

# The molluscan species described by Robert James Shuttleworth. II. Polyplacophora, Gastropoda (Caenogastropoda), Bivalvia

Autor(en): **Neubert, Eike / Gosteli, Margret**

Objektyp: **Article**

Zeitschrift: **Contributions to Natural History : Scientific Papers from the Natural History Museum Bern**

Band (Jahr): - **(2005)**

Heft 5

PDF erstellt am: **16.08.2024**

Persistenter Link: <https://doi.org/10.5169/seals-786955>

## **Nutzungsbedingungen**

Die ETH-Bibliothek ist Anbieterin der digitalisierten Zeitschriften. Sie besitzt keine Urheberrechte an den Inhalten der Zeitschriften. Die Rechte liegen in der Regel bei den Herausgebern.

Die auf der Plattform e-periodica veröffentlichten Dokumente stehen für nicht-kommerzielle Zwecke in Lehre und Forschung sowie für die private Nutzung frei zur Verfügung. Einzelne Dateien oder Ausdrucke aus diesem Angebot können zusammen mit diesen Nutzungsbedingungen und den korrekten Herkunftsbezeichnungen weitergegeben werden.

Das Veröffentlichen von Bildern in Print- und Online-Publikationen ist nur mit vorheriger Genehmigung der Rechteinhaber erlaubt. Die systematische Speicherung von Teilen des elektronischen Angebots auf anderen Servern bedarf ebenfalls des schriftlichen Einverständnisses der Rechteinhaber.

## **Haftungsausschluss**

Alle Angaben erfolgen ohne Gewähr für Vollständigkeit oder Richtigkeit. Es wird keine Haftung übernommen für Schäden durch die Verwendung von Informationen aus diesem Online-Angebot oder durch das Fehlen von Informationen. Dies gilt auch für Inhalte Dritter, die über dieses Angebot zugänglich sind.

# The molluscan species described by Robert James Shuttleworth

## II. Polyplacophora, Gastropoda (Caenogastropoda), Bivalvia

**Eike Neubert & Margret Gosteli**

### **ABSTRACT**

Contrib. Nat. Hist. 5: 1–79.

In part II of the type catalogue, all nominal taxa of Polyplacophora, Caenogastropoda and Bivalvia introduced by Robert James Shuttleworth are listed. Most of the type specimens were identified in the collection of Shuttleworth and photographed.

Key words: Shuttleworth, type catalogue, Polyplacophora, Caenogastropoda, Bivalvia.

### **KURZFASSUNG**

Im zweiten Teil des Typenkatalogs werden die nominalen von Robert James Shuttleworth beschriebenen Taxa aus den Gruppen Polyplacophora, Caenogastropoda und Bivalvia aufgelistet. Soweit vorhanden wurde das Typusmaterial identifiziert und abgebildet.

Schlüsselbegriffe: Shuttleworth, Typenkatalog, Polyplacophora, Caenogastropoda, Bivalvia.

### **Introduction**

This publication concludes the catalogue on the primary types of nominal molluscan taxa described by Robert James Shuttleworth. Although his major interest was focused on pulmonate gastropods, he added valuable contributions to the taxonomy of Polyplacophora, Helicinidae and Neocyclotidae (Shuttleworth 1852b; 1853; 1856b; 1857). During his scientific career he described 45 taxa of non-pulmonate species (11 Polyplacophora, 28 Caenogastropoda, and 6 Bivalvia) and 9 taxa of generic level (5 Polyplacophora, 4 Caenogastropoda). In the collection of the Natural History Museum Berne, type specimens of 5 polyplacophoran, 27 caenogastropod and all 6 bivalve species could be identified.

The major gap exists in the Polyplacophora, where the type specimens of 6 nominal taxa have to be considered as lost.

Since the publication of volume I, several colleagues complained about the change in the cataloguing system (cf. Neubert & Gosteli 2003: 6). For this reason we feel the need of a more complete explanation. The old numbers can often be found written with china ink on shells and stamped on all sorts of labels. They result from a curatorial process using an automatic stamp, which produced numbers from 1–999. This means that after reaching number 999, the numbering system starts with 1 again. We estimate the collection to contain 60'000 lots, which means that a given number theoretically occurs about 60 times in parallel. A system like this comes into conflict with the basic idea of a museum's catalogue, where a number represents a unique lot. After establishing an electronic database for the collections of the NMBE, the old system could not be used anymore, because the catalogue number is the key character for the lot. We are aware that in some cases these old numbers were mistaken as catalogue numbers and published as such. For this reason, a table (Tab. 1) is provided comprising the old and new catalogue numbers of all type specimens of Shuttleworth including those of volume I. We explicitly point out that the old numbers are invalid and must not be used anymore.

During our work on the type catalogue, we tried to find out more about Shuttleworth's relationships with his contemporary colleagues, which allowed us to recover additional type specimens in other institutions. We already pointed out that he was a close friend of Jean de Charpentier and Albert Mousson, and the collections of both still contain specimens from the private collection of Shuttleworth. Charpentier was also a friend of the famous Swiss botanist Pierre Edmond Boissier (1810–1885), who is well known in malacology, because he frequently collected terrestrial molluscs during his visits to Asia Minor and Palestine. It was the late Dr. Paul Bohny (1882–1962), Basel, who acquired the collection of Boissier in 1940 and donated it as a gift to the Natural History Museum Basel (NMB). Between 1880 and 1885 an unknown number of lots from the Shuttleworth collection was given in exchange for skins of birds to the dealer G. Schneider, Basel, and we expected at least some of these lots in NMB. We visited the collection of NMB and searched for additional type specimens of Shuttleworth taxa. The result is comprised in Table 2.

Further type material could be discovered in the Natural History Museum of La Chaux-de-Fonds, Switzerland, which was founded by Adolphe-Célestin Nicolet (1803–1871). He obviously distributed his collection, which contains species described by Shuttleworth, both to the museums of Neuchâtel and La Chaux-de-Fonds.

Shuttleworth also had connections with Sauveur Petit de la Saussaye (1792–1870), malacologist in Paris. He frequently sent specimens for identification to Berne, and Shuttleworth published also two of his works in the “Journal de Conchyliologie”. During a visit of one of the authors to the Muséum National d’Histoire Naturelle, Paris, the type collection of MNHN was searched for additional Shuttleworth specimens. Almost nothing could be found, but we still believe that specimens (and probably the original series) can be recovered in the basic collection of the museum.

Unfortunately, volume I is not free of errors, and we report on these in a separate chapter “Addenda et corrigenda”.

## Systematic section

The species account follows the alphabetical order within the three groups Polyplacophora, Caenogastropoda and Bivalvia. Affiliation of a nominal taxon described by Shuttleworth to a present-day genus or family aims at a fast orientation of the reader. We are aware that in several cases, our conclusions may be incorrect and would be very grateful for additional information.

### Abbreviations:

D	shell diameter
H	shell height
L	shell length
MHNC	Musée d’Histoire Naturelle La Chaux-de-Fonds
MHNM	Muséum d’Histoire Naturelle Marseille
MHNN	Muséum d’Histoire Naturelle Neuchâtel
MNHN	Muséum National d’Histoire Naturelle Paris
NMB	Naturhistorisches Museum Basel (Natural History Museum Basel)
NMBE	Naturhistorisches Museum Bern (Natural History Museum Berne)
ZMZ	Zoologisches Museum der Universität Zürich (Zoological Museum Zurich)
[ ]	comments of the authors

## Polyplacophora

### ***asper*, *Chiton (Chaetopleura)***

Plate 5, figs. 1–5

1856b                    *Chiton (Chaetopleura) asper* SHUTTLEWORTH, J. Conch. 5: 169.

Type material:        Syntypes NMBE 19118/3.

Type locality:        West Indies, Guadeloupe, ex Bernardi 1855.

Taxonomy:            Ischnochitonidae, *Calloplax janeirensis* (GRAY, 1828 fide Kaas & Van Belle 1994: 203, Kaas & Van Belle 1998).

Remarks:            Shuttleworth originally mentioned six specimens.

### ***blauneri*, *Chiton (Acanthopleura)***

Plate 1, figs. 1–4

1856b                    *Chiton (Acanthopleura) blauneri* SHUTTLEWORTH, J. Conch. 5: 170.

Type material:        Holotype NMBE 19117.

Type locality:        Puerto Rico, leg. Blauner 1853.

Taxonomy:            Chitonidae, *Acanthopleura granulata* (GMELIN, 1791 fide Kaas & Van Belle 1998).

Remarks:            Shuttleworth mentioned only one specimen, which thus has to be considered as the holotype.

### ***caerulescens*, *Chiton (Radsia)***

1853                    *Chiton (Radsia) caerulescens* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 189 [nomen nudum].

Material:            No specimens so labelled were found in the collection.

Remarks:            This name is not available according to ICZN §12.3.

### ***candisatus*, *Chiton (Chaetopleura)***

1856b                    *Chiton (Chaetopleura) candisatus* SHUTTLEWORTH, J. Conch. 5: 168.

Type material:        Syntypes probably lost or mixed with other specimens.

Type locality:        West Indies, Guadeloupe, ex Petit.

Taxonomy:            Unclear.

Remarks: The identification of *candisatus* with *Chaetopleura apiculata* (SAY in Conrad, 1834) by Kaas (1972) is erroneous. In 1959, he was misled by a specimen which is accompanied by a label reading “*Chiton candisatus* SHUTTL., in valv. mort. *C. serrati*, Guadeloupe, Beau 1855”. This note is similar to that in the description stating that two specimens were found in a valve of *Cardium serratum* sent by Petit. The specimen investigated by Kaas is 24 mm long and thus cannot be a type specimen, because Shuttleworth noted a length of 8–9 mm. We conclude that the label is the original label for *candisatus*, but the specimens were exchanged, mixed or lost. Consequently, the synonymisation of *candisatus* with *apiculata* is wrong.

***gemmulatus*, *Chiton* (*Lophurus*)**

Plate 2, figs. 1–5

1853 *Chiton* (*Lophurus*) *gemmulatus* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 199.

Type material: Syntypes NMBE 19120/2.

Type locality: USA, Virgin Islands “St. Thomas”, leg. Blauner 1852.

Taxonomy: Chitonidae, *Chiton viridis* SPENGLER, 1797 (fide Kaas & Van Belle 1998).

Remarks: Shuttleworth described young *C. viridis*, which differ markedly from adult specimens (Bullock 1988: 176). The collection only contains two instead of three originally mentioned specimens.

***lateritius*, *Chiton* (*Ischnochiton*)**

1853 *Chiton* (*Ischnochiton*) *lateritius* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 199.

Type material: No type material could be identified in the collection.

Type locality: USA, Virgin Islands “St. Thomas”, leg. Blauner.

Taxonomy: Ischnochitonidae, *Ischnochiton erythronotus* (C.B. ADAMS, 1845) (fide Kaas 1972: 83).

Remarks: Shuttleworth mentioned two specimens. Kaas borrowed them from the NMBE in 1955, selected a lectotype and published photos of the shells (Kaas 1972, plate 5, figs. 6, 7).

The shells obviously came back to the NMBE in 1959. In 1971 Robert C. Bullock from the Harvard Museum visited the NMBE to study the Polyplacophora of Shuttleworth. After his visit a note was added to the catalogue of the collection, which points out that at that time, the collection was in a mess. A search for the lost specimens in the collection was unsuccessful.

***lutulatus*, *Chiton* (*Ischnochiton*)**

1853                    *Chiton* (*Ischnochiton*) *lutulatus* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 200.

Type material:      No type material could be identified in the collection.

Type locality:        Puerto Rico, leg. Blauner.

Taxonomy:            Ischnochitonidae, *Ischnochiton striolatus* (GRAY, 1828) (fide Kaas 1972: 77).

Remarks:            Shuttleworth mentioned one specimen. Kaas borrowed this specimen, the holotype, from the NMBE and published a photo (Kaas 1972, plate 5, fig. 4). Although the type specimen obviously came back to the NMBE, it could not be relocated in the collection.

***mucronulatus*, *Chiton* (*Acanthopleura*)**

1853                    *Chiton* (*Acanthopleura*) *mucronulatus* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 203.

Type material:      No type material could be identified in the collection.

Type locality:        Puerto Rico, leg. Blauner 1853.

Taxonomy:            Chitonidae, *Acanthopleura granulata* (GMELIN, 1791 fide Kaas & Van Belle 1998).

Remarks:            Shuttleworth mentioned only one specimen. A lot with the original label and one specimen and a half – both belonging to the same species – could be found in the collection. The complete specimen measures 16 mm in length and 11.5 mm in width and thus cannot be the type specimen, because Shuttleworth noted 9 mm and 6 mm for length and width respectively. Obviously the specimen was exchanged or lost.

***obesus, Chiton (Acanthopleura)***

1853 *Chiton (Acanthopleura) obesus* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 191.

Taxonomy: Chitonidae, *Acanthopleura gemmata* (DE BLAINVILLE, 1825) (fide Kaas & Van Belle 1998).

Remarks: Shuttleworth created *obesus* as a substitute name to resolve the homonymy with *Chiton piceus* REEVE, 1847 non *Chiton piceus* GMELIN, 1791.

***piceolus, Chiton (Acanthopleura)***

Plate 4, figs. 3–6

1853 *Chiton (Acanthopleura) piceolus* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 206.

Type material: Syntypes NMBE 19119/16.

Type locality: Canary Islands “Tenerife”, leg. Blauner 1850.

Taxonomy: Ischnochitonidae, *Lepidochitona piceola* (fide Kaas & Van Belle 1998).

***schrammi, Chiton (Tonicia)***

Plate 3, figs. 1–3, pl. 4, figs. 1–2

1856b *Chiton (Tonicia) schrammi* SHUTTLEWORTH, J. Conch. 5: 171, pl. 6, fig. 9.

1950 *Chiton (Tonicia) schrami* [sic!] – Fischer-Piette, J. Conch. 90: 16.

Type material: Lectotype MNHN, paralectotypes MNHN/2, NMBE 19115/5 (Bernardi), NMBE 19116/2 (Petit).

Type locality: West Indies, Guadeloupe, ex Bernardi 1855 and Petit 1854.

Type designation: Fischer-Piette (1950: 16) listed a holotype in the “Liste des types décrits dans le Journal de Conchyliologie...”, although several specimens were mentioned and no type specimen was originally selected. According to ICZN §74.5, this action has to be accepted as a lectotype designation, because Fischer-Piette used the term holotype for the “exemplaire unique, ou qui est le principal objet de la description” (p. 10), which meets the requirements of the paragraph cited above.

Taxonomy: Chitonidae, *Tonicia* (Kaas & Van Belle 1998).

Remarks: Shuttleworth mentioned twelve specimens, so two are still missing.



## Caenogastropoda

### *barthelemianum*, *Pomatias*

- 1852b *Pomatias barthelemianum* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 294.
- 1975 *Pomatias barthelemianum* – Shuttleworth, in Backhuys (ed.), Tab. ineditae: 23, pl. 6, fig. 14.
- Type material: One specimen (holotype) in MHNM.
- Type locality: Canary Islands “in Insulis Canariis (Mus. Massiliense)”.
- Taxonomy: Cochlostomatidae, *Cochlostoma*.
- Remarks: Most probably not a Macaronesian taxon (Bank & al. 2002: 205).

### *blaueri*, *Cyclostoma* (*Chondropoma*)

Plate 14, fig. 2

- 1854 *Cyclostoma* (*Chondropoma*) *blaueri* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 91.
- Type material: Syntypes NMBE 18847/8, NMBE 18848/18 (labelled by Isenschmid, locality: Puerto Rico), NMBE 18849a/4 (*blaueri*). NMBE 18849b/2 (Annulariidae gen. sp. 1) and NMBE 18849c/2 (Annulariidae gen. sp. 2) represent part of the type lot but are not identical with *C. blaueri*. NMB 10070a/3 (Original label written by Shuttleworth: “Portorico, Blauner”. “Humacao” was added later on a NMB label. Coll. Bohny, ex Boissier, ex Shuttleworth). ZMZ 527502/3.
- Type locality: Puerto Rico “sub foliis delapsis prope Humacao”, leg. Blauner 1853.
- Taxonomy: Annulariidae, *Chondropoma* (Van der Schalie 1948: 33).
- Remarks: Shuttleworth gave no information on the number of specimens. In NMBE, three lots containing the type specimens could be identified. Two lots contain one species, while the third (NMBE 18849) consists of three species. The “intentio auctoris” can be derived from the following parts of the original description which have been used for identification: “Testa ... truncatula ... violaceo-fusca ...; sutura confertim papilloso-crenulata; alt. 20 [mm]”. The illustrated specimen

NMBE 18847 (pl. 14, fig. 2) perfectly matches these characters. The other two species from the mixed syntype lot NMBE 18849 are illustrated as well (pl. 14, figs. 3, 4). Probably more type material seen in MHNN.

***cayennense*, *Cyclostoma* (*Cyclophorus*)**

Plate 13, fig. 2

1852b                    *Cyclostoma* (*Cyclophorus*) *cayennense* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 299.

Type material:        Syntype NMBE 19096/1.

Type locality:        French Guyana “Cayenne”, ex Verreaux.

Taxonomy:            Neocyclotidae, *Neocyclotus* (*Incidostoma*) (Tillier 1980: 37).

Remarks:            Shuttleworth mentioned three specimens, but in the collection only one specimen is left.

***chrysocheila*, *Helicina***

Plate 8, fig. 1

1852b                    *Helicina chrysocheila* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern, 1852: 303.

Type material:        Holotype NMBE 15267.

Type locality:        Mexico “Cordova, Vera Cruz”, ex Jacot-Guillarmod.

Taxonomy:            Helicinidae, *Helicina*? (not mentioned by Wagner 1907–1911).

Remarks:            Originally only one specimen mentioned. *Helicina chrysocheila* SHUTTLEWORTH, 1852 is a homonym of *Helicina chrysocheila* BINNEY, 1851, and currently treated as a synonym as well (Martens 1890: 33). Pilsbry (1948: 1081) only mentions Binney’s *chrysocheila*. Comparing the original diagnoses and illustration of Binney (reproduced by Pilsbry), and Pilsbry’s paragraph on the variability of his specimens with the holotype of *chrysocheila* SHUTTLEWORTH some doubts remain. Binney mentioned a microsculpture on the teleoconch for his species, which is lacking in Shuttleworth’s *chrysocheila*, and Binney’s specimen shows a much more elevated spire. Probably, the case should be reconsidered.

- 1847 [Trochatella chrysostoma] L. Pfeiffer in Martini & Chemnitz: Systematisches Conchylien Cabinet 1 (18): Die gedeckelten Lungenschnecken (Helicinacea et Cyclostomacea): pl. 10, figs. 3, 4.
- 1852 Trochatella chrysostoma L. PFEIFFER, Monogr. pneumon. vivent. I: 330.
- 1853 Trochatella chrysostoma – L. Pfeiffer in Martini & Chemnitz: Systematisches Conchylien Cabinet 1 (18): Die gedeckelten Lungenschnecken (Helicinacea et Cyclostomacea): 66.
- 1877 Helicina (Trochatella) chrysostoma – Shuttleworth, in Fischer (ed.), Notitiae Malac. 2: 16, pl. 15, fig. 4.
- 1907 Eutrochatella (Eutrochatella) chrysostoma – A. Wagner in Martini & Chemnitz: Systematisches Conchylien Cabinet (2) 1 (18): 111.

Material: Originals NMBE 15278/3 (Cuba), NMBE 18817/12 (Cuba, Punta Brava), NMBE 19040/16 (Cuba, Punta Brava).

Locality: Cuba.

Taxonomy: Helicinidae, Eutrochatella (cf. Wagner 1907: 111).

Remarks: Specimens of this species were obviously distributed by Cuming under the unpublished name *chrysostoma* SHUTTLEWORTH. Pfeiffer had this species at hand before 1847, which is the publication date of pl. 10 in the “Systematisches Conchylien Cabinet, 1 (18)” (part 64). The plate lacks any reference; the text was published in 1853, one year after publication of the description in the “Monographia pneumonopomorum” (1852). Subsequently, the publication date of 1852 with the authorship of L. Pfeiffer has to be used (cf. Wagner 1907). At both occasions Pfeiffer states “*Helicina chrysostoma* SHUTTL. teste Cuming” (in 1852) and “Shuttleworth in schedulis Cuming” (in 1853), and adds “Aus meiner Sammlung” (in 1853). The lots of *Trochatella chrysostoma* in NMBE contain no labels of Cuming, but were collected by Rugel. As a conclusion we have to state that the specimens at NMBE have no type status, because they were not part of the lot which was used by Pfeiffer when describing the taxon. The specimen illustrated in 1877 from the Shuttleworth collection could not be positively identified, so another specimen is depicted here.

***cinctella, Helicina***

Plate 8, fig. 2

- 1852b *Helicina cinctella* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 304.
- Type material: Syntypes NMBE 15275/3.  
Type locality: Mexico “Cordova, Vera Cruz”, ex Jacot-Guillarmod 1852.  
Taxonomy: Helicinidae, *Helicina* (Wagner 1910: 298).  
Remarks: Shuttleworth mentioned four specimens, but in the collection only three are left. There is probably more type material in MHNN.

***costatum, Cyclostoma (Craspedopoma)***

Plate 6, fig. 3

- 1852a *Cyclostoma (Craspedopoma) costatum* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 145.
- 1975 *Cyclostoma (Craspedopoma) costatum* – Shuttleworth, in Backhuys (ed.), Tab. ineditae: 18, pl. 8, fig. 10.
- Type material: Syntypes NMBE 18977/12, ZMZ 525761/4.  
Type locality: Canary Islands “ad folia putrescentia, Palma”, leg. Blauner 1851.  
Taxonomy: Cyclophoridae, *Craspedopoma* (Bank & al. 2002: 156).  
Remarks: Bank & al. (2002) published two separate numbers for the syntype lot in NMBE: 18976/1 and 18977/11. This was due to a previous separation of an unpublished lectotype selected by Alonso & Ibáñez. We here reunite all the syntypes into one single lot NMBE 18977, from which a lectotype can be selected if needed.

***delicatula, Helicina***

Plate 8, fig. 3

- 1852b *Helicina delicatula* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 303.
- Type material: Holotype NMBE 19074.  
Type locality: Mexico “Cordova, Vera Cruz”, ex Jacot-Guillarmod.  
Taxonomy: Helicinidae, *Helicina* (cf. Wagner 1910: 310).  
Remarks: Originally only one specimen mentioned.

***elata, Helicina***

Plate 9, fig. 1

- 1852b *Helicina elata* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 304.
- Type material: Syntype NMBE 15269/1.
- Type locality: Mexico “Cordova, Vera Cruz”, ex Jacot-Guillarmod.
- Taxonomy: Helicinidae, *Helicina*? (not mentioned by Wagner 1907–1911).
- Remarks: Shuttleworth wrote that he examined few specimens (“specimina pauca vidi”). Consequently more syntypes must exist in other collections.

***floccosum, Cyclostoma (Cyclotus)***

Plate 12, figs. 1a–c

- 1857 *Cyclostoma (Cyclotus) floccosum* SHUTTLEWORTH, J. Conch. 5: 268.
- Type material: Syntypes NMBE 19100/9 (1852), NMBE 19101/2 (1854).
- Type locality: “Haiti”, leg. Sallé ex Cuming and Bland.
- Taxonomy: Neocyclotidae, *Crocidopoma (Crocidopoma)* (Bartsch in Torre & al. 1942: 64, pl. 12, fig. 16).
- Remarks: The syntype material of *floccosum* is composed of two lots, which both originate from Cuming. The names of Sallé and Bland are not mentioned on the labels. The lots reached Shuttleworth in 1852 and 1854, each of them containing two labels with the localities “Haiti” and “St. Domingo” respectively. They both mean the same island. Haiti was the original name and then the Spanish changed it to Santo Domingo. In 1804 the name changed to Haiti again. ✂

***granadense, Cyclostoma (Cyclotus)***

Plate 14, fig. 1

- 1857 *Cyclostoma (Cyclotus) granadense* SHUTTLEWORTH, J. Conch. 5: 266.
- Type material: Holotype NMBE 19098.
- Type locality: West Indies, Grenada “Insul. Granada”, leg. Newcomb ex Bland 1856.
- Taxonomy: Neocyclotidae, *Aperostoma (Austrocyclotus)* (Bartsch in Torre & al. 1942: 134, pl. 17, figs. 19–21).
- Remarks: Shuttleworth mentioned “un échantillon de l’île de Grenade, où M. Newcomb l’a trouvée”. We interpret this sentence as

Newcomb found one specimen on Grenada Island, which thus has to be considered as the holotype. The spelling by Bartsch is erroneous, it is *granadense* instead of *grenadense* (which would be more appropriate, indeed).

***gutta, Hydrocaena***

Plate 6, fig. 1

1852a *Hydrocaena gutta* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 145.  
1975 *Hydrocaena gutta* – Shuttleworth, in Backhuys (ed.), Tab. ineditae: 18, pl. 8, fig. 11.

Type material: Syntypes NMBE 18974/214 (Teneriffa), NMBE 18975/91 (Palma), ZMZ 528712/15 (Teneriffa), ZMZ 528710/10 (Palma), NMB 10261a/1 (Palma, coll. Bohny, ex Boissier, ex Shuttleworth).

Type locality: Canary Islands “sub saxis udis in Teneriffa: varietas minor occurret in Palma”, leg. Blauner 1851.

Taxonomy: Hydrocenidae, *Hydrocena* (*Hydrocena*) (Bank & al. 2002: 167).

Remarks: Bank & al. (2002) published two separate numbers for the lot from Tenerife: NMBE 18973/1 and 18974/213. This was due to a previous separation of an unpublished lectotype selected by Alonso & Ibáñez. We here reunite all the syntypes into one single lot NMBE 18974. Probably more type material to be found in MHNN.

***hartvigii, Fusus***

Plate 11, fig. 3

1856b *Fusus hartvigii* SHUTTLEWORTH, J. Conch. 5: 171.

Type material: Syntype NMBE 19094/1 (St. Thomas, leg. Blauner).

Type locality: British Virgin Islands “Tortola”, leg. Hartvig (3 specimens); USA, Virgin Islands “St. Thomas”, leg. Blauner 1853 (1 specimen).

Taxonomy: Fasciolaridae, *Fusinus*.

Remarks: The three specimens from Tortola are neither in the collection of Shuttleworth nor in MNHN or in NMB. *Fusinus hartvigii* is endemic to the Virgin Islands and was recorded in depths between 11 and 146 m (Hadorn & Rogers 2000, pers. comm. Hadorn 2003).

**lowei, *Truncatella***

Plate 6, fig. 2

- 1852a *Truncatella lowei* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 146.  
1975 *Truncatella lowei* – Shuttleworth, in Backhuys (ed.), Tab. ineditae: 19, pl. 8, fig. 12.

Type material: Syntypes NMBE 19114/3.  
Type locality: Canary Islands “ad oram maritimam insulae Teneriffae”, leg. Blauner.  
Taxonomy: Truncatellidae, *Truncatella*. A junior synonym of *Truncatella subcylindrica* (LINNAEUS, 1767) (Bank & al. 2002: 173).

**martinicense, *Cyclostoma (Cyclotus)***

Plate 13, fig. 1

- 1857 *Cyclostoma (Cyclotus) martinicense* SHUTTLEWORTH, J. Conch. 5: 267.

Type material: Syntypes NMBE 19099/2.  
Type locality: French Antilles “Ins. Martinique”, 2 specimens ex Petit 1854.  
Taxonomy: Neocyclotidae.

**minor, *Cyclostoma (Megalomastoma) croceum* var.**

Plate 11, fig. 2

- 1854 *Cyclostoma (Megalomastoma) croceum* var. *minor* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 89.

Type material: Syntypes NMBE 20737/10.  
Type locality: Puerto Rico. No locality is specified, the original label reads “sine localitate, Blauner 1853”.  
Taxonomy: Megalomastomatidae, *Neopupina*. The shell resembles very much the description and figures of *Megalomastoma hjalmersoni* L. PFEIFFER, 1875 as given by Bartsch in Torre & Bartsch (1942: 45, pl. 9, figs. 26–28).

**newtoni, *Cyclostoma (Chondropoma?)***

Plate 15, fig. 2

- 1854 *Cyclostoma (Chondropoma?) newtoni* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 92.

Type material: Syntypes NMBE 19110/3.  
Type locality: Puerto Rico “Arecibo”, leg. Newton ex Bland 1853.

Taxonomy: Annulariidae, a junior synonym of *Chondropoma riisei* (L. PFEIFFER, 1852) (fide Van der Schalie 1948: 32).

Remarks: There is a decided sexual dimorphism in *Chondropoma riisei*. Shuttleworth obviously described a female shell (Van der Schalie 1948: 32).

***nicoleti, Schasicheila***

Plate 10, fig. 2

1852b *Schasicheila nicoleti* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 302.

Type material: Syntype NMBE 15274/1.

Type locality: Mexico “Cordova, Vera Cruz”, leg. Jacot-Guillarmod ex Nicolet.

Taxonomy: Helicinidae, *Schasicheila*? (not mentioned by Wagner 1907–1911).

Remarks: Shuttleworth mentioned two specimens, but in the collection only one specimen is left. There is probably more type material in coll. Nicolet in MHNN or MHNC.

***ovoidea, Gyrotoma***

Plate 11, fig. 5

1845 *Gyrotoma ovoidea* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1845: 88.

Type material: Syntypes NMBE 19111/36, ZMZ 523764/3.

Type locality: USA, Alabama “auf Felsen im Flusse Coosa bei Wetumpka”, leg. Ruge 1843.

Taxonomy: Pleuroceridae, a junior synonym of *Gyrotoma excisum* (LEA, 1843).

***opima, Trochatella***

Plate 7, fig. 2

1852b *Trochatella opima* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 302.

Type material: Syntype NMBE 15271/1.

Type locality: “Haiti”, leg. Sallé ex Cuming 1852.

Taxonomy: Helicinidae, *Eutrochatella* (cf. Wagner 1907: 111).

Remarks: Shuttleworth mentioned that he had two specimens in his collection, but there is only one left.



***pyramidata, Gyrotoma***

Plate 11, fig. 4

1845 *Gyrotoma pyramidata* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1845: 88.

Type material: Syntypes NMBE 19112/32, NMBE 19113/6 (Isenschmid), ZMZ 523766/4.

Type locality: USA, Alabama “auf Felsen im Flusse Coosa bei Wetumpka”, leg. Rugel 1843.

Taxonomy: Pleuroceridae, *Gyrotoma pyramidatum* (Burch 1989: 148, 271).

Remarks: In NMBE 19113 Isenschmid substituted the original label by his own (locality: “Coosa River, Alabama”).

***sandozi, Helicina***

Plate 9, fig. 2

1852b *Helicina sandozi* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 303.

Type material: Syntypes NMBE 15270/1, NMBE 19039/1.

Type locality: “Mexico”, leg. Sandoz ex Nicolet.

Taxonomy: Helicinidae, *Helicina?* (not mentioned by Wagner 1907–1911).

Remarks: NMBE 15270 measures 11.4 mm (major diameter), 9.4 mm (minor diameter) and 10 mm (height), which is close to the original measurements of 11 mm, 9.5 mm and 9 mm. NMBE 19039 is much smaller and presumably represents another species. The name of Sandoz does not appear on the original labels, instead Jacot-Guillarmod is noted as the collector of the shells. There is probably more type material in coll. Nicolet in MHNN or MHNC.

***schrammi, Cyclostoma (Cyclophorus)***

Plate 12, fig. 2

1857 *Cyclostoma (Cyclophorus) schrammi* SHUTTLEWORTH, J. Conch. 5: 269.

Type material: Syntypes NMBE 19095/2.

Type locality: French Antilles “Guadeloupe”, ex Petit 1854 and 1855.

Taxonomy: Neocyclotidae, *Amphicyclotulus (Amphicyclotulus)* (Bartsch in Torre & al. 1942: 57, pl. 10, figs. 6–8).

***senticosum, Cyclostoma (Choanopoma)***

Plate 15, fig. 3

1854 *Cyclostoma (Choanopoma) senticosum* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 90.

Type material: Syntypes NMBE 19106/9 (Vieques Island), NMBE 19107/6 (Luquillo), NMBE 19108/17 (Puerto Rico, labelled by Isenschmid), ZMZ 527500/1, ZMZ 527501/4 (both Vieques Island). Probable syntypes: NMB 10088d/3 (original label: “*Cycl. senticosum* SHUTTL., Cuba, Blauner”, coll. Bohny, ex Boissier, ex Shuttleworth; the locality is most probably wrong, because Blauner never was in Cuba). NMB 10088c/2 (original label: “*Cycl. decussatum* LAM., Portorico, Blauner”, coll. Bohny, ex Boissier, ex Shuttleworth).

Type locality: Puerto Rico “rarius prope Luquillo, frequentius in insula Vièque”, leg. Blauner 1853.

Taxonomy: Annulariidae, a junior synonym of *Licina decussata* (LAMARCK, 1819) (fide Van der Schalie 1948: 31).

***swiftii, Cyclostoma (Chondropoma)***

Plate 15, fig. 1

1854 *Cyclostoma (Chondropoma) swiftii* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 91.

Type material: Syntypes NMBE 19109/4.

Type locality: Puerto Rico “Ponce”, leg. Swift ex Bland 1853.

Taxonomy: Annulariidae, *Chondropoma (Chondropomium)* (Bartsch 1946: 28, pl. 4, figs. 1–2).

***thersites, Cyclostoma (Cyclophorus vel Leptopoma)***

Plate 6, fig. 4

1852b *Cyclostoma (Cyclophorus vel Leptopoma) thersites* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 299.

Type material: Syntypes NMBE 19097/2.

Type locality: Philippines “in Ins. Philippinis”, ex Verreaux 1851.

Taxonomy: Cyclophoridae, *Cyclophorus*. This species is very close to *Cyclophorus sericinus* QUADRAS & MÖLLENDORFF, 1894 (if not identical) as illustrated by Springsteen & Leobrera (1986: 354, pl. 100, fig. 13).

***umbonata, Helicina***

Plate 9, fig. 3

1854 *Helicina umbonata* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 93.

- Type material: Holotype and three “syntypes?” NMBE 15272/4.  
Type locality: Puerto Rico “Portorico”, leg. Knox ex Bland 1853.  
Taxonomy: Helicinidae, *Helicina* (Thompson 1982).  
Remarks: Shuttleworth mentioned that he received one specimen from his friend Bland (“spec. unicum comm. am. Bland”), which represents the holotype. To this lot, Shuttleworth added three further specimens, which he received in 1855 (leg. Swift ex Bland) as indicated on the original label. The lot now consists of four specimens, three adults and one subadult. We were not able to identify the holotype, because the diameters of the shells are all similar and the description contains no individual details.

***verruculosum, Cyclostoma (Megalomastoma)***

Plate 11, fig. 1

1854 *Cyclostoma (Megalomastoma) verruculosum* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 90.

- Type material: Syntypes NMBE 19104/12, NMBE 19105/7 (Isenschmid), NMB 4709a/36 (coll. Bohny, ex Schneider, ex Shuttleworth), NMB 4709b/5 (coll. Bohny, ex Boissier, ex Shuttleworth).  
Type locality: Puerto Rico “sub truncis et foliis putrescentibus Musarum, ad Sierra de Luquillo”, leg. Blauner 1853.  
Taxonomy: Megalomastomatidae, *Megalomastoma (Megalomastomoides)* (Bartsch in Torre & al. 1942: 51, pl. 9, figs. 13–15, 19). *C. verruculosum* is the type species of *Megalomastomoides* BARTSCH, 1942 (by original designation).  
Remarks: In NMBE 19105 Isenschmid substituted the original label by his own (locality: “Portorico”).

***vinosa, Helicina***

Plate 10, fig. 1

1854 *Helicina vinosa* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1854: 92.

- Type material: Syntypes NMBE 15273/15 (Humacao), NMBE 18813/12 (Rio Blanco), NMBE 18814/1 (Puerto Rico), ZMZ 527985/8 (San Juan).

Probable syntypes NMBE 18815/6 (Puerto Rico, labelled by Isenschmid), NMB 10522a/6 (San Juan, coll. Bohny, ex Boissier, ex Shuttleworth).

Type locality: Puerto Rico “sub foliis delapsis ad rupes prope San Juan, Humacao, et ad Rio Blanco”.

Taxonomy: Helicinidae, *Lucidella* (Van der Schalie 1948: 22).

Remarks: The two lots from Humacao and Rio Blanco respectively were collected by Blauner in 1853. NMBE 18814 was collected by Knox in 1853. So this specimen was also available to Shuttleworth in 1854. In NMBE 18815 there is no original label left due to mis-curation by Isenschmid. Probably more type material to be found in MHNN.

## Bivalvia

### ***canariense*, *Pisidium***

Plate 19, figs. 1a–f

1852a *Pisidium canariense* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 146.

1975 *Pisidium canariense* – Shuttleworth, in Backhuys (ed.), Tab. ineditae: 19, pl. 8, fig. 18.

Type material: Syntypes NMBE 501772/77+<sup>1</sup>/<sub>2</sub>, ZMZ 532486/11.

Type locality: Canary Islands “Teneriffa”, leg. Blauner.

Taxonomy: Sphaeriidae, *Pisidium casertanum* (POLI, 1791) fide Kuiper 1967 (unpubl.).

Remarks: More type material in the Zoological Museum Berlin and in the Museum of Comparative Zoology, Harvard University, Cambridge (Bank & al. 2002: 152).

### ***conradi*, *Cardita***

Plate 16, figs. 1a–f

1856b *Cardita conradi* SHUTTLEWORTH, J. Conch. 5: 173.

Type material: Syntypes NMBE 501773/2.

Type locality: USA, Florida “Jampa Bay” [sic! = Tampa Bay] leg. Rugel 1847, “Florida” ex Petit.

Taxonomy: Carditidae, *Carditamera*. A junior synonym of *Carditamera floridana* CONRAD, 1838 (pers. comm. Huber 2004).

Remarks: Shuttleworth mentioned three specimens collected by Rugel in Florida, Tampa Bay and one specimen, which he received from Petit originating from “Florida”. In the collection, only two specimens collected by Rugel are left.

***egmontianum, Cardium***

Plate 17, figs. 2a–f

1856b *Cardium egmontianum* SHUTTLEWORTH, J. Conch. 5: 172.

Type material: Syntypes NMBE 501775/2.

Type locality: USA, Florida, Tampa Bay, Egmont Keys “ad Egmont Kay sinu Floridano ‘Jampa Bay’ [sic!] dicto”, leg. Rugel.

Taxonomy: Cardiidae, *Trachycardium* (Abbott 1974: 483, pers. comm. Huber 2004).

Remarks: Shuttleworth originally mentioned four specimens, but only two of them are left.

***gracilis, Cardita***

Plate 16, figs. 2a–f

1856b *Cardita gracilis* SHUTTLEWORTH, J. Conch. 5: 173.

Type material: Syntypes NMBE 501774/17.

Type locality: Puerto Rico, leg. Blauner 1853.

Taxonomy: Carditidae, *Carditamera* (Abbott 1974: 476, pers. comm. Huber 2004).

***media, Iphigenia***

Plate 17, figs. 1a–f

1856b *Iphigenia media* SHUTTLEWORTH, J. Conch. 5: 174.

Type material: Syntypes NMBE 501776/6.

Type locality: Puerto Rico, leg. Blauner 1853.

Taxonomy: Donacidae, a junior synonym of *Iphigenia brasiliensis* (LAMARCK, 1818) (pers. comm. Huber 2004).

Remarks: The illustrated specimen almost exactly matches the dimensions given by Shuttleworth. *Iphigenia brasiliensis* is often erroneously cited as *I. brasiliana* (i.e. Abbott 1974: 510). However, Lamarck (1818: 553) described this species as *Capsa brasiliensis*.

***portoricensis*, *Mulinia***

Plate 18, figs. 1a–f

1856b *Mulinia portoricensis* SHUTTLEWORTH, J. Conch. 5: 174.

Type material: Syntypes NMBE 501777/11.

Type locality: Puerto Rico, leg. Blauner 1853.

Taxonomy: Mactridae, a junior synonym of *Mulinia cleryana* (ORBIGNY, 1846) (Abbott 1974: 491, pers. comm. Huber 2004).

**The non-pulmonate supraspecific taxa described by Shuttleworth**

***Gyrotoma* SHUTTLEWORTH, 1845**

1845 *Gyrotoma* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1845: 88.

Type species: *Gyrotoma ovoidea* SHUTTLEWORTH, 1845 by original designation, = *Gyrotoma excisum* (LEA, 1843).

Taxonomy: Pleuroceridae, currently valid genus (Burch 1989: 148).

***Schasicheila* SHUTTLEWORTH, 1852**

1852b *Schasicheila* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1852: 301.

Type species: *Helicina alata* L. PFEIFFER, 1848 by subsequent designation (Kobelt 1879: 202).

Taxonomy: Helicinidae, currently valid genus (Richling 2004: 390, 408).

***Ischnoradsia* SHUTTLEWORTH, 1853**

1853 *Ischnoradsia* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 189.

Type species: *Chiton australis* SOWERBY, 1840 by subsequent designation (Pilsbry 1892: 144).

Taxonomy: Ischnochitonidae, currently valid subgenus of *Ischnochiton* GRAY, 1847 (Van Belle 1983: 70, Kaas & Van Belle 1998: 8).

### ***Chaetopleura* SHUTTLEWORTH, 1853**

1853                    *Chaetopleura* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 190.

Type species:        *Chiton peruvianus* LAMARCK, 1819 by subsequent designation (Dall 1879: 296, 329).

Taxonomy:            Ischnochitonidae, currently valid genus and subgenus (Van Belle 1983: 85, Kaas & Van Belle 1998: 8).

### ***Eudoxochiton* SHUTTLEWORTH, 1853**

1853                    *Eudoxochiton* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 191.

Type species:        *Acanthopleura nobilis* GRAY, 1843 by monotypy.

Taxonomy:            Ischnochitonidae, currently valid genus and subgenus (Van Belle 1983: 92, Kaas & Van Belle 1998: 8).

### ***Craspedochiton* SHUTTLEWORTH, 1853**

1853                    *Craspedochiton* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 191.

Type species:        *Chiton laqueatus* SOWERBY, 1841, by monotypy.

Taxonomy:            Acanthochitonidae, currently valid genus (Van Belle 1983: 142, Kaas & Van Belle 1998: 10).

### ***Aulacochiton* SHUTTLEWORTH, 1853**

1853                    *Aulacochiton* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1853: 192.

Type species:        *Chiton volvox* REEVE, 1847 by subsequent designation (Pilsbry 1893: 236).

Taxonomy:            Schizochitonidae, synonym of *Lorica* H. & A. ADAMS, 1852 (Van Belle 1983: 118).

### ***Crocidopoma* SHUTTLEWORTH, 1857**

1857                    *Crocidopoma* SHUTTLEWORTH, J. Conch. 5: 271.

Type species:        *Crocidopoma floccosum* SHUTTLEWORTH, 1857 by original designation.

Taxonomy: Neocyclotidae, Crocidopominae. Currently valid genus. *Crocidopoma* is the type genus of Crocidopominae (Thompson 1967: 15).

***Rhynchocheila* SHUTTLEWORTH, 1877**

1877 *Rhynchocheila* SHUTTLEWORTH, in Fischer (ed.), Notitiae Malac. 2: 15.

Type species: *Helicina regina* MORELET, 1849 by subsequent designation (Baker 1922: 63).

Taxonomy: Helicinidae, synonym of *Viana* H. & A. ADAMS, 1856 (Wenz 1938: 438, Keen 1960: 288).

**Addenda et corrigenda to part I (Gastropoda: Pulmonata)**

***blauneri, Helix***

Plate 20, fig. 1

1843 *Helix blauneri* SHUTTLEWORTH, Mitt. Naturf. Ges. Bern 1843: 13.

Type material: Lectotype NMBE 19038a, paralectotypes NMBE 19038b/3 (former number 734).

Type locality: The original label reads “Bastia, Calvi, Aleria, Bonifacio. Corsica”, leg. Blauner 1842.

Type designation: Falkner & al. (2002: 124).

Taxonomy: Oxychilidae, *Oxychilus*.

Remarks: In part I, we erroneously photographed a syntype specimen of *Oxychilus shuttleworthianus* (PINI, 1883) (Neubert & Gosteli 2003: pl. 18, fig. 2) instead of *Oxychilus blauneri*.

***livens, Orthalicus***

Plate 20, fig. 2

1856a *Orthalicus livens* SHUTTLEWORTH, Notitiae Malac. 1: 64, pl. 3, fig. 8.

Type material: No type material in NMBE; 2 syntype specimens in MHNN.

Type locality: Mexico, “probabiliter prope Vera Cruz (Sandoz! specimina plurima communicavit am. Nicolet.)”.

Taxonomy: Orthalicidae, *Orthalicus*.



Remarks: We unfortunately overlooked that the name *livens* was mentioned by Beck (1837: 59) [nomen nudum]. Shuttleworth was the first to correctly describe this taxon, which automatically makes him the author.

***hyalina, Succinea***

Plate 20, fig. 3

Remarks: Erroneously, the lateral view of *Succinea hyalina* was not published, the figure (Neubert & Gosteli 2003: pl. 2, fig. 3) is only a copy of *S. approximans* (see above fig. 1). The correct figure is given here.

***servilis, Helix***

Remarks: In Neubert & Gosteli (2003: 49) we stated that the type lot was not present in the collection of the NMBE, and photographed a specimen from the Mousson collection in ZMZ. Meanwhile we found that the original type lots from the Shuttleworth collection were on loan with the late Dr. Forcart in NMB since 1962. They were retransferred in 2004 (NMBE 20370/51 from “Garachico, Teneriffa”, and NMBE 20744/1 from “Palma”).

***clymene, Zonites***

Remarks: In Neubert & Gosteli (2003: 18) we stated that the type lot was not present in the collection of the NMBE. The malacological collection in NMB houses a lot of *Zonites clymene* SHUTTLEWORTH containing an original collection label of Shuttleworth, a second label in Shuttleworth’s handwriting, a label of the Bohny collection and a modern museum label of NMB. According to the NMBE files, Dr. Forcart received the original lot of *Zonites clymene* in December 1962 on loan. We suppose that the Bohny collection probably contained some specimens of *Z. clymene* (ex Schneider?) as well, which were mixed up with the original lot of Shuttleworth after 1962. In

2004, 18 specimens from this lot were retransferred to NMBE (syntypes NMBE 20369/18).

## Acknowledgements

This second part of the type catalogue of the Shuttleworth collection could only be realized thanks to considerable financial support from the Friends of the Museum (“Verein des Naturhistorischen Museums Bern”). The authors are very grateful to Prof. Dr. Marcel Güntert and Dr. Christian Kropf (both NMBE) for their support of the project. Dr. Ambros Hänggi and Edi Stöckli (both NMB), Dr. Wolf Blanckenhorn, Dr. Marianne Haffner and Trudi Meier (all ZMZ), Dr. Jean-Paul Haenni (MHNN) and Marcel S. Jacquat (MHNC) gave us access to their collections and/or helped us with the loan of type material. Prof. Dr. Philippe Bouchet and Virginie Héros (both MNHN) supported E. Neubert during his visit to MNHN in spring 2004. Dr. Didier Reinhardt (University of Berne) took the electron micrographs of *Pisidium canariense*. We gratefully acknowledge the contributions of many colleagues to this enterprise (in alphabetical order): Dr. Maria R. Alonso (La Laguna, Tenerife, Canary Islands), Dr. Ruud A. Bank (Hoofddorp, The Netherlands), Gerhard Falkner (Hörlkofen, Germany), Klaus Groh (Hackenheim, Germany), Roland Hadorn (Röthenbach, Switzerland), Dr. Markus Huber (Seuzach, Switzerland), Prof. Miguel Ibáñez (La Laguna, Tenerife, Canary Islands), Dr. Ronald Janssen (Frankfurt/Main, Germany), Elsa Obrecht (NMBE), Dr. Ira Richling (Kronshagen, Germany), Theo Ripken (Delft, The Netherlands), Dr. David G. Robinson (Philadelphia, USA).

## References

A complete list of the publications of R.J. Shuttleworth is given in part I of the type catalogue (Neubert & Gosteli 2003).

- Abbott, R.T. (1974): American seashells. The marine mollusca of the atlantic and pacific coasts of North America. — Second edition. 663 pp. Van Nostrand Reinhold Company, New York.
- Baker, H.B. (1922): Notes on the radula of the Helicinidae. — Proceedings of the Academy of Natural Sciences of Philadelphia 74: 29–67, plates 3–7.
- Bank, R., Groh, K. & Ripken, T.E.J. (2002): Catalogue and bibliography of the non-marine Mollusca of Macaronesia. — In: Falkner, M., Groh, K. & Speight, M.C.D. (eds.), *Collectanea Malacologica*, Festschrift für Gerhard Falkner, pp. 89–235, 13 S. Tafelerkl., 13 Farbtafeln. Conch Books, Hackenheim & Verlag der Friedrich-Held-Gesellschaft, München.
- Bartsch, P. (1946): The operculate land mollusks of the family Annulariidae of the island of Hispaniola and the Bahama archipelago. — United States National Museum, Bulletin 192: 264 pp., 38 plates.

- Beck, H. (1837–1838): Index molluscorum praesentis aevi musei principis augustissimi Christiani Frederici. — 1–100 (1837), 101–124, 1–8 (1838). Hafniae.
- Bullock, R.C. (1988): The genus *Chiton* in the New World (Polyplacophora: Chitonidae). — *The Veliger* 31: 141–191.
- Burch, J.B. (1989): North American freshwater snails. — 365 pp. Malacological Publications, Hamburg, Michigan.
- Dall, W.H. (1879): Report on the limpets and chitons of the Alaskan and Arctic regions, with descriptions of genera and species believed to be new. — *Proceedings of the United States National Museum* 1: 281–344, plates 1–5.
- Fischer-Piette, E. (1950): Historique du Journal de Conchyliologie. — *Journal de Conchyliologie* 90: 5–23, 65–82, 149–180.
- Hadorn, R. & Rogers, B. (2000): Revision of recent *Fusinus* (Gastropoda: Fascioliidae) from tropical western Atlantic, with description of six new species. — *Argonauta* 14: 5–57.
- Kaas, P. (1972): Polyplacophora of the Caribbean region. — *Studies on the fauna of Curaçao and other Caribbean islands* 41 (137): 1–162, figs. 1–247, plates 1–9.
- Kaas, P. & Van Belle, R.A. (1994): Monograph of the living chitons (Mollusca: Polyplacophora). — Vol. 5, 402 pp. E.J. Brill, Leiden, The Netherlands.
- Kaas, P. & Van Belle, R.A. (1998): Catalogue of living chitons (Mollusca, Polyplacophora). — Second edition, 204 pp. Backhuys Publishers, Leiden, The Netherlands.
- Keen, A.M. (1960): Helicinidae. — In: Moore, R.C. (ed.): *Treatise on invertebrate paleontology: Mollusca, Part I*. University of Kansas Press, Lawrence, Kansas. 23 + 351 pp.
- Kobelt, W. (1879–1881): *Illustriertes Conchylienbuch*, II. — pp. 145–392, Nürnberg. [145–176: 1879; 177–264: 1879; 265–312: 1880; 313–344: 1881; 345–392: 1881].
- Lamarck, J.B.P.A. de Monet de (1818): *Histoire naturelle des animaux sans vertèbres*. — Vol. 5, 612 pp. Paris.
- Martens, E. von (1890–1901): *Biologia Centrali Americana*. — Land and freshwater Mollusca. — 706 pp., 44 plates. Francis & Taylor, London.
- Neubert, E. & Gosteli, M. (2003): The molluscan species described by Robert James Shuttleworth. I. Gastropoda: Pulmonata. — *Contributions to Natural History* 1: 1–123.
- Pilsbry, H.A. (1892–1894): Monograph of the Polyplacophora. — In: G.W. Tryon, *Manual of Conchology* 14: 1–128, plates 1–30 (1892); i–xxxiv, 129–350, plates 31–68 (1893); 15: 1–64, plates 1–10 (1893); 65–133, plates 11–17 (1894). The Academy of Natural Sciences of Philadelphia.
- Pilsbry, H.A. (1939–1948): Land mollusca of North America (north of Mexico), I–IV. — The Academy of Natural Sciences of Philadelphia, Monographs 3: 1113 pp., Philadelphia.
- Richling, I. (2004): Classification of the Helicinidae: Review of morphological characteristics based on a revision of the Costa Rican species and application to the arrangement of the Central American mainland taxa (Mollusca: Gastropoda: Neritopsina). — *Malacologia* 45: 195–440.
- Shuttleworth, R.J. (1843): Über die Land- und Süßwasser-Mollusken von Corsica. — *Mittheilungen der Naturforschenden Gesellschaft in Bern* 1843 (No. 2, 3): 9–21.
- Shuttleworth, R.J. (1845): Über *Gyrotoma*, eine neue Gattung der Melaniana, Gasteropoda, Pectinibranchiata. — *Mittheilungen der Naturforschenden Gesellschaft in Bern* 1845 (No. 50): 85–88.

- Shuttleworth, R.J. (1852a): Diagnosen einiger neuen Mollusken aus den Canarischen Inseln. — Mittheilungen der Naturforschenden Gesellschaft in Bern 1852 (No. 241, 242): 137–146.
- Shuttleworth, R.J. (1852b): Diagnosen neuer Mollusken. — Mittheilungen der Naturforschenden Gesellschaft in Bern 1852 (No. 260, 261): 289–304.
- Shuttleworth, R.J. (1853): Über den Bau der Chitoniden, mit Aufzählung der die Antillen und die Canarischen Inseln bewohnenden Arten. — Mittheilungen der Naturforschenden Gesellschaft in Bern 1853 (No. 286–291): 169–207.
- Shuttleworth, R.J. (1854): Beiträge zur näheren Kenntniss der Land- und Süßwasser-Mollusken der Insel Portorico. — Mittheilungen der Naturforschenden Gesellschaft in Bern 1854 (No. 321, 322): 89–103.
- Shuttleworth, R.J. (1856a): Notitiae Malacologicae oder Beiträge zur näheren Kenntniss der Mollusken. 1. Heft. — 90 pp. + 9 Tafeln. Haller, Bern.
- Shuttleworth, R.J. (1856b): Description de nouvelles espèces. Première décade; espèces nouvelles pour la faune des Antilles. — Journal de Conchyliologie 5: 168–175.
- Shuttleworth, R.J. (1857): Essai critique sur quelques espèces du genre *Cyclostoma*. — Journal de Conchyliologie 5: 261–272.
- Shuttleworth, R.J. (1877): Notitiae Malacologicae oder Beiträge zur näheren Kenntniss der Mollusken. 2. Heft. — P. Fischer ed., 16 pp. + 15 Tafeln. Engelmann, Leipzig. [The Berne edition was published in 1878.]
- Shuttleworth, R.J. (1975): Tabulae ineditae Molluscorum Insularum Canariensium. — W. Backhuys ed., 43 pp. + 8 Tafeln. Goecke & Evers, Krefeld.
- Springsteen, F.J. & Leobrera, F.M. (1986): Shells of the Philippines. — 377 pp., 100 plates. Kyodo Printing Co., Manila, Philippines.
- Thompson, F.G. (1967): A new cyclophorid land snail from the West Indies (Prosobranchia), and the discussion of a new subfamily. — Proceedings of the Biological Society of Washington 80: 13–18.
- Thompson, F.G. (1982): The *Helicina umbonata* complex in the West Indies (Gastropoda, Prosobranchia, Helicinidae). — Bulletin of the Florida State Museum, Biological Sciences 28: 1–23.
- Tillier, S. (1980): Gastéropodes terrestres et fluviatiles de Guyane Française. — Mémoires du Muséum National d'Histoire Naturelle, Nouvelle Série. Série A, Zoologie, 118: 1–189, 6 plates.
- Torre, C. de la, Bartsch, P. & Morrison, J.P.E. (1942): The cyclophorid operculate land mollusks of America. — United States National Museum, Bulletin 181: 306 pp., 42 plates.
- Van Belle, R.A. (1983): The systematic classification of the chitons (Mollusca: Polyplacophora). — Informations de la Société Belge de Malacologie, Série 11: 1–178.
- Van der Schalie, H. (1948): The land- and fresh-water mollusks of Puerto Rico. — Miscellaneous publications, Museum of Zoology, University of Michigan 70: 1–134, plates 1–14.
- Wagner, A.J. (1907–1911): Die Familie Helicinidae N.F. — In: Martini & Chemnitz, Systematisches Conchylien-Cabinet I, 18: 1–112 (1907); 113–184 (1908); 185–264 (1909); 265–368 (1910); 369–391 (1911).
- Wenz, W. (1938–1944): Gastropoda, Teil 1: Allgemeiner Teil und Prosobranchia. — In: O.H. Schindewolf (ed.), Handbuch der Paläozoologie 6, Teil 1: XII + 1639 pp. + 10 pp. Berichtigungen. Borntraeger, Berlin-Zehlendorf.

## Index

The index provides information on the illustration of the type specimens following an alphabetical order of the families.

Annulariidae	Annulariidae gen. sp. 1	Plate 14, fig. 3
	Annulariidae gen. sp. 2	Plate 14, fig. 4
	<i>blauneri</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> )	Plate 14, fig. 2
	<i>newtoni</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> ?)	Plate 15, fig. 2
	<i>senticosum</i> , <i>Cyclostoma</i> ( <i>Choanopoma</i> )	Plate 15, fig. 3
	<i>swiftii</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> )	Plate 15, fig. 1
Cardiidae	<i>egmontianum</i> , <i>Cardium</i>	Plate 17, figs. 2a–f
Carditiidae	<i>conradi</i> , <i>Cardita</i> <i>gracilis</i> , <i>Cardita</i>	Plate 16, figs. 1a–f Plate 16, figs. 2a–f
Chitonidae	<i>blauneri</i> , <i>Chiton</i> ( <i>Acanthopleura</i> )	Plate 1, figs. 1–4
	<i>gemmulatus</i> , <i>Chiton</i> ( <i>Lophurus</i> )	Plate 2, figs. 1–5
	<i>schrammi</i> , <i>Chiton</i> ( <i>Tonicia</i> )	Plate 3, figs. 1–3 Plate 4, figs. 1–2
Cyclophoridae	<i>costatum</i> , <i>Cyclostoma</i> ( <i>Craspedopoma</i> )	Plate 6, fig. 3
	<i>thersites</i> , <i>Cyclostoma</i> ( <i>Cyclophorus</i> vel <i>Leptopoma</i> )	Plate 6, fig. 4
Donacidae	<i>media</i> , <i>Iphigenia</i>	Plate 17, figs. 1a–f
Fasciolariidae	<i>hartvigii</i> , <i>Fusus</i>	Plate 11, fig. 3
Helicinidae	<i>chrysocheila</i> , <i>Helicina</i> <i>chrysostoma</i> , <i>Trochatella</i> <i>cinctella</i> , <i>Helicina</i> <i>delicatula</i> , <i>Helicina</i> <i>elata</i> , <i>Helicina</i> <i>nicoleti</i> , <i>Schasicheila</i> <i>opima</i> , <i>Trochatella</i> <i>sandozi</i> , <i>Helicina</i> <i>umbonata</i> , <i>Helicina</i> <i>vinosa</i> , <i>Helicina</i>	Plate 8, fig. 1 Plate 7, fig. 1 Plate 8, fig. 2 Plate 8, fig. 3 Plate 9, fig. 1 Plate 10, fig. 2 Plate 7, fig. 2 Plate 9, fig. 2 Plate 9, fig. 3 Plate 10, fig. 1
Hydrocenidae	<i>gutta</i> , <i>Hydrocaena</i>	Plate 6, fig. 1

Ischnochitonidae	<i>asper</i> , <i>Chiton</i> ( <i>Chaetopleura</i> )	Plate 5, figs. 1–5
	<i>piceolus</i> , <i>Chiton</i> ( <i>Acanthopleura</i> )	Plate 4, figs. 3–6
Mactridae	<i>portoricensis</i> , <i>Mulinea</i>	Plate 18, figs. 1a–f
Megalomastomatidae	<i>minor</i> , <i>Cyclostoma</i>	Plate 11, fig. 2
	( <i>Megalomastoma</i> ) <i>croceum</i> var.	
	<i>verruculosum</i> , <i>Cyclostoma</i>	Plate 11, fig. 1
	( <i>Megalomastoma</i> )	
Neocyclotidae	<i>cayennense</i> , <i>Cyclostoma</i>	Plate 13, fig. 2
	( <i>Cyclophorus</i> )	
	<i>floccosum</i> , <i>Cyclostoma</i>	Plate 12, figs. 1a–c
	( <i>Cyclotus</i> )	
	<i>granadense</i> , <i>Cyclostoma</i>	Plate 14, fig. 1
	( <i>Cyclotus</i> )	
	<i>martinicense</i> , <i>Cyclostoma</i>	Plate 13, fig. 1
	( <i>Cyclotus</i> )	
	<i>schrammi</i> , <i>Cyclostoma</i>	Plate 12, fig. 2
	( <i>Cyclophorus</i> )	
Orthalicidae	<i>livens</i> , <i>Orthalicus</i>	Plate 20, fig. 2
Oxychilidae	<i>blauneri</i> , <i>Helix</i>	Plate 20, fig. 1
Pleuroceridae	<i>ovoidea</i> , <i>Gyrotoma</i>	Plate 11, fig. 5
	<i>pyramidata</i> , <i>Gyrotoma</i>	Plate 11, fig. 4
Sphaeriidae	<i>canariense</i> , <i>Pisidium</i>	Plate 19, figs. 1a–f
Succineidae	<i>hyalina</i> , <i>Succinea</i>	Plate 20, fig. 3
Truncatellidae	<i>lowei</i> , <i>Truncatella</i>	Plate 6, fig. 2

## Appendices

**Table 1. Comparison between NMBE numbers and old invalid numbers given for each type lot in the collection of R.J. Shuttleworth. The pulmonate species published in part I of the type catalogue are also included.**

### Chitonidae

Species	NMBE number	old number
<i>asper</i> , <i>Chiton</i> ( <i>Chaetopleura</i> )	19118	231
<i>blauneri</i> , <i>Chiton</i> ( <i>Acanthopleura</i> )	19117	410
<i>gemmulatus</i> , <i>Chiton</i> ( <i>Lophurus</i> )	19120	266
<i>piceolus</i> , <i>Chiton</i> ( <i>Acanthopleura</i> )	19119	–
<i>schrammi</i> , <i>Chiton</i> ( <i>Tonicia</i> )	19115	388
<i>schrammi</i> , <i>Chiton</i> ( <i>Tonicia</i> )	19116	387

### Caenogastropoda

Species	NMBE number	old number
<i>blauneri</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> )	18847	86
<i>blauneri</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> )	18848	87
<i>blauneri</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> )	18849a, b, c	85
<i>cayennense</i> , <i>Cyclostoma</i> ( <i>Cyclophorus</i> )	19096	351
<i>chrysocheila</i> , <i>Helicina</i>	15267	37
<i>chrysostoma</i> , <i>Trochatella</i>	15278	227
<i>chrysostoma</i> , <i>Trochatella</i>	18817	229
<i>chrysostoma</i> , <i>Trochatella</i>	19040	230
<i>cinctella</i> , <i>Helicina</i>	15275	125
<i>costatum</i> , <i>Cyclostoma</i> ( <i>Craspedopoma</i> )	18977	280
<i>delicatula</i> , <i>Helicina</i>	19074	968
<i>elata</i> , <i>Helicina</i>	15269	2
<i>floccosum</i> , <i>Cyclostoma</i> ( <i>Cyclotus</i> )	19100	538
<i>floccosum</i> , <i>Cyclostoma</i> ( <i>Cyclotus</i> )	19101	627
<i>granadense</i> , <i>Cyclostoma</i> ( <i>Cyclotus</i> )	19098	552
<i>gutta</i> , <i>Hydrocaena</i>	18974	317-T (Teneriffa)

Species	NMBE number	old number
<i>gutta</i> , <i>Hydrocaena</i>	18975	317-P (Palma)
<i>hartvigii</i> , <i>Fusus</i>	19094	201
<i>lowei</i> , <i>Truncatella</i>	19114	344
<i>martinicense</i> , <i>Cyclostoma</i> ( <i>Cyclotus</i> )	19099	570
<i>minor</i> , <i>Cyclostoma</i> ( <i>Megalomastoma</i> ) <i>croceum</i> var.	20737	246
<i>newtoni</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> ?)	19110	134
<i>nicoleti</i> , <i>Schasicheila</i>	15274	223
<i>ovoidea</i> , <i>Gyrotoma</i>	19111	414
<i>opima</i> , <i>Trochatella</i>	15271	232
<i>pyramidata</i> , <i>Gyrotoma</i>	19112	415
<i>pyramidata</i> , <i>Gyrotoma</i>	19113	416
<i>sandozi</i> , <i>Helicina</i>	15270	21
<i>sandozi</i> , <i>Helicina</i>	19039	20
<i>schrammi</i> , <i>Cyclostoma</i> ( <i>Cyclophorus</i> )	19095	420
<i>senticosum</i> , <i>Cyclostoma</i> ( <i>Choanopoma</i> )	19106	931
<i>senticosum</i> , <i>Cyclostoma</i> ( <i>Choanopoma</i> )	19107	930
<i>senticosum</i> , <i>Cyclostoma</i> ( <i>Choanopoma</i> )	19108	932
<i>swiftii</i> , <i>Cyclostoma</i> ( <i>Chondropoma</i> )	19109	201
<i>thersites</i> , <i>Cyclostoma</i> ( <i>Cyclophorus</i> vel <i>Leptopoma</i> )	19097	428
<i>umbonata</i> , <i>Helicina</i>	15272	924
<i>verruculosum</i> , <i>Cyclostoma</i> ( <i>Megalomastoma</i> )	19104	273
<i>verruculosum</i> , <i>Cyclostoma</i> ( <i>Megalomastoma</i> )	19105	274
<i>vinosa</i> , <i>Helicina</i>	15273	905 B
<i>vinosa</i> , <i>Helicina</i>	18813	905 C
<i>vinosa</i> , <i>Helicina</i>	18814	605
<i>vinosa</i> , <i>Helicina</i>	18815	606

## Bivalvia

<i>canariense</i> , <i>Pisidium</i>	501772	–
<i>conradi</i> , <i>Cardita</i>	501773	368
<i>egmontianum</i> , <i>Cardium</i>	501775	43
<i>gracilis</i> , <i>Cardita</i>	501774	372
<i>media</i> , <i>Iphigenia</i>	501776	1036
<i>portoricensis</i> , <i>Mulinea</i>	501777	836



## Pulmonata

Species	NMBE number	old number
<i>acicularis</i> , <i>Stenogyra</i> ( <i>Subulina</i> )	18895	1
<i>adjaciensis</i> , <i>Clausilia</i>	19082	735
<i>alabastrina</i> , <i>Stenogyra</i> ( <i>Opeas</i> )	18897	39
<i>albopunctulata</i> , <i>Gaeotis</i>	18853a, b	166
<i>albopunctulata</i> , <i>Gaeotis</i>	18854	166
<i>antillarum</i> , <i>Leptinaria</i>	18888	1115
<i>antillarum</i> , <i>Leptinaria</i>	18889	79
<i>antillarum</i> , <i>Leptinaria</i>	18890	1120
<i>approximans</i> , <i>Succinea</i>	18942	29 A
<i>approximans</i> , <i>Succinea</i>	18943	29 B
<i>approximans</i> , <i>Succinea</i>	18944	28 C
<i>approximans</i> , <i>Succinea</i>	18945	28 D
<i>approximans</i> , <i>Succinea</i>	18946	81
<i>approximans</i> , <i>Succinea</i>	18947	82
<i>approximans</i> , <i>Succinea</i>	18948	83
<i>atomus</i> , <i>Pupa</i>	18797	679
<i>auris-myoxi</i> , <i>Bulimus</i>	19055	355
<i>bassamensis</i> , <i>Limicolaria</i>	18960	283
<i>bethencourtiana</i> , <i>Helix</i>	18811a, b	8
<i>bifrons</i> , <i>Perideris</i>	18967	218
<i>bifrons</i> , <i>Perideris</i>	18968	219
<i>blauneri</i> , <i>Helix</i>	19038a, b, c, d	734
<i>blauneri</i> , <i>Vitrina</i>	19033	564
<i>blauneri</i> , <i>Vitrina</i>	19034	569
<i>bryodes</i> , <i>Zonites</i>	18950	735 A
<i>bryodes</i> , <i>Zonites</i>	18951	735 B
<i>candida</i> , <i>Achatina</i> ( <i>Polyphemus</i> )	18843	40
<i>castanea</i> , <i>Pupa</i>	19083	39
<i>ceratina</i> , <i>Helix</i>	18812	478–481, 483, 484
<i>circumlineatus</i> , <i>Planorbis</i>	18952	23 A
<i>circumlineatus</i> , <i>Planorbis</i>	18953	23 B
<i>circumsessa</i> , <i>Helix</i>	18791a	43
<i>circumsessa</i> , <i>Helix</i>	18791b	44
<i>circumsessa</i> , <i>Helix</i>	18940	42
<i>circumsessa</i> , <i>Helix</i>	18941	41

Species	NMBE number	old number
<i>clymene</i> , <i>Zonites</i>	20369	(ex NMB 10881a)
<i>coniformis</i> , <i>Spiraxis</i> ( <i>Streptostyla</i> )	18835	14
<i>corsica</i> , <i>Helix</i>	19087a, b	709
<i>corsica</i> , <i>Succinea</i>	18771	883, 885
<i>corsica</i> , <i>Succinea</i>	18772	884
<i>corsica</i> , <i>Succinea</i>	18773	886
<i>couloni</i> , <i>Helix</i>	18826	399
<i>cumingii</i> , <i>Achatina</i>	19054	154
<i>cuticula</i> , <i>Helix</i>	18785a, b	133-T (Teneriffa)
<i>cuticula</i> , <i>Helix</i>	18786	133-P (Palma)
<i>delicatula</i> , <i>Achatina</i> ( <i>Polyphemus</i> )	18844	29
<i>dermatina</i> , <i>Helix</i>	18870a, b	372
<i>discobolus</i> , <i>Helix</i>	18983	71
<i>dysoni</i> , <i>Helix</i>	15276	–
<i>ejuncida</i> , <i>Spiraxis</i>	19030	88
<i>ejuncida</i> , <i>Spiraxis</i>	19031	89
<i>encaustus</i> , <i>Bulimus</i>	18818	(ex ZMZ 513755)
<i>engonata</i> , <i>Helix</i>	18790	84
<i>euclasta</i> , <i>Helix</i>	18875	374
<i>euclasta</i> , <i>Helix</i>	18876	376
<i>eximia</i> , <i>Spiraxis</i> ( <i>Columna</i> )	18819	309
<i>felina</i> , <i>Limicolaria</i>	18958	286
<i>felina</i> , <i>Limicolaria</i>	18959	285
<i>festinans</i> , <i>Zonites</i>	18766	–
<i>filicosta</i> , <i>Cylindrella</i>	18863	718
<i>flavescens</i> , <i>Spiraxis</i> ( <i>Streptostyla</i> )	18836	15
<i>flavolineata</i> , <i>Gaeotis</i>	18856a, b	168
<i>flavolineata</i> , <i>Gaeotis</i>	18857	167
<i>fortunata</i> , <i>Helix</i>	18936a, b	307
<i>fortunata</i> , <i>Helix</i>	18937	308
<i>gabonensis</i> , <i>Pseudachatina</i>	19035a	310
<i>gabonensis</i> , <i>Pseudachatina</i>	19035b	311, 314
<i>gabonensis</i> , <i>Pseudachatina</i>	19036	315
<i>gabonensis</i> , <i>Pseudachatina</i>	19037	312, 313
<i>glasiana</i> , <i>Helix</i>	18807	11
<i>gompharium</i> , <i>Stenogyra</i> ( <i>Opeas</i> )	18896	44
<i>guillarmodi</i> , <i>Helix</i>	19080	646

Species	NMBE number	old number
<i>heldreichi</i> , <i>Helix</i>	18824	90
<i>heldreichi</i> , <i>Helix</i>	18825	90
<i>hopetonensis</i> , <i>Helix</i>	18828	533
<i>hyalina</i> , <i>Succinea</i>	18949	39
<i>hypolepta</i> , <i>Helix</i>	19073	78
<i>incolorata</i> , <i>Perideris</i>	18969	223
<i>incolorata</i> , <i>Perideris</i>	18970	224
<i>ingallsiana</i> , <i>Helix</i>	19046	–
<i>insititia</i> , <i>Helix</i>	19086	909
<i>interrupta</i> , <i>Glandina</i>	18899	210
<i>intincta</i> , <i>Helix</i>	15268	758
<i>iodes</i> , <i>Orthalicus</i>	19045	440
<i>iolarynx</i> , <i>Perideris</i>	18971	232
<i>irrigua</i> , <i>Spiraxis</i> ( <i>Streptostyla</i> )	18837	16
<i>kordofanus</i> , <i>Bulimus</i>	18980	284
<i>latevittata</i> , <i>Porphyrobaphe</i>	18965	430
<i>lenis</i> , <i>Zonites</i>	18769	790
<i>lenis</i> , <i>Zonites</i>	18770	789
<i>luquillensis</i> , <i>Helix</i>	18867	573
<i>luquillensis</i> , <i>Helix</i>	18868	574
<i>lurida</i> , <i>Spiraxis</i> ( <i>Streptostyla</i> )	18838	17
<i>lymneiformis</i> , <i>Spiraxis</i> ( <i>Streptostyla</i> )	18839	18
<i>macilenta</i> , <i>Zonites</i>	19052	87
<i>margaritacea</i> , <i>Stenogyra</i> ( <i>Opeas</i> )	18898	56
<i>marmorata</i> , <i>Cylindrella</i>	18864	15
<i>maugeana</i> , <i>Helix</i>	18810	15
<i>meisneriana</i> , <i>Clausilia</i>	18794	754
<i>mitraeformis</i> , <i>Spiraxis</i> ( <i>Streptostyla</i> )	18840	20
<i>mordax</i> , <i>Helix</i>	19051	101
<i>musicola</i> , <i>Helix</i>	18872	387
<i>musicola</i> , <i>Helix</i>	18873	388
<i>musicola</i> , <i>Helix</i>	18874	389
<i>nana</i> , <i>Achatina</i> ( <i>Polyphemus</i> )	18845	49
<i>nanodes</i> , <i>Bulimus</i>	18800a, b	354
<i>nicoleti</i> , <i>Spiraxis</i> ( <i>Streptostyla</i> )	18842	26
<i>nigrolineata</i> , <i>Gaeotis</i>	18850a, b, c	169
<i>nivariensis</i> , <i>Helix</i>	18805	992, 993

Species	NMBE number	old number
<i>obductus, Orthalicus</i>	18955a	390
<i>obductus, Orthalicus</i>	18955b	391
<i>obductus, Orthalicus</i>	18955c	392
<i>oleacea, Helix</i>	18803	996
<i>onager, Perideris</i>	18972	240
<i>opalescens, Leptinaria</i>	18891	85 A
<i>opalescens, Leptinaria</i>	18892	85 B
<i>opalescens, Leptinaria</i>	18893	85 C
<i>oppressa, Zonites</i>	18765	817
<i>payraudeaui, Auricula myosotis</i> var.	19047	97
<i>pediculus, Pupa</i>	15279	169
<i>perlevis, Helix</i>	18833a, b	715
<i>perlevis, Helix</i> (= <i>Ichnusotricha berninii</i> )	18834	716
<i>persimilis, Helix</i>	18801	997-T (Teneriffa)
<i>persimilis, Helix</i>	18802	997-P (Palma)
<i>physodes, Spiraxis (Streptostyla)</i>	18841	23
<i>placentula, Zonites</i>	19053	846
<i>placida, Helix</i>	18780	72
<i>plagioptycha, Helix</i>	18878	32 C
<i>plagioptycha, Helix</i>	18879	32 D
<i>plagioptycha, Helix</i>	18880	36 A
<i>plagioptycha, Helix</i>	18881	36 B
<i>plagioptycha, Helix</i>	18882	33
<i>pleurophora, Pupa</i>	18861	673
<i>pleurophora, Pupa</i>	18862	673
<i>pompylia, Helix</i>	18777	214
<i>porphyrostoma, Achatina</i>	18820	173
<i>portoricensis, Simpulopsis</i>	18860	101
<i>propinquus, Bulimus</i>	18792	379
<i>putillus, Bulimus</i>	18869	685
<i>retexta, Helix</i>	18783	211
<i>rubicunda, Limicolaria</i>	18957	294
<i>rugeli, Cyllindrella</i>	18865	21
<i>rugeli, Helix</i>	18827	515
<i>scalarina, Cyllindrella</i>	18866	22
<i>scutula, Helix</i>	18788	210
<i>sennaariensis, Bulimus</i>	18981	275

Species	NMBE number	old number
<i>servilis</i> , <i>Helix</i>	20370	(NMB 10882a)
<i>servilis</i> , <i>Helix</i>	20744	(NMB 10882b)
<i>steursiana</i> , <i>Helix</i>	18831	474
<i>steursii</i> , <i>Nanina</i>	18823	–
<i>stigmatica</i> , <i>Achatina</i> ( <i>Polyphemus</i> )	18846	28
<i>strigata</i> , <i>Limicolaria luctuosa</i> var.	18982	291
<i>stylodon</i> , <i>Leptinaria</i>	18894	86
<i>subaquila</i> , <i>Helix</i>	18883	38 C
<i>subaquila</i> , <i>Helix</i>	18884	38 D
<i>subaquila</i> , <i>Helix</i>	18885	37 A
<i>subaquila</i> , <i>Helix</i>	18886	37 B
<i>subaquila</i> , <i>Helix</i>	18887	35
<i>subtilis</i> , <i>Achatina</i>	19032	36
<i>sulculosa</i> , <i>Glandina</i>	18903	73 A
<i>sulculosa</i> , <i>Glandina</i>	18904	73 B
<i>tabidus</i> , <i>Bulimus</i>	18795	382
<i>taeniata</i> , <i>Pupa</i>	19084a, b	571
<i>taeniata</i> , <i>Pupa</i>	19085a, b	570
<i>tandoniana</i> , <i>Achatina</i> ( <i>Zua</i> )	18985	90
<i>terebraeformis</i> , <i>Glandina</i>	18900	75
<i>terebraeformis</i> , <i>Glandina</i>	18901	76
<i>textilis</i> , <i>Helix</i>	18781	212
<i>trullisatus</i> , <i>Orthalicus</i>	18962	386
<i>uvulifera</i> , <i>Helix</i>	18830	425
<i>vitellus</i> , <i>Nanina</i>	18822	355

**Table 2. Pulmonate syntype specimens from the Shuttleworth collection in the Natural History Museum Basel (NMB). The type locality is only specified when Shuttleworth mentioned several localities for one species.**

Species	NMB number	Remarks
<i>albopunctulata</i> , <i>Gaeotis</i>	8260a/1	Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>approximans</i> , <i>Succinea</i>	7285b/3	Probable syntypes. Puerto Rico. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>castanea</i> , <i>Pupa</i>	7045a/3	Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>ceratina</i> , <i>Helix</i>	446e/6	Probable syntypes. Corsica. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>circumlineatus</i> , <i>Planorbis</i>	4560d/6	Humacao. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>circumsessa</i> , <i>Helix</i>	2380c/4	Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>clymene</i> , <i>Zonites</i>	10881a/18	Coll. Bohny, ex Shuttleworth.
<i>corsica</i> , <i>Succinea</i>	527bf/5	Corsica, Bastia. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>cuticula</i> , <i>Helix</i>	9423a/6	Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>cuticula</i> , <i>Helix</i>	9423b/2	Teneriffa. Coll. Bohny, probably ex Boissier, ex Shuttleworth.
<i>engonata</i> , <i>Helix</i>	7424b/5	Probable syntypes. Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>fortunata</i> , <i>Helix</i>	9410a/4	Probable syntypes. Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>fortunata</i> , <i>Helix</i>	9410b/1	Probable syntypes. Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>hopetonensis</i> , <i>Helix</i>	8644b/2	Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>hyalina</i> , <i>Succinea</i>	7296a/1	Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>interrupta</i> , <i>Glandina</i>	7993a/3	Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>lenis</i> , <i>Zonites</i>	7462a/5	Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>luquillensis</i> , <i>Helix</i>	6682b/5	Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>margaritacea</i> , <i>Stenogyra</i>	4557l/16	Rio Blanco. Coll. Bohny, ex Schneider, ex Shuttleworth.

Species	NMB number	Remarks
<i>margaritacea</i> , <i>Stenogyra</i>	4557m/5	Sierra de Luquillo. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>marmorata</i> , <i>Cylindrella</i>	1598a/>50	Coll. Schneider 1874, ex Meissner, ex Shuttleworth.
<i>mordax</i> , <i>Helix</i>	4625a/2	Coll. NMB, ex Shuttleworth 1842.
<i>musicola</i> , <i>Helix</i>	4672a/9	Luquillo. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>musicola</i> , <i>Helix</i>	4672b/9	Luquillo. Coll. Bohny, ex Schneider, ex Shuttleworth.
<i>musicola</i> , <i>Helix</i>	4672c/1	San Juan. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>nigrolineata</i> , <i>Gaeotis</i>	8258a/9	Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>nivariensis</i> , <i>Helix</i>	2376c/9	Probable syntypes. Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>nivariensis</i> , <i>Helix</i>	2376d/14	Probable syntypes. Teneriffa. Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>oleacea</i> , <i>Helix</i>	9362a/2	Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>opalescens</i> , <i>Leptinaria</i>	7631a/3	Probable syntypes. Puerto Rico. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>plagioptycha</i> , <i>Helix</i>	4954b/4	Humacao. Coll. Bohny, probably ex Boissier, ex Shuttleworth, leg. Blauner.
<i>portoricensis</i> , <i>Simpulopsis</i>	8932a/6	Coll. Bohny, ex Boissier, ex Shuttleworth.
<i>rugeli</i> , <i>Cylindrella</i>	8480a/3	Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Rugel.
<i>servilis</i> , <i>Helix</i>	10882a/5	Garachico, Teneriffa, ex Shuttleworth.
<i>servilis</i> , <i>Helix</i>	(10882b/1)	Palma, ex Shuttleworth. This specimen is now in NMBE (20744/1).
<i>scalarina</i> , <i>Cylindrella</i>	1599a/6	Probable syntypes. Cuba. Coll. NMB, ex Meissner 1874, ex Shuttleworth.
<i>scalarina</i> , <i>Cylindrella</i>	1599c/8	Probable syntypes. Cuba. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Rugel.
<i>subaquila</i> , <i>Helix</i>	8760a/12	Humacao, Insula Vièque. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>subaquila</i> , <i>Helix</i>	8760b/28	Luquillo. Coll. Bohny, ex Schneider, ex Shuttleworth.
<i>sulculosa</i> , <i>Glandina</i>	7986b/3	San Juan. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.

Species	NMB number	Remarks
<i>terebraeformis</i> , <i>Glandina</i>	7986a/2	Rio Blanco. Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Blauner.
<i>uvulifera</i> , <i>Helix</i>	6167b/1	Coll. Bohny, ex Boissier, ex Shuttleworth, leg. Rugel.

### Addresses of the authors:

Dr. Eike Neubert, Wiesenstrasse 2, D-79410 Badenweiler-Schweighof, Germany; e-mail: eike.neubert@t-online.de

Dr. Margret Gosteli, Naturhistorisches Museum Bern, Bernastrasse 15, CH-3005 Bern, Switzerland; e-mail: margret.gosteli@nmbe.unibe.ch.

### Plates

**All plates phot./layout E. Neubert. The SEM pictures of plate 19 were made by Dr. Didier Reinhardt (University of Berne).**



## Plate 1

### Chitonidae I.

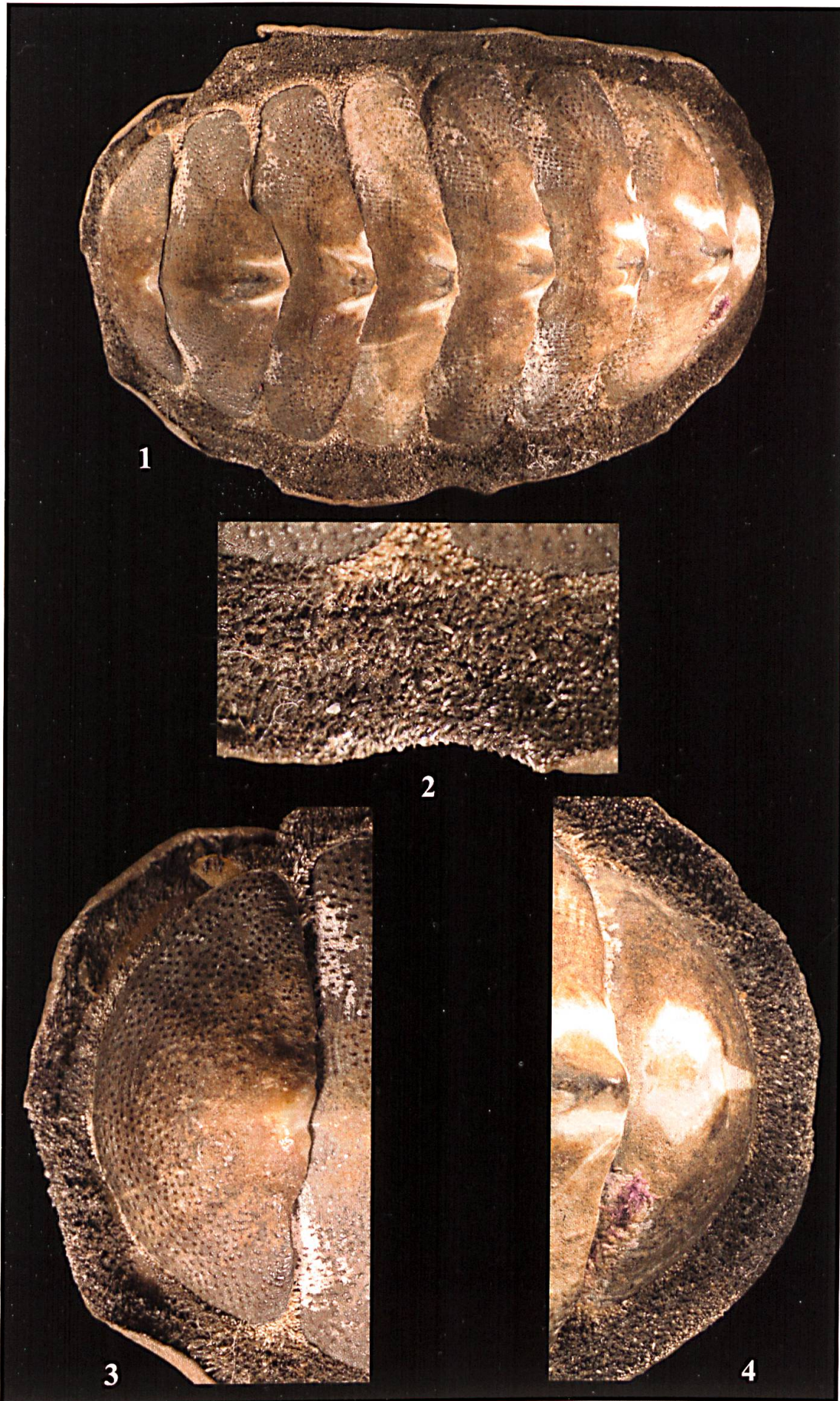
Figs. 1–4. *Chiton (Acanthopleura) blauneri* SHUTTLEWORTH, 1856. Holotype NMBE 19117, Puerto Rico, leg. Blauner 1853.

Fig. 1: Situs dorsal (L = 48.3 mm, scaled 2x).

Fig. 2: Detail of girdle with scales.

Fig. 3: Dorsal view on valve 1.

Fig. 4: Dorsal view on valve 8.



## Plate 2

### Chitonidae II.

Figs. 1–5. *Chiton (Lophurus) gemmulatus* SHUTTLEWORTH, 1853. Syntype NMBE 19120, USA, Virgin Islands “St. Thomas”, leg. Blauner 1852.

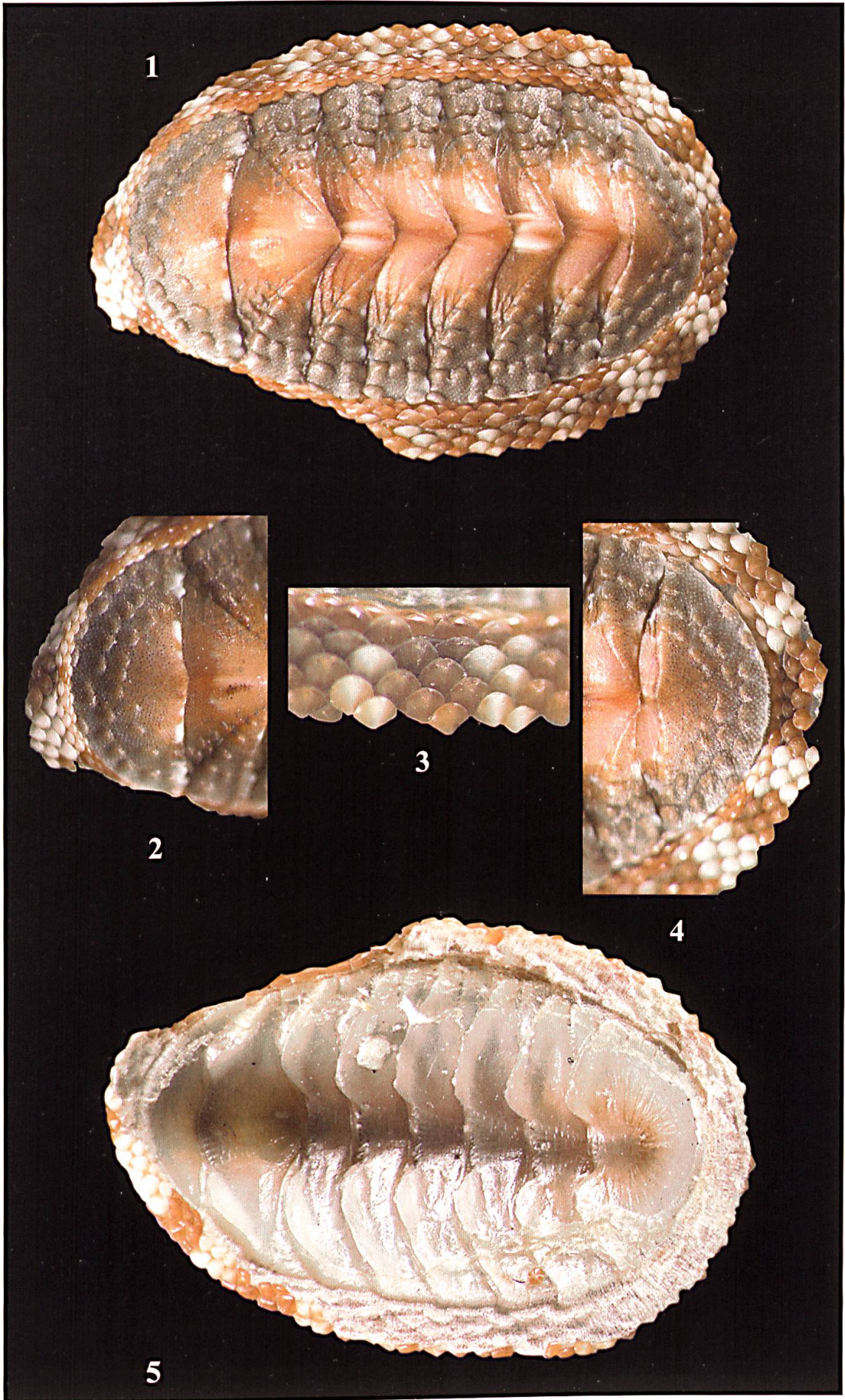
Fig. 1: Situs dorsal (L = 8.4 mm, scaled 11x).

Fig. 2: Dorsal view on valve 1.

Fig. 3: Detail of girdle with scales.

Fig. 4: Dorsal view on valve 8.

Fig. 5: Situs ventral (L = 8.4 mm, scaled 11x).



## Plate 3

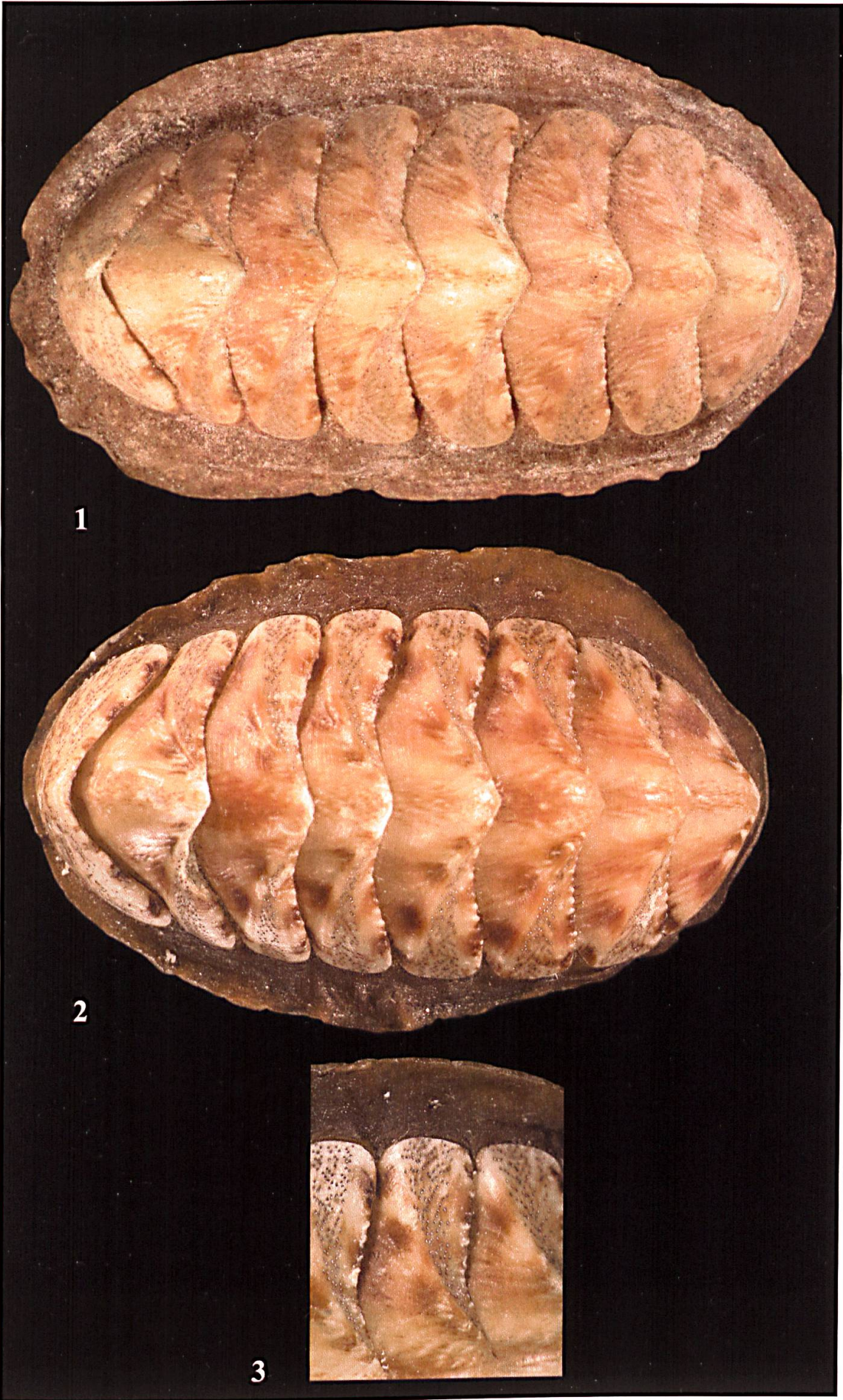
### Chitonidae III.

Figs. 1–3. *Chiton (Tonicia) schrammi* SHUTTLEWORTH, 1856. Lectotype MNHN, paralectotype NMBE 19115, West Indies, Guadeloupe, ex Bernardi 1855.

Fig. 1: Lectotype MNHN (L = 29 mm, scaled 4x).

Fig. 2: Paralectotype NMBE 19115 (L = 26 mm, scaled 4x).

Fig. 3: Paralectotype NMBE 19115, detail of median valves with girdle.



## Plate 4

### Chitonidae IV, Ischnochitonidae I.

Figs. 1–2. *Chiton (Tonicia) schrammi* SHUTTLEWORTH, 1856. Paralectotype NMBE 19115, West Indies, Guadeloupe, ex Bernardi 1855.

Fig. 1: Dorsal view on valve 1.

Fig. 2: Dorsal view on valve 8.

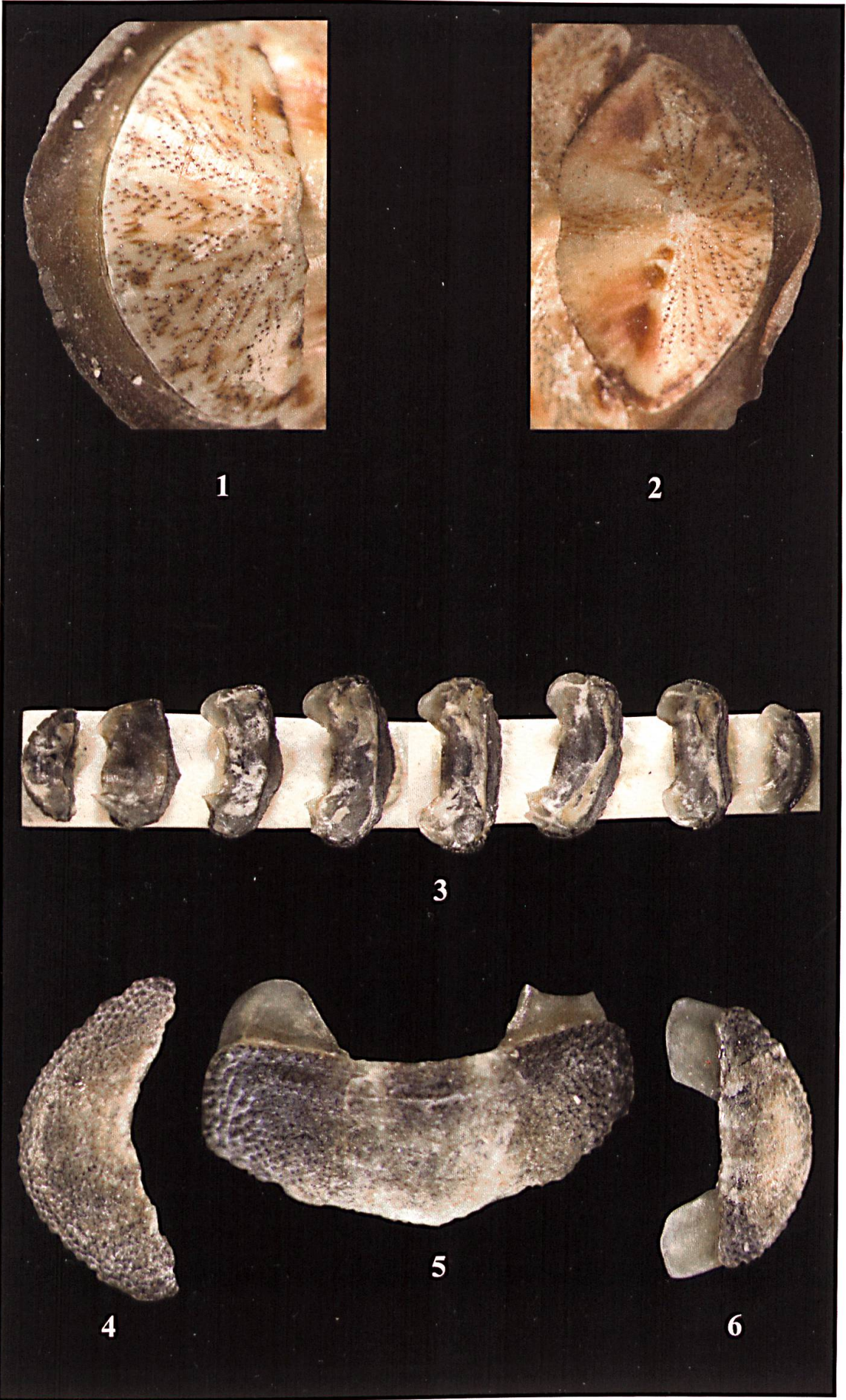
Figs. 3–6. *Chiton (Acanthopleura) piceolus* SHUTTLEWORTH, 1853. Syntype NMBE 19119, Canary Islands “Tenerife”, leg. Blauner 1850.

Fig. 3: Ventral view on disarticulated syntype specimen.

Fig. 4: Dorsal view on valve 1 (width = 2.8 mm).

Fig. 5: Dorsal view on valve 4 (width = 4.0 mm).

Fig. 6: Dorsal view on valve 8 (width = 2.6 mm).





## Plate 5

### Ischnochitonidae II.

Figs. 1–5. *Chiton (Chaetopleura) asper* SHUTTLEWORTH, 1856. Syntype NMBE 19118, West Indies, Guadeloupe, ex Bernardi 1855.

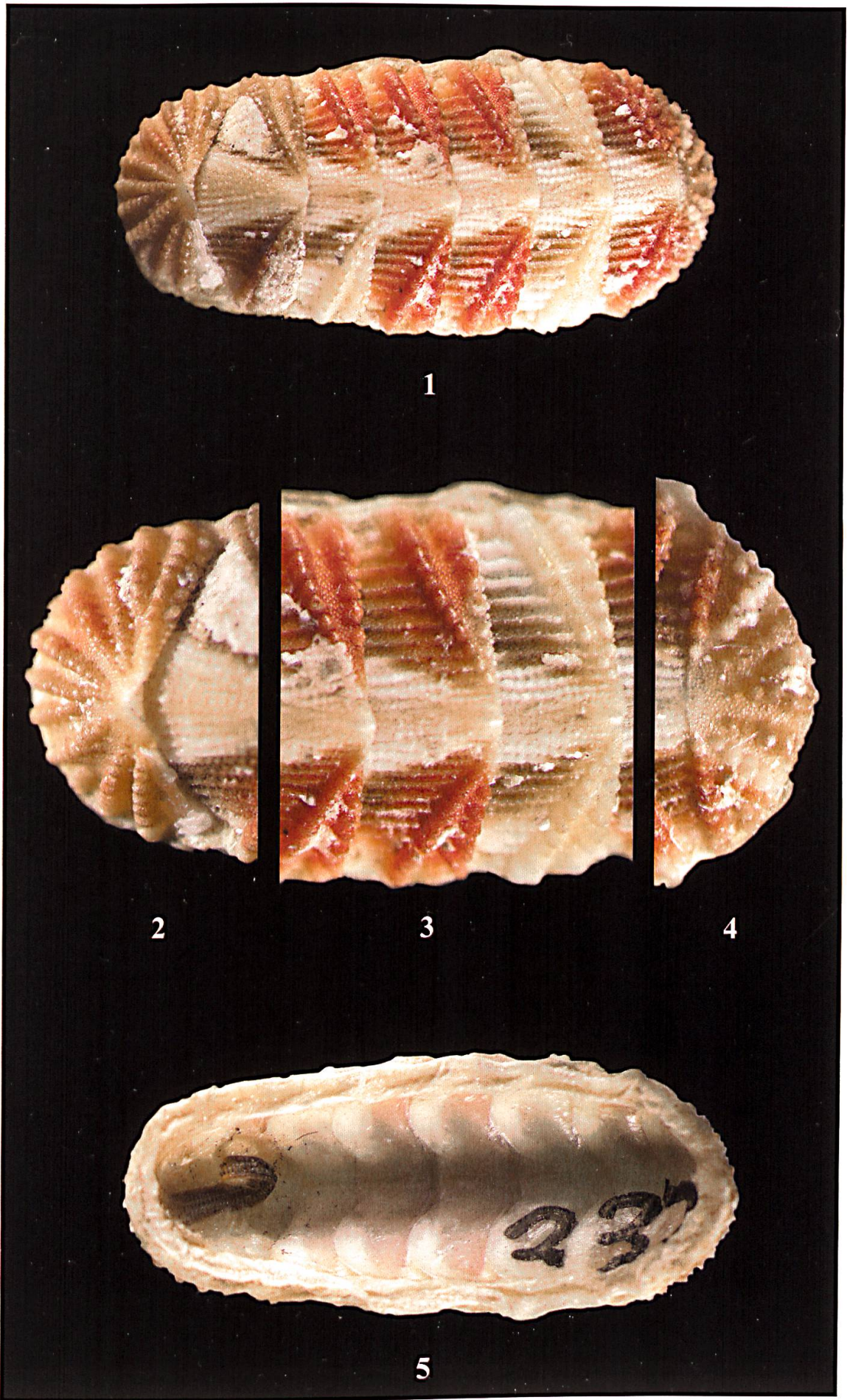
Fig. 1: Situs dorsal (L = 10.5 mm, scaled 8x).

Fig. 2: Dorsal view on valve 1, 2.

Fig. 3: Dorsal view on valve 4, 5, 6.

Fig. 4: Dorsal view on valve 7, 8.

Fig. 5: Situs ventral (L = 10.5 mm, scaled 8x).



## Plate 6

### Hydrocenidae, Truncatellidae, Cyclophoridae.

- Fig. 1. *Hydrocaena gutta* SHUTTLEWORTH, 1852. Syntype NMBE 18974, Canary Islands “Teneriffa”, leg. Blauner 1851 (H = 2.9 mm, scaled 20x).
- Fig. 2. *Truncatella lowei* SHUTTLEWORTH, 1852. Syntype NMBE 19114, Canary Islands “ad oram maritimam insulae Teneriffae”, leg. Blauner (H = 5.7 mm, scaled 15x).
- Fig. 3. *Cyclostoma (Craspedopoma) costatum* SHUTTLEWORTH, 1852. Syntype NMBE 18977, Canary Islands “Palma”, leg. Blauner 1851 (H = 4.0 mm, scaled 15x).
- Fig. 4. *Cyclostoma (Cyclophorus vel Leptopoma) thersites* SHUTTLEWORTH, 1852. Syntype NMBE 19097, Philippines, ex Verreaux 1851 (H = 19.3 mm, scaled 2x).

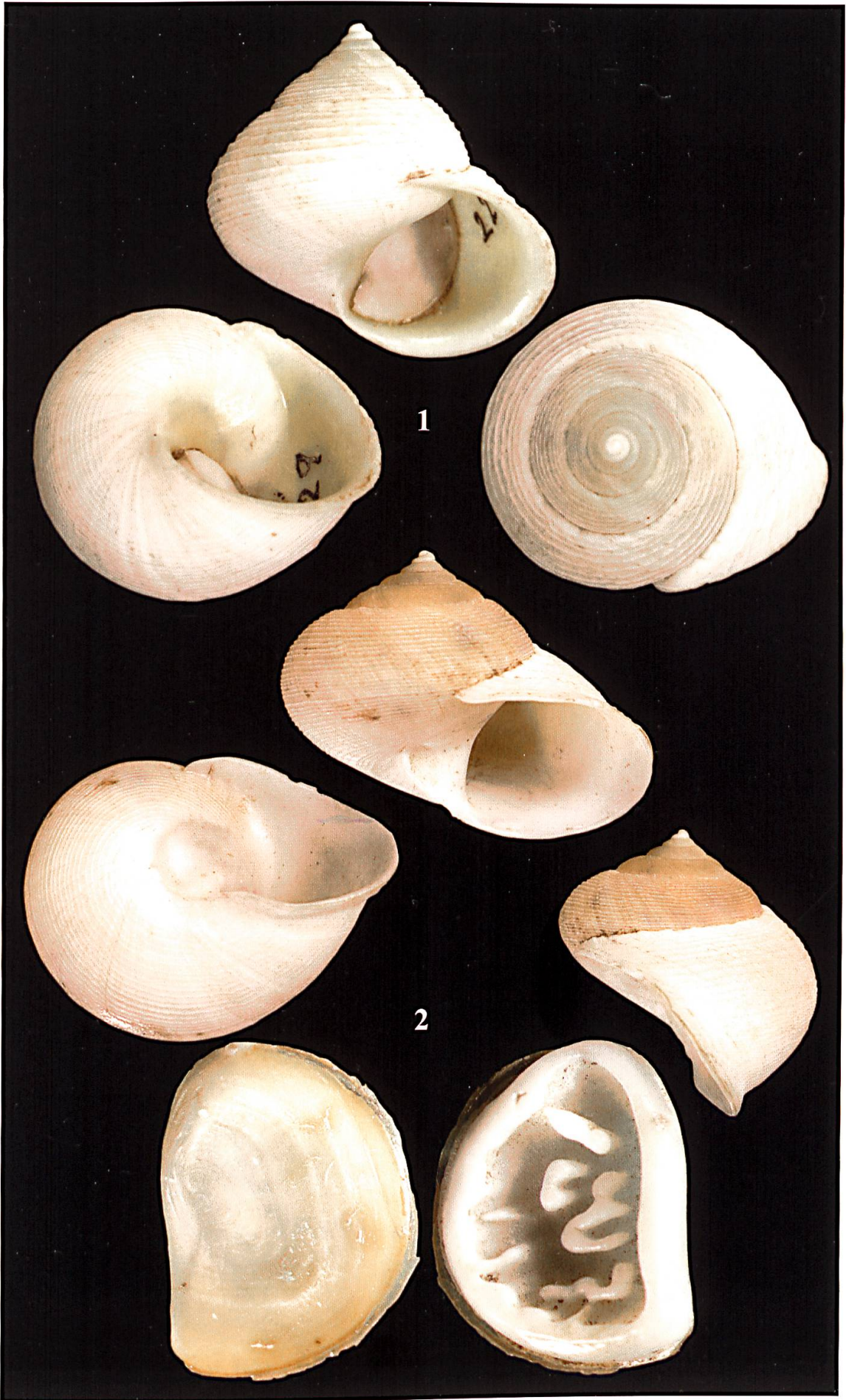


## Plate 7

### Helicinidae I, all figures 4x.

Fig. 1. *Trochatella chrysostoma* L. PFEIFFER, 1852. NMBE 18817, Cuba, Punta Brava, leg. Rugel 1849 (H = 11.35 mm).

Fig. 2. *Trochatella opima* SHUTTLEWORTH, 1852. Syntype NMBE 15271, "Haiti", leg. Sallé ex Cuming 1852 (H = 10.1 mm).



## Plate 8

### Helicinidae II, all figures 4x.

- Fig. 1. *Helicina chrysocheila* SHUTTLEWORTH, 1852. Holotype NMBE 15267, Mexico "Cordova, Vera Cruz", ex Jacot-Guillarmod (H = 8.05 mm).
- Fig. 2. *Helicina cinctella* SHUTTLEWORTH, 1852. Syntype NMBE 15275, Mexico "Cordova, Vera Cruz", ex Jacot-Guillarmod 1852 (H = 8.2 mm).
- Fig. 3. *Helicina delicatula* SHUTTLEWORTH, 1852. Holotype NMBE 19074, Mexico "Cordova, Vera Cruz", ex Jacot-Guillarmod (H = 5.88 mm).

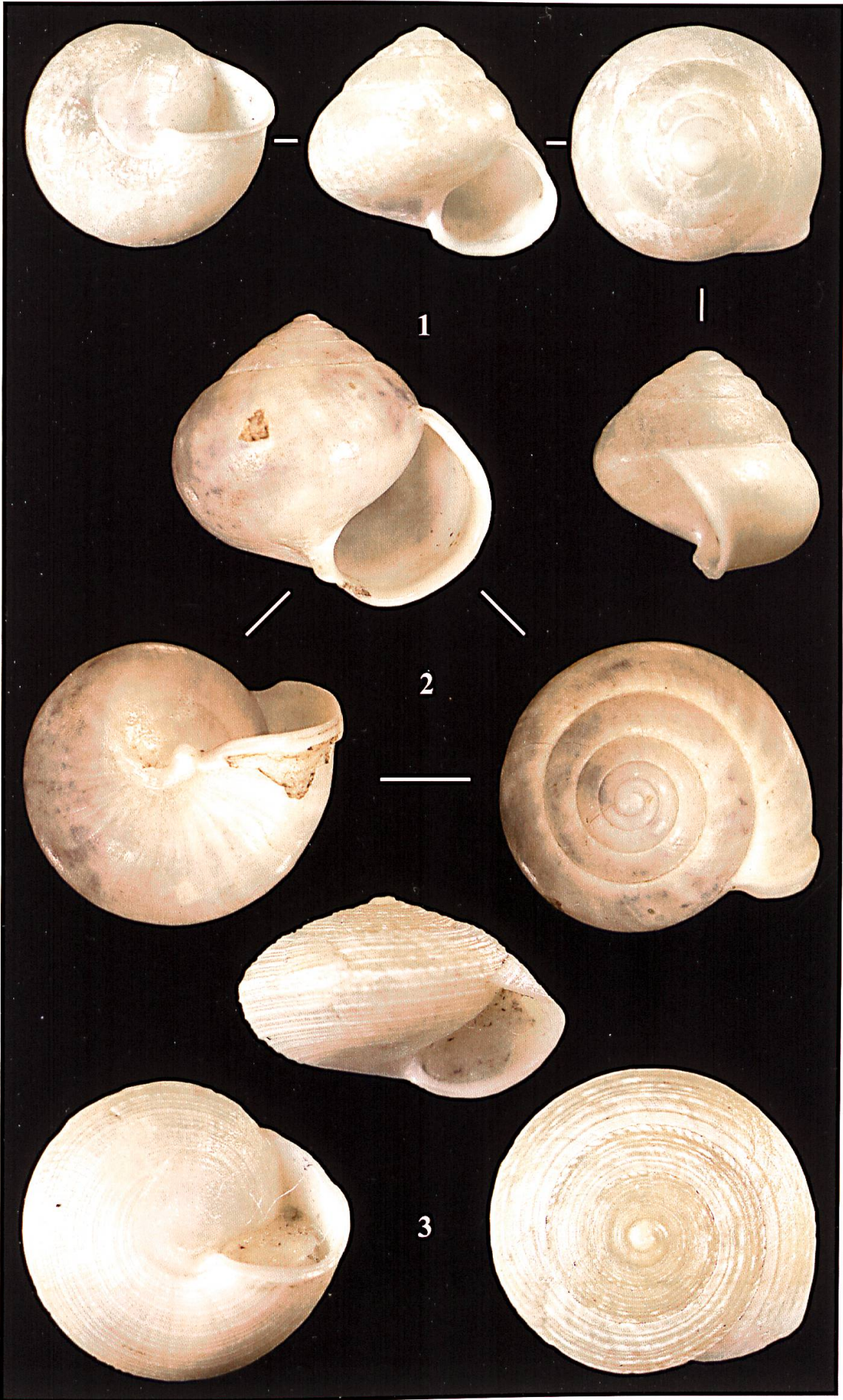




## Plate 9

### Helicinidae III.

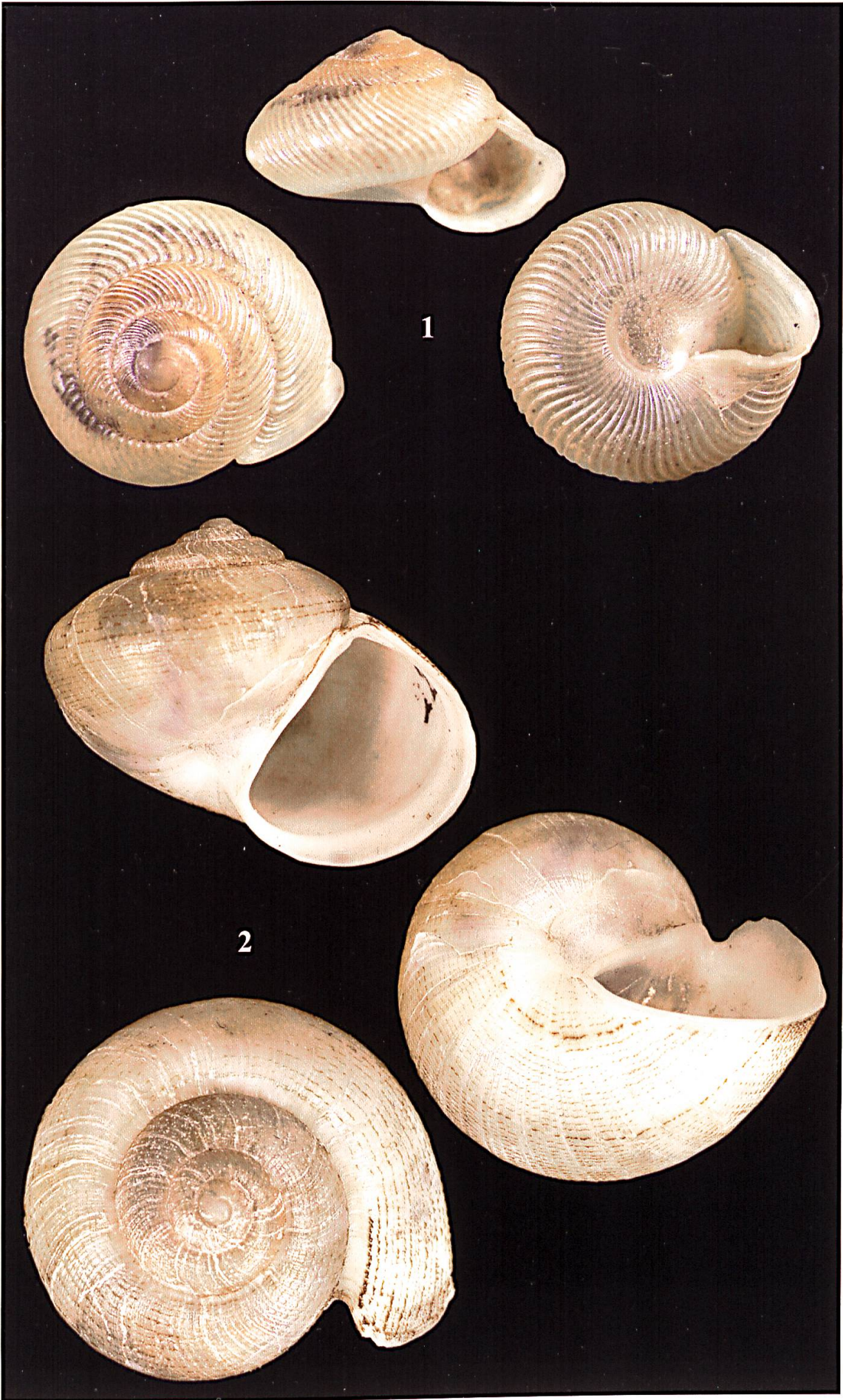
- Fig. 1. *Helicina elata* SHUTTLEWORTH, 1852. Syntype NMBE 15269, Mexico “Cordova, Vera Cruz”, ex Jacot-Guillarmod (H = 4.0 mm, scaled 8x).
- Fig. 2. *Helicina sandozi* SHUTTLEWORTH, 1852. Syntype NMBE 15270, “Mexico”, leg. Sandoz ex Nicolet (H = 10.2 mm, scaled 4x).
- Fig. 3. *Helicina umbonata* SHUTTLEWORTH, 1854. “Syntype” NMBE 15272, Puerto Rico, leg. Knox 1853 (H = 3.55 mm, scaled 8x).



## Plate 10

### Helicinidae IV.

- Fig. 1. *Helicina vinosa* SHUTTLEWORTH, 1854. Syntype NMBE 18813, Puerto Rico "Rio Blanco" (H = 2.33 mm, scaled 12x).
- Fig. 2. *Schasicheila nicoleti* SHUTTLEWORTH, 1852. Syntype NMBE 15274, Mexico "Cordova, Vera Cruz", leg. Jacot-Guillarmod ex Nicolet (H = 12.2 mm, scaled 4x).



## Plate 11

### Megalomastomatidae, Fasciolariidae, Pleuroceridae.

- Fig. 1. *Cyclostoma (Megalomastoma) verruculosum* Shuttleworth, 1854. Syntype NMBE 19104, Puerto Rico “Sierra de Luquillo”, leg. Blauner 1853 (H = 16.5 mm, scaled 5x).
- Fig. 2. *Cyclostoma (Megalomastoma) croceum* var. *minor* SHUTTLEWORTH, 1854. Syntype NMBE 20737, Puerto Rico “sine localitate, Blauner 1853” (H = 21.0 mm, scaled 5x).
- Fig. 3. *Fusus hartvigii* SHUTTLEWORTH, 1856. Syntype NMBE 19094, USA, Virgin Islands “St. Thomas”, leg. Blauner 1853 (H = 30.1 mm, scaled 4x).
- Fig. 4. *Gyrotoma pyramidata* SHUTTLEWORTH, 1845. Syntype NMBE 19112, USA, Alabama “auf Felsen im Flusse Coosa bei Wetumpka”, leg. Rugel 1843 (H = 21.2 mm, scaled 3x).
- Fig. 5. *Gyrotoma ovoidea* SHUTTLEWORTH, 1845. Syntype NMBE 19111, USA, Alabama “auf Felsen im Flusse Coosa bei Wetumpka”, leg. Rugel 1843 (H = 18.32 mm, scaled 3x).



## Plate 12

### Neocyclotidae I, all figures 4x.

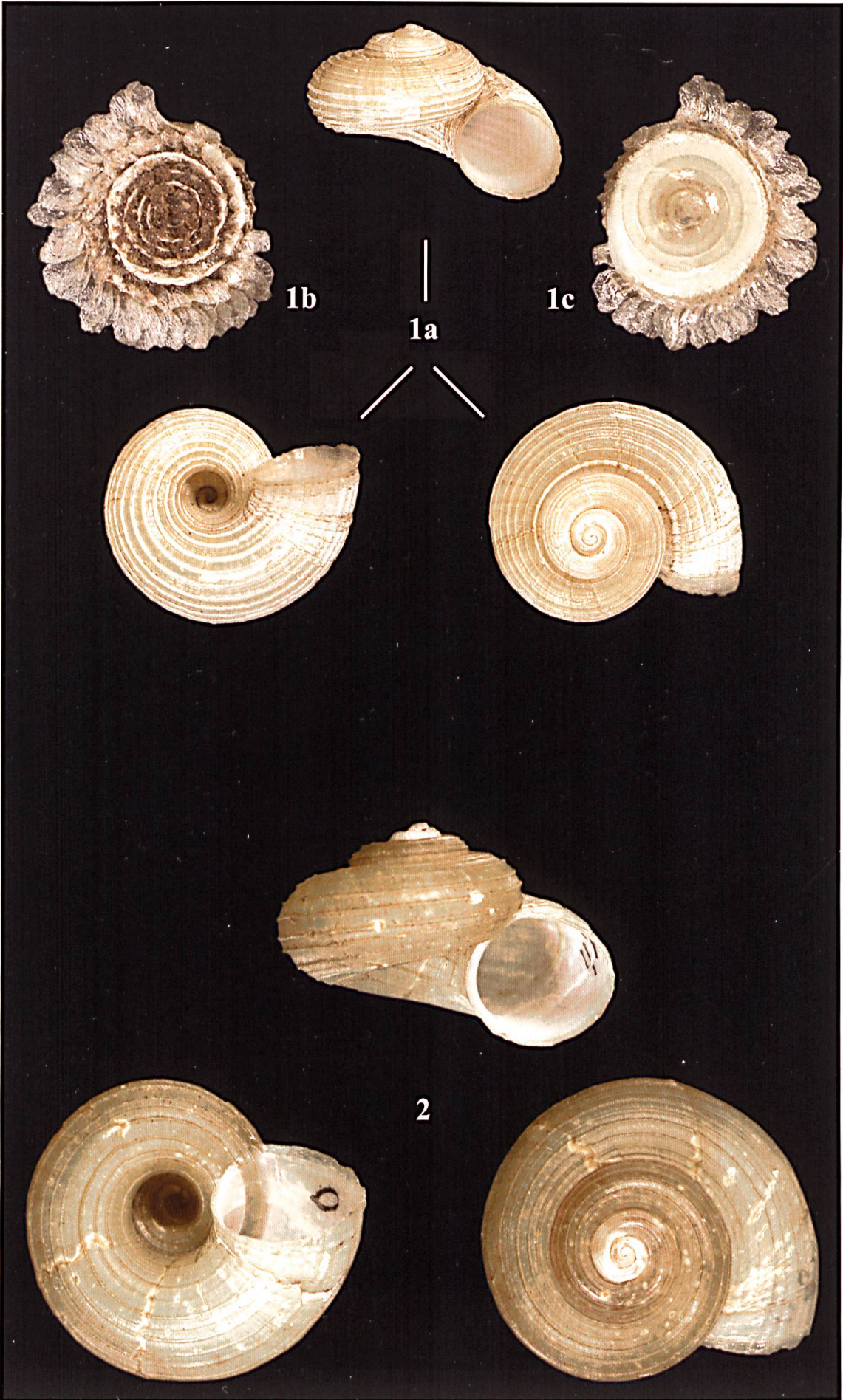
Figs. 1a–c. *Cyclostoma (Cyclotus) floccosum* SHUTTLEWORTH, 1857. Syntype NMBE 19100, “Haiti”, ex Cuming 1852 (D = 9.98 mm).

Fig. 1a: Syntype specimen in three different views.

Fig. 1b: Operculum, outer surface (diameter of nucleus without fringe 3.1 mm).

Fig. 1c: Operculum, inner surface (diameter of nucleus without fringe 3.1 mm).

Fig. 2. *Cyclostoma (Cyclophorus) schrammi* SHUTTLEWORTH, 1857. Syntype NMBE 19095, French Antilles “Guadeloupe”, ex Petit 1854/1855 (D = 11.82 mm).

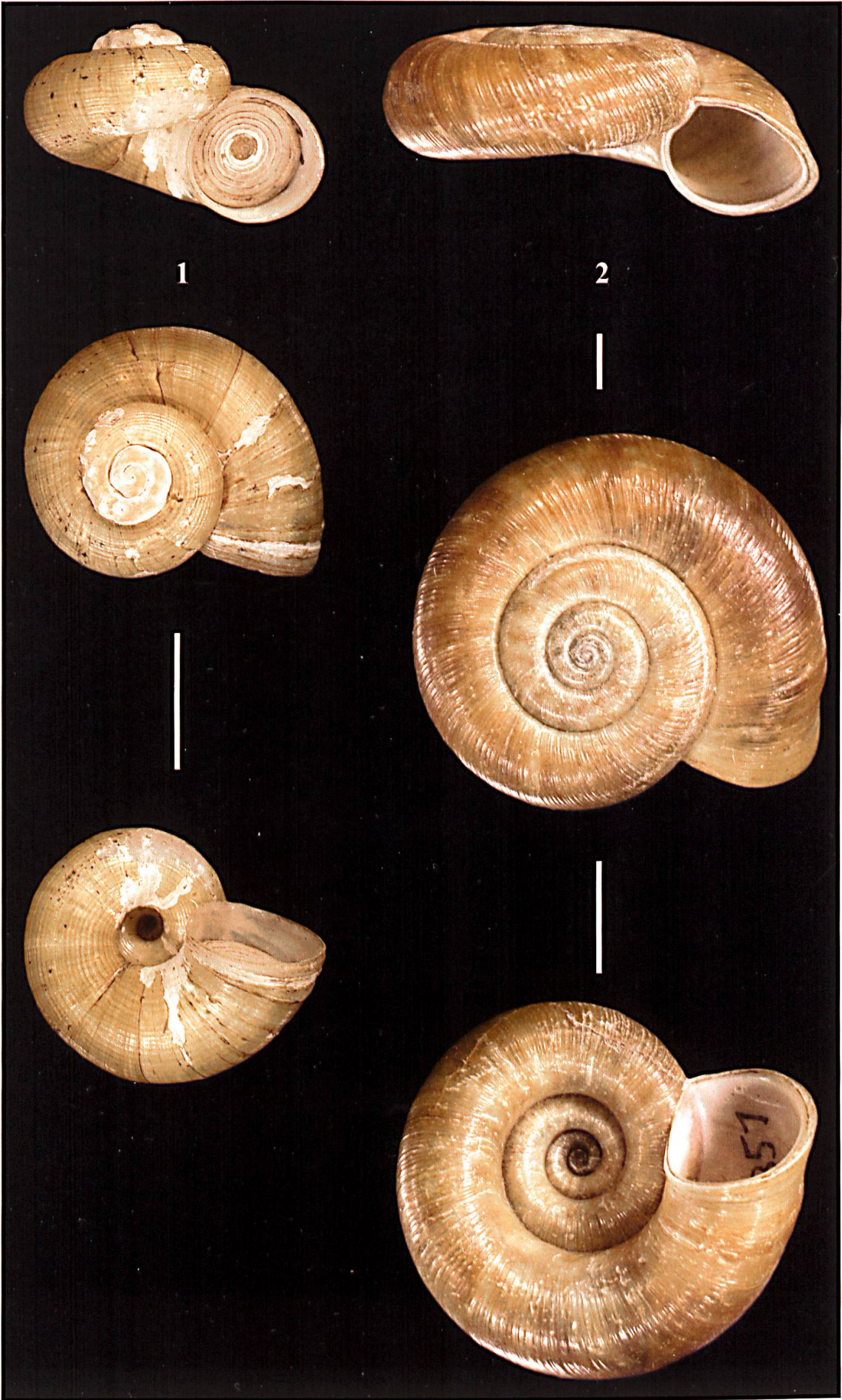




## Plate 13

### Neocyclotidae II, all figures 3x.

- Fig. 1. *Cyclostoma (Cyclotus) martinicense* SHUTTLEWORTH, 1857. Syntype NMBE 19099, French Antilles “Ins. Martinique”, ex Petit 1854 (D = 14.29 mm).
- Fig. 2. *Cyclostoma (Cyclophorus) cayennense* SHUTTLEWORTH, 1852. Syntype NMBE 19096, French Guyana “Cayenne”, ex Verreaux (D = 21.69 mm).



## Plate 14

### Neocyclotidae III, Annulariidae I.

Fig. 1. *Cyclostoma (Cyclotus) granadense* SHUTTLEWORTH, 1857. Holotype NMBE 19098, West Indies, "Insul. Granada", leg. Newcomb ex Bland 1856 (D = 15.69 mm, scaled 3x).

Fig. 2. *Cyclostoma (Chondropoma) blauneri* SHUTTLEWORTH, 1854. Syntype NMBE 18847, Puerto Rico "prope Humacao", leg. Blauner 1853 (H = 18.5 mm, scaled 4x).

Fig. 3. Annulariidae gen. sp. 1, NMBE 18849b (H = 14.85 mm, scaled 4x).

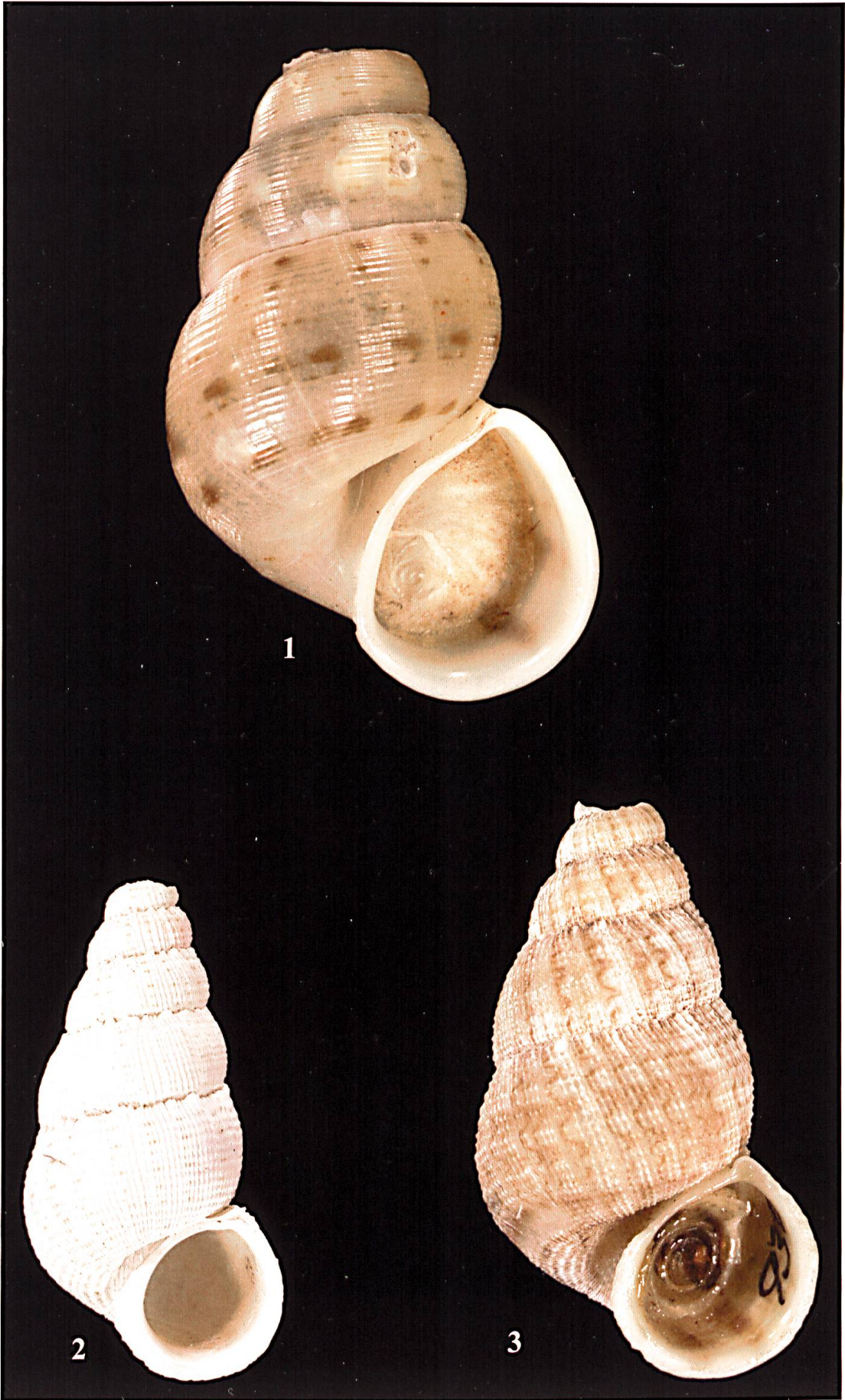
Fig. 4. Annulariidae gen. sp. 2, NMBE 18849c (H = 13.5 mm, scaled 4x).



## Plate 15

### Annulariidae II, all figures 5x.

- Fig. 1. *Cyclostoma (Chondropoma) swiftii* SHUTTLEWORTH, 1854. Syntype NMBE 19109, Puerto Rico "Ponce", leg. Swift ex Bland 1853 (H = 18.2 mm).
- Fig. 2. *Cyclostoma (Chondropoma?) newtoni* SHUTTLEWORTH, 1854. Syntype NMBE 19110, Puerto Rico "Arecibo", leg. Newton ex Bland 1853 (H = 13.9 mm).
- Fig. 3. *Cyclostoma (Choanopoma) senticosum* SHUTTLEWORTH, 1854. Syntype 19107, Puerto Rico "prope Luquillo", leg. Blauner 1853 (H = 16.0 mm).



## Plate 16

### Carditidae.

Figs. 1a–f. *Cardita conradi* SHUTTLEWORTH, 1856. Syntype NMBE 501773, USA, Florida, Tampa Bay, leg. Ruge 1847 (L = 27.55 mm, H = 18.05 mm.)

1a, b: External view of valves. 1a: left valve; 1b: right valve.

1c, d: Internal view of valves. 1c: left valve; 1d: right valve.

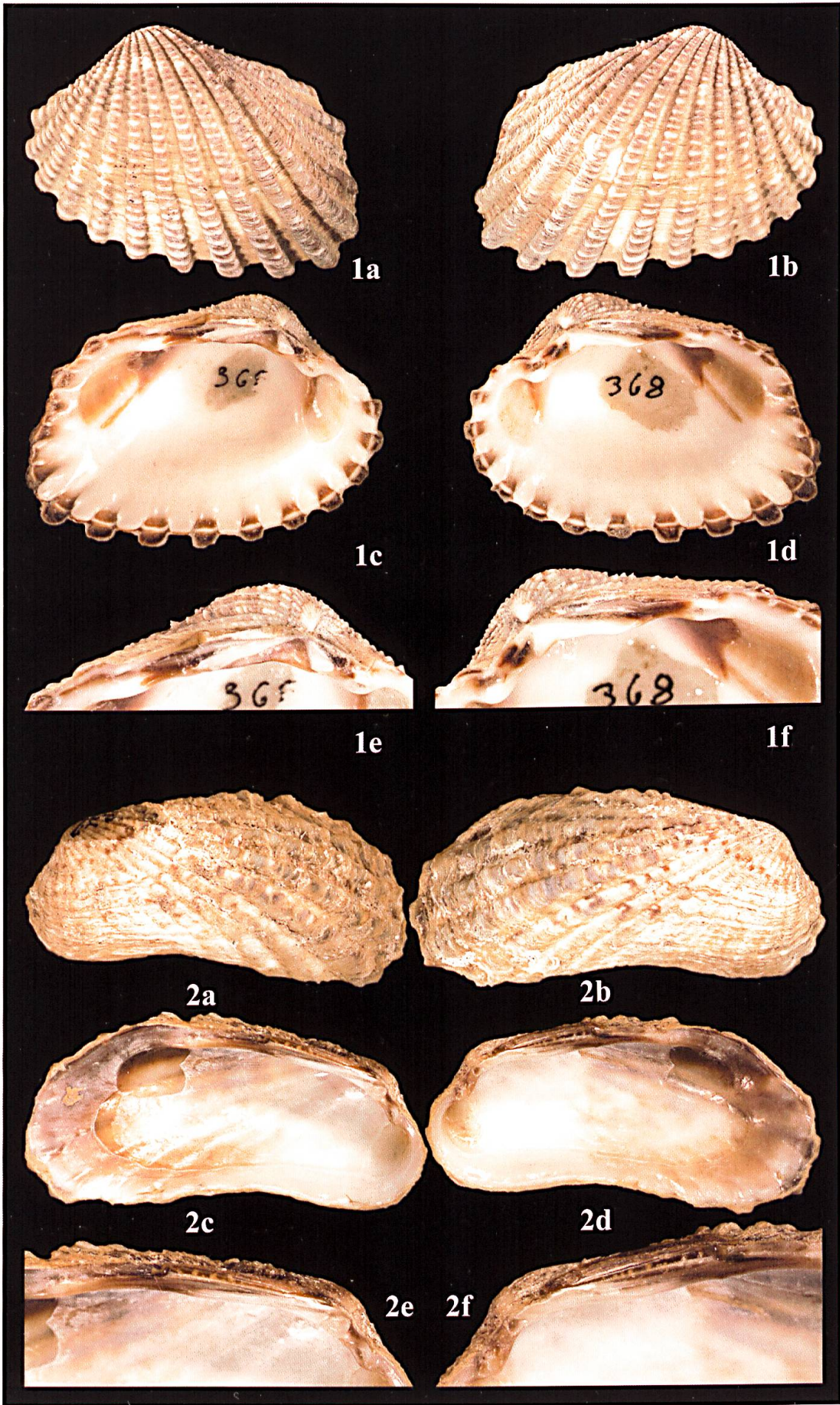
1e, f: View of hinge area. 1e: left valve; 1f: right valve.

Figs. 2a–f. *Cardita gracilis* SHUTTLEWORTH, 1856. Syntype NMBE 501774, Puerto Rico, leg. Blauner 1853 (L = 30.91 mm, H = 14.5 mm).

2a, b: External view of valves. 2a: left valve; 2b: right valve.

2c, d: Internal view of valves. 2c: left valve; 2d: right valve.

2e, f: View of hinge area. 2e: left valve; 2f: right valve.





## Plate 17

### Donacidae, Cardiidae.

Figs. 1a–f. *Iphigenia media* SHUTTLEWORTH, 1856. Syntype NMBE 501776, Puerto Rico, leg. Blauner 1853 (L = 65.77 mm, H = 43.35 mm).

1a, b: External view of valves. 1a: left valve; 1b: right valve.

1c, d: Internal view of valves. 1c: left valve; 1d: right valve.

1e, f: View of hinge area. 1e: left valve; 1f: right valve.

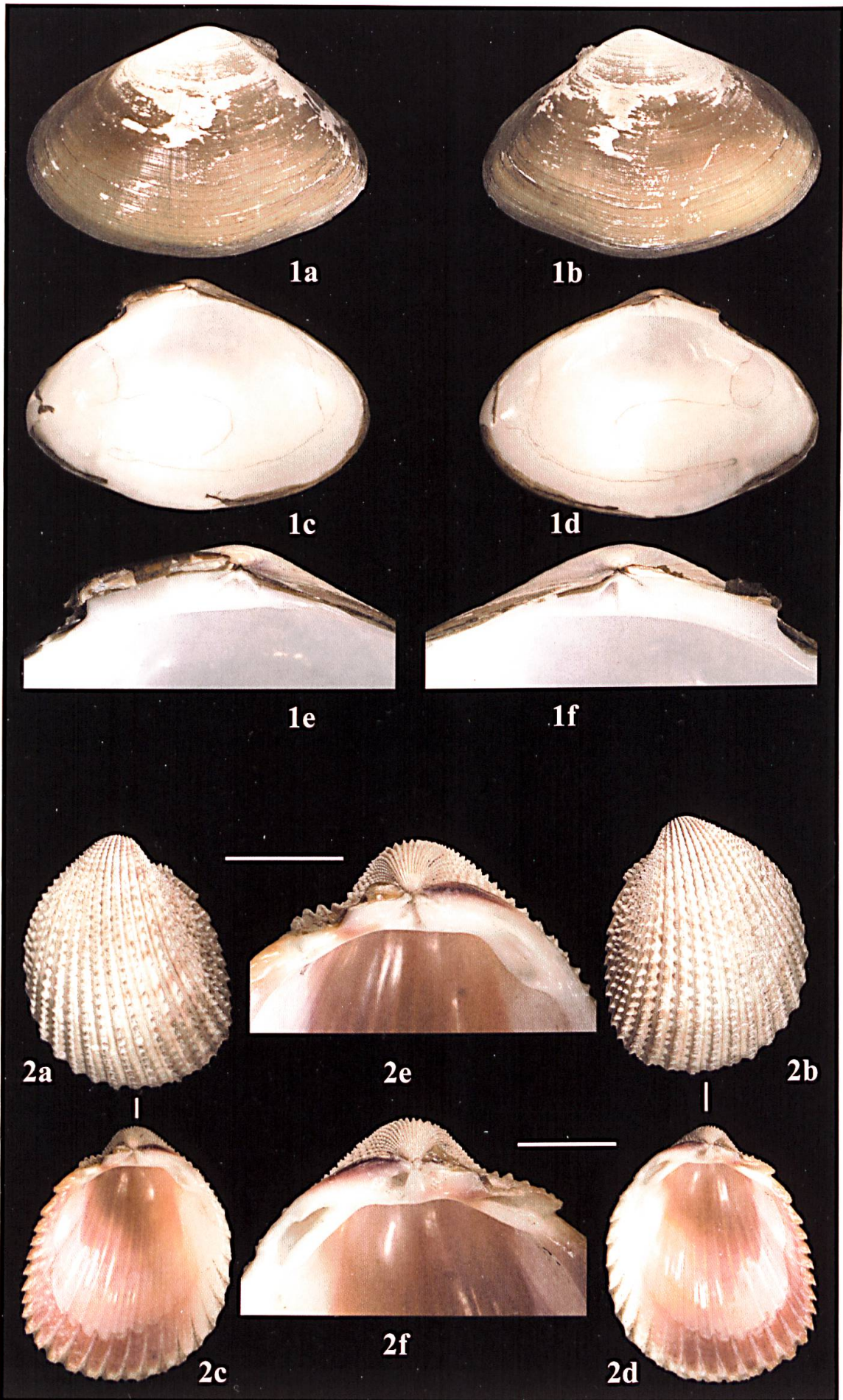
Figs. 2a–f. *Cardium egmontianum* SHUTTLEWORTH, 1856. Syntype NMBE 501775, USA, Florida, Tampa Bay, Egmont Keys, leg. Rugel (L = 39.2 mm, H = 48.55 mm).

2a, b: External view of valves. 2a: left valve; 2b: right valve.

2c, d: Internal view of valves. 2c: left valve; 2d: right valve.

2e, f: View of hinge area. 2e: left valve; 2f: right valve.

12

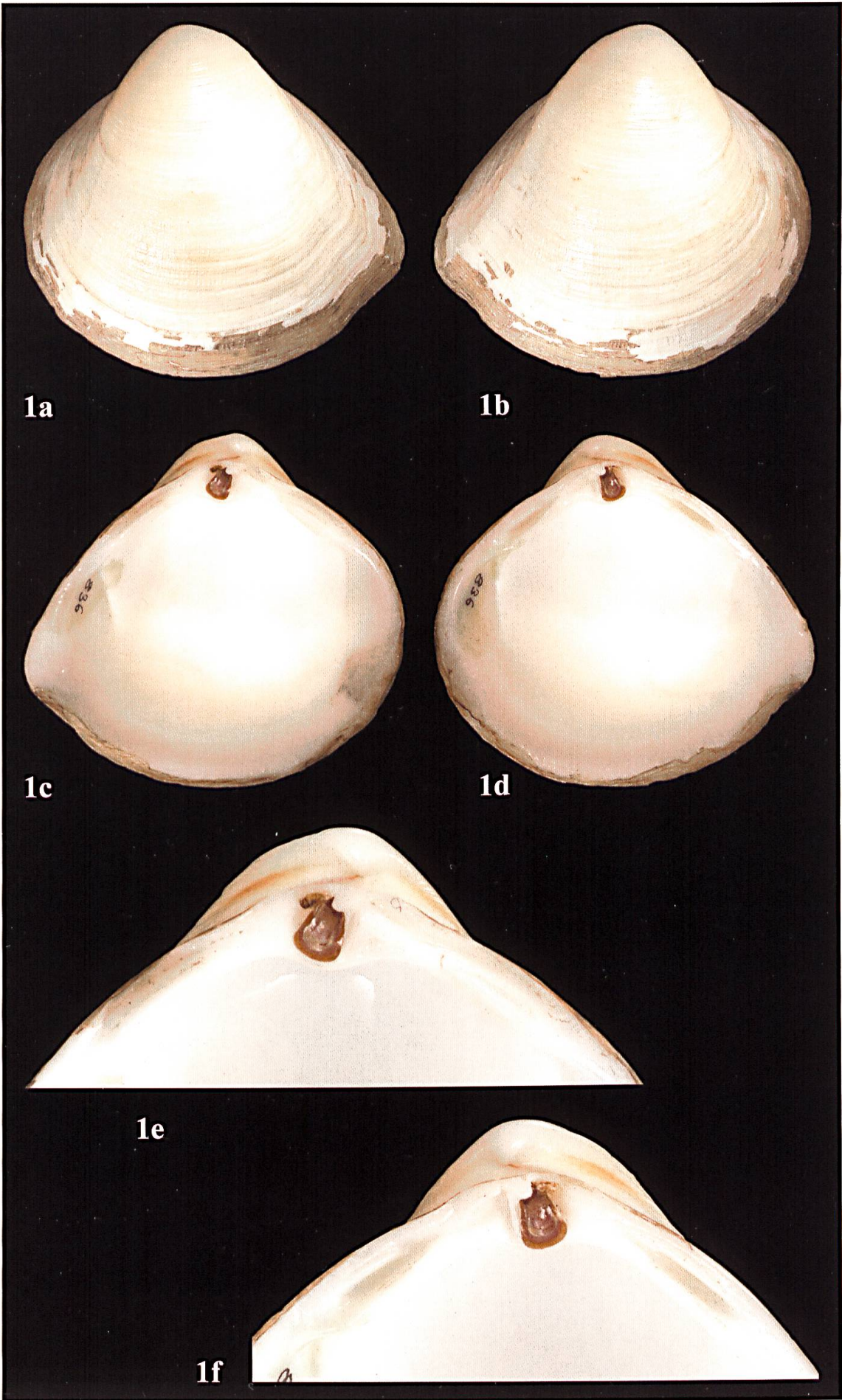


## Plate 18

### Mactridae.

Figs. 1a–f. *Mulina portoricensis* SHUTTLEWORTH, 1856. Syntype NMBE 501777, Puerto Rico, leg. Blauner 1853 (L = 36.3 mm, H = 32.95 mm).

- 1a, b: External view of valves. 1a: left valve; 1b: right valve.  
1c, d: Internal view of valves. 1c: left valve; 1d: right valve.  
1e, f: View of hinge area. 1e: left valve; 1f: right valve.

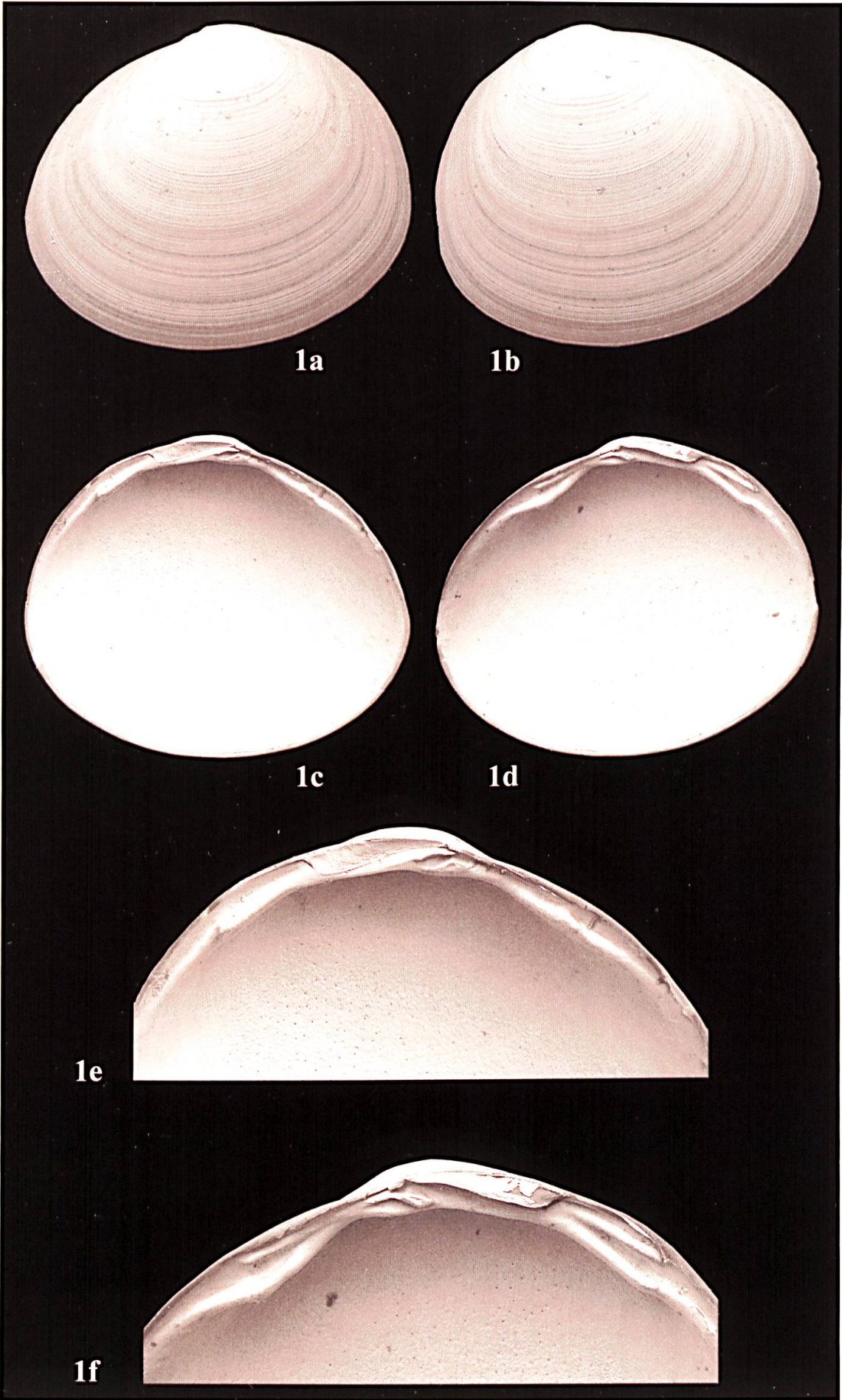


## Plate 19

### Sphaeriidae.

Figs. 1a–f. *Pisidium canariense* SHUTTLEWORTH, 1852. Syntype NMBE 501772, Canary Islands “Teneriffa”, leg. Blauner (L = 3.36 mm, H = 2.77 mm).

- 1a, b: External view of valves. 1a: left valve; 1b: right valve.  
1c, d: Internal view of valves. 1c: left valve; 1d: right valve.  
1e, f: View of hinge area. 1e: left valve; 1f: right valve.



## Plate 20

### Oxychilidae, Orthalicidae, Succineidae.

- Fig. 1. *Helix blauneri* SHUTTLEWORTH, 1843. Lectotype NMBE 19038a, France, Corsica, leg. Blauner 1842 (D = 10.3 mm, scaled 4x).
- Fig. 2. *Orthalicus livens* SHUTTLEWORTH, 1856. Syntype MHNN, Mexico, “probabiliter prope Vera Cruz”, ex Nicolet (H = 57.8 mm, scaled 1.5x).
- Fig. 3. *Succinea hyalina* SHUTTLEWORTH, 1854. Syntype NMBE 18949, Puerto Rico “Rio Blanco”, leg. Blauner 1853 (H = 10.6 mm, scaled 6x).





## INSTRUCTIONS TO AUTHORS

**Content:** Contributions to Natural History is a publication series of the Natural History Museum Bern (NMBE). Publications cover the fields of zoology, paleontology, and geology (including mineralogy and meteoritics) and should be related to scientific collections (preferably to those of the NMBE) and/or to research activities of museum scientists. In zoology, priority is given to contributions on taxonomy and systematics, biodiversity, morphology, faunistics, biogeography and all other aspects of organismic biology.

**Language:** Manuscripts may be written in English (preferred), German or French.

**Review:** Manuscripts will be peer-reviewed in any case by external referees.

**Submission of manuscripts:** Manuscripts should be sent as Email-attachments (preferred) or as three paper copies, including figures (no originals) and tables, to the managing editor. After reviewing, authors should send the revised version of the manuscript (including figures/tables) in a single paper copy and in an electronic version of the text (preferably MS Word or Word for Macintosh) and as txt file. Figures should be sent after reviewing either as originals or in an electronic version (jpeg, tiff, or other standard formats). Concerning figures and tables, authors should pay attention to the print area of 195 x 117 mm (including legends). Full breadth figures/tables are 117 mm wide with the legend at the base, all others are 85 mm wide with the legend at the side. If sent as originals, indicate magnification or size reduction of the figures at the backside of each original.

**Presentation:** Manuscripts must be clear and concise in style. Telegraphic style is recommended for descriptions. Establishment of new taxa must be in accordance with the rulings of the last edition of the International Code of Zoological Nomenclature and authors are expected to be familiar with the rulings of the Code. Name-bearing types must be deposited in a museum or in another institutional collection. Nomenclatural authors must be written in SMALL CAPS, with a comma between author and year of description. Bibliographical authors are written in normal style and without a comma between author and year. Use "&" for co-authors and "& al." instead of "et al.". Scientific names of genus-, species-, and subspecies-rank or (in case of citation of names proposed before 1961) of forms and varieties must be written in *italics*.

Manuscripts should be organised in the following way (in brackets: optional): Title, (subtitle), author(s), Abstract, (Kurzfassung, Résumé), Introduction, Material and Methods, (Abbreviations), Results, Discussion, Acknowledgements, References, Adress(es) of author(s), (Appendices). Figures, tables and legends should be on separate sheets. In case of large manuscripts, contents and index can be added. Footnotes should be avoided. Colour prints are possible in certain cases. Large manuscripts may require financial contributions to the printing costs by the authors.

Manuscripts should be typed or printed and be double-spaced throughout (including legends). Pages must be numbered. References must strictly follow the journal's style. Do not cite papers as "in prep." or other unpublished manuscripts like diploma theses or expert opinions, unless these manuscripts are accepted for publication in a scientific journal ("in press"). Examples for citation of literature:

Meyer, A.H., Schmidt, B.R. & Grossenbacher, K. (1998): Analysis of three amphibian populations with quarter-century long time series. — Proceedings of the Royal Society of London B 265: 523–528.

Groh, K. & Poppe, G. (2002): A conchological iconography. Family Acavidae excluding *Ampelita*. — 69 pp., 44 plates. ConchBooks, Hackenheim.

Selden, P.A. & Dunlop, J.A. (1998): Fossil taxa and relationships of chelicerates. — In: Edgecombe, G.D. (ed.), Arthropod fossils and phylogeny, pp. 303–331, Columbia University Press, New York.

**Proofs:** Galley proofs are sent to the authors for correction.

**Reprints:** 25 reprints will be supplied for free; additional reprints can be ordered with returned proof.