucho, and Cuzco) and in northern Peru (Ancash, La Libertad and Cajamarca). The lists suggest that Bravo sent out material to his correspondents with provisional or incomplete identifications (e.g., genus only). On the lists dated 1 November 1926 cross-references are made to the numbers under which one or both of the two other correspondents received material (fig. 6). From these lists it is clear that Staid received most material, the highest number being 482. Received identifications are marked by Bravo on the original list. However, these identifications were not always in agreement with each other. For that reason Bravo made a list of those cases where he reflected upon the differences and drew his own conclusions.

#### Discussion

While some shell-exchanging has always taken place, it has been suggested that in the beginning of the 20th century relatively more collectors wished to enrich their knowledge by exchanging material (Visker, 1968, 1970). On the other hand, the period between the two World Wars has been characterized as "lean years" (Dance, 1966), when shell-collecting lost the excitement it had had before. It was within this time frame that Bravo built up his collection.

Analyzing the data on the collection, it is clear there are obvious gaps, since only part of the Peruvian material could be traced from among the more than 450 lots that were exchanged. Concentrating our further analyses on the land snails, it is striking that nearly all smaller species are missing (e.g., Vertiginidae, Charopidae), as well as slugs. Also, given their diversity, Clausiliidae and the larger Orthalicidae are poorly represented. It may be assumed that Bravo only collected dry material and concentrated on the larger species. Nevertheless, all major families currently known from the country are represented, with the exception of Subulinidae and Spiraxidae. Finally, it is remarkable that some Chilean species are present. It is not known, however, if Bravo received them by exchange with Chilean colleagues or whether he received them in other ways.

The reconstructed collection of Bravo may be compared with the faunal overview of the Peruvian terrestrial malacofauna by Ramírez et al. (2003). Their list enumerates 763 species, of which 457 were published before 1925. Taking this into account, the 60 species that were at least present in the brave collection (Appendix 2) account for 13 % of the

Peruvian malacofauna known at that time. For two reasons this percentage may even be considered an underestimation: 1) Part of the 457 taxa currently known from Peru had not been reported for that country at the time Bravo made the collection; 2) Bravo collected only in certain parts of the country, therefore his collection could only have given a partial representation *a priori*. It is, however, beyond the scope of this paper to decide to which extent this has been the case in both instances.

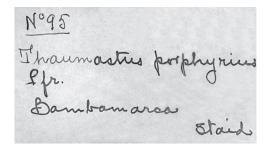


Fig. 7. Thaumastus (Scholvienia) porphyrius (Pfeiffer, 1847), label in Bravo's handwriting, collection number 95.

The scientific value of a shell collection increases with the quality of the accompanying documentation. The shells are all labeled with the locality where they were found, but the collection date is not recorded (fig. 7). A collection's value becomes even greater if type or voucher material is included that has been published. Seen from this perspective, the Bravo collection has seemingly little value, despite the fact that it gives a fairly representative view of the land snails from the areas covered. However, in the context of his time and where he lived, it can be considered remarkable that his efforts have withstood the test of time.

## Acknowledgements

This paper is dedicated to Dr Dolf van Bruggen on the occasion of his 80th birthday, as a token of appeciation of his keen interest in biohistorical subjects.

The first author is much indebted to Carlos Arias (Lima), who gave him the collection of shells and documents. We are grateful to the following persons who helped us in our quest for additional information: Wim Backhuys (Oegstgeest), Dolf van Bruggen (Den Haag), Jozef Grego (Banská Bystrica), Virginie Héros (Paris), Sylvia van Leeuwen (Bilthoven) and Kathy Way (London). Francisco Borrero (Cincinnati) and Peter Dance (Carlisle) kindly provided useful comments on an earlier draft of this paper. The latter deserves our gratitude for grammatical corrections.

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# Appendix 1

Analysis of data provided in this paper, giving an overview of the extent of the collection. Numbers refer to entries in lists, excluding subnumbers, arranged according to groups of molluscs.

	Peru	Other countries	Total
Marine	265	360	625
Freshwater	15	9	24
Land	174	10	184
Total	454	379	833

## Appendix 2

Terrestrial taxa present in the Bravo collection according to reconstruction (current taxonomy and alphabetical arangement within families following Ramírez et al., 2003); species with voucher specimens in the Leiden museum (RMNH) and personal collection of the first author (Lima) marked with an asterisk[\*]):

Family Helicinidae Férussac, 1822 Helicina lacerata Preston, 1914 Family Neocyclotidae Kobelt & Möllendorf, 1897 Calaperostoma chanchapoyasense (Da Costa, 1906) Family Clausiliidae Gray, 1855 Andinia taczanowski (Lubomirski, 1879) Peruinia flachi (O. Boettger, 1889) Peruinia slosarki (Lubomirski, 1879) Clade Stylommatophora A. Schmidt, 1855 Family Megalobulimidae Leme, 1973 Megalobulimus capillaceus (Pfeiffer, 1855) Megalobulimus leucostoma (Sowerby, 1835) Megalobulimus popelairianus (Nyst, 1845) Family Systrophiidae Thiele, 1926 Systrophia (S.) polycycla (Morelet, 1860) Systhrophia (S.) stenostrepa (Pfeiffer, 1856) Systhrophia (Systrophiella) gyrella (Morelet, 1863) Systrophia (Systrophiella) tortilis (Morelet, 1863) Family Bulimulidae Tryon, 1867 (sensu Ramírez et al., 2003) Bostryx angrandianus (Pilsbry, 1897) Bostryx balsanus (Morelet, 1863)

Bostryx cereicola (Morelet, 1863)
Bostryx depstus (Reeve, 1849)
Bostryx ignobilis (Philippi, 1867)\*
Bostryx infundibulum (Pfeiffer, 1853)
Bostryx modestus (Broderip, 1832)
Bostryx nigropileatus (Reeve, 1849)\*
Bostryx orophilus (Morelet, 1860)\*
Bostryx reentsi (Philippi, 1851)
Bostryx rhodolarynx papillatus (Morelet, 1860)
Bostryx scalariformis (Broderip, 1832)
Bostryx scutulatus (Broderip, 1832)\*
Bostryx serotinus (Morelet, 1860)\*
Bostryx spiculatus (Morelet, 1860)

Bostryx stenacme (Pfeiffer, 1857)

Bostryx turritus (Broderip, 1832) Drymaeus (D.) chanchamayensis (Hidalgo, 1870) Drymaeus (D.) expansus (Pfeiffer, 1848)
Drymaeus (D.) punctatus Da Costa, 1907
Drymaeus (D.) regularis Fulton, 1905
Drymaeus (D.) scitulus (Reeve, 1849)
Drymaeus (D.) vespertinus (Pfeiffer, 1858)
Drymaeus (Mesembrinus) eurystomus (Philippi, 1867)

Neopetraeus decussatus (Reeve, 1848) Neopetraeus patasensis (Pfeiffer, 1858) Plectostylus chilensis (Lesson, 1826)

Scutalus (Kuschelenia) culmineus (Orbigny, 1835)\*
Scutalus (Kuschelenia) edwardsi (Morelet, 1863)
Scutalus (S.) mutabilis (Broderip, 1832)

Scutalus (S.) proteus (Broderip, 1832) Scutalus (S.) steeri Pilsbry, 1900 Scutalus (S.) versicolor (Broderip, 1832) Scutalus (Vermiculatus) coagulatus (Reeve, 1849)

Scutalus (Vermiculatus) ochraceus (Morelet, 1863) Scutalus (Vermiculatus) thamnoicus (Orbigny, 1835) Thaumastus (Scholvienia) alutaceus (Reeve, 1850) Thaumastus (Scholvienia) bifasciatus (Philippi, 1845)

Thaumastus (Scholvienia) bitaeniatus (Nyst, 1845) Thaumastus (Scholvienia) porphyrius (Pfeiffer, 1847)

Thaumastus (T.) foveolatus (Reeve, 1849) Thaumastus (T.) melanocheilus (Nyst, 1845) Thaumastus (T.) sangoae (Tschudi, 1852) Family Orthalicidae Albers, 1860

Sultana yatesi galactostomus (Ancey, 1890) ?Family Charopidae Hutton, 1884 Stephanoda chiliensis (Mühlfeldt, 1839)

Family Pleurodontidae Ihering, 1912 [= Camaenidae sensu Ramírez et al. 2003]

Labyrinthus raimondii (Philippi, 1867) Family Solaropsidae Nordsieck, 1986 Psadara castelnaudii (Hupé & Deville, 1850) Family Helminthoglyptidae Pilsbry, 1939

Epiphragmophora (E.) higginsi (Miller, 1878)

Epiphragmophora (E.) patasensis (Pfeiffer, 1859)