Ann. Naturhist. Mus. Wien, Serie A	113	373–509	Wien, Mai 2011

Gastropods and their habitats from the northern Red Sea (Egypt: Safaga)
Part 2: Caenogastropoda: Sorbeoconcha and Littorinimorpha

By Ronald JANSSEN [1], Martin ZUSCHIN[2] and Christian BAAL[2]

(With 28 plates, 7 figures and 4 tables)

Manuscript submitted on January 18th 2011,
the revised manuscript on February 18th 2011

Abstract

Almost 5,900 shells from a highly structured, coral-dominated coastal area of approximately 75 km^2 were studied and yielded 112 species of Sorbeoconcha and Littorinimorpha as well as one Vetigastropoda (in supplement to part 1). All species are figured and the taxonomy of many species is discussed in detail. Twelve species are recorded for the Red Sea for the first time. The high species richness was obtained from 119 quantitative and qualitative samples, which covered a broad range of soft and hard substrates in water depths from the intertidal down to 50 m. At all systematic levels (superfamilies, families, genera, species) well more than two third of the taxa belong to the Littorinimorpha, although 59 % of the studied shells are Sorbeoconcha. The Cerithioidea and Rissooidea together make up more than three quarters of the shells and also have the highest species- and genus richness. High diversity is also present in the Tonnoidea, Stromboidea, Naticoidea, Cypraeoidea and Vanikoroidea, which together, however, make up only 10 % of the studied shells. The majority of species was found in quantitative bulk samples from soft substrates. The highest species richness occurred in sandy, coral-associated sediments. Only ten species account for almost 75 % of the shells, and almost half of the species are present with less than ten shells. The three most abundant species are the rissoid *Rissoina cerithiiformis*, the cerithiid *Rhinoclavis sordidula* and the vermetid *Dendropoma maximum*. The most frequent species, *Rhinoclavis kochi*, was found in 23, but most species are rare and occur in less than five samples. Among abundant families the Cerithiidae were diverse in coral associated sediments, but individual species are abundant in mud, in the mangrove, on subtidal hard substrata and on some rocky tidal flats. Rissoidae and Plesiotrochidae were mostly found in coarse-grained sediments and were most diverse and / or abundant in samples from reef slope sand. Dialidae and Hipponicidae were preferentially found in coral- and seagrass-associated sediments. Scaliolidae and Naticidae were most abundant in muddy sediments, Potamididae virtually restricted to the mangrove and Vermetidae very abundant on reef flats near the reef edge. Strombidae and Turritellidae are widely distributed on soft- and hard

[1] Forschungsinstitut und Naturmuseum Senckenberg, Senckenberganlage 25, 60325 Frankfurt am Main, Germany; e-mail: Ronald.Janssen@senckenberg.de
[2] Universität Wien, Department für Paläontologie, Althanstraße 14, 1090 Wien, Austria

substrata and certain species of the former are abundant in seagrass-associated sediments and of the latter are restricted to muddy sediments and to the reef slope.

Keywords: Mollusca, biodiversity, Red Sea, Indian Ocean, Egypt, assemblages, taxonomy, new records

Zusammenfassung

Beinahe 5900 Schneckenschalen aus einem stark gegliederten, korallendominierten Küstenbereich von 75 km² wurden untersucht und 112 Arten von Sorbeoconcha und Littorinimorpha sowie eine Vetigastropode (als Nachtrag zu Teil 1) nachgewiesen. Alle Arten werden abgebildet und bei vielen Arten wird die Taxonomie diskutiert. Zwölf Arten stellen Erstnachweise für das Rote Meer dar. Der hohe Artenreichtum resultiert aus 119 quantitativen und qualitativen Proben, die eine große Bandbreite an Weich- und Hartsubstraten vom Intertidal bis 50 m Wassertiefe abdecken. Auf allen systematischen Niveaus (Supefamilien, Familien, Gattungen, Arten) gehören mehr als zwei Drittel der Arten zu den Littorinimorpha, obwohl 59 % der untersuchten Schalen Sorbeoconcha sind. Cerithioidea und Rissooidea machen zusammen mehr als drei Viertel der Schalen aus und haben den höchsten Arten- und Gattungsreichtum. Eine hohe Diversität ist auch in den Tonnoidea, Stromboidea, Naticoidea, Cypraeoidea and Vanikoroidea vorhanden, wobei diese Taxa nur 10 % der Schalen ausmachen. Die meisten Arten wurden in den quantitativen Proben von Weichsubstraten gefunden. Der höchste Artenreichtum kommt in sandigen, Korallen-assoziierten Sedimenten vor. Zehn Arten tragen zu beinahe 75 % der untersuchten Schalen bei und etwa die Hälfte der Arten sind mit weniger als 10 Schalen vorhanden. Die drei häufigsten Arten sind die Rissoide *Rissoina cerithiiformis*, die Cerithiide *Rhinoclavis sordidula* und die Vermetide *Dendropoma maximum*. Die am weitesten verbreitete Art, die Cerithiide *Rhinoclavis kochi*, wurde in 23 Proben gefunden, die meisten Arten kommen aber nur in fünf oder weniger Proben vor. Unter den häufigeren Familien sind die Cerithiidae in korallenassoziierten Sedimenten divers, aber einzelne Arten sind im Schlamm, in der Mangrove, auf subtidalen Hartsubstraten und auf einigen Gezeitenflächen häufig. Rissoidae und Plesiotrochidae wurden hauptsächlich in grobkörnigen Sedimenten gefunden und waren am diversesten und / oder häufigsten in den Proben von Sand auf Riffhängen. Dialidae und Hipponicidae wurden bevorzugt in Korallen- und Seegrasassoziierten Sedimenten gefunden. Scaliolidae und Naticidae waren am häufigsten in schlammigen Sedimenten, Potamididae nahezu beschränkt auf die Mangrove und Vermetidae sehr häufig am Riffdach nahe der Riffkante. Strombidae und Turritellidae sind weit verbreitet auf Weich- und Hartsubstraten und bestimmte Arten der ersteren sind häufig in Seegras-assoziierten Sedimenten, und der letzteren beschränkt auf schlammige Sedimente oder den Riffhang.

Schlüsselwörter: Mollusca, Biodiversität, Rotes Meer, Indischer Ozean, Ägypten, Artengesellschaften, Taxonomie, Erstnachweise

Introduction

The present study is part 2 of monographs on gastropod species from the Northern Bay of Safaga (Egypt, Red Sea). The aim of this study is the taxonomic- and habitat documentation for sorbeoconch and littorinimorph gastropods found in the course of several

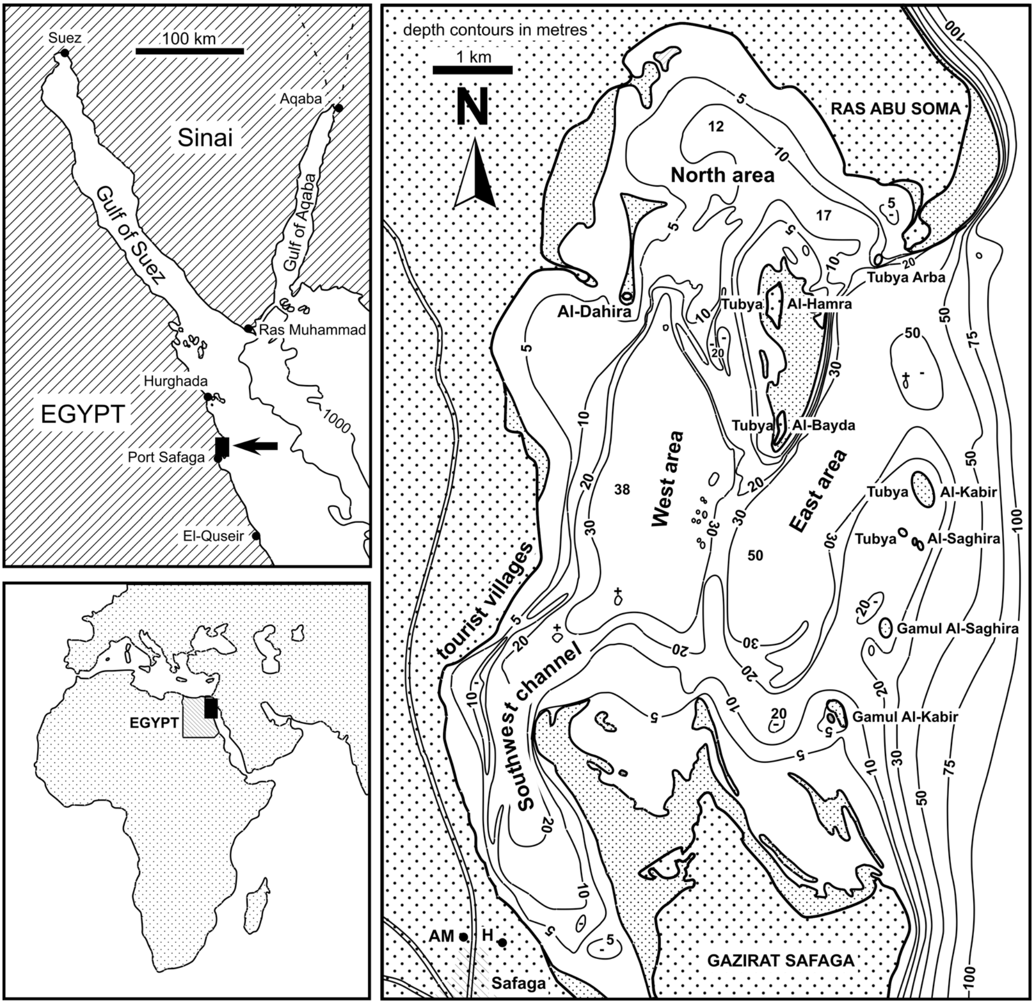


Fig. 1. Location map and general bathymetry of the study area (after PILLER & PERVESLER 1989). Dense stippled fields in the right map are intertidal areas. AM = Aerial mast, H = ''Safaga Hotel''.

actuopalaeontological projects in the 1980ies and 1990ies, which involved many members of the Department of Palaeontology, University of Vienna under the leadership of W.E. Piller and F.F.Steininger. A full documentation of publications out of these projects was given by ZUSCHIN & OLIVER (2003) and the present contribution follows the recently published part 1 on patellogastropods, vetigastropods and cycloneritimorphs (ZUSCHIN et al. 2009). As for part 1, the voucher material of this study is stored at the Natural History Museum Vienna and at the Senckenberg Museum Frankfurt.

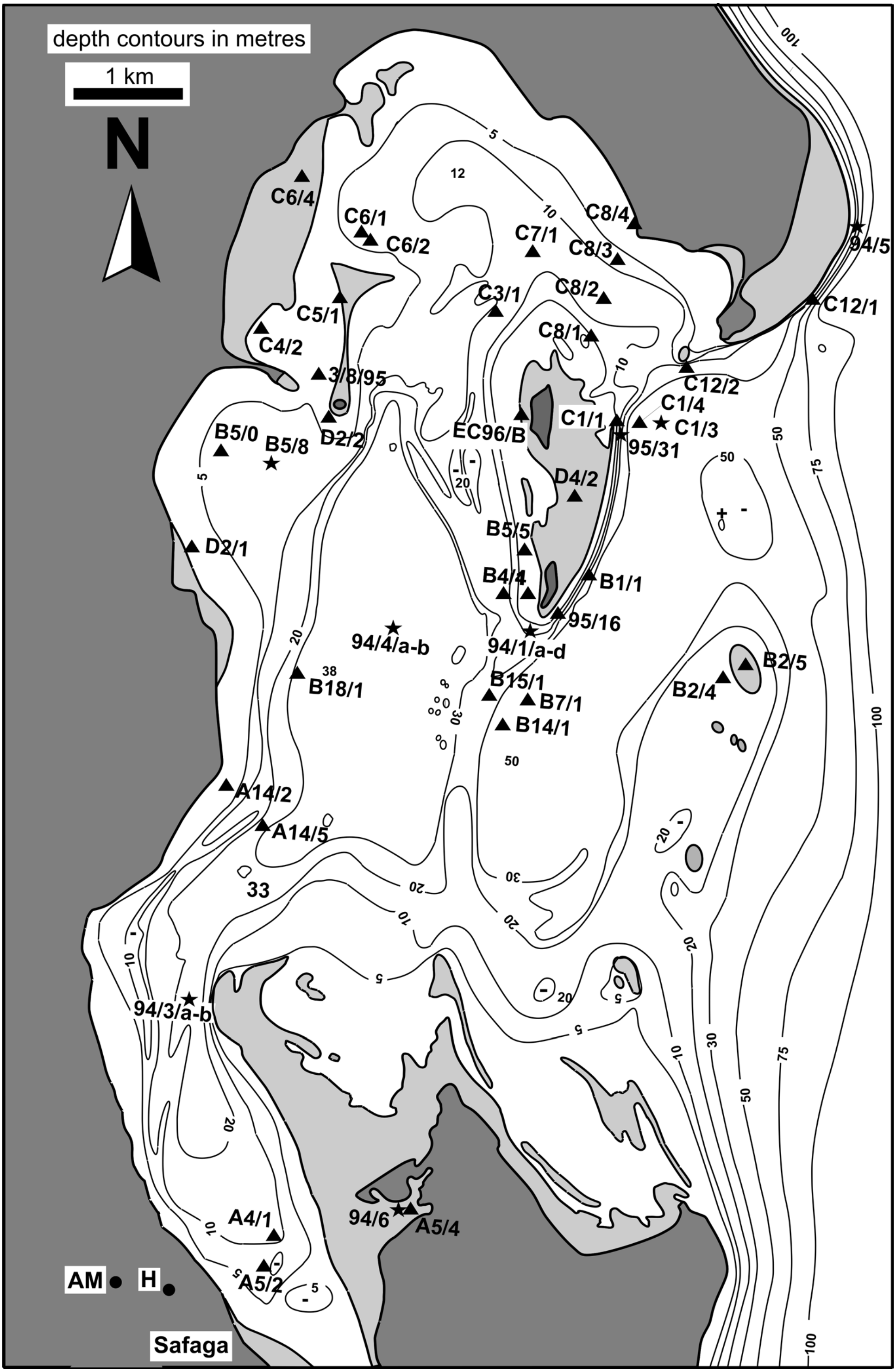
Study area

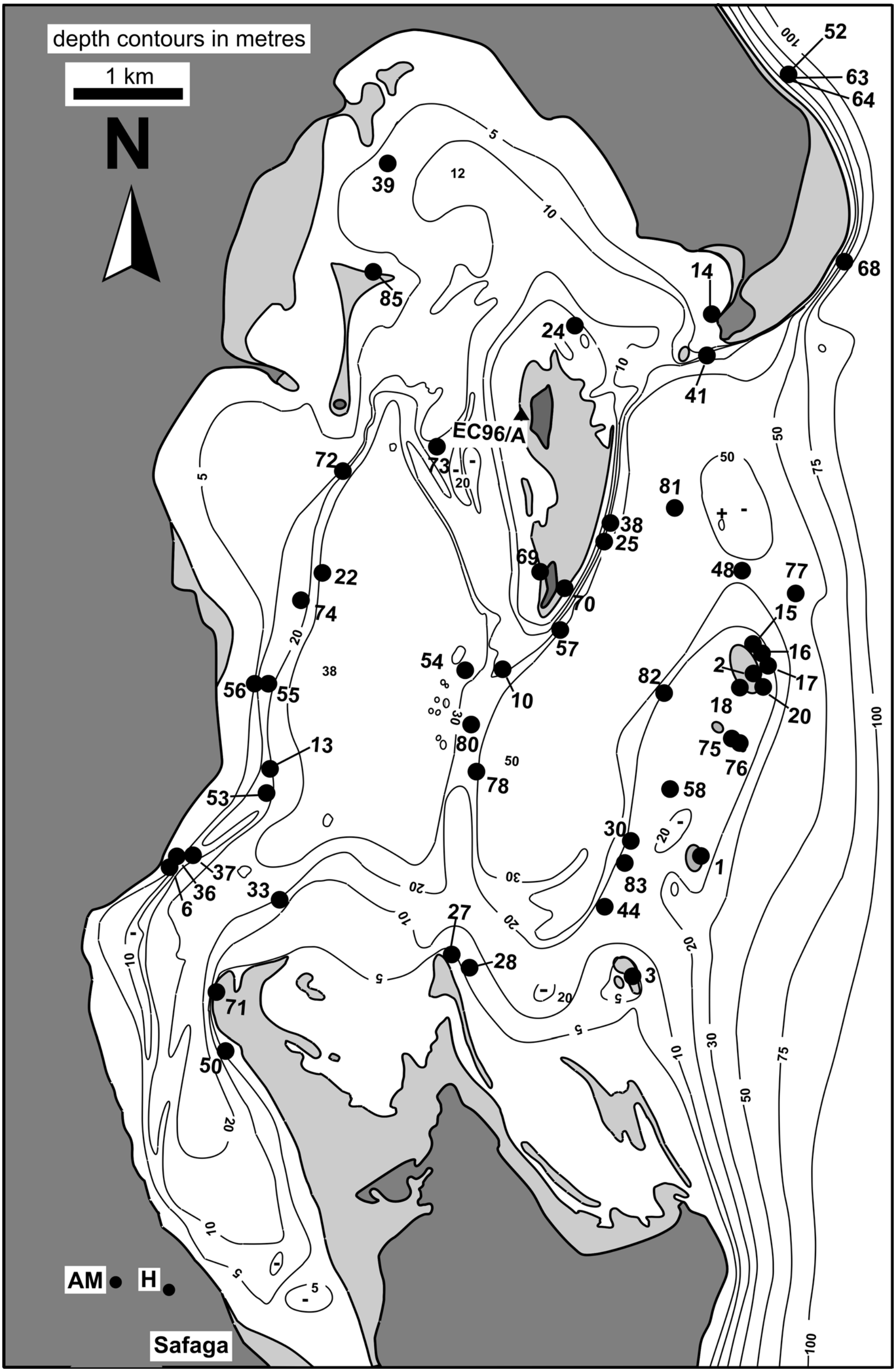
The Northern Bay of Safaga is a coral-dominated, shallow-water area measuring approximately 10 km from N-S and approximately 7 km from E-W. It exhibits a highly structured bottom topography extending down to more than 50 m water depth (Fig. 1). The annual water temperature ranges between 21 and 29 °C, salinity between 40 and 46 ‰, both without any obvious depth gradient due to complete water mixing. The tidal range is < 1 m (Piller & Pervesler 1989). Terrigenous (thus nutrient) input occurs mainly along the coast and is due to fluvial transport during flash floods, local erosion of impure carbonate rocks and aeolian transport by the prevailing northerly winds (Piller & Mansour 1994). Water energy is relatively weak, but a complex current pattern influences facies development (Piller & Pervesler 1989), and bottom facies and sedimentary facies generally show a good correspondence (Piller & Mansour 1990; Piller 1994). In 1984, the Northern Bay of Safaga was chosen to study bottom types, sediments, burrows and selected groups of benthic organisms with considerable fossilization potential (including coralline red algae, foraminifera, corals, echinoids and molluscs) with respect to their palaeoecological significance (Piller & Pervesler 1989, see Zuschin & Oliver 2003 for summary of references). Four- to six-week field investigations were carried out in April/May 1986, November 1986, February 1987, and July/August 1987 and resulted in the basic mapping of bottom facies and description of sedimentary facies (Piller & Pervesler 1989; Piller & Mansour 1990).

Sampling

Three- to four-week field campaigns by the second author in October/November 1994, July/August 1995, May/June 1996 and March/April 1997 yielded all quantitative samples from hard and soft substrata and many qualitative samples used for this study. From a methodological point of view, this study is based on three major sampling programs which covered soft substrata and hard substrata and included both quantitative and qualitative samples, in a depth range from intertidal to 50 m. For the quantitative analysis of soft substrata molluscs, we studied 13 standardised bulk samples taken by scuba diving. All quantitatively studied sedimentary facies, except the mangrove channel, are represented by more than one sample (Tab. 1). The water depth ranges from shallow subtidal to 40 m (Fig. 2). A steel cylinder (diameter 35 cm) was pushed into the sediment and the uppermost 30 cm, with a volume of 29 dm³, was collected into a 1 mm-mesh net and sieved in seawater. The sediment was air-dried and molluscs > 2 cm were removed before

Fig. 2. Sample locations for quantitative samples on soft substrata and for qualitative samples (most of them are from soft substrata).   = bulk samples from soft substrata, ▲ = qualitative samples. For information on water depth and bottom facies of samples see tab. 1. AM = Aerial mast, H = "Safaga Hotel". ►


depth contours in metres
1 km
N
C6/4
C6/1
C6/2
C7/1
C8/4
C8/3
C8/2
C3/1
C5/1
C4/2
3/8/95
C8/1
C12/1
C12/2
C1/4
C1/3
C1/1
95/31
94/5
B5/0
B5/8
D2/2
EC96/B
D4/2
D2/1
B5/5
B4/4
B1/1
95/16
94/4/a-b
94/1/a-d
B2/5
B2/4
B18/1
B15/1
B7/1
B14/1
A14/2
A14/5
33
94/3/a-b
A4/1
94/6
A5/4
A5/2
AM
H
Safaga


depth contours in metres
1 km
N
EC96/A
AM
H
Safaga

Tab. 1. Basic data (bottom facies, water depth), number of shells and number species for quantitative samples on soft- and hard substrata and for qualitative samples. © before the site number means that the sample was taken near that site.

		quantitative bulk samples		
site	water depth	bottom facies	no. of shells	no. of species
94/1/a	10	sand between coral patches	191	34
94/1/b	10	sand between coral patches	241	30
94/1/c	10	sand between coral patches	134	25
94/1/d	10	sand between coral patches	147	28
94/3/a	23	muddy sand	87	12
94/3/b	23	muddy sand	109	11
94/4/a	39	mud	793	8
94/4/b	39	mud	808	12
94/5	19	reef slope	342	28
95/31	12	reef slope	1019	34
B5/8	6	sandy seagrass	283	20
C1/3	40	muddy sand with seagrass	179	22
94/6	<1	mangrove-channel	361	11

splitting the samples using a modified sample splitter as described by KENNARD & SMITH (1961). For more details on soft substrata samples see ZUSCHIN & HOHENEGGER (1998) and ZUSCHIN & OLIVER (2003).

Different intertidal and subtidal hard substrata were sampled for molluscs at 74 localities in Safaga Bay with a 0.25 m^2 aluminium, square frame (see Tab. 2 in ZUSCHIN & OLIVER 2003). Shells of the studied clades were only found at 15 hard substrata stations (Fig. 3, Tab. 1). At each locality, on such substrata, the location of the first frame was selected at random by a diver throwing the frame from a few meters above the substratum. The subsequent frames were positioned contiguously along a line extending from the first frame; areas covered by such transects ranged from 1 m^2 to 5.75 m^2 (Tab. 1). For more details on hard substrata samples see ZUSCHIN et al. (2000, 2001).

During the initial mapping of bottom facies (PILLER & PERVESLER 1989), numerous samples (mostly from soft substrata) were taken all over the bay and many of these were evaluated qualitatively in the present study. Additionally, we unsystematically collected shells in the vicinity of many of our quantitative hard substrata stations and during dives around soft substrata stations. The water depth covered by this sampling strategy is intertidal to 50 m.

◄ Fig. 3. Sample locations for quantitative samples (transects) from hard substrata. For information on water depth and bottom facies of samples see tab. 1. AM = Aerial mast, H = "Safaga Hotel".

Tab. 1. (continued)

		qualitative samples		
site	**water depth**	**bottom facies**	**no. of shells**	**no. of species**
©A5/4	<1	Mangrove channel	3	3
©B7/1	50	muddy sand	9	7
©C8/1	6	sand between coral patches	2	1
©10	24	rock bottom	1	1
©25	9	reef slope	5	4
©27	5	reef slope	4	4
©28	11	coral patches	1	1
©36	6	coral carpet	1	1
©39	7	coral patches	1	1
©50	6	coral carpet- coral patches	1	1
©56	6	coral carpet	1	1
©69	intertidal	rocky intertidal	5	4
©72	14	sand near rock bottom	5	4
©74	18	rock bottom	2	1
©81	39	coral carpet	1	1
©82	20	coral carpet	1	1
©94/6	<1	mangrove-channel	3	2
A1/3	18	muddy sand	4	1
A4/1	10	sand between coral patches	1	1
A5/2	8	coral patches	3	2
A14/3	1	sand with seagrass	1	1
A14/5	23	sand near coral carpet	1	1
B1/1	27	sand near coral reef	3	1
B2/4	6	sand	14	1
B2/5	1	sand on reef flat	2	1
B4/1	15	sand between coral patches	4	2
B4/4	1,5	sand	4	3
B5/1	21	sand near coral carpet	2	2
B5/5	1	sand with seagrass	2	2
B5/8	6	sand with seagrass	9	3
B5/0	6	seagrass	4	3
B14/1	47	muddy sand	4	2
B15/1	27	sand on rock bottom	1	1
B18/1	30	muddy sand with seagrass	3	1
C1/1	10	coral sand	1	1
C1/3	40	muddy sand with seagrass	11	3
C1/4	35	sand near seagrass	1	1
C3/1	13,5	muddy sand	2	1
C4/2	3	sand with seagrass	1	1
C5/1	<1	sand near seagrass	2	1
C6/1	8	sand with seagrass	8	3
C6/2	7	sand between coral patches	6	2
C6/4	<1	sand on rocky intertidal	1	1
C7/1	14	muddy sand with seagrass	2	2
C8/1	6	sand between coral patches	4	3
C8/2	17	sand with seagrass	16	3
C8/3		sand between coral patches	8	2
C8/4	1	sand with seagrass	4	2
C12/1	20	sand on reef slope	3	3
C12/2	15	sand on reef slope	3	2
D2/1	3	sand with seagrass	6	5
D2/2	1	sand	4	2
D4/2	<1	sand on rocky intertidal	7	2
EC96B	intertidal	rock bottom	64	1
95/6	18	sand near rock bottom	1	1
95/16	12	sand on reef slope	15	9
3/8/95	1-2	sand with seagrass	2	2
“Safaga”	no depth and habitat information		22	14

Tab. 1. (continued)

	quantitative transects on hard substrata					
site	**bottom facies**	**coral associations**	**water depth**	**invest. area**	**no. of shells**	**no. of species**
1	reef flat	*Stylophora* association	1	4,5	208	1
2	reef flat	*Stylophora* association	1	8	60	2
3	reef flat	*Stylophora* association	1	5,75	108	1
6	coral carpet	depauperate faviid association	6	4	3	1
13	coral carpet	faviid association	12	4	2	2
14	reef slope	Millepora - Porites	1	6	7	1
15	reef slope	*Acropora* association	13	6	1	1
16	reef slope	*Acropora* association	8	6	1	1
17	reef slope	*Acropora* association	5	6	1	1
18	reef slope	*Porites* association	6	3	1	1
20	reef slope	*Porites* association	2	3	1	1
22	coral carpet	*Sarcophyton* association	28	3	1	1
24	patch reef	*Acropora* patch association	4	3	2	2
25	reef slope	*Acropora* - *Millepora* reef slope	9	6	2	1
27	reef slope	*Acropora* - *Millepora* reef slope			2	2
30	coral carpet	faviid association	18	11	2	1
37	coral carpet	depauperate faviid association	10	6	1	1
38	reef slope	*Acropora* - *Millepora* reef slope	16	6	2	2
39	coral patches	*Stylophora* - *Acropora* patch association	7	7	2	2
41	coral carpet	faviid association	15	8	1	1
44	coral carpet	faviid association	19	8	2	2
48	coral carpet	faviid association	34	5	3	1
50	coral carpet - coral patches	depauperate faviid association	6	5,5	9	2
52	reef slope	platy scleractinian association	30	4	2	1
53	coral carpet	faviid association	14	5	1	1
54	coral carpet	platy scleractinian association	38	6	2	2
55	coral carpet	*Sarcophyton* association	11	3	3	2
56	coral carpet	*Sarcophyton* association	6	3	1	1
57	rock bottom	rock bottom	30	3	1	1
58	coral carpet	faviid association			1	1
63	coral carpet	*Porites* association			1	1
64	reef slope	rock bottom	5	4	1	1
68	coral carpet	*Porites* association	5	4	2	1
69	rocky intertidal	rock bottom	intertidal	5,5	10	4
70	rocky intertidal	rock bottom	intertidal	4,25	4	3
71	Conglomerate	rock bottom	intertidal	3	3	1
72	rock bottom	*Sarcophyton* association	14	1	1	1
73	coral carpet	*Porites* association	14	1,25	5	2
74	rock bottom	*Sarcophyton* association	18	1	6	4
75	reef flat	*Stylophora* association	1	1,5	84	1
76	reef flat	*Stylophora* association	1	2,5	130	3
77	coral carpet	platy scleractinian association	40	1,75	3	3
78	rock bottom	*Sarcophyton* association	31	1	1	1
80	rock bottom	*Sarcophyton* association	19	2	1	1
81	coral carpet	faviid association	39	2	1	1
83	coral carpet	faviid association	18	2	1	1
85	reef slope	*Acropora* - *Millepora* reef slope	2	2,25	1	1
EC-96A	rocky intertidal	rock bottom	intertidal	1,75	209	1

Diversity of higher taxa

One hundred twelve species, identified from almost 5,900 shells, belong to 14 superfamilies, 32 families and 75 genera of the two clades studied. At all levels well more than two third of the taxa belong to the Littorinimorpha, although 59 % of the studied shells are Sorbeoconcha (Tab. 2).

The Cerithioidea and Rissooidea together make up more than three quarters of the shells and also have the highest species- and genus richness. In contrast to the Rissooidea, however, the Cerithioidea are also rich in families. Considering the low number of shells (<1 %) the Tonnoidea are remarkable for a high diversity at all levels. Stromboidea, Naticoidea, Cypraeoidea and Vanikoroidea together make up only 9 % of the studied shells and account more than 30 % of species and genera, but only for about 20 % of the families. Among the remaining superfamilies the Vermetoidea are remarkable because they account for 10 % of the studied shells but have only one species (Tab. 3).

The most species-rich family are Cerithiidae (15) and Rissoidae (14), which together also account for 47 % of the shells. The species-richness of Naticidae (9), Strombidae (9), Ranellidae (8), Cypraeidae (7) and Tornidae (6) is outstanding, because together they account for less than 6 % of the shells. In contrast, the Scaliolidae (4), Dialidae (2), Potamididae (1) and Vermetidae (1) can be considered as species poor, compared to a high number of shells they account for (two thirds) (Fig. 4).

Diversity and sampling programs

Almost 80 % of the shells are from our quantitative soft substrata samples, and their detailed examination yielded 80 species. Fifteen percent of the shells (22 species) are from the quantitative hard substrata survey. Only 5 % of the samples are qualitative, but these yielded 53 species (Tab. 4, Fig. 5).

Fifty-three species were only found in samples from the quantitative soft substrata survey, but only 3 species were restricted to samples from the quantitative hard substrata survey. Nineteen species were restricted to qualitative collections (Fig. 5). Seventy-six species (68 %) could only be detected with one, 29 species (26 %) with two, but only seven species (6 %) with all three sampling strategies.

Tab. 2. The number of superfamilies, families, genera, species and shells per clade.

	superfamilies	families	genera	species	shells
Sorbeoconcha	2	10	19	31	3474
Littornimorpha	12	22	56	81	2419
Total	14	32	75	112	5893

Tab. 3. The number of families, species, genera and shells per superfamily.

	families	genera	species	shells
Cerithioidea	9	18	29	3362
Campaniloidea	1	1	2	112
Capuloidea	1	1	1	1
Cypraeoidea	2	7	8	17
Littorinoidea	2	3	4	45
Naticoidea	1	7	9	105
Pterotracheoidea	1	1	1	7
Rissooidea	2	11	20	1170
Stromboidea	2	8	10	194
Tonnoidea	5	9	15	34
Vanikoroidea	2	4	7	237
Velutinoidea	2	3	3	6
Vermetoidea	1	1	1	598
Xenophoroidea	1	1	2	5
	32	75	112	5893

Tab. 4. The number of shells per sampling strategy related to the two studied clades.

	quantitative soft substrata	quantitative hard substrata	qualitative
Sorbeconcha	3056	270	148
Littorinimorpha	1638	627	154
Total	4694	897	302

Diversity of samples and habitats

The total species richness of the 13 quantitative bulk samples is 80 (Fig. 5) and ranges from 8 to 34 in individual samples (Tab. 1). Species richness is relatively high (28 to 34 species) in the four samples from coral sand and in the two samples from the reef slope. It is intermediate in the two samples from seagrass (22 and 20) and distinctly lower in the five samples from muddy sand, mud, and the mangrove channel (range from 8 to 12) (Tab. 1).

Total species richness of the quantitative hard substrata survey is only 22 (Fig. 4), and values in the individual transects are also typically low (1–2 species); only three transects had three, and only two transects had four species (Tab. 1).

The total species richness in the qualitative samples is 53 (Fig. 5) from only 302 shells. Forty-one samples had only 1 or 2, thirteen samples had 3 or 4 and four samples had 5

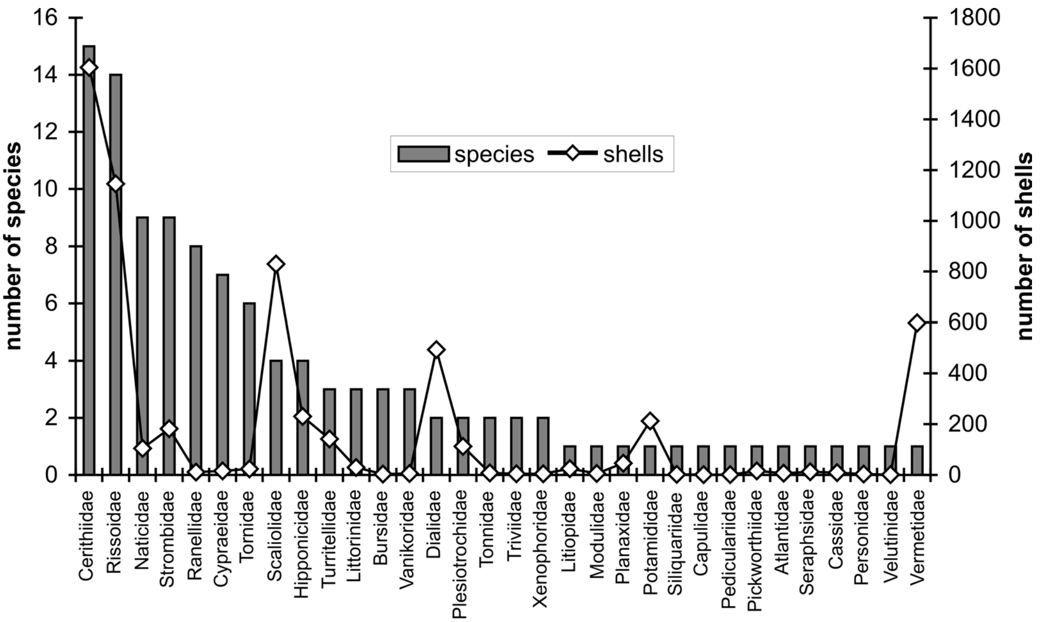


Fig. 4. Species richness and abundance of the 32 families of Sorbeconcha and Littorinimorpha found in Safaga Bay.

or more species each (Tab. 1). The highest number of species (14) occurs in the lumping category of shells without depth and habitat information.

Species abundance and frequency

The three most abundant species are *Rissoina cerithiiformis* (15.4% of the shells), *Rhinoclavis sordidula* (14.5%) and *Dendropoma maximum* (10.2%). The next seven most abundant species (*Clathrofenella cerithina*, *Diala semistriata*, *Cerithium caeruleum*, *Finella pupoides*, *Pirenetta conica*, *Sabia conica*, *Voorwindia tiberiana*) account for more than 34% and the remaining 102 species for 25.5% of the number of shells. Most species (64) are present with less than 10 shells (Fig. 5A).

The most frequent species, *Rhinoclavis kochi*, was found in 23 samples and was well represented in quantitative samples from soft substrata and in qualitative samples, and occurred only once in a quantitative transect on hard substrata. Among the other species with ten or more occurrences, some were found with all three sampling strategies (*Archimediella maculata*, *Gibberulus albus*, *Canarium erythrinum*, *Sabia conica*, *Canarium mutabile*), but others were completely restricted to quantitative samples from soft substrata (*Voorwindia*, *Clathrofenella*, *Diala*) or hard substrata (*Dendropoma maxima*). Among these comperatively frequent species one occurred only in quantitative samples from soft substrata and

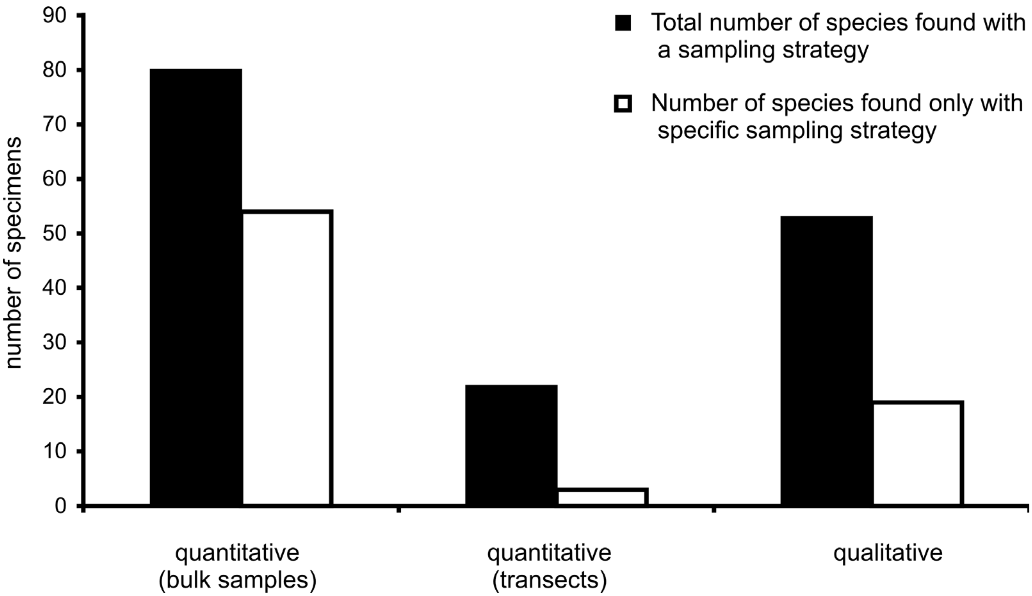


Fig. 5. Number of species in relation to sampling strategies.

in qualitative samples (*Notocochlis gualteriana*), one only on quantitative transects on hard substrata and in qualitative samples (*Certhium nodulosum*) and one only in quantitative samples in soft and hard substrata (*Cerithium echinatum*). Most species, however, are rare and occur in less than five samples (Fig. 6B).

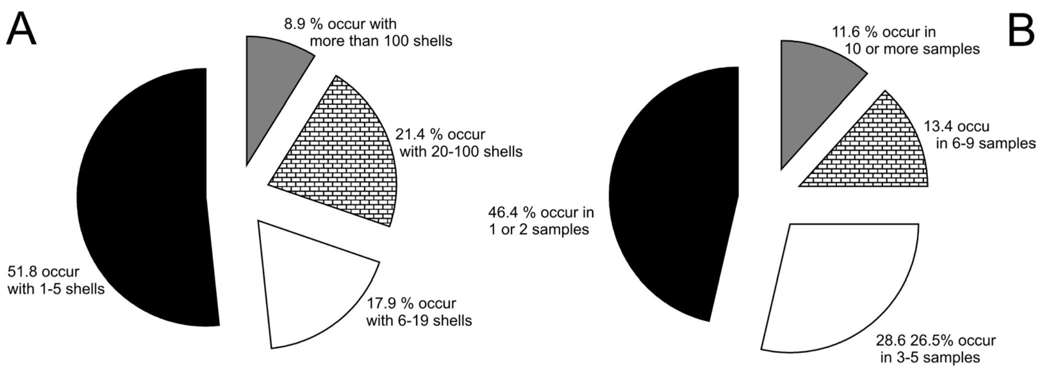


Fig. 6. Rarity of studied gastropod species at Safaga Bay; A: number of species in four abundance categories; B: number of species in four occurrence categories.

Abundance and occurrence of families

Cerithiidae are diverse in coral associated sediments, abundant in mud, in the mangrove, on subtidal hard substrata and on some rocky tidal flats, and most species show distinct habitat preferences. **Dialidae** are abundant in soft substrata, mostly in coral associated sediments and sandy seagrass, less so in muddy sand and muddy seagrass and virtually absent from mud. **Litiopide** are present with few shells of a single species, which is most abundant in sandy seagrass and otherwise mostly restricted to coral-associated sediments. The few shells of a single species of **Modulidae** were found on rock bottoms and coral substrata. A single species of **Planaxidae** was most abundant in the mangrove and otherwise found in coral associated sediments. The single species of **Potamididae** was virtually restricted to the mangrove. The small shells of **Scaliolidae** were found in all studied bulk samples, but they were most abundant in muddy sediments. A single species of **Siliquariidae** was found with very few shells in sediments of the reef slopes. Of the three species of **Turritellidae** one is widely distributed on soft and hard substrata, but the other two are restricted to muddy sediments and to the reef slope, respectively. **Plesiotrochidae** were mostly found in coarse grained sediments and were most abundant in sediments of reef slopes. A single shell of **Capulidae** was found in reef slope sediments. **Cypraeidae** are highly diverse but uncommon and their few shells were found in very different habitats including deeper water muddy sand, seagrass associated sediments, rock bottoms, coral carpets and reef flats. A single shell of **Pediculariidae** was found on coral carpets. **Littorinidae** were mostly found in the mangrove and otherwise in coral associated sediments. The single species of **Pickworthiidae** is restricted to coral associated sediments and was most abundant in the sample from the *Porites*-dominated reef slope. **Naticidae** were found in all studied bulk samples and were quite abundant in muddy sediments. The few shells of **Atlantidae** were found in coral associated sediments and in muddy sand. **Rissoidae** were mostly found in coarse grained sediments and were most diverse and abundant in samples from reef slope sand. **Tornidae** are diverse and their few shells were found on coral associated sediments and in samples from seagrass. The single species of **Seraphsidae** was found with few shells in sandy sediments. Among the diverse **Strombidae** one set of species was found preferentially in sand between coral patches and seagrass-associated sediments, one in deeper-water muds and muddy sands and one was only found on hard substrata including reef flats, the conglomerate, rock bottoms and coral carpets; Strombidae were abundant in seagrass-associated sediments. The very few shells of **Bursidae** were found on or close to coral carpets. A single species of **Cassidae** was found with few shells in sandy sediments associated with seagrass and rock bottoms. **Personidae** are represented with a single species and were found with very few shells on a reef slope. Most species of the diverse **Ranellidae** are present with single shells, which were found on reef slope, in the mangrove, on coral carpet, in muddy sand and seagrass-associated sediments. The two species of **Tonnidae** were found with few shells in heterogeneous habitats including muddy sand, muddy sand with seagrass, reef slopes and the mangrove. **Hipponicidae** were preferentially found in coral- and seagrass-associated sediments and they were abundant in sediments from the reef slope. The few shells of **Vanikoridae** were restricted to coral-associated sediments. **Triviidae** were found with few shells in reef slope sediments, in sand with seagrass and in deeper-water muddy sand. A single species of **Velutinidae** occurred with a single shell in reef slope sediments. The single species of **Vermetidae** was very abundant on reef flats near the reef edge and rare on reef slopes. The two species of **Xenophoridae** were found with few shells in deeper-water muddy sands and muddy sands with seagrass.

Remarks on systematics and taxonomy

In accordance to part one of the monographic treatments of the Safaga gastropods (ZUSCHIN et al. 2009) the systematic arrangement here follows the classification outlined by BOUCHET & ROCROI (2005). The general remarks on the taxonomical problems given already in the first part apply to this part, too. Particularly the groups with smaller sized species like the Scaliolidae, Rissoidae, Tornidae, Vanikoridae etc. raise many taxonomic problems which can be resolved only by a thorough revision of the related Indopacific species or by examining relevant type material. This, however, is far beyond the aims of our work. Therefore, taxonomic work and decisions follow the guidelines set for part one. In the synonymic lists mainly references related to the Arabian Seas are cited besides few more general taxonomc revisions and high quality illustrations in some recent works such as OKUTANI (2000) or POPPE (2008), which may serve the reader. Also illustrations of respective type specimens of various species have been cited (HIGO et al. 2001).

Feeding types are generally known for families and genera rather than for every particular species. These information has mostly been gathered from the excellent accounts in BEESLEY et al. (1998) and and from the Neogene Marine Biota of Tropical America molluscan life habits databases (TODD 2001). Informations about the geographical distribution of species are taken from the pertinent monographs and literature cited in the synonymy lists.

The main part of the material including all figured specimens is registered in the malacological department of the Natural History Museum at Vienna (NHMW). Voucher specimens of most species are deposited in the Senckenberg Forschungsinstitut at Frankfurt a. M. (SMF).

Numbers & Occurrence

Numbers cited are divided into three categories, those from quantitative hard substrate analysis (QHS), those from quantitative sediment analysis (QBS) and those from qualitative observations (Ql). The occurrence data lists all sampling sites from which species were collected or observed, those with living specimens are given in Roman text, those with only dead specimens in italic text. © means “near to”.

Abbreviations

SMF = Senckenberg Forschungsinstitut und Naturmuseum Frankfurt a. M., Germany

Systematic part

Order Caenogastropoda Cox, 1960

Clade Sorbeoconcha Ponder & Lindberg, 1997

Superfamily Cerithioidea Fleming, 1822

Family Cerithiidae Fleming, 1822

Feeding type: all cerithiid species are herbivorous algal detritus-feeders or grazers on diatoms and microalgae.

Cerithium caeruleum G. B. Sowerby (II), 1855
(Pl. 1, Figs 1–3; Pl. 28, Fig. 2)

1855 *Cerithium caeruleum* Sowerby: 866, Pl. 179, Figs 61–62
1984 *Cerithium* cf. *caeruleum*, – Sharabati: Pl. 4, Fig. 19
1992 *Cerithium caeruleum*, – Houbrick: 37, Figs 21–24
1995 *Cerithium caeruleum*, – Bosch et al.: 51, Fig. 158
1997 *Cerithium caeruleum*, – Verbinnen & Dirkx: 53, Fig. 2
2008 *Cerithium caeruleum*, – Rusmore-Villaume: 34, Fig.

Number of specimens: QHS (211), QBS (-), Ql (31l, 37d)

Habitat: All specimens are from the rocky intertidal. Many were found alive, but dead shells were also frequently inhabited by hermit crabs and encrusted by coralline red algae, forming rhodoliths (Zuschin & Piller 1997).

Samples: 4, EC96A, EC96B, *A5/2*, *D4/2*, ©70

Range: E-Africa, Arabian Sea, Red Sea

Cerithium columna G. B. Sowerby (I), 1834
(Pl. 1, Fig. 4)

1834 *Cerithium columna* Sowerby: Fig. 7
1984 *Cerithium columna*, – Sharabati: Pl. 4, Fig. 17
1992 *Cerithium columna*, – Houbrick: 49, Figs 31–36
1997 *Cerithium columna*, – Verbinnen & Dirkx: 53, Fig. 3
2008 *Cerithium columna*, – Rusmore-Villaume: 34, Fig.
2008 *Cerithium columna*, – Poppe et al. in Poppe: Pl. 89, Fig. 17; Pl. 90, Fig. 2

Number of specimens: QHS (-), QBS (-), Ql (1d)

Habitat: Only one dead specimen was found on sand in 1.5 m water depth

Samples: *B4/4*

Range: Indopacific

Cerithium echinatum LAMARCK, 1822
(Pl. 1, Fig. 5–6)

1822 *Cerithium echinatum* LAMARCK: 69
1984 *Cerithium erythraeonense* LAMARCK, 1822, – SHARABATI: Pl. 4, Fig. 18 [non LAMARCK, 1822]
1984 *Cerithium* sp., – SHARABATI: Pl. 4, Figs 11, 11a, 20–23 [juveniles]
1992 *Cerithium echinatum*, – HOUBRICK: 77, Figs 51–54
1997 *Cerithium echinatum*, – VERBINNEN & DIRKX: 54, Fig. 4
2008 *Cerithium echinatum*, – RUSMORE-VILLAUME: 36, Fig.
2008 *Cerithium echinatum*, – POPPE et al. in POPPE: Pl. 90, Figs 14–15

Number of specimens: QHS (19l, 9d), QBS (3), Ql (-)

Habitat: Was found on coral carpets, coral patches, rock bottoms and reef slopes in water depth between 5 and 38 m. Most occurred on coral carpets between 5 and 20m.

Samples: *94/5*, 6, *13*, *15*, *18*, 27, 30, 37, 39, 48, 52, 53, 54, *64*, *68*, 73, 74

Range: Indopacific

Cerithium egenum GOULD, 1849
(Pl. 1, Fig. 7; Pl. 2, Fig. 1)

1849 *Cerithium egenum* GOULD: 121
1992 *Cerithium egenum*, – HOUBRICK: 86, Figs 55–57
1995 *Cerithium egenum*, – BOSCH et al.: 53, Fig. 164
1997 *Cerithium egenum*, – VERBINNEN & DIRKX: 54, Fig. 11
2000 *Cerithium egenum*, – OKUTANI: 119, Pl. 59, Fig. 22
2008 *Cerithium egenum*, – RUSMORE-VILLAUME: 36, Fig.
2008 *Cerithium egenum*, – POPPE et al. in POPPE: Pl. 90, Fig. 7

Number of specimens: QHS (3d), QBS (80d), Ql (-)

Habitat: Was found in sand between coral patches and reef slope sands and on the rocky intertidal

Samples: *94/1/a-d*, *94/5*, *95/31*, *69*

Range: Indopacific; Lessepsian migrant to the Mediterranean Sea

Cerithium nodulosum adansonii Bruguière, 1792
(Pl. 2, Figs 2–4; Pl. 28, Fig. 1)

1792 *Cerithium adansonii* Bruguière: 479
1984 *Cerithium erythraeonense* Lamarck, 1822, – Sharabati: Pl. 4, Fig. 12
1992 *Cerithium nodulosum* Bruguière, 1792, – Houbrick: 126 partim, Figs 90, 96
1995 *Cerithium nodulosum adansonii*, – Bosch et al.: 52, Fig. 160
1997 *Cerithium adansonii*, – Verbinnen & Dirkx: 53, Fig. 1
2000 *Cerithium adansonii*, – Dekker & Orlin: 19
2008 *Cerithium adansonii*, – Rusmore-Villaume: 34, Fig.

Remarks: Houbrick (1992: p. 134) discussd the taxonomic status of the Red Sea populations of *C. nodulosum* and concluded that it was premature to confer formal taxonomic status to Red Sea phenotypes. We follow recent authors in attributing separate status to the Red Sea populations.

Number of specimens: QHS (13l, 3d), QBS (-), Ql (2l, 3d)

Habitat: Mostly on coral carpets, also on coral patches, rock bottom, in the seagrass and in the mangrove

Samples: *24*, 44, 50, 55, *56*, 58, 74, *78*, C6/1, *C7/1*, ©94/6

Range: nominate subspecies occuring in the whole Indopacific, the subspecies *adansonii* is known from Somalia, Arabian Sea and the Red Sea

Cerithium rostratum G. B. Sowerby (II), 1855
(Pl. 2, Figs 5–7)

1855 *Cerithium rostratum* Sowerby: 861, Pl. 158, Fig. 104
1992 *Cerithium rostratum*, – Houbrick: 158, Figs 114–117
1997 *Cerithium rostratum*, – Verbinnen & Dirkx: 54, Fig. 13
2001 *Cerithium rostratum*, – Higo et al.: 27, Fig. G 646
2006 *Rhinoclavis* juv. – Bandel: Pl. 1, Fig. 3
2008 *Ceritihum rostratum*, – Rusmore-Villaume: 36, Fig.
2008 *Cerithium rostratum*, – Poppe et al. in Poppe: Pl. 91, Figs 11–12

Number of specimens: QHS (-), QBS (45), Ql (-)

Habitat: Was only found in sand between coral patches and in seagrass

Samples: *94/1/a/b/d*, *B5/8*, *C1/3*

Range: Indopacific

Cerithium ruppelli Philippi, 1848
(Pl. 2, Figs 8–9)

1848 *Cerithium ruppelli* Philippi: 22
1984 *Cerithium* sp. – Sharabati: Pl. 4, Fig. 15

1992 *Cerithium ruppelli*, – HOUBRICK: 164, Figs 118–121
1995 *Cerithium rueppelli* [sic!], – BOSCH et al.: 52, Fig. 161
1997 *Cerithium ruppelli*, – VERBINNEN & DIRKX: 54, Fig. 5
[left and right fig, not the middle one = *columna*]
2008 *Cerithium rueppelli* [sic!], – RUSMORE-VILLAUME: 38, Fig.

Number of specimens: QHS (12l, 29d), QBS (2d), Ql (2)

Habitat: Most were found on coral carpets and rock bottoms between 6 and 38 m, mostly between 15 and 30 m

Samples: *94/1/a*, *7*, 10, *12*, *43*, *46*, *50*, *52*, *54*, 55, *56*, *57*, *58*, *72*, 74, *86*, *C4/2*, *C6/2*, *95/6*

Range: Red Sea, Madagascar

Cerithium zebrum KIENER, 1841
(Pl. 3, Figs 1–5)

1841 *Cerithium zebrum* KIENER: 71, Pl. 25, Fig. 4
1993 *Cerithium zebrum*, – HOUBRICK: 15, Figs 1–17
2000 *Cerithium zebrum*, – OKUTANI: 119, Pl. 59, Fig. 23

Number of specimens: QHS (-), QBS (30), Ql (-)

Habitat: Shells were found in coral-associated sediments (sand between coral patches and reef slope sands)

Samples: *94/1/a-d*, *94/5*, *95/31*

Range: Indopacific

Clypeomorus bifasciata bifasciata (G. B. SOWERBY (II), 1855)
(Pl. 3, Fig. 6)

1855 *Cerithium bifasciatum* SOWERBY: 874, Pl. 183, Fig. 198
1984 *Clypeomorus bifasciatus*, – SHARABATI: Pl. 5, Figs 12, 12a, 12b
1984 *Clypeomorus concisus* (HOMBRON & JACQUINOT, 1854), – SHARABATI: Pl. 5, Fig. 9
1984 *Clypeomorus* sp., – SHARABATI: Pl. 5, Figs 10–11
1985 *Clypeomorus bifasciata bifasciata*, – HOUBRICK: 23, Figs 10–17
1995 *Clypeomorus bifasciatus bifasciatus*, – BOSCH et al.: 53, Fig. 165
1997 *Clypeomorus bifasciatus bifasciatus*, – VERBINNEN & DIRKX: 55, Fig. 17
2008 *Clypeomorus bifasciata*, – RUSMORE-VILLAUME: 38, Fig.
2008 *Clypeomorus bifasciata*, – POPPE et al. in POPPE: Pl. 91, Fig. 1

Number of specimens: QHS (3), QBS (-), Ql (8)

Feeding type: Grazer on microalgae on hard substrate

Habitat: Living and dead shells were found in the intertidal (conglomerate, tidal flat, mangrove)

Samples: 71, *D4/2*, *©94/6*, ©69

Range: Indopacific; Lessepsian migrant to the Mediterranean Sea

Dahlakia protea (Jousseaume, 1930)
(Pl. 3, Figs 7–9)

1930 *Cerithium proteum* Jousseaume: 283, Fig. 1
1971 *Dahlakia leilae* Biggs: 221, Fig. 3
1971 *Dahlakia striata* Biggs: 222, Fig. 1
1971 *Dahlakia jugosa* Biggs: 222, Fig. 2
1973 *Obtortio* (*Alabina*) *virgata* (Philippi), – Selli: 316, Pl. 18, Fig. 8 [non Philippi, 1849]
1995 *Bittium* (*Dahlakia*) *proteum*, – Bosch et al.: 51, Fig. 156
2008 *Dahlakia proteum*, – Rusmore-Villaume: 40, Fig.

Remarks: Dekker & Orlin (2000: 19) indicate *Litiopa bucciniformis* Hornung & Mermod, 1926 as a possible older name for that species. Confirmation of this would need examination of the types. Selli 1973 misidentified this species as *Alaba virgata* (Philippi, 1849).

Number of specimens: QHS (-), QBS (96), Ql (-)

Habitat: Sand between coral patches and mangrove

Samples: *94/1/a-d*, *94/6*

Range: Red Sea, Gulf of Aden

Rhinoclavis (_Rhinoclavis_) _fasciata_ (Bruguière, 1792)
(Pl. 4, Figs 1–3)

1792 *Cerithium fasciatum* Bruguière: 474
1978 *Rhinoclavis* (*Rhinoclavis*) *fasciata*, – Houbrick: 41, Pls 2, 16–18
1984 *Rhinoclavis fasciatus*, – Sharabati: Pl. 4, Figs 8, 8a
1995 *Rhinoclavis* (*Rhinoclavis*) *fasciata*, – Bosch et al.: 54, Fig. 174
1998 *Rhinoclavis fasciata*, – Verbinnen & Dirkx: 57; 1997: Fig. 7
2008 *Rhinoclavis fasciata*, – Rusmore-Villaume: 40, Fig.
2008 *Rhinoclavis fasciata*, – Poppe et al. in Poppe: Pl. 93, Figs 1, 11, 14–15

Number of specimens: QHS (-), QBS (-), Ql (4)

Habitat: Coral sand between 10 and 20 m water depth

Samples: C1/1, C12/1, C12/2

Range: Indopacific

***Rhinoclavis* (*Proclava*) *kochi* (PHILIPPI, 1848)**
(Pl. 4, Figs 4–9)

1848 *Cerithium kochi* PHILIPPI: 22
1978 *Rhinoclavis* (*Proclava*) *kochi*, – HOUBRICK: 73, Pl. 42, Figs 1–2, Pls 43–47
1984 *Rhinoclavis kochi*, – SHARABATI: Pl. 4, Fig. 16
1995 *Rhinoclavis* (*Proclava*) *kochi*, – BOSCH et al.: 54, Fig. 170
1998 *Rhinoclavis kochi*, – VERBINNEN & DIRKX: 58 ["59" in error]; 1997: Fig. 8
2008 *Rhinoclavis kochi*, – RUSMORE-VILLAUME: 40, Fig.
2008 *Rhinoclavis kochi*, – POPPE et al. in POPPE: Pl. 93, Fig. 7

Number of specimens: QHS (1), QBS (55), Ql (28)

Habitat: Sand between coral patches and sand with seagrass, from 1 to 20 m, mostly below 10 m. Some specimens colonized by solitary corals. Conservative position of corals on the backside of the shells may suggest that the gastropods were colonized by the coral during lifetime.

Samples: *94/1a-d*, *94/3a*,*b*, *94/6*, *95/31*, *B5/8*, *C1/3*, *77*, *A1/3*, *B4/1*, *B4/4*, *C3/1*, *C6/1*, *C6/2*, *C8/1*, *C8/2*, *C8/3*, *C12/1*, *D2/2*

Range: Indopacific, Lessepsian migrant to the Mediterranean Sea

***Rhinoclavis* (*Proclava*) *sordidula* (GOULD, 1849)**
(Pl. 4, Figs 10–11)

1849 *Cerithium sordidulum* GOULD: 119
1978 *Rhinoclavis* (*Proclava*) *sordidula*, – HOUBRICK: 69, Pls 39-41; Pl. 42, Figs 3–4
1995 *Rhinoclavis* (*Proclava*) *sordidula*, – BOSCH et al.: 54
2008 *Rhinoclavis sordidula*, – POPPE et al. in POPPE: Pl. 93, Fig. 13

Number of specimens: QHS (-), QBS (856), Ql (-)

Habitat: Mostly in mud at 40 m water depth, few shells in muddy sand and sand between coral patches. In sampled mud station it is frequently colonized by solitary corals. Conservative position of corals on the backside of the shells may suggest that the gastropods were colonized by the coral during lifetime.

Samples: *94/1/b*, *94/3/a*, *94/4a*,*b*

Range: Indopacific

***Royella sinon* (BAYLE, 1880)**
(Pl. 5, Figs 1–2)

1855 *Cerithium clathratum* A. ADAMS in SOWERBY: 883, Pl. 185, Fig. 258 [non DESHAYES, 1833]
1880 *Cerithium sinon* BAYLE: 245 [nom. nov. pro *C. clathratum* A. ADAMS]
1984 *Mathilda* sp., – SHARABATI: Pl. 5, Fig. 1
1986 *Royella sinon*, – HOUBRICK: 430, Figs 1–3

2006 *Royella* cf. *sinon* – BANDEL: Pl. 1, Figs 5, 10, 11
2008 *Royella sinon*, – RUSMORE-VILLAUME: 42, Fig.
2008 *Royella sinon*, – POPPE et al. in POPPE: Pl. 93, Fig. 9

Number of specimens: QHS (-), QBS (27), Ql (5)

Habitat: Only in samples from reef slope sediments between 12 and 18 m water depth

Samples: *94/5*, *95/16*, *95/31*

Range: Indopacific

Varicopeza pauxilla (A. ADAMS, 1855)
(Pl. 5, Figs 3–5)

1855 *Cerithidea* (*Pirenella*) *pauxilla* A. ADAMS: 86
1980 *Varicopeza pauxilla*, – HOUBRICK: 526, Figs 1–2

Remarks: It occurs in small numbers together with abundant *Rhinoclavis sordidula* (GOULD, 1849) to which it looks rather similar. But *V. pauxilla* can be distinguished from *R. sordidula* by its smaller size, much more slender form, the sculpture of nodular spiral ribs without well developed axial riblets, the well developed posterior sinus in the outer lip of the aperture and by the missing spiral fold on the columella.

Number of specimens: QHS (-), QBS (26), Ql (-)

Feeding type: microphagous detritivor, perhaps a filter feeder

Habitat: Mostly in mud at 40 m water depth, one shell from muddy sand

Samples: *94/3a*, *94/4/a,b*

Range: Indopacific

Family Dialidae KAY 1979

Diala albugo (WATSON, 1886)
(Pl. 5, Figs 6–9)

1886 *Alaba albugo* WATSON: 568, Pl. 42, Fig. 3
1992 *Diala albugo*, – PONDER & DE KEYZER: 1038, Figs 1 F, 5 A-C, 6 G-I, 10 A-K, 11
2000 *Diala albugo*, – OKUTANI: 125, Pl. 62, Fig. 2
2001 *Diala albugo*, – HIGO et al.: 28, Fig. G 688 [not numbered]
2008 *Diala albugo*, – BOUCHET & STRONG in POPPE: Pl. 94, Fig. 4

Number of specimens: QHS (-), QBS (49), Ql (-)

Feeding type: Probably an algal detritus-feeder like all Cerithioideans

Habitat: Coral sand, sand with seagrass and muddy sand with seagrass, from 10 to 40 m

Samples: *94/1a,c,d*, *94/5*, *95/31*, *B5/8*, *C1/3*

Range: Indopacific

Diala semistriata (PHILIPPI, 1849)
(Pl. 5, Figs 10–12)

1849 *Rissoa semistriata* PHILIPPI: 34
1992 *Diala semistriata*, – PONDER & DE KEYZER: 1022,
Figs 1 A-E, 2 B, C, E, G-H, 3 I-P, 4,5 D-I, 6 A-F, 7, 8 C-D, 9 A-B
1995 *Diala semistriata*, – BOSCH et al.: 54, Fig. 176
2000 *Diala semistriata*, – OKUTANI: 125, Pl. 62, Figs 1a-c
2006 *Diala* sp. – BANDEL: Pl. 5, Fig. 1
2008 *Diala semistriata*, – BOUCHET & STRONG in POPPE: Pl. 94, Figs 1–3

Remarks: For unknown reason ZENETOS et al. (2003: 76) cited this species as Lessepsian migrant by its synonym *Diala varia* ADAMS, 1860.

Number of specimens: QHS (-), QBS (445), Ql (-)

Feeding type: Probably algal detritus-feeders like all Cerithioideans

Habitat: Most in coral sand, sand with seagrass and muddy sand with seagrass, also in the mangrove, muddy sand, and mud; from 1 to 40 m

Samples: *94/1a-d*, *94/3/a,b*, *94/4b*, *94/5*, *94/6*, *95/31*, *B5/8*, *C1/3*

Range: Indopacific, Lessepsian migrant to the Mediterranean Sea

Family Litiopidae GRAY 1847

Styliferina goniochila A. ADAMS, 1860
(Pl. 6, Figs 1–3)

1860b *Styliferina goniochila* A. ADAMS: 335
1961 *Stiyliferina* [sic!] *goniochila*, – HABE: 198, Pl. 2, Fig. 21
1995 *Styliferina goniochila*, – BOSCH et al.: 55, Fig. 180
2000 *Alaba goniochila*, – OKUTANI: 127, Pl. 63. Figs 2a-b
2001 *Styliferina goniochila*, – HIGO et al.: 28, Fig. G 701
2006 *Styliferina goniochila*, – BANDEL: Pl. 10, Figs 1–2
2008 *Styliferina goniochila*, – BOUCHET & STRONG in POPPE: Pl. 94, Figs 5–6

Number of specimens: QHS (-), QBS (25), Ql (-)

Feeding type: Probably algal detritus-feeders like all Cerithioideans

Habitat: Mostly in sand with seagrass at 6 m water depth, but also in coral sand and muddy sand

Samples: *94/1/a-c*, *94/3a*, *95/31*, *B5/8*

Range: Indopacific

Family Modulidae P. Fischer, 1884

Modulus tectum (Gmelin, 1791)
(Pl. 6, Figs 4–5)

1791 *Trochus tectus* Gmelin: 3569
1984 *Modulus tectum*, – Sharabati: Pl. 2, Figs 21, 21a-c
1995 *Modulus tectum*, – Bosch et al.: 50, Fig. 151
2008 *Modulus tectum*, – Rusmore-Villaume: 44, Fig.
2008 *Modulus tectum*, – Poppe in Poppe: Pl. 94, Figs 8–9

Number of specimens: QHS (-), QBS (3), Ql (3)

Feeding type: Detritus browser

Habitat: Living found on coral patches and rock bottom, dead shells on coral carpet, sand and rocky tidal flat

Samples: 24, *73*, 74, ©*72*, *95/16*, ©69

Range: Indopacific

Family Planaxidae Gray, 1850

Planaxis savignyi Deshayes, 1844
(Pl. 6, Figs 6–8)

1821 *Buccinum griseum* Brocchi: 217 [non Schröter 1805]
1844 *Planaxis savignyi* Deshayes: Pl. 109
1982 *Planaxis savignyi*, – Bouchet & Danrigal: 15, Fig. 45
1982 *Tricolia draparnaudi* Audouin, 1826, – Bouchet & Danrigal: 13, Fig. 46
1984 *Planaxis sulcatus*, – Sharabati: Pl. 6, Figs 6, 6a-c [non Born, 1780]
1995 *Planaxis sulcatus*, – Bosch et al.: 50, Fig. 148 [non Born, 1780]
2000 *Planaxis griseus*, – Dekker & Orlin: 20
2003 *Planaxis griseus*, – Zenetos et al: 68, Fig.
2005b *Planaxis sulcatus*, – Verbinnen & Dirkx: 116, Fig. 6 [non Born, 1780]
2006 *Planaxis sulcatus*, – Bandel: Pl. 2, Figs 5, 7, 9 [non Born, 1780]
2008 *Planaxis savignyi*, – Rusmore-Villaume: 44, Fig.

Remarks: Dekker & Orlin (2000) were the first to use the name *P. griseus* (Brocchi, 1821) for the Red Sea species usually known as *P. savignyi* (Deshayes, 1844) or *P. sulcatus* (Born, 1780). Verbinnen & Dirkx (2005b) shortly discussed the great variability of *P. sulcatus* and concluded that several species names based on the Red Sea population like *griseus*, *savignyi* etc. are synonyms of *P. sulcatus*. However, with regard to the fact that populations identified as *P. sulcatus* from the NW Indian Ocean are known to have a direct development in contrast to the planktotrophic larval stage of other Indo-Pacific populations (see remarks by HOUBRICK 1987: p. 5, 10) it seems justified to consider the NW Indian Ocean form a distinct species. It should be noted that according to HOUBRICK (1987: 5, Fig. 1 E, F) the larval shell of *P. sulcatus* from the Pacific Ocean has 3.5 whorls, whereas the larval shell of a specimen from the Gulf of Aquaba figured by BANDEL (2006: Pl. 2, Figs 5, 7, 9) has only 2.5 whorls. Therefore we follow DEKKER & ORLIN (2000) in keeping the Red Sea form separate from *P. sulcatus*, despite the lack of any study of this problem. DEKKER & GEMERT (2008: p. 135) pointed out that *B. griseum* BROCCHI is preoccupied by SCHRÖTER.

Number of specimens: QHS (-), QBS (46), Ql (-)

Feeding type: Microalgal grazer

Habitat: Mostly in the mangrove but also in sand between coral patches at 10m

Samples: *94/1/a*,*b*,*d*, *94/6*

Range: NW Indian Ocean, Lessepsian migrant to the Mediterranean Sea

Family Potamididae H. ADAMS & A. ADAMS, 1854

Pirenella conica **(BLAINVILLE, 1829)**
(Pl. 7, Figs 1–2)

1829 *Cerithium conicum* BLAINVILLE: 158, Pl. 6A, Fig. 10
1973 *Pirenella cailliaudi* (POTIEZ et MICHAUD), – SELLI: 314, Pl. 18, Fig. 7
1973 *Pirenella cailliaudi marchesinii* SELLI: 313, Pl. 18, Figs 4–6
1973 *Cerithium cerithinum sublaevigatum* SELLI: 317, Pl. 18, Figs 9-10
1984 *Cerithium* sp., – SHARABATI: Pl. 5, Fig. 7
1984 *Cerithium* cf. *cingulata* (GMELIN, 1791), – SHARABATI: Pl. 5, Fig.13 [non GMELIN, 1791]
1995 *Potamides conicus*, – BOSCH et al.: 56, Fig. 185
1997 *Pirenella conica*, – VERBINNEN & DIRKX: Fig. 19
1998 *Pirenella conica*, – VERBINNEN & DIRKX: 59
2008 *Potamides conicus*, – RUSMORE-VILLAUME: 44, Fig.

Remarks: SELLI (1973) described this extremely variable species under different names. *Cerithium conicum* BLAINVILLE is the type species of the genus *Pirenella* GRAY, 1847. Recently, REID et al. (2008) have shown that *P. conica* is not related to the fossil type species *P. lamarkii* BRONGNIART, 1810, but groups out with species of the genus *Cerithideopsilla* THIELE, 1929. This would make the latter genus a younger synonym of *Pirenella* what, however, would be contradictory to current usage of these genus names. REID et al. (2008) addressed this problem, but avoided nomenclatural consequences. We like to use *Pirenella*, which was introduced for *conica*.

Number of specimens: QHS (-), QBS (213), Ql (-)

Feeding type: Detritus-feeder

Habitat: Mostly in the mangrove, one shell from coral sand

Samples: *94/1/a*, *94/6*

Range: NW Indian Ocean, Mediterranean Sea

Family Scaliolidae Jousseaume, 1912

Remarks: Based on anatomical data and characters of the ultrastructure of the spermatozoa Ponder (1994) united the genera *Scaliola* A. Adams, 1860 and *Finella* A. Adams, 1860 within one family Scaliolidae, with Finellidae Thiele, 1929 as a synonym. Bandel (2006), however, on the basis of small differences in protoconch morphology kept Scaliolidae separate from Finellidae and included the latter as subfamily in the family Bittiidae Cossmann, 1906, to which he also attributed the subfamily Diastomatinae Cossmann, 1894, overlooking that by this action Diastomatidae would take precedence over Bittiidae. As long as no more convincing arguments for a separation of the families Finellidae and Scaliolidae can be demonstrated, we follow Ponder (1994).

***Clathrofenella cerithina* (Philippi, 1849)**
(Pl. 7, Figs 3–7)

1849 *Rissoa cerithina* Philippi: 33
1860a *Dunkeria fusca* A. Adams: 119
1977 *Clathrofenella fusca*, – Habe: 157, Figs 1–3
1995 *Cerithidium diplax* (Watson, 1886), – Bosch et al.: 56, Fig. 182
1995 *Cerithidium cerithinum*, – Bosch et al.: 56, Fig. 181
1997 *Clathrofenella fusca*, – Giannuzzi-Savelli et al.: 48, Fig. 97
2000 *Cerithidium cerithinum*, – Dekker & Orlin: 20
2000 *Cerithidium fusca*, – Okutani: 125, Pl. 62, Fig. 55
2001 *Clathrofenella reticulata* (A. Adams, 1860), – Higo et al.: 28, Fig. G 707s
2001 *Clathrofenella asperulata* (A. Adams, 1860), – Higo et al.: 28, Fig. G 709
2003 *Clathrofenella ferruginea* (A. Adams, 1860), – Zenetos et al.: 74
2006 *Bittium* cf. *impendens*, – Bandel: Pl. 4, Figs 5, 9, 10 [non Hedley, 1899]

Remarks: The taxonomy of this group of small, reticulated Scaliolids is very confusing and needs revision. *C. cerithina* was originally described from the Red Sea and Gulf of Aden. Tryon (1887: 395) was the first to synonymize the Japanese species *Dunkeria reticulata* A. Adams 1860 with *C. cerithina*. According to Habe 1977 *Dunkeria asperulata*, *reticulata*, *fusca* and *ferruginea* (all of A. Adams 1860) are synonyms. According to Bosch et al. (1995) *Bittium perparvulum* Watson, 1886 shall be another synonym. They distinguish, however, *C. cerithinum* and another species they identified as *C. diplax* (Watson, 1886). But both taxa are illustrated by the same photo. Zenetos et al. (2003: 74) illustrate *C. ferruginea* as Lessepsian migrant to the Mediteranean Sea. Their figures show a pale brownish shell with two prominent spiral cords and a third fine spiral on the upper slope of the whorls. According to these authors *cerithina* differs by having four spiral cords. However, in our material there can be found a wide variability of the sculpture ranging from two to four spiral cords. Those specimens with four spirals are identical with the specimen figured by GIANNUZZI-SAVELLI et al. (1997) as *C. fusca*. Compared syntypes of *C. ferruginea* in SMF do not well agree with our material and the specimens figured by ZENETOS et al. (2003). They are of larger size, broader and have a coarser sculpture of usually three spiral cords. Thus, whether this species falls within the range of our form seems to be questionable. A syntype of *C. fusca*, however, shows two strong spiral cords and looks more like the form identified as *C. diplax* WATSON and agrees – apart from being much larger – with those specimens of our material which have two spirals, as well as with the figures of ZENETOS et al. (2003). We conclude that we are dealing with only one highly variable species for which *C. cerithina* seems to be the oldest available name, which, moreover, is based on Red Sea material. Whether *C. diplax*, *C. perparvulum* and *C. ferruginea* can be referred to our species needs further study.

Another question which would need to be examined in more detail is the proper generic placement of the species. BOSCH et al. (1995) as well as DEKKER & ORLIN (2000) use the genus name *Cerithidium* MONTEROSATO, 1884 for this species. The type-species of this genus, *Cerithium submamillatum* RAYNEVAL & PONZI, 1854 from the Italian Pleistocene, agrees not very well with *C. cerithina*, but with its coarser sculpture and better developed varices comes closer to the genus *Bittium* GRAY, 1847. Therefore we prefer to use the genus *Clathrofenella* KURODA & HABE, 1954 which is based on *Dunkeria reticulata* A. ADAMS, 1860.

SELLI (1973) described a new subspecies *Cerithidium cerithinum sublaevigatum* which, however, unquestionably belongs to *Pirnella conica* (BLAINVILLE, 1829) (see above).

Number of specimens: QHS (-), QBS (515), Ql (-)

Feeding type: Probably a detritus feeder

Habitat: Mostly in mud (39 m) and muddy sand (23 m); also in sand between coral patches, reef slope sand, and muddy and sandy seagrass

Samples: *94/1–d*, *94/3a*,*b*, *94/4a*,*b*, *94/5*, *95/31*, *B5/8*, *C1/3*

Range: Indopacific, Lessepsian migrant to the Mediterranean Sea

***Finella pupoides* A. ADAMS, 1860**
(Pl. 7, Figs 8–10)

1860b *Finella pupoides* A. ADAMS: 336
1995 *Obtortio pupoides*, – BOSCH et al.: 56, Fig. 183
2000 *Finella pupoides*, – OKUTANI: 135, Pl. 67, Fig. 4
2001 *Eufenella pupoides*, – HIGO et al: 29, Fig. G 716
2003 *Finella pupoides*, – ZENETOS et al.: 72, Figs.
2006 *Finella pupoides*, – BANDEL: Pl. 4, Fig. 12, Pl. 5, Fig. 2
2008 *Finella pupoides*, – BOUCHET & STRONG in POPPE: Pl. 95, Fig. 2

Remarks: In former literature this species was often cited in the genus *Obtortio* HEDLEY, 1899, which, however, is regarded as synonym of *Finella* A. ADAMS, 1860 (PONDER 1994).

Number of specimens: QHS (-), QBS (277), Ql (-)

Feeding type: Detritus feeder

Habitat: Mostly in mud at 39 m, some in muddy sand at 23 m, few in coral sand and muddy sand with seagrass

Samples: *94/1/a,c*, *94/3a,b*, *94/4/a,b*, *B5/8*

Range: Indopacific, Lessepsian migrant to the Mediterranean Sea

***Scaliola bella* A. ADAMS, 1860**
(Pl. 8, Fig. 1)

1860a *Scaliola bella* A. ADAMS: 120
1961 *Scaliola bella*, – HABE: 197, Pl. 2 Fig. 13, 16; Pl. 4, Fig. 13
2000 *Scaliola bella*, – OKUTANI: 135, Pl. 67, Fig. 1

Remarks: This species is characterized by convex whorls, very deep sutures and rather loose coiling of whorls, particulary the last one. It agrees very well with the figures of *S. bella* given by the authors cited above.

Number of specimens: QHS (-), QBS (10), Ql (-)

Feeding type: Detritus feeder

Habitat: Few shells in muddy sand at 23 m and mud at 39 m

Samples: *94/3/a,b*, *94/4/a*

Range: Indopacific

***Scaliola elata* ISSEL, 1869**
(Pl. 8, Fig. 2)

1869 *Scaliola elata* "SEMPER" ISSEL: 198, 291, 330
1982 *Scaliola elata*, – BOUCHET & DANRIGAL: 13, Fig. 84
1997 *Scaliola elata*, – GIANNUZZI-SAVELLI et al.: 50, Fig. 108
2006 *Scaliola bella*, – BANDEL: Pl. 6, Fig. 6–8 (non A. ADAMS, 1860)

Remarks: The species differs from *S. bella* A. Adams, 1860, by its densely agglutinated shell which appears as if completely built of sand grains. Besides, it has a slightly larger protoconch diameter than *S. bella*, its sutures are not as deeply incised, the shell form is more slender. DEKKER & ORLIN (2000: 20) enumerate only this species but add the suspicion "possibly more than one species". Of the various *Scaliola* species described from Japan by A. ADAMS 1862, particularly *S. glareosa* and S. *gracilis* look rather similar to *S. elata*. The figures of syntypes of both taxa given by HABE (1961) and HIGO et al. (2001) suggest, too, that both species could be older synonyms. Unfortunately a revision of *Scaliola* has not been published yet. Therefore we prefer to use *elata* as this name is based on the Red Sea form.

GIANNUZZI-SAVELLI et al. (1997) figured a specimen from Haifa, Mediterranean coast of Israel. ZENETOS et al. (2003: 320) discussed the identification of an earlier record.

Number of specimens: QHS (-), QBS (28), Ql (-)

Feeding type: Detritus-feeder

Habitat: Coral sand, mangrove, seagrass, from 1 m to 40 m.

Samples: *94/1–d*, *94/5*, *94/6*, *95/31*, *B5/8*, *C1/3*

Range: Red Sea; possibly Indopacific, Lessepsian migrant to the Mediterranean Sea

Family Siliquariidae ANTON, 1838

***Tenagodus* sp.**
(Pl. 8, Figs 3–4)

Remarks: Only juvenile specimens were found, which do not allow specific identification. Some Indopacific species have been figured by POPPE (2008: Pl. 96): *T. cuminigi*, *T. ponderosus* and *T. trochlearis*, all of MÖRCH 1860. However, the differences between these taxa are not at all clear. This is the first record of the family for the Red Sea.

Number of specimens: QHS (-), QBS (2), Ql (-)

Feeding type: Suspension-feeder

Habitat: Shells were found in reef slope sediments at 12 m and 19 m water depth

Samples: *95/31*, *94/5*

Range: Red Sea

Family Turritellidae LOVÉN, 1847

***Archimediella maculata* (REEVE, 1849)**
(Pl. 8, Figs 5–6)

1849 *Turritella maculata* REEVE: Pl. 7, Fig. 33
1984 *Turritella* cf. *sanguinea* REEVE, 1849, – SHARABATI: Pl. 4, Fig. 2 [non REEVE, 1849 ?]
1984 *Turritella* sp., – SHARABATI: Pl. 4, Fig. 3
1995 *Turritella maculata*, – BOSCH et al.: 58, Fig. 192
2008 *Archimediella maculata*, – RUSMORE-VILLAUME: 42, Fig.

Number of specimens: QHS (5), QBS (17), Ql (23)

Feeding type: Suspension-feeder

Habitat: In coral sand, sand with seagrass, and muddy sand with seagrass, on coral carpets, rock bottoms and coral patches, from 1 to 39 m

Samples: *94/1/b,d, C1/3, 44, 54, 55, 74, 81, A4/1, B4/1, B5/0, B15/1, C1/3, C6/1, D2/1, ©72, 95/16, ©39*

Range: Indopacific

***Haustator aurocinctus* (Martens, 1882)**
(Pl. 8, Figs 7–9)

1882 *Turritella aurocincta* Martens: 107
1903 *Turritella auricincta* [sic!], – Sturany: 25, Pl. 5, Figs 8–10
? 1984 *Turritella* sp. – Sharabati: Pl. 5, Fig. 3
2006 *Turritella* sp. – Bandel: Pl. 9, Fig. 1

Remarks: Martens described this species from "Vavao insularum amicarum", i.e. Uta Vava'u Island, Tonga Islands. Our material agrees perfectly with a compared syntype in SMF. The species is characterised by its slender, needleshaped shell with three prominent primary spirals which usually are coloured in yellow or brown. Whether there may be an older name for this species could not be checked yet. Dekker & Orlin (2000) did miss this species in their checklist although it was already illustrated for the Red Sea by Sturany (1903).

Number of specimens: QHS (-), QBS (85), Ql (-)

Feeding type: Suspension-feeder

Habitat: Only between 23 m and 40 m in muddy sand, muddy sand with seagrass, and mud

Samples: *94/3a,b, 94/4a,b, C1/3*

Range: Pacific (Tonga Islands), Red Sea

***Turritella* (s. lat.) *alba* H. Adams, 1872**
(Pl. 9, Figs 1–2)

1872 *Turritella alba* H. Adams: 9, Pl. 3, Fig. 3
1880 *Turritella concava* Martens: 283, Pl. 20, Fig. 19 [non Say, 1826]
1973 *Turritella* (*Torcula*) *martensi* Selli: 298, Pl. 16, Figs 1–ab, 2a-b
2000 *Gazameda alba*, – Dekker & Orlin: 20
2006 *Turritella* cf. *terebra*, – Bandel: Pl. 8, Figs 12–14 [non Linnaeus, 1758]

Remarks: This small species can not be easily assigned to a genus. It has only one primary spiral rib in the middle of the whorls even in the adult stage, and the growth lines on the whorls are deeply sinuated with the deepest point of the sinus corresponding to the spiral rib. On the base of the last whorl the growth lines ar very strongly reflected posteriorwards. The protoconch is multispiral. The form of the basal growth lines is very similar to the one observed in the Protominae but lacks the basal sinus characterising this group. In any case it has nothing in common with the Australian genus *Gazameda* IREDALE, 1924, which shows a quite different shape of growth lines and has a paucispiral protoconch (see MARWICK 1957).

Number of specimens: QHS (-), QBS (12), Ql (-)

Feeding type: Suspension-feeder

Habitat: Only found in reef slope sands in 12 m and 19 m water depth

Samples: *94/5*, *95/31*

Range: Red Sea, Mauritius

Superfamily Campaniloidea DOUVILLÉ, 1904

Family Plesiotrochidae HOUBRICK, 1990

Plesiotrochus aff. *acutangulus* (YOKOYAMA, 1924)
(Pl. 9, Figs 3–4)

aff. 1924 *Bittium acutangulus* YOKOYAMA: Pl. 38, Fig. 7.
1995 *Plesiotrochus* cf. *penitricinctus* (COTTON, 1932), – BOSCH et al.: 53, Fig. 168 [non COTTON, 1932]
2000 *Plesiotrochus acutangulus*, – DEKKER & ORLIN: 20
aff. 2000 *Plesiotrochus acutangulus*, – OKUTANI:135, Pl. 67, Fig. 1
2008 *Plesiotrochus* sp., – RUSMORE-VILLAUME: 46, Fig.

Remarks: This species differs from *P. unicinctus* (A. ADAMS, 1853) by a steeper sloping base, a much stronger spiral cord below the peripheral rib and by developping weakly noded varices. The specimen figured by RUSMORE-VILLAUME (2008) was identified by VAN GEMERT (2008: 146) as *P. pagodiformis* (HEDLEY, 1907). However, HEDLEY's original figure shows a shell with rather strong and sharp regular axial riblets. This does not conform with our material and therefore and because of lack of material for comparison at present this identification must remain doubtful. Because Japanese material could not be compared, too, even this identification is not certain.

Number of specimens: QHS (-), QBS (19), Ql (-)

Feeding type: algal feeder

Habitat: Shells were found in coral sand, muddy sand, sand with seagrass and muddy sand with seagrass between 10 m and 40 m water depth

Samples: *94/1/a-d*, *94/3/b*, *B5/8*, *C1/3*

Range: Indopacific

Plesiotrochus unicinctus (A. Adams, 1853)
(Pl. 9, Figs 5–6)

1853 *Ziziphinus unicinctus* A. Adams: 167
1878 *Plesiotrochus souverbianus* P. Fischer: 212
1990 *Plesiotrochus souverbianus*, – Houbrick: Fig. 1A
1995 *Plesiotrochus souverbianus*, – Bosch et al.: 53, Fig. 169
2000 *Plesiotrochus souverbianus*, – Dekker & Orlin: 20
2000 *Plesiotrochus souverbianus*, – Okutani: 135, Pl. 67, Fig. 2
2008 *Plesiotrochus unicinctus*, – Rusmore-Villaume: 46, Fig.
2008 *Plsiotrochus unicinctus*, – Strong & Bouchet in Poppe: Pl. 97, Figs 1–2

Remarks: According to Strong & Bouchet (2008) *P. souverbianus* is a synonym of *P. unicinctus*.

Number of specimens: QHS (-), QBS (93), Ql (-)

Feeding type: Algal feeder

Habitat: Sand between coral patches, reef slope sand and sand with seagrass, between 6 and 19 m

Samples: *94/1a-d*, *94/5*, *95/31*, *B5/8*

Range: Indopacific

Clade Littorinimorpha Golikov & Starobogatov, 1975

Superfamily Capuloidea Fleming, 1822

Family Capulidae Fleming, 1822

Separatista helicoides (Gmelin, 1791)
(Pl. 9, Fig. 7)

1791 *Turbo helicoides* Gmelin: 3598
2000 *Separatista helicoides*, – Okutani: 197, Pl. 98, Fig. 11

Number of specimens: QHS (-), QBS (1), Ql (-)

Feeding type: Probably a filter feeder like many capulids

Habitat: Only one shell was found in reef slope sand at 19 m water depth

Samples: *94/5*

Range: Indopacific

Superfamily Cypraeoidea RAFINESQUE, 1815

Family Cypraeidae RAFINESQUE, 1815

Feeding type: Cypraeids are mainly herbivorous, but there are also species known to be omnivorous or feeders on sponges

Erosaria macandrewi (G. B. SOWERBY (III), 1870)
(Pl. 10, Fig. 1)

1870 *Cypraea macandrewi* SOWERBY: 38
1984 *Cypraea macandrewi*, – SHARABATI: Pl. 12, Figs 1, 1a
1993 *Erosaria macandrewi*, – LORENZ & HUBERT: 208, Pl. 92, Figs 23–30, 36–37
1995 *Cypraea macandrewi*, – BOSCH et al.: 76, Fig. 266
2008 *Erosaria macandrewi*, – RUSMORE-VILLAUME: 62, Fig.

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: A single shell was found in muddy sand in 51 m water depth

Samples: *B14/1*

Range: Red Sea, Arabian Sea

Erosaria nebrites (MELVILL, 1888)
(Pl. 10, Figs 2–5)

1888 *Cypraea nebrites* MELVILL: 223, Pl. 1, Fig. 13
1984 *Cypraea nebrites*, – SHARABATI: Pl. 11, Figs 12, 12a
1993 *Erosaria nebrites*, – LORENZ & HUBERT: 188, Pl. 81, Figs 15–28
1995 *Cypraea nebrites*, – BOSCH et al.: 78, Fig. 270
2008 *Erosaria nebrites nebrites*, – RUSMORE-VILLAUME: 62, Fig.

Number of specimens: QHS (-), QBS (-), Ql (4)

Habitat: Unknown

Samples: Safaga

Range: NW Indian Ocean, Red Sea

Erronea caurica quinquefasciata (RÖDING, 1798)
(Pl. 10, Fig. 6)

1798 *Cypraea quinquefasciata* RÖDING: 27
1984 *Cypraea caurica* LINNAEUS, 1758, – SHARABATI: Pl. 11, Figs 16, 16a [non LINNAEUS, 1758]
1993 *Erronea caurica quinquefasciata*, – LORENZ & HUBERT: 137, Pl. 52, Figs 1–4
1995 *Cypraea caurica*, – BOSCH et al.: 73, Fig. 246 [non LINNAEUS, 1758]
2008 *Erronea caurica quinquefasciata*, – RUSMORE-VILLAUME: 64, Figs

Remarks: Lorenz & Hubert (1993) distinguish several subspecies of *E. caurica* (Linnaeus, 1758). The Red Sea form is considered as the subspecies *E. c. quinquefasciata*, which differs from typical *E. caurica* by its more oval, less elongated shell form, the more open and curved aperture and the fewer but larger colour dots on the margins. Heimann & Mienis (1999) described a new subspecies *E. c. nabeqensis* from the Gulf of Aqaba, which differs from *E. c. quinquefasciata* by developping rather strong callused margins, a character of somewhat dubious value because it could well be due to ecological influences.

Number of specimens: QHS (-), QBS (1), Ql (2)

Habitat: One living specimen was found in 11 m water depth at the margin of a seagrass meadow, dead shells were found in sandy seagrass at 6 m and on rock bottom at 24 m water depth

Samples: *B5/8*, *©10*, ©28,

Range: Arabian Seas

Luria isabella isabella (Linnaeus, 1758)
(Pl. 10, Fig. 7)

1758 *Cypraea isabella* Linnaeus: 722
1984 *Cypraea isabella*, – Sharabati: Pl. 11, Figs 10, 10a
1993 *Luria isabella isabella*, – Lorenz & Hubert: 82, Pl. 29, Figs 1–18
1995 *Cypraea isabella*, – Bosch et al.: 75, Fig. 260
2008 *Luria isabella*, – Rusmore-Villaume: 64, Fig.
2008 *Luria isabella*, – Poppe in Poppe: Pl. 122, Figs 1–6

Number of specimens: QHS (-), QBS (-), Ql (3)

Habitat: Dead shells were found on sand close to coral carpets in 6 m and 39 m water depth

Samples: *©56*, *©81*, Safaga

Range: Indian Ocean, Western Pacific

Lyncina carneola (Linnaeus, 1758)
(Pl. 11, Fig. 1)

1758 *Cypraea carneola* Linnaeus: 719
1984 *Cypraea carneola*, – Sharabati: Pl. 10, Fig. 6c [figs 6, 6a-b = *titan*?]
1993 *Lyncina carneola carneola*, – Lorenz & Hubert: 68, Pl. 24, Figs 1–12, 23–32, 34
1995 *Cypraea carneola*, – Bosch et al.: 72, Fig. 245
2008 *Lyncina carneola*, – Rusmore-Villaume: 66, Fig.
2008 *Lyncina carneola*, – Poppe in Poppe: Pl. 118, Figs 1–4

Remarks: According to Dekker & Orlin (2000: 22) part of the figures of Sharabati illustrate *L. leviathan titan* (Schilder & Schilder, 1962). Our specimens clearly belong to *L. carneola*.

Number of specimens: QHS (1), QBS (-), Ql (3)

Habitat: Dead shell found on coral carpet in 15 m water depth

Samples: *41*, Safaga

Range: Indian Ocean, Western Pacific

Mauritia arabica grayana SCHILDER, 1930
(Pl. 11, Fig. 2)

1930 *Mauritia arabica grayana* SCHILDER: 75
1984 *Cypraea grayana*, – SHARABATI: Pl. 10, Figs 5, 5a-c
1993 *Mauritia arabica grayana*, – LORENZ & HUBERT: 59, Pl. 13, Figs 3–4, 8–10
1995 *Cypraea grayana*, – BOSCH et al.: 75, Fig. 258
2008 *Mauritia grayana*, – RUSMORE-VILLAUME: 66, Fig.

Remarks: LORENZ & HUBERT (1993) discussed the various subspecies of *M. arabica* (LINNAEUS, 1758) which alltogether seem not to be very well defined and show overlap of ranges. The variability of *grayana* from the Northern Red Sea was illustrated by HEIMANN & MIENIS (2000).

Number of specimens: QHS (-), QBS (-), Ql (3)

Habitat: Dead shells were found on reef flats

Samples: *16*, *76*, Safaga

Range: Red Sea, Western Indian Ocean

Staphylaea staphylaea laevigata (DAUTZENBERG, 1932)
(Pl. 11, Fig. 3)

1932 *Cypraea staphylaea* var. 1 *laevigata* "HIDALGO" DAUTZENBERG: 52
1984 *Cypraea staphylea* [sic!] LINNAEUS, 1758, – SHARABATI: Pl. 11, Figs 7, 7a [non LINNAEUS, 1758]
1993 *Staphylaea staphylaea laevigata*, – LORENZ & HUBERT: 214, Pl. 99, Figs 4–6, 11; Pl. 100, Figs 13–15, 18–19, 21–22
1995 *Cypraea staphylaea*, – BOSCH et al.: 79, Fig. 275 [non LINNAEUS, 1758]

Remarks: Our specimen agrees rather well with the differential characterization against typical *S. staphylaea* (LINNAEUS, 1758) given by LORENZ & HUBERT (1993): oval shellform, darker coloured dorsum and obsolete pustules.

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: A dead shell was found in sand with seagrass at 1 m water depth

Samples: *D2/1*

Range: Western Indian Ocean, Red Sea

Cypraeidae juv. indet.
(Pl. 12, Fig. 1)

Larger specimens of Cypraeids are almost exclusively from qualitative collections. Shells found in quantitative bulk samples, however, are exclusively juveniles

Number of specimens: QHS (-), QBS (3), Ql (1)

Habitat: Juvenile shells were found in bulk samples from reef slope sediments in 12 m and 19 m water depth

Samples: *94/5*, *95/16*

Family Pediculariidae GRAY, 1853

Pseudocypraea adamsonii **(G. B. SOWERBY (I), 1832)**
(Pl. 11, Fig. 4)

1832 *Cypraea adamsonii* SOWERBY: Fig. 7
1984 *Pseudocypraea adamsonii*, – SHARABATI: Pl. 12, Fig. 11
1995 *Pseudocypraea adamsonii*, – BOSCH et al.: 83, Fig. 297
2001 *Pseudocypraea adamsonii*, – HIGO et al.: 38, Fig. G 1257
2008 *Psudocypraea adamsonii*, – RUSMORE-VILLAUME: 68, Fig.
2009 *Pseudocypraea adamsonii*, – LORENZ & FEHSE: 142, Pl. 200, Figs 1–3; Figs A 372–373

Number of specimens: QHS (1), QBS (-), Ql (-)

Feeding type: probably carnivorous on polyps of cnidarians like the Ovulids

Habitat: A single shell was found on a coral carpet in 12 m water depth

Samples: *13*

Range: Indopacific

Superfamily Littorinoidea CHILDREN, 1834

Family Littorinidae CHILDREN, 1834

Littoraria intermedia **(PHILIPPI, 1846)**
(Pl. 12, Figs 2–3)

1846 *Littorina intermedia* PHILIPPI: 141
1986 *Littoraria* (*Littorinopsis*) *intermedia*, – REID: 124, Figs 43–47
1995 *Littoraria* (*Littorinopsis*) *intermedia*, – BOSCH et al.: 45, Fig. 114
2005a *Littoraria intermedia*, – VERBINNEN & DIRKX: 110, Fig. 1
2008 *Littoraria intermedia*, – RUSMORE-VILLAUME: 48, Fig.

Number of specimens: QHS (-), QBS (3), Ql (-)

Feeding type: Algal grazer

Habitat: Three shells were found in the mangrove

Samples: *94/6*

Range: Indopacific

Peasiella infracostata (ISSEL, 1869)
(Pl. 12, Figs 4–5)

1869 *Risella infracostata* ISSEL: 195
1982 *Risella infracostata*, – BOUCHET & DANRIGAL: 13, Fig. 64
1989 *Peasiella infracostata*, – REID: 61 partim, Figs 11, 106–109, 112 [non Figs 10, 29, 47, 64, 111 = *P. habei* REID & MAK, 1998, Figs 12, 30, 48 = *P. fasciata* REID & MAK, 1998, Fig. 110 = *P. patula* REID & MAK, 1998]
1995 *Peasiella infracostata*, – BOSCH et al.: 46, Fig. 118
1998 *Peasiella infracostata*, – REID & MAK: 7, Figs 1–5, 35–41, 76–79, 108–109, 131

Remarks: Usually badly preserved dead shells.

Number of specimens: QHS (-), QBS (23), Ql (-)

Feeding type: Algal grazer

Habitat: Shells were found in sand between coral patches and in the mangrove

Samples: *94/1–d*, *94/6*

Range: NW Indian Ocean, East Africa

Peasiella isseli (ISSEL, 1869)
(Pl. 12, Fig. 6)

1869 *Risella isseli* "SEMPER" ISSEL: 347
1982 *Risella isseli*, – BOUCHET & DANRIGAL: 13, Fig. 65
1989 *Peasiella isseli*, – REID: 60 partim, Figs 13, 50, 56, 97–98, 101, 103 [non Figs 14–15, 28, 49, 97, 99-100, 102, 104–105 = *P. mauritiana* (VIADER, 1951)]
1998 *Peasiella isseli*, – REID & MAK: 18, Figs 25–29, 62–67, 99-101, 118–119, 136
2005a *Peasiella isseli*, – VERBINNEN & DIRKX: 114, Fig. 7
2008 *Peasiella isseli*, – RUSMORE-VILLAUME: 48, Figs

Number of specimens: QHS (-), QBS (3), Ql (-)

Feeding type: Algal grazer

Habitat: Shells were found in sand between coral patches and in the mangrove

Samples: *94/1/b*, *94/6*

Range: Red Sea, Gulf of Aden

Family Pickworthiidae IREDALE, 1917

Mareleptopoma nov. spec.
(Pl. 12, Figs 7–8)

1973 *Sansonia* (*Sansonia*) *christinae* SELLI: 295 partim, Pl. 15, Figs 8, 9a-d [not Fig. 10]

Remarks: When SELLI (1973) described his species, apart from the holotype (Fig. 10) he figured two specimens which he thought to be juveniles. However, these alleged juvenile specimens are not conspecific with the holotype, but differ by their much smaller size, convex whorls and different arrangement of spiral cords. *S. christinae* is a synonym of *Sansonia kirkpatricki* (IREDALE, 1917) (see LE RENARD & BOUCHET 2003: 589). Although *Mareleptopoma* sp. is the most common pickworthiid in the Red Sea (many samples in SMF) it has not yet been described. A formal description prepared by B. SABELLI and M. TAVIANI for a planned monograph of the family has not been published so far.

Number of specimens: QHS (-), QBS (16), Ql (-)

Feeding type: Unknown

Habitat: Shells were found in reef slope sands in 12 m and in sand between coral patches in 10 m water depth

Samples: *94/1/b*, *95/31*

Range: Red Sea

Superfamily Naticoidea GUILDING, 1834

Family Naticidae GUILDING, 1834

Feeding type: All naticids are carnivorous shell-boring predators on other molluscs

Mammilla melanostoma (GMELIN, 1791)
(Pl. 13, Figs 1–2)

1791 *Nerita melanostoma* GMELIN: 3674
1984 *Polinices melanostomus*, – SHARABATI: Pl. 13, Figs 2, 2a [non Fig. 2b = *simiae* DESHAYES]
1995 *Mammilla melanostoma*, – BOSCH et al.: 85, Fig. 311
2000 *Mammilla melanostoma*, – KABAT: 354, Figs 4–5
2008 *Mammilla melanostoma*, – RUSMORE-VILLAUME: 72, Fig.
2008 *Mammilla melanostoma*, – HOLLMANN in POPPE: Pl. 186, Fig. 3
2008 *Polinices melanostoma*, – VERBINNEN & WILS: 34, Pl. 2, Fig. 10

Number of specimens: QHS (-), QBS (1), Ql (1)

Habitat: Dead shells were found in sand between coral patches in 10 m water depth and on the rocky intertidal

Samples: *94/1/b*, *©69*

Range: Indopacific

Mammilla simiae (DESHAYES, 1838)
(Pl. 13, Figs 3–4)

1838 *Natica simiae* DESHAYES: 652
1984 *Polinices melanostomus* (GMELIN, 1791), – SHARABATI: Pl. 13, Fig. 2b [non GMELIN, 1791]
1995 *Mammilla simiae*, – BOSCH et al.: 85, Fig. 313
2000 *Mammilla simiae*, – KABAT: 357, Figs 10–11
2008 *Mammilla simiae*, – RUSMORE-VILLAUME: 72, Fig.
2008 *Mammilla simiae*, – HOLLMANN in POPPE: Pl. 186, Fig. 8
2008 *Polinices simiae*, – VERBINNEN & WILS: 35, Pl. 3, Fig. 13

Number of specimens: QHS (-), QBS (1), Ql (1)

Habitat: Sand between coral patches in 10 m and sand near coral carpet in 21 m water depth

Samples: *94/1/a*, *B5/1*

Range: Indopacific

Natica buriasiensis RÉCLUZ, 1844
(Pl. 13, Fig. 5)

1844 *Natica buriasiensis* RÉCLUZ: 212
1995 *Natica pseustes* WATSON, 1881, – BOSCH et al.: 87, Fig. 321
2000 *Natica buriasensis* [sic!], – OKUTANI: 261, Pl. 130, Fig. 51
2000 *Natica buriasiensis*, – KABAT: 359, Figs 13–16
2008 *Natica buriasiensis*, – HOLLMANN in POPPE: Pl. 189, Fig. 2
2008 *Natica pseustes*, – HOLLMANN in POPPE: Pl. 190, Figs 2–3
2008 *Natica buriasiensis*, – VERBINNEN & WILS: 30, Pl. 1, Fig. 1

Remarks: According to KABAT (2000) *N. pseustes* WATSON, 1881, is a synonym of *buriasiensis*, which was, however, denied by VERBINNEN & WILS (2008: 30). Our specimen agrees particularly well with the figures given by HOLLMANN (2008) for *N. pseustes* and with the one given as *N. buriasiensis* by VERBINNEN & WILS. We are not able to take a position regarding the status of both taxa and follow KABAT (2000) who had examined the type materials.

Number of specimens: QHS (-), QBS (11), Ql (-)

Habitat: Shells were found in sand between coral patches, in mud, in muddy sand with seagrass and in sand with seagrass, between 10 and 40 m.

Samples: *94/1/b*, *94/4/a*, *94/4/b*, *B5/8*, *C1/3*

Range: Indopacific

Naticarius onca (Röding, 1798)
(Pl. 13, Figs 6–8)

1798 *Cochlis onca* Röding: 147
1984 *Natica onca*, – Sharabati: Pl. 13, Figs 4, 4a
2000 *Naticarius onca*, – Okutani: 263, Pl. 131, Fig. 59
2000 *Naticarius onca*, – Kabat: 360, Figs 18–19
2008 *Naticarius onca*, – Rusmore-Villaume: 72, Fig.
2008 *Naticarius onca*, – Hollman in Poppe: Pl. 191, Fig. 6
2008 *Naticarius onca*, – Verbinnen & Wils: 31, Pl. 1, Fig. 5

Number of specimens: QHS (-), QBS (2), Ql (1)

Habitat: Shells were found in sand between coral patches and in reef slope sediments in 6 m and 10 m water depth

Samples: *94/1/c*,*d*, *©27*

Range: Indopacific

Notocochlis gualteriana (Récluz, 1844)
(Pl. 13, Figs 9-10; Pl. 14, Figs 1–3)

1844 *Natica gualteriana* Récluz: 208
1984 *Natica gualteriana*, – Sharabati: Pl. 13, Figs 3, 3a
1995 *Natica gualteriana*, – Bosch et al.: 86, Fig. 319
2000 *Natica gualteriana*, – Okutani: 261, Pl. 130, Fig. 49
2000 *Notocochlis gualteriana*, – Kabat: 365, Fig. 25
2001 *Natica gualteriana*, – Higo et al.: 45, Fig. G 1476
2003 *Natica gualteriana*, – Zenetos et al.: 108, Fig.
2008 *Notocochlis gualterianus*, – Rusmore-Villaume: 72, Fig.
2008 *Notocochlis gualteriana*, – Hollmann in Poppe: Pl. 192, Fig. 4
2008 *Notocochlis gualteriana*, – Verbinnen & Wils: 32, Pl. 2, Fig. 8.

Remarks: Hollmann in Poppe (2009: Pl. 192, Figs 1–3) figures some shells under the name of *N. venustula* (Philippi, 1851), which show a colouration of interrupted dark brown axial stripes very similar or almost identical to a pattern seen in some specimens of *N. gualteriana*, too (e. g. in the syntype of *N. gualteriana* figured by Higo et al. 2001). It remains unclear to us whether there are really two different species and how they could be separated.

Number of specimens: QHS (-), QBS (77), Ql (2)

Habitat: Was found in virtually all studied sediments (sand between coral patches, reef slope sands, muddy sand, mud, muddy sand with seagrass), from 1 m to 40 m water depth

Samples: *94/1/a-d*, *94/3a*,*b*, *94/4*,*a*,*b*, *94/5*, *94/6*, *95/31*, *C1/3*, *A5/2*

Range: Indopacific, Lessepsian migrant to the Mediterranean Sea

Tanea euzona (RÉCLUZ, 1844)
(Pl. 14, Fig. 4)

1844 *Natica euzona* RÉCLUZ: 204
2008 *Tanea euzona*, – HOLLMANN in POPPE: Pl. 193, Figs 3, 6

Remarks: Our specimen has a glossy shell, milky white in colour, with a very strong umbilical callus. The shell agrees so perfectly with specimens of *Tanea euzona*, that we do not hesitate to identify it with that species, even if it lacks the characteristic colouration of that species. From the other species known from the Red Sea, *T. areolata* (RÉCLUZ, 1844), our shell is distinguished by its more oval shape instead of the somewhat more depressed shape of that species (compare VERBINNEN & WILS 2008: Pl. 3, Fig. 14).

Number of specimens: QHS (-), QBS (1), Ql (-)

Habitat: One shell was found in muddy sand with seagrass

Samples: *C1/3*

Range: Indopacific

Polinices flemingianus (RÉCLUZ, 1844)
(Pl. 14, Fig. 5)

1844 *Natica flemingiana* RÉCLUZ: 209
1971 *Polinices* (*Polinices*) *flemingiana*, – CERNOHORSKY: 193, Figs 46, 51–53
2000 *Polinices flemingiana*, – KABAT: 368, Fig. 29
2008 *Polinices flemingianus*, – HOLLMANN in POPPE: Pl. 188, Fig. 3
2008 *Polinices flemingianus*, – VERBINNEN & WILS: 33, Pl. 2, Fig. 9

Remarks: CERNOHORSKY (1971) outlined the differences between *P. mammilla* (LINNAEUS, 1758) (under its synonym *P. tumidus* SWAINSON, 1840) and this species. The main distinguishing features of *P. flemingianus* are the well developed umbilical groove and the more oblique shell form.

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: One shell was found reef slope sand in few meters water depth

Samples: *©27*

Range: Indopacific

Polinices mammilla (LINNAEUS, 1758)
(Pl. 14, Fig. 6)

1758 *Nerita mammilla* LINNAEUS: 776
1971 *Polinices* (*Polinices*) *tumidus* (SWAINSON, 1840), – CERNOHORSKY: 191, Figs 45, 47–50
1984 *Polinices tumidus*, – SHARABATI: Pl. 13, Figs 1, 1a
1990 *Polinices mammilla*, – KABAT: 16, Fig. 3 A-B

1995 *Polinices mammilla*, – Bosch et al.: 86, Fig. 317
2000 *Polinices mammilla*, – Kabat: 368, Fig. 30
2008 *Polinices mammilla*, – Rusmore-Villaume: 72, Fig.
2008 *Polinices mammilla*, – Verbinnen & Wils: 34, Pl. 2, Fig. 12

Number of specimens: QHS (-), QBS (1), Ql (1)

Habitat: Shells were found in sand and sand between coral patches in 1 m and 10 m water depth

Samples: *94/1/a*, *A14/3*

Range: Indopacific

Sigatica mienisi (Kilburn, 1988)
(Pl. 14, Figs 7–9)

1988 *Eunaticina* (*Gennaeosinum*) *mienisi* Kilburn: 523, Figs 1–4
2008 *Sigatica mienisi*, – Rusmore-Villaume: 74, Fig.

Remarks: This specis has been descibed originally from he Gulf of Elat. *Gennaeosinum* Iredale, 1929 is synonymised with *Sigatica* Meyer & Aldrich, 1886 (see Kabat 2000: 37).

Number of specimens: QHS (-), QBS (4), Ql (-)

Habitat: Shells were found in muddy sand with seagrass in 40 m water depth

Samples: *C1/3*

Range: Red Sea

Superfamily Pterotracheoidea Rafinesque, 1814

Family Atlantidae Rang, 1829

Atlanta sp.
(Pl. 15, Figs 1–2)

Remarks: Several badly preserved and fragmentary specimens of the holoplanktonic gastropods of the genus *Atlanta* Lesueur, 1817 have been found. They are mentioned here only for completeness because the focus of our work is on the benthic fauna. Therefore, no attempts have been made to identify the poor material to species. Besides, the fragmentary state of the material most probably would not allow a proper identification. It is possible that there is more than one species present. Janssen (2007) described and illustrated nine species of *Atlanta* from the Red Sea.

Number of specimens: QHS (-), QBS (7), Ql (-)

Feeding type: Carnivorous predators on euthecosomatous pteropods

Habitat: Shells were found in sand between coral patches, and in reef slope sediments, in muddy sand

Samples: *94/1/a*, *94/1/c*, *94/3/b*, *95/31*

Range: Indopacific

Superfamily Rissooidea GRAY, 1847

Family Rissoidae GRAY, 1847

Subfamily Rissoinae GRAY, 1847

Feeding type: All Rissoaceans are indiscriminate deposit-feeders, ingesting diatoms, algal films and foraminifera.

***Parashiela* sp.**

(Pl. 15, Fig. 3)

Remarks: This species shows close relationships to the widespread Indopacific *P. ambulata* (LASERON 1956: p. 439, Fig. 145; PONDER 1985: p. 50, Fig. 104 A-G; OKUTANI 2000: 151, Pl. 75, Fig. 11). However, *P. ambulata* has a marked peripheral rib on the middle of the whorls, somewhat more distant axial ribs and a more turreted shell form. Our species is the first record of the genus for the Red Sea.

Number of specimens: QHS (-), QBS (1), Ql (-)

Habitat: One shell was found in reef slope sand at 12 m water depth

Samples: *95/31*

Range: Red Sea

***Voorwindia tiberiana* (ISSEL, 1869)**

(Pl. 15, Figs 4–6)

1869 *Cingula tiberiana* ISSEL: 199
1982 *Cingula tiberiana*, – BOUCHET & DANRIGAL: 16, Fig. 69
1995 *Voorwindia tiberiana*, – BOSCH et al.: 48, Fig. 137
2003 *Voorwindia tiberiana*, – ZENETOS et al.: 90, Fig.

Number of specimens: QHS (-), QBS (104), Ql (-)

Habitat: Shells were found in most studied sediments from 1 m to 40 m water depth, particularly abundant in sand with seagrass in 6 m

Samples: *94/1/a-d*, *94/3/a,b*, *94/4/a,b*, *94/6*, *95/31*, *B5/8*

Range: Red Sea, Lessepsian migrant to the Mediterranean Sea

Subfamily Rissoininae Stimpson, 1865

***Rissoina* (*Apataxia*) *cerithiiformis* Tryon, 1887**
(Pl. 16, Figs 1–2)

1887 *Rissoina cerithiiformis* Tryon: 384, Pl. 57, Fig. 92
1993 *Rissoina* (*Apataxia*) *cerithiiformis*, – Sleurs: 105,
Figs 32 A-C, 33 A-C, 34 A-D, 35 A-E, 36 A-B, 52 D, 54 C
1995 *Rissoina cerithiiformis*, – Bosch et al.: 46, Fig. 131
2000 *Rissoina erythraea* Philippi, 1851, – Dekker & Orlin: 20 [non Philippi, 1851]
2000 *Rissoina* (*Apataxia*) *cerithiformis*, – Okutani: 159, Pl. 79, Fig. 48
2008 *Rissoina balteata* Pease, 1869, – Poppe in Poppe: Pl. 197, Fig. 4

Remarks: Sleurs (1993) considered *R. erythraea* Philippi, 1851 a nomen dubium and placed this taxon only tentatively into the synonymy of *R. cerithiiformis*, but Dekker & Orlin (2000) listed the species under that name. The interpretation of *R. erythraea* mainly was based on a figure given by Schwartz von Mohrenstern (1860: Pl. 8, Fig. 59) under that name. This figure clearly shows *R. cerithiiformis*. However, later authors apparently overlooked Jickeli's (1884: p. 256) observation that Philippi's original specimens agree with *R. seguenziana* Issel, 1869! The identity of *R. balteata* Pease is dubious because all type material is lost.

Number of specimens: QHS (-), QBS (909), Ql (-)

Habitat: Shells were mostly found in reef slope sediments but were also abundant in sand between coral patches, between 10 m and 19 m

Samples: *94/1a-d*, *94/5*, *95/31*

Range: Indopacific

***Rissoina* (*Moerchiella*) *dorbignyi* A. Adams, 1851**
(Pl. 16, Fig. 3)

1851 *Rissoina dorbignyi* A. Adams: 265
1993 *Rissoina* (*Moerchiella*) *dorbignyi*, – Sleurs: 84, Figs 11 A-E, 12 A-B, 13 A-D, 14, 15 A-D, 16, 17 A-C, 18 a-B, 19 A-B, 53 C
2003 *Rissoina spirata* Sowerby, 1825, – Zenetos et al.: 86, Fig.
2008 *Rissoina dorbignyi*, – Rusmore-Villaume: 48, Fig.

Remarks: According to Sleurs (1993) *R. spirata* Sowerby, 1825 is a nomen dubium.

Number of specimens: QHS (-), QBS (2), Ql (-)

Habitat: Few shells were found in reef slope sediments in 12 m water depth

Samples: *95/31*

Range: Indopacific, Lessepsian migrant to the Mediterranean Sea

***Rissoina* (*Phosinella*) *digera* (LASERON, 1956)**
(Pl. 16, Figs 4–5)

1956 *Phintorene digera* LASERON: 408, Fig. 52

Remarks: This species is small (ca. 2–3 mm) and characterized by its clathrate sculpture of always three spiral cords and a fine secondary spiral striation in the interstices between the primary spiral cords. The similar species *R. seguenziana* ISSEL, 1869 is about twice as large, has four spiral cords and smooth interstices. Our material was compared to other rich material from the Red Sea identified by W. SLEURS as *R. digera*. This species has not been recorded so far from the Red Sea.

Number of specimens: QHS (-), QBS (26), Ql (-)

Habitat: Shells were found in sand on reef slope and in sand between coral patches, from 10 to 19 m water depth

Samples: *94/1a*,*b*,*d*, *94/5*, *95/31*

Range: Indopacific

***Rissoina* (*Rissoina*) *ambigua* (GOULD, 1849)**
(Pl. 16, Figs 6–7)

1849 *Pyramidella ambigua* GOULD: 118
1973 *Rissoina* (*Rissoina*) *pusilla indica* SELLI: 292, Pl. 15, Figs 4–5
1973 *Turbonilla* (*Strioturbonilla*) *mateldae* SELLI: 354, Pl. 21, Figs 3–4
1978 *Rissoina ambigua*, – CERNOHORSKY: 44, Pl. 11, Fig. 6
1985 *Rissoina* (*Rissoina*) *ambigua*, – PONDER: Fig. 129 E-G

Remarks: For Pleistocene specimens from Massaua (Erithrea) SELLI (1973) established the new subspecies *indica* of *R. pusilla* (BROCCHI, 1814), which is a Mio-Pliocene Mediterranean species. In our opinion this subspecies is a synonym of *R. ambigua*. The fragments described by SELLI as the pyramidellid *Turbonilla mateldae* obviously belong to *R. ambigua*, too. These fragments show the typical oblique axial ribbing of *R. ambigua* and lack the columellar plait or tooth, which characterizes all genera of the Pyramidellidae.

Number of specimens: QHS (-), QBS (21), Ql (-)

Habitat: Shells were only found in reef slope sediments in 12 and 19 m water depth

Samples: *94/5*, *95/31*

Range: Indopacific

***Rissoina* (*Rissoina*) *dimidiata* Jickeli, 1882**
(Pl. 16, Figs 8–9)

1882 *Rissoina dimidiata* Jickeli: 368
1884 *Rissoina dimidata*, – Jickeli: 261, Pl.6, Figs 4–6

Remarks: This species is similar to *R. tenuistriata* Pease, 1868 (Cernohorsky 1978: p. 46, Pl. 12, Fig. 3), which, however, has a much finer clathrate sculpture. Our material was identified after comparison with the type (SMF) and other material identified as *R. dimidiata* by W. Sleurs.

Number of specimens: QHS (-), QBS (4), Ql (-)

Habitat: Few shells were found in sand on reef slope and in sand between coral patches, from 10 to 19 m water depth

Samples: *94/1d*, *94/5*, *95/31*

Range: Red Sea

***Rissoina* (*Rissolina*) *bertholleti* Issel, 1869**
(Pl. 16, Figs 10–11)

1869 *Rissoina bertholleti* "Audouin" Issel: 208
1982 *Rissoina bertholleti*, – Bouchet & Danrigal: 12, Fig. 38
2003 *Rissoina bertholleti*, – Zenetos et al.: 84, Fig.
2008 *Rissoina bertholleti*, – Rusmore-Villaume: 48, Fig.

Number of specimens: QHS (-), QBS (7), Ql (-)

Habitat: Few shells were found in sand on reef slope and in sand between coral patches, in 10 and 12 m water depth

Samples: *94/1/a*,*c*,*d*, *95/31*

Range: NW Indian Ocean, Lessepsian migrant to the Mediterranean Sea

***Schwartziella* (*Pandalosia*) *ephamilla* (Watson, 1886)**
(Pl. 17, Figs 1–3)

1886 *Rissoina scalariformis* Watson: 617 (Pl. 46, Fig. 6) [non C.B. Adams, 1852]
1886 *Rissoina ephamilla* Watson: Pl. 46, Fig. 6a-c
1985 *Schwartziella* (*Pandalosia*) *ephamilla*, – Ponder: Fig. 139 C-H
2000 *Schwartziella* (*Pandalosia*) *ephamilla*, – Okutani: 161, Pl. 80, Fig. 61
2006 *Pseudoschwartziella jordanica* Bandel: 103, Pl. 11, Figs 6–7, 9
2008 *Rissoina ephamilla*, – Poppe in Poppe: Pl. 197, Fig. 2; Pl. 198, Fig. 4

Remarks: This species is similar to *S. subfirmata* (O. Boettger, 1887) (see below), but constantly much smaller, with somewhat less dense axial ribbing and a bit more obtuse apex. Watson described the species under the preoccupied name *R. scalariformis* and changed the name on the explanation to the plate. BANDEL (2006) described a new genus and species *Pseudoschwartziella jordanica* from Aqaba, which differs from *Schwartziella* NEVILL, 1881 by a protoconch ornamented with a granulated spiral rib below the suture. According to BANDEL this new taxon is not related to the rissoinids but possibly to his new family Sakarahellidae in the Vermetoidea. It seems, however, very questionable that the observed feature of the protoconch justifies a new genus, which in all other respects is indistinguishable from *Schwartziella*. It is rather probable that BANDEL observed an exceptionally well preserved protoconch and that the very delicate sculptural features he observed will turn out to be present in other *Schwartziella* species too, if well enough preserved material is examined. At least the figures in PONDER (1985: Fig. 139 D, E) show very clearly a granulated sutural spiral on the protoconch as do our specimens. So there can be no doubt that BANDEL's new genus and species are synonyms.

Number of specimens: QHS (-), QBS (23), Ql (-)

Habitat: Few shells were found in sand on reef slope and in sand between coral patches, from 10 to 19 m water depth

Samples: *94/1a*,*b*, *94/5*, *95/31*

Range: Indopacific

Schwartziella (*Pandalosia*) *subfirmata* (O. BOETTGER, 1887)
(Pl. 17, Fig. 4)

1887 *Rissoina* (*Schwartziella*) *subfirmata* O. BOETTGER: 126, Pl. 6, Fig. 1

Remarks: This species is very similar to *S. ephamilla* (see above), but differs by constantly larger size (ca. 1/3), a more glossy shell, one to two more axial ribs per whorl, and a more acute apex. Our material agrees very well with the compared type material (SMF). This species originally was described from Hongkong and is also known from the Philippines. It is the first record from the Red Sea.

Number of specimens: QHS (-), QBS (2), Ql (-)

Habitat: Few shells were found in sand on reef slope in 12 m water depth

Samples: *95/31*

Range: Indopacific

Schwartziella (*Schwartziella*) *triticea* (PEASE, 1861)
(Pl. 17, Figs 5–6)

1861 *Rissoina triticea* PEASE: 433
1881 *Rissoina rissoi* "AUDOIN" WEINKAUFF: 63, Pl. 15, Fig. 13
1973 *Rissoina* (*Rissoina*) *rissoi*, – SELLI: 294, Pl. 15, Figs 6a-b, 7a-b
1978 *Rissoina* (*Schwartziella*) *triticea*, – CERNOHORSKY: 46, Pl. 11, Fig. 10
1979 *Schwartziella triticea*, – KAY: 86, Fig. 29 I

1982 *Rissoina rissoi*, – Bouchet & Danrigal: 14, Fig. 76
2000 *Schwartziella* (*Schwartziella*) *triticea*, – Okutani: 161, Pl. 80, Fig. 60
2008 *Rissoina triticea*, – Poppe in Poppe: Pl. 198, Fig. 15

Remarks: Our material is identical with compared material of *S. triticea* from Hawaii, the type locality. Apparently this species was listed by Dekker & Orlin (2000: p. 20) as *S. rissoi* which in our opinion is a synonym. Weinkauff attributed the authorship to Audouin which, however, did not publish this name in a valid way (see Bouchet & Danrigal 1982).

Number of specimens: QHS (-), QBS (3), Ql (-)

Habitat: Few shells were found in sand on reef slope and in sand between coral patches, from 10 to 19 m water depth

Samples: *94/1/a*,*b*, *95/31*

Range: Indopacific

Stosicia lochi Sleurs, 1996
(Pl. 17, Figs 7–9)

1996 *Stosicia lochi* Sleurs: 146, Figs 6 D, 17 D-I

Number of specimens: QHS (-), QBS (19), Ql (-)

Habitat: Shells were only found in reef slope sediments in 12 and 19 m water depth

Samples: *94/5*, *95/31*

Range: Indopacific

Zebina (*Zebina*) *stoppanii* (Issel, 1869)
(Pl. 17, Fig. 10)

1869 *Rissoina stoppanii* Issel: 294, Pl. 5, Fig. 8

Remarks: This species is easily distinguishable from *Z. tridentata* (Michaud, 1830) by its much smaller size, slender shell form and the missing axial ribs on the early whorls. Dekker & Orlin (2000) did not list this species although it was originally described from the Red Sea.

Number of specimens: QHS (-), QBS (9), Ql (-)

Habitat: Few shells were found in sand on reef slope and in sand between coral patches, in 10 and 12 m water depth

Samples: *94/1/a-d*, *95/31*

Range: Red Sea

Zebina (*Zebina*) *tridentata* (MICHAUD, 1830)
(Pl. 17, Figs 11–12)

1830 *Rissoa tridentata* MICHAUD: 6, Figs 5–6
1985 *Zebina* (*Zebina*) *tridentata*, – PONDER: Figs. 136 A-D
1995 *Zebina tridentata*, – BOSCH et al.: 48, Fig. 139
2000 *Zebina* (*Zebina*) *tridentata*, – OKUTANI: 159, Pl. 79, Fig. 50
2008 *Zebina tridenta* [sic !], – RUSMORE-VILLAUME: 48, Fig.
2008 *Zebina tridentata*, – POPPE in POPPE: Pl. 198, Fig. 8

Number of specimens: QHS (-), QBS (13), Ql (3)

Habitat: Few shells were found in sand on reef slope and in sand between coral patches, from 10 to 19 m water depth

Samples: *94/1/a*, *94/5*, *95/31*, *95/16*

Range: Indopacific

Family Tornidae SACCO, 1896

Feeding type: detritus-feeders, commensal with burrowing polychaetes etc.

Circulus novemcarinatus (MELVILL, 1906)
(Pl. 18, Fig. 1)

1906 *Cyclostrema novem-carinatum* MELVILL: 22, Pl. 3, Figs 3, 3a
1995 *Lodderia novemcarinata*, – BOSCH et al.: 38, Fig. 64

Remarks: The taxonomy of Tornidae is in a chaotic state. Species usually are rather small and not adequately described nor figured. Interpretations of taxa are differing among authors and only in rare cases are based on type material. Many species within one genus are very similar to each other and often differ only by subtle characters. This situation makes specific identifications particularly of Indopacific species nearly impossible.

For the Red Sea DEKKER & ORLIN (2000: 21) gave a list of 13 species, mainly described in the genus "*Cyclostrema*". Out of these, "*C*." *cingulata* PHILIPPI, 1852, based on SAVIGNY (1817: Pl. 5, Fig. 32) is a juvenile Turbinidae. This is also true for "*C*." *philippii* ISSEL, 1869, based on SAVIGNY (1817: Pl. 5, Fig. 33; see BOUCHET & DANRIGAL 1982: p. 14, Fig. 66). So both taxa have to be cancelled from the list of Red Sea Tornidae. With the exception of "*C*." *octolirata* CARPENTER, 1856 no other species listed by DEKKER & ORLIN can be referred to one of our species found at Safaga.

C. novemcarinatus is distinguished from *C. octoliratus* (see below) by its much larger size (about 3.5 mm diameter), its much stronger and more acute spiral carinae and the more apparent growth lines in the interstices of ribs. Otherwise it is very similar to *C. octoliratus*. Our specimens were compared to other material from the Arabian Seas which agrees very well with MELVILL's description and figure. According to the figures in the literature, *C. cinguliferus* (A. Adams, 1850) is similar and possibly an earlier synonym of our species (compare Okutani 2000: p. 177, Pl. 88, Fig. 11). This is apparently the first record for the Red Sea.

Number of specimens: QHS (-), QBS (1), Ql (-)

Habitat: A single shell was found in sand between coral patches

Samples: *94/1/a*

Range: NW Indian Ocean, Red Sea

***Circulus octoliratus* (Carpenter, 1856)**

(Pl. 18, Fig. 2)

1856 *Cyclostrema octolirata* Carpenter: 169
1869 *Cyclostrema* (*Daronia*) *octolyrata* [sic!]?, – Issel: 191, 286, Pl. 5, Fig. 5
1973 *Daronia* (*Daronia*) *octolyrata*, – Selli: 271, Pl. 13, Figs. 1a-c, 2

Remarks: *C. octoliratus* was originally described from the Red Sea. Our material agrees very well with the original description and size. This species is common and present from several localitites in the Red Sea (material in SMF). Also some specimens from the Philippines (SMF) are identical with the Red Sea material. It is rather small (ca. 1.5–2 mm diameter), and has 8–9 low and rounded spiral ribs.

A possible synonym is *C. tornatus* (A. Adams, 1864), described from the Philippines (see Okutani 2000: p. 177, Pl. 88, Fig. 13). The identity of the species figured under this name by Poppe (2009: Pl. 199, Fig. "5" = error pro 4) is somewhat questionable, it looks more like *C. cinguliferus* (A. Adams, 1850).

Number of specimens: QHS (-), QBS (15), Ql (-)

Habitat: Sand between coral patches and seagrass

Samples: *94/1/a-d*, *B5/8*, *C1/3*

Range: Indopacific

***Lodderia* sp.**

(Pl. 18, Fig. 3)

Remarks: This species is characterized by a sculpture of very prominent spiral cords accompanied by a fine spiral striation, and a thickened peristome. Nothing similar could be found in the literature. Probably it is a yet undescribed species. The thickened and circular peristome could point to a position of this species in a skeneid genus. We could, however, not find something similar among the various genera or species of that veti-gastropod family.

Number of specimens: QHS (-), QBS (4), Ql (-)

Habitat: sand on reef slope in 12 m and 19 m water depth

Samples: *94/5*, *95/31*

Range: Red Sea

***Pygmaerota* sp.**
(Pl. 19, Fig. 1)

Remarks: This badly preserved and immature specimen has some resemblance to *Pygmaerota duplicata* (LISCHKE, 1872) from Japan (see OKUTANI 2000: p. 175, Pl. 87, Fig. 10).

Number of specimens: QHS (-), QBS (1), Ql (-)

Habitat: A single shell was found in sand between coral patches at 10 m water depth

Samples: *94/1/d*

Range: Red Sea

***Teinostoma* (*Esmeralda*) *aloysii* SELLI, 1973**
(Pl. 19, Fig. 2)

1973 *Teinostoma* (*Teinostoma*) *aloysii* SELLI: 272, Pl. 13, Figs 4a-c

Remarks: Our single specimen agrees very well with the species described by SELLI (1973) in shape, punctuated sculpture, smooth umbilical callus and very small size (diameter ca. 1.5 mm). A similar form has been figured by BOSCH et al. (1995: p. 39, Fig. 66) as *Woodringilla solida* (LASERON, 1954) (see also OKUTANI 2000: p. 179, Pl. 89, Fig. 23). Our species, however, differs from this species by the last whorl, which does not embrace the earlier whorls and the smooth umbilical callus. Particularly the shape and strong sculpture of the umbilical callus is not conform to *Woodringilla* PILSBRY & OLSSON, 1951 (see PILSBRY & OLSSON 1952: Pl. 8, Fig. 1, 1a-b), but agrees rather well with the species of the subgenus *Esmeralda* PILSBRY & OLSSON, 1952.

Number of specimens: QHS (-), QBS (2), Ql (-)

Habitat: Few shells were found in sand between coral patches at 10 m water depth
Samples: *94/1/c*, *d*

Range: Red Sea

***Vitrinella* (s. lat.) sp.**
(Pl. 19, Fig. 3)

Remarks: This very small, tiny and translucent shell could not be identified to species, even the generic attribution is doubtful. However, it looks rather similar to typical species of *Vitrinella* C.B. ADAMS, 1850 from the Panamic province (see PILSBRY & OLSSON 1952: various species figured on Pls 11–13).

Number of specimens: QHS (-), QBS (1), Ql (-)

Habitat: A single shell was found in sand between coral patches at 10 m water depth

Samples: *94/1/b*

Range: Red Sea

Superfamily Stromboidea RAFINESQUE, 1815

Family Seraphsidae GRAY, 1853

***Terebellum terebellum* (LINNAEUS, 1758)**
(Pl. 20, Fig. 1)

1758 *Conus terebellum* LINNAEUS: 718
1967 *Terebellum terebellum*, – JUNG & ABBOTT: 449, Pls 318–327
1984 *Terebellum terebellum*, – SHARABATI: Pl. 8, Figs 1, 1a–f
1995 *Terebellum terebellum*, – BOSCH et al.: 65, Fig. 209
1998 *Terebellum terebellum*, – PICKERY & WELLENS: 62, Fig. 4
1999 *Terebellum terebellum*, – KREIPL & POPPE: 19, Pl. 8, Figs 1–11; Pl. 125, Fig. 2
2008 *Terebellum terebellum*, – RUSMORE-VILLAUME: 60, Fig.
2008 *Terebellum terebellum*, – KRONENBERG in POPPE: Pl. 231, Figs 1–6

Number of specimens: QHS (-), QBS (1), Ql (10)

Feeding type: herbivorous

Habitat: Sand between coral patches and sandy seagrass, sand between *Sarcophyton*, from 1 m to 26 m, mostly deeper than 10 m.

Samples: *94/5*, *A14/5*, *B1/1*, *C8/2*, *D2/1*, *©27*

Range: Indopacific

Family Strombidae RAFINESQUE, 1815

Feeding type: All Strombids are macroalgal feeders

***Canarium erythrinum* (DILLWYN, 1817)**
(Pl. 20, Figs 2–3)

1817 *Strombus erythrinus* DILLWYN: 673
1960 *Strombus erythrinus erythrinus*, – ABBOTT: 79, Pl. 20, Figs 1–5
1984 *Strombus erythrinus*, – SHARABATI: Pl. 8, Figs 6, 6a, 6b
1995 *Strombus* (*Canarium*) *erythrinus*, – BOSCH et al.: 60, Fig. 197
1998 *Strombus erythrinus*, – PICKERY & WELLENS: 60, Fig. 8
1999 *Strombus* (*Canarium*) *erythrinus*, – KREIPL & POPPE: 34, Pl. 60, Figs 1–8; Pl. 61, Figs 1–6

2008 *Canarium erythrinum*, – RUSMORE-VILLAUME: 50, Fig.
2008 *Canarium erythrinum*, – KRONENBERG in POPPE: Pl. 218, Figs 1, 3, 4, 5, 8

Number of specimens: QHS (1), QBS (57), Ql (11)

Habitat: Sand between coral patches, sand and muddy sand with seagrass, dead shells were also found on and close to coral carpets, between 6 and 39 m

Samples: *94/1/a*, *94/3/a,b*, B5/8, *C1/3*, *C1/4*, *C7/1*, *D2/1*, *77*, *©36*, *©72*

Range: Indopacific

***Canarium fusiforme* (G. B. SOWERBY (II), 1842)**
(Pl. 20, Fig. 4)

1842 *Strombus fusiformis* SOWERBY: 31, Pl. 9, Figs 91–92
1960 *Strombus fusiformis*, – ABBOTT: 78, Pl. 20, Fig. 30
1984 *Strombus fusiformis*, – SHARABATI: Pl. 8, Figs 3, 3a
1995 *Strombus* (*Canarium*) *fusiformis*, – BOSCH et al.: 60, Fig. 198
1998 *Strombus fusiformis*, – PICKERY & WELLENS: 60, Fig. 9
1999 *Strombus* (*Canarium*) *fusiformis*, – KREIPL & POPPE: 34, Pl. 62, Figs 1–6
2008 *Canarium fusiformis*, – RUSMORE-VILLAUME: 50, Fig.

Remarks: For *S. fusiformis* two new subgeneric names have been introduced: *Fusicanarium* ROMAGNA MANOJA, 1980, and *Fusistrombus* BANDEL, 2007. *Fusicanarium* correctly was rejected by KRONENBERG & VERMEIJ (2002: p. 50) as an invalid nomen nudum. The availability of BANDEL's taxon, however, is questionable because it is only based on a description of the type species (*S. fusiformis*). It is not accepted as valid in the World Register of Marine Species (2010). We prefer to follow the traditional allocation of this species to the subgenus *Canarium* SCHUMACHER, 1817.

Number of specimens: QHS (-), QBS (3), Ql (1)

Habitat: Muddy sand and muddy sand with seagrass in 40 and 52 m water depth

Samples: *C1/3*, *©B7/1*

Range: Red Sea, NW Indian Ocean

***Canarium mutabile* (SWAINSON, 1821)**
(Pl. 20, Figs 5–6)

1821 *Strombus mutabilis* SWAINSON: Pl. 71
1960 *Strombus mutabilis*, – ABBOTT: 72, Pl. 20, Figs15–17
1984 *Strombus mutabilis*, – SHARABATI: Pl. 8, Figs 2, 2a, 2b
1995 *Strombus* (*Canarium*) *mutabilis mutabilis*, – BOSCH et al.: 61, Fig. 200
1998 *Strombus mutabilis*, – PICKERY & WELLENS: 60, Figs 13, 13a
1999 *Strombus* (*Canarium*) *mutabilis*, – KREIPL & POPPE: 38, Pl. 69, Figs 1–9; Pl. 70, Figs 1–7; Pl. 128, Figs 1–2
2003 *Strombus mutabilis*, – ZENETOS et al.: 94, Fig.

2008 *Canarium mutabilis*, – Rusmore-Villaume: 50, Fig.
2008 *Canarium mutabile*, – Kronenberg in Poppe: Pl. 220, Figs 1–9

Number of specimens: QHS (1), QBS (2), Ql (10)

Habitat: Sand between coral patches, sand and muddy sand with seagrass, dead shells also on conglomerate, from intertidal to 40 m water depth, but mostly very shallow

Samples: *94/1/c*, *69*, *B2/5*, *B5/8*, *C1/3*, *C5/1*, *C6/4*, *D2/1*, *3/8/95*

Range: Indopacific; Lessepsian migrant to the Mediterranean Sea

Conomurex fasciatus (Born, 1778)
(Pl. 20, Figs 7–8; Pl. 28, Fig. 7)

1778 *Strombus fasciatus* Born: 274
1960 *Strombus fasciatus*, – Abbott: 121, Pl. 14, Figs 16–17
1983 *Strombus* (*Conomurex*) *dehelensis* Ostini & Rigoletti: 21, Figs
1984 *Strombus fasciatus*, – Sharabati: Pl. 7, Figs 2, 2a
1998 *Strombus fasciatus*, – Pickery & Wellens: 60, Fig. 11
1999 *Strombus* (*Lentigo*) *fasciatus*, – Kreipl & Poppe: 48, Pl. 100, Figs 1–7; Pl. 130, Fig. 4
2008 *Conomurex fasciatus*, – Rusmore-Villaume: 52, Fig.

Remarks: This species was placed into the genus *Lentigo* Mörch, 1868 by Kreipl & Poppe but without giving any arguments. Bandel (2007) introduced a new subgenus *Decostrombus*, with *S. fasciatus* as type species. We fully agree with the criticism of Kronenberg et al. (2009), who continue to use *Conomurex* for *S. fasciatus*. In accordance with these authors and with Moolenbeek & Dekker (1993) we place the species within *Conomurex* "Bayle" P.Fischer 1884. *S. dehelensis* Ostini & Rigoletti, described from the Dahlak Archipelago, is considered synonymous with *S. fasciatus* by Kronenberg & Berkhout (1986) as well as by Kreipl & Poppe (1999).

Number of specimens: QHS (1), QBS (5), Ql (9)

Habitat: Sand between coral patches, sand with seagrass, mangrove channel; dead shells also on rocky intertidal and on reef slope, from 1m to 10 m water depth

Samples: *94/1/d*, *70*, B5/8, *B5/0*, *C8/1*, *©A5/4*, *©25*

Range: Red Sea

Dolomena plicata plicata (Röding, 1798)
(Pl. 21, Figs 1–2)

1798 *Lambis plicata* Röding: 65
1960 *Strombus plicatus plicatus*, – Abbott: 89, Pl. 18, Fig. 12
1984 *Strombus plicatus plicatus*, – Sharabati: Pl. 7, Figs 9, 9a
1998 *Strombus plicatus plicatus*, – Pickery & Wellens: 61, Fig. 14
1999 *Strombus* (*Dolomena*) *plicatus plicatus*, – Kreipl & Poppe: 43, Pl. 87, Figs 1–5
2008 *Dolomena plicata plicata*, – Rusmore-Villaume: 52, Fig.

Number of specimens: QHS (-), QBS (1), Ql (2)

Habitat: Few shells were found in mud and muddy sand in 40 m and 52 m water depth

Samples: *94/4/b*, *©B7/1*, *Safaga*

Range: Red Sea

Gibberulus gibberulus albus (MÖRCH, 1850)
(Pl. 21, Figs 3–6)

1850 *Strombus albus* MÖRCH: 11
1960 *Strombus gibberulus albus*, – ABBOTT: 144, Pl. 14, Fig. 27
1984 *Strombus gibberulus albus*, – SHARABATI: Pl. 7, Figs 7, 7a, 7b
1998 *Strombus gibberulus albus*, – PICKERY & WELLENS: 60, Fig. 12
1999 *Strombus* (*Gibberulus*) *gibberulus albus*, – KREIPL & POPPE: 54, Pl. 118, Figs 1–3
2008 *Gibberulus gibberulus albus*, – RUSMORE-VILLAUME: 54, Fig.

Number of specimens: QHS (6), QBS (9), Ql (40)

Habitat: Sand between coral patches, sand with seagrass, was also found living on conglomerate, between 1 and 30 m water depth, mostly less than 20 m

Samples: *94/1/c,d*, *B5/8*, 69, *70*, *B2/4*, B5/5, *B18/1*, *C8/1*, *©C8/1*, *C8/2*, *C8/3*, *C8/4*, *C12/1*, *C12/2*, *D2/2*,

Range: Red Sea, Gulf of Aden

Lambis truncata sebae (KIENER, 1843)
(Pl. 21, Figs 7–8; Pl. 28, Fig. 8)

1843 *Pterocera sebae* KIENER: 4, Pl. 2; Pl. 4, Fig. 2
1961 *Lambis truncata sebae*, – ABBOTT: 156, Pl. 121, Fig. 9; Pl. 122, Fig. 1
1984 *Lambis truncata sebae*, – SHARABATI: Pl. 9, Figs 1, 1a, 1b
1995 *Lambis truncata sebae*, – BOSCH et al.: 62, Fig. 208
1998 *Lambis truncata sebae*, – PICKERY & WELLENS: 60, Fig. 1
1999 *Lambis* (*Lambis*) *truncata sebae*, – KREIPL & POPPE: 20, Pl. 14, Figs 1–3; Pl. 15, Fig. 2; Pl. 33, Figs 1, 4, Pl. 34, Figs 2, 3
2008 *Lambis truncata sebae*, – RUSMORE-VILLAUME: 56, Fig.

Number of specimens: QHS (8), QBS (-), Ql (3)

Habitat: Was found living on reef flat and conglomerate, dead shells were also found on rock bottom in 19 m water depth and on sand in 45 m water depth

Samples: *2*, *69*, 76, 80, *B7/2*, *Safaga*

Range: Indopacific

Terestrombus terebellatus (G. B. Sowerby (II), 1842)
(Pl. 22, Fig. 1)

1842 *Strombus terebellatus* Sowerby: 31, Pl. 9, Figs 84–85
1960 *Strombus terebellatus*, – Abbott: 87, Pl. 14, Fig. 29; Pl. 61, Fig. 1
1960 *Strombus terebellatus* subspecies *afrobellatus* Abbott: 88, Pl. 61, Fig. 2
1984 *Strombus terebellatus terebellatus*, – Sharabati: Pl. 8, Figs 5, 5a
1984 *Strombus terebellatus afrobellatus*, – Sharabati: Pl. 8, Figs 4, 4a
1998 *Strombus terebellatus*, – Pickery & Wellens: 61, Fig. 10
1999 *Strombus* (*Canarium*) *terebellatus afrobellatus*, – Kreipl & Poppe: 34, Pl. 59, Figs 1–5
2000 *Canarium terebellatum*, – Dekker & Orlin: 21
2001 *Canarium terebellatum*, – Higo et al.: 34, Fig. G 1041
2008 *Gibberulus terebellatus*, – Rusmore-Villaume: 54, Fig.
2008 *Terestrombus terebellatus*, – Kronenberg in Poppe: Pl. 215, Figs 3, 4, 6

Remarks: Abbott (1960) divided this species into two subspecies which should have different ranges: the typical subspecies with Western Pacific distribution, and the newly established subspecies *afrobellatus* from Eastern Africa and the Red Sea. The main distinguishing features between the two are the fine brown lirae inside the outer lip and the proportionally higher spire of *terebellatus* s.s. This subdivision was not maintained by later authors. Sharabati (1984) illustrated both forms from the Red Sea and Pickery & Wellens (1998) reported them to have been found sympatric. The figures of Rusmore-Villaume (2008), too, seem to show *S. terebellatus* s.s. Kronenberg & Vermeij (2002) created the new genus *Terestrombus* and included *S. terebellatus* as well as *S. afrobellatus* which they consider a separate species as long as no more comprehensive material is at hand. As far as there is no convincing evidence that both forms are really distinct species we prefer to follow those authors who regard them as synonyms. The problem should be addressed by molecular genetic methods. Our specimen belongs to the form *afrobellatus*.

Number of specimens: QHS (1), QBS (-), Ql (1)

Habitat: Few dead shells were found on coral carpets in 6 m and 18 m water depth

Samples: *83*, *©50*

Range: Indopacific

Tricornis tricornis [Lightfoot, 1786]
(Pl. 22, Figs 2–3)

1786 *Strombus tricornis* Lightfoot: 5
1960 *Strombus tricornis*, – Abbott: 53, Pl. 17, Figs 6–7; Pl. 29, Figs 1–2
1984 *Strombus tricornis*, – Sharabati: Pl. 9, Figs 4, 4a-d
1995 *Strombus* (*Tricornis*) *tricornis*, – Bosch et al.: 62, Fig. 206
1998 *Strombus tricornis*, – Pickery & Wellens: 62, Fig. 5
1999 *Strombus* (*Tricornis*) *tricornis*, – Kreipl & Poppe: 28, Pl. 42, Figs 1–5; Pl. 121, Figs 6–7
2008 *Tricornis tricornis*, – Rusmore-Villaume: 58, Fig.

Number of specimens: QHS (2), QBS (-), Ql (7)

Habitat: Shells were found on coral carpet, rock bottom and sand near to coral carpet in water depth between 6 m and 30 m, a living juvenile was found in sand close to a coral carpet in 20 m water depth

Samples: *50*, *57*, *B5/1*, ©*72*, ©82, *Safaga*

Range: Red Sea, Gulf of Aden

Strombidae juv. indet.
(Pl. 19, Figs 4–7)

Number of specimens: QHS (-), QBS (16), Ql (-)

Habitat: Juvenile strombid shells were typical elements in quantitative bulk samples from sand between coral patches, sand on reef slope, the mangrove channel and muddy sand with seagrass, in water depth between 1 m and 39 m

Samples: *94/1a-c*, *94/5*, *94/6*, *C1/3*

Range:

Superfamily Tonnoidea SUTER, 1913

Family Bursidae THIELE, 1925

Feeding type: All bursids are carnivorous predators on polychaetes or sipunculids

***Bursa granularis* (RÖDING, 1798)**
(Pl. 22, Fig. 4)

1798 *Tritonium granulare* RÖDING: 127
1984 *Bursa granularis*, – SHARABATI: Pl. 16, Figs 8, 8a, 8b
1995 *Bursa* (*Bufonariella*) *granularis*, – BOSCH et al.: 102, Fig. 373
1994 *Bursa* (*Colubrellina*) *granularis granularis*, – COSSIGNANI: 75–77, Figs
1998 *Bursa granularis*, – BEU: 150, Figs 48a-e, 58 d
2007 *Bursa granularis*, – VERBINNEN & BUIJSE: 51, Pl. 1, Figs 2–3
2008 *Bursa granularis*, – RUSMORE-VILLAUME: 74, Fig.
2008 *Bursa granularis granularis*, – BEU in POPPE: Pl. 255, Figs 1, 3, 4

Number of specimens: QHS (-), QBS (-), Ql (1)

Feeding type: Vermivorous

Habitat: A single shell was found at a reef slope in about 5 m water depth

Samples: ©*27*

Range: Indopacific and Atlantic

Bursa rhodostoma (G. B. Sowerby (II), 1835)
(Pl. 22, Fig. 5)

1835 *Ranella rhodostoma* "Beck" Sowerby: Pl. 88, Fig. 10
1984 *Bursa rhodostoma*, – Sharabati: Pl. 16, Fig. 5
1994 *Bursa* (*Bursa*) *rhodostoma rhodostoma*, – Cossignani: 56, Figs
1998 *Bursa rhodostoma*, – Beu: 163, Figs 47 g, 52 h, k, 58 e
2001 *Bursa rhodostoma*, – Higo et al.: 49, Fig. G 1614
2007 *Bursa rhodostoma*, – Verbinnen & Buijse: 53, Pl. 1, Fig. 6
2008 *Bursa rhodostoma rhodostoma*, – Beu in Poppe: Pl. 256, Fig. 3

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: A living specimen was found on coral carpet in 19 m water depth

Samples: 44

Range: Indopacific and Atlantic

Tutufa bufo (Röding, 1798)
(Pl. 22, Fig. 6)

1798 *Tritonium bufo* Röding: 128
1994 *Tutufa* (*Tutufa*) *bufo*, – Cossignani: 100–102, Figs
1998 *Tutufa* (*Tutufa*) *bufo*, – Beu: 174, Figs 55a, d
2007 *Tutufa bufo*, – Verbinnen & Buijse: 55, Pl. 2, Figs 11–11a
2008 *Tutufa bufo*, – Rusmore-Villaume: 74, Fig.

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: No information available

Samples: Safaga

Range: Indopacific

Bursidae indet juv.

Number of specimens: QHS (-), QBS (1), Ql (1)

Habitat: Shells of unidentified juvenile Bursidae were found in sand between coral patches and in reef slope sands in water depth between 10 m and 12 m

Samples: *94/1/a*, *95/16*

Range: Indopacific

Family Cassidae Latreille, 1825

Casmaria ponderosa unicolor (DAUTZENBERG in PALLARY, 1926)
(Pl. 22, Figs 7–8; Pl. 23, Fig. 1)

1926 *Cassis* (*Casmaria*) *turgida* REEVE var. *unicolor* DAUTZENBERG in PALLARY: 88, Pl. 6, Fig. 6
1968 *Casmaria ponderosa* subspecies *unicolor*, – ABBOTT: 199, Pl. 14, Fig. 5, Pl. 186
1984 *Casmaria ponderosa* (GMELIN, 1791), – SHARABATI: Pl. 13, Figs 5, 5a-c [non GMELIN, 1791]
1995 *Casmaria ponderosa unicolor*, – BOSCH et al.: 93, Fig. 342
1997 *Casmaria ponderosa* subspecies *unicolor*, – KREIPL: 47, Pl. 16, Figs 52–52a
2001b *Casmaria turgida* REEVE, 1848, – VERBINNEN & PICKERY: 8, Figs 7a-f [not 8 as erroneously stated in the figure caption!] [non REEVE, 1848 ?]
2008 *Casmaria ponderosa unicolor*, – RUSMORE-VILLAUME: 76, Fig.

Remarks: VERBINNEN & PICKERY (2001b) discussed the status of *C. p. unicolor* after having rediscovered the type specimen. They compared it to *Cassis turgida* REEVE, 1848 (originally described from the Philippines) and come to the conclusion that *C. p. unicolor* is synonymous with that taxon and *C. turgida* is the valid name. Nevertheless, they treated this as a form of *C. ponderosa* (GMELIN, 1791). In any case, their observations point to the possibility that the smooth forms are only ecophenotypical variations due to occurrence in different habitats. ABBOTT (1968) as well as KREIPL (1997) indicate a wide range of variability of *C. ponderosa ponderosa*, which has a distribution from East Africa and the Indian Ocean to Polynesia. With regard to that variability both of colouration and sculpture (from heavily noduled to smooth) it seems very questionable to us that the distinction of the subspecies *C. p. unicolor* can be maintained.

Number of specimens: QHS (-), QBS (4), Ql (5)

Feeding type: predator on echinoids

Habitat: Few shells were found in sand and muddy sand with seagrass and sand near rock bottom, between 1.5 m and 39 m water depth

Samples: *C1/3*, *B4/4*, *©74*, *Safaga*

Range: Red Sea, Gulf of Aden, Gulf of Oman

Family Personidae GRAY, 1854

Distorsio anus (LINNAEUS, 1758)
(Pl. 23, Figs 2–3)

1758 *Murex anus* LINNAEUS: 750
1984 *Distorsio anus*, – SHARABATI: Pl. 15, Figs 5, 5a
1998 *Distorsio anus*, – BEU: 182, Figs 58 o, 59a-b
2008 *Distorsio anus*, – RUSMORE-VILLAUME: 76, Fig.
2008 *Distorsio anus*, – KRONENBERG & BEU in POPPE: Pl. 259, Fig. 5

Number of specimens: QHS (-), QBS (-), Ql (3)

Feeding type: Predatory carnivore

Habitat: One shell and a living specimen were found on reef slope in 9 m water depth

Samples: ©25, *Safaga*

Range: Indopacific

Family Ranellidae Gray, 1854

Remarks: Following Beu (2010), genus group taxa (*Gelagna* Schaufuss, 1869, *Linatella* Gray, 1857, *Monoplex* Perry, 1811, *Ranularia* Schumacher, 1817 and *Septa* Perry, 1810) regarded hitherto as of subgeneric rank within the genus *Cymatium* Röding, 1798 are treated now as genera.

Feeding type: carnivorous predators on echinoderms

Charonia tritonis (Linnaeus, 1758)
(Pl. 23, Fig. 4)

1758 *Murex tritonis* Linnaeus: 754
1984 *Charonia tritonis*, – Sharabati: Pl. 14, Figs 4, 4a
1998 *Charonia tritonis*, – Beu: 66, Fig. 20a
2008 *Charonia tritonis*, – Rusmore-Villaume: 78, Fig.
2008 *Charonia tritonis*, – Beu & Segers in Poppe: Pl. 264, Fig. 1

Number of specimens: QHS (-), QBS (-), Ql (1)

Feeding type: Predator on asteroids

Habitat: No information available

Samples: Safaga

Range: Indopacific

Gelagna succincta (Linnaeus, 1771)
(Pl. 23, Fig. 5)

1771 *Murex succinctus* Linnaeus: 551
1984 *Gelagna succinta* [sic!], – Sharabati: Pl. 15, Figs 3, 3a
1998 *Cymatium* (*Gelagna*) *succinctum*, – Beu: 79, Figs 23e, 24a-c
2008 *Cymatium* (*Gelagna) succinctum*, – Beu & Segers in Poppe: Pl. 265, Fig. 3

Number of specimens: QHS (-), QBS (1), Ql (-)

Habitat: One shell was found in reef slope sand at 19 m water depth

Samples: *94/5*

Range: Indopacific and Atlantic

Linatella cingulata (LAMARCK, 1822)
(Pl. 23, Fig. 6)

1822 *Cassidaria cingulata* LAMARCK: 216
1993 *Linatella* (*Linatella*) *caudata* (GMELIN, 1791), – HENNING & HEMMEN: 107, Pl. 20, Fig. 3
1995 *Linatella* (*Linatella*) *caudata*, – BOSCH et al.: 101, Fig. 366
1998 *Cymatium* (*Linatella*) *cutaceum* (LAMARCK, 1816), – BEU: 83
1999 *Cymatium* (*Linatella*) *cingulatum*, – BEU: 16
2000 *Cymatium cutaceum*, – DEKKER & ORLIN: 24
2008 *Cymatium* (*Linatella*) *cingulatum*, – BEU & SEGERS in POPPE: Pl. 265, Figs 2, 5, 6

Remarks: BEU (1999) has finally clarified the nomenclature of this species formerly known as *Linatella caudata* (GMELIN, 1791).

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: A single shell was found in muddy sand at 52 m water depth

Samples: *©B7/1*

Range: Indopacific and Atlantic

Monoplex aquatilis (REEVE, 1844)
(Pl. 23, Fig. 7)

1844 *Triton aquatilis* REEVE: Pl. 7, Fig. 24
1984 *Cymatium aquatile*, – SHARABATI: Pl. 15, Fig. 9 [Figs 9a-c ? = *parthenopeum* LINNAEUS, 1758 ??]
1995 *Cymatium* (*Monoplex*) *aquatile*, – BOSCH et al.: 98, Fig. 353
1998 *Cymatium* (*Monoplex*) *aquatile*, – BEU: 85, Fig. 34a
2001 *Cymatium aquatile*, – HIGO et al.: 48, Fig. G 1579
2008 *Cymatium aquatile*, – RUSMORE-VILLAUME: 78, Fig.
2008 *Cymatium* (*Monoplex*) *aquatile*, – BEU & SEGERS in POPPE: Pl. 266, Fig. 1

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: A single shell was found in the mangrove channel

Samples: *©A5/4*

Range: Indopacific and Atlantic

Ranularia exilis (REEVE, 1844)
(Pl. 23, Fig. 8)

1844 *Triton exilis* REEVE: Pl. 4, Fig. 11
1984 *Cymatium exile*, – SHARABATI: Pl. 15, Fig. 2
1998 *Cymatium* (*Ranularia*) *exile*, – BEU: 122, Figs 34 b, 40 a-e, g-h
2001 *Cymatium exile*, – HIGO et al.: 48, Fig. G 1596
2008 *Cymatium exile*, – RUSMORE-VILLAUME: 78, Fig.
2008 *Cymatium* (*Ranularia*) *exile*, – BEU & SEGERS in POPPE: Pl. 269, Figs 1, 3

Number of specimens: QHS (1), QBS (-), Ql (-)

Habitat: A single shell was found on coral carpet in 28 m water depth

Samples: 22

Range: Red Sea, Western Pacific

***Ranularia trilineata* (Reeve, 1844)**
(Pl. 24, Figs 1–2)

1844 *Triton trilineatus* Reeve: Pl. 10, Fig. 31
1984 *Cymatium trilineatum*, – Sharabati: Pl. 15, Figs 1, 1a
1993 *Cymatium* (*Ranularia*) *trilineatum*, – Henning & Hemmen: 86, Pl. 18, Fig. 3
2008 *Cymatium trilineatum*, – Rusmore-Villaume: 80, Fig.

Number of specimens: QHS (-), QBS (1), Ql (1)

Habitat: A juvenile shell was found in muddy sand with seagrass at 39 m water depth

Samples: *C1/3*, *Safaga*

Range: NW Indian Ocean, Red Sea

***Septa rubecula marerubrum* Garcia Talavera, 1985**
(Pl. 24, Fig. 3)

1984 *Cymatium rubeculum* (Linnaeus, 1758), – Sharabati: Pl. 15, Figs 6, 6a, 6b [non Linnaeus 1758]
1985 *Cymatium* (*Septa*) *marerubrum* Garcia-Talavera: 29, Figs 3–5
1998 *Cymatium* (*Septa*) *rubeculum marerubrum*, – Beu: 18, 135
2008 *Cymatium marerubrum*, – Rusmore-Villaume: 78, Fig.

Number of specimens: QHS (-), QBS (-), Ql (1)

Habitat: No information available

Samples: Safaga

Range: Red Sea

***Gyrineum concinnum* (Dunker, 1862)**
(Pl. 24, Figs 4–5)

1862 *Bursa concinna* Dunker: 239
1984 *Gyrineum concinnum*, – Sharabati: Pl. 15, Figs 7, 7a
1993 *Gyrineum concinnum*, – Henning & Hemmen: 26, Pl. 3, Fig. 8
1998 *Gyrineum concinnum*, – Beu: 42, Figs 6i, 10a-c, e-h
2008 *Gyrineum concinnum*, – Rusmore-Villaume: 80, Fig.

Remarks: According to BEU (1998) 1998 *G. concinnum* is the only species of *Gyrineum* LINK, 1807 occurring in the Red Sea. In the adjacent Indian Ocean it is replaced by *G. gyrinum* (LINNAEUS, 1758).

Number of specimens: QHS (-), QBS (3), Ql (-)

Habitat: Sand with seagrass and muddy sand with seagrass in 6 m and 39 m water depth

Samples: *B5/8*, *C1/3*

Range: Red Sea

Family Tonnidae SUTER, 1913

Malea pomum (LINNAEUS, 1758)
(Pl. 24, Fig. 6)

1758 *Buccinum pomum* LINNAEUS: 735
1984 *Malea pomum*, – SHARABATI: Pl. 13, Figs 7, 7a
1995 *Malea pomum*, – BOSCH et al.: 88, Fig. 332
2001a *Malea pomum*, – VERBINNEN & PICKERY: 6, Figs 5 A-C
2007 *Malea pomium*, – VOS & TERRYN: 28, Pls 3–5
2008 *Malea pomum*, – RUSMORE-VILLAUME: 80, Fig.
2008 *Malea pomum*, – VOS in POPPE: Pl. 242, Fig. 3

Number of specimens: QHS (-), QBS (1), Ql (5)

Feeding type: feeding on holothurians

Habitat: Shells were found in muddy sand and muddy sand with seagrass in 39 and 52 m water depth, and on reef slopes in 9 and 12 m water depth

Samples: *C1/3*, *95/16*, *©B7/1*, *©25*

Range: Indopacific

Tonna galea (LINNAEUS, 1758)
(Pl. 24, Figs 7–8)

1758 *Buccinum galea* LINNAEUS: 734
2001a *Tonna galea*, – VERBINNEN & PICKERY: 5, Fig. 2
2007 *Tonna galea*, – VOS & TERRYN: 62, Pls 21–27

Remarks: *T. galea* is an amphiatlantic species but few specimens have also been recorded from the Red Sea. The species is assumed to be introduced accidentally. VERBINNEN & PICKERY (2001a) indicated this species to have been collected not uncommonly in the Hurghada region. Another species known from the Red Sea is *T. tenebrosa* (HANLEY, 1860), which shows a more globulous shape, somewhat coarser spiral cords and a more elevated spire (see VOS & TERRYN 2007: 65, Pls 28, 61)

Number of specimens: QHS (-), QBS (-), Ql (2)

Feeding type: Holothurian feeder

Habitat: Few shells were found in muddy sand at 52 m water depth and in the mangrove channel

Samples: *©B7/1*, *©A5/4*

Range: European Seas, Atlantic, Red Sea (introduced)

Superfamily Vanikoroidea GRAY, 1840

Family Hipponicidae TROSCHEL, 1861

Feeding type: Commensal organic detritus-feeders

Cheilea cicatricosa (REEVE, 1858)
(Pl. 25, Figs 1–2)

1858 *Calyptraea cicatricosa* REEVE: Pl. 1, Fig. 3
1984 *Cheilea cicatricosa*, – SHARABATI: Pl. 1, Figs 16, 16a
1984 *Cheilea equestris* (LINNAEUS, 1758), – SHARABATI: Pl. 1 Figs 17, 17a-b [non LINNAEUS, 1758]
1995 *Cheilea cicatricosa*, – BOSCH et al.: 66, Fig. 212
2001 *Cheilea cicatricosa*, – HIGO et al.: 35, Fig. G 1076
2008 *Cheilea cicatricosa*, – RUSMORE-VILLAUME: 60, Fig.

Number of specimens: QHS (-), QBS (-), Ql (3)

Habitat: Shells were found on reef slope in 5 m water depth and on sand with seagrass in 1 to 2 m water depth

Samples: *©27*, *3/8/95*, *Safaga*

Range: Indopacific

Cheilea tectumsinense (LAMARCK, 1822)
(Pl. 25, Fig. 3)

1822 *Calyptraea tectumsinense* LAMARCK: 22
1984 *Cheilea tectumsinense*, – SHARABATI: Pl. 1, Figs 14, 14a
2000 *Cheilea tectumsinense*, – OKUTANI: 193, Pl. 96, Fig. 16
2008 *Cheilea tectumsinensis*, – POPPE in POPPE: Pl. 275, Figs 1, 4

Number of specimens: QHS (-), QBS (1), Ql (1)

Habitat: Few shells were found in sand on reef slope in 12 and 19 m water depth

Samples: *94/5*, *94/16*

Range: Indopacific

Sabia conica (Schumacher, 1817)
(Pl. 26, Figs 1–6)

1817 *Amalthea conica* Schumacher: 181, Pl. 21, Fig. 4a-c
1984 *Hipponix conicus*, – Sharabati: Pl. 6, Figs 11, 11a, 11b
1995 *Hipponix conicus*, – Bosch et al.: 66, Fig. 214
2003 *Sabia conica*, – Zenetos et al.: 96, Fig.
2008 *Sabia conica*, – Rusmore-Villaume: 60, Fig.
2008 *Hipponix conicus*, – Poppe in Poppe: Pl. 276, Figs 3–5

Remarks: We follow Vermeij (1998) in using the genus name *Sabia* Gray, 1841 for this recent species usually referred to the genus *Hipponix* Defrance, 1819 which is based on an Eocene fossil from the Paris Basin.

Number of specimens: QHS (3), QBS (189), Ql (1)

Habitat: Living specimens occurred attached to gastropod shells and are very abundant. Many dead shells were found in sand between coral patches, reef slope sands, muddy sand with seagrass and sand with seagrass, from 1 m to 39 m water depth

Samples: *94/1a-d*, *94/4/b*, *94/5*, *95/31*, *B5/8*, *C1/3*, 38, *72*, *77*, *C8/4*

Range: Indopacific, Lessepsian migrant to the Mediterranean Sea

Sabia sp.
(Pl. 26, Figs 7–9)

Remarks: This red coloured laterally compressed species is similar to *Hippponix prionocidaricola* Habe & Kanazawa, 1991 from Japan, which is described to bear a sculpture of about 40 radial ribs. Our species, however, has only a coarse sculpture of ca. five weak but coarse ribs on each lateral side and one very conspicuous median rib. It is possible that this species has not yet been described. The somehow similar looking *Capulus camaranensis* Sturany (1903: p. 256, Pl. 7, Fig. 11) (= *Malluvium lissum* (Smith, 1894) fide Dekker & Orlin 2000: p. 21) can have also a laterally compressed shell, but it is whitish, with irregular yellowish stripes, and it has a white smooth protoconch. From capulids such as *Capulus badius* Dunker, 1882 (see Bosch et al. 1995: p. 70, Fig. 232; Okutani 2000: p. 197, Pl. 98, Fig. 7) it is distinguished by its sculptured, yellowish protoconch, the spire being much less enrolled and the redbrown colouration instead of the rose to pinkish colour of that species.

Number of specimens: QHS (-), QBS (33), Ql (-)

Habitat: Shells were found in reef slope sands at 12 and 19 m water depth

Samples: *94/5*, *95/31*

Range: Red Sea

Family Vanikoridae GRAY, 1840

Macromphalus sp.
(Pl. 27, Fig. 1)

Remarks: The only specimen has a somewhat damaged apertural side and is rather worn. Under high magnification a very delicate sculpture can be observed of fine flexuous axial riblets, which cross extremely fine and dense spiral lines. It has a very narrow umbilical chink. Our species looks similar to *Fossarus* (*Couthouyia*) *cancellarius* MELVILL, 1918, described from the Persian Gulf, but without comparing material it it not possible to come to an unequivocal identification of those tiny and often very similarly looking species. *M. thelacme* (MELVILL, 1904) as illustrated by BOSCH et al. (1995: p. 67, Fig. 220) has a much more dominant spiral sculpture. The genus is here reported for the first time from the Red Sea.

Number of specimens: QHS (-), QBS (1), Ql (-)

Feeding type: Probably detritus feeder

Habitat: A single shell was found in sand between coral patches

Samples: *94/1/a*

Range: Red Sea

Vanikoro plicata (RÉCLUZ, 1844)
(Pl. 27, Fig. 2)

1844 *Narica plicata* RÉCLUZ: 7
1989 *Vanikoro plicata*, – DRIVAS & JAY: 45, Fig. 12
1995 *Vanikoro plicata*, – BOSCH et al.: 67, Fig. 223
2008 *Vanikoro plicata*, – RUSMORE-VILLAUME: 60, Fig.
2003 *Vanikoro plicata*, – DIRKX & VERBINNEN: Fig. 34 [no text]
2004 *Vanikoro plicata*, – DIRKX & VERBINNEN: 28

Remarks: For the identification of Vanikoridae the work of DRIVAS & JAY (1989) is very useful. *Vanikoro rugata* A. ADAMS, 1854 (see HIGO et al. 2001: 35, Fig. G 1088) seems to be a synonym.

Number of specimens: QHS (-), QBS (3), Ql (1)

Feeding type: Probably detritus-feeder

Habitat: Few shells were found in sand between coral patches and in reef slope sediments in water depth of 10 m and 12 m

Samples: *94/1/b*, *95/31*, *95/16*

Range: Indopacific

Vanikoro solida G. B. SOWERBY (III), 1875
(Pl. 27, Fig. 3)

1875 *Vanikoro solida* SOWERBY: Pl. 3, Fig. 20
1887 *Vanikoro solida*, – SOWERBY: 168, Pl. 482, Fig. 1
2000 *Vanikoro solida*, – OKUTANI 193, Pl. 97, Fig. 7

Remarks: Our species is distinguished by the axial rib sculpture being restricted to the first teleoconch whorl, its tumid ovoidal shape, the rather dense and fine spiral striation and the very narrow umbilicus. It does not agree with any of the various species figured from Arabian Seas by DIRKX & VERBINNEN (2003), BOSCH et al. (1995) or RUSMORE-VILLAUME (2008): *V. gueriniana* (RÉCLUZ, 1843), *V. cancellata* (LAMARCK, 1822) or *V. acuta* (RÉCLUZ, 1844). Whereas the first two species have plicate shells, *V. acuta* has a much more elevated spire and the ribs fade out only on the body whorl. Judging from the figures and descriptions given by DRIVAS & JAY (1989) similar species are *V. helicoidea* (LE GUILLOU, 1843) and *V. deshayesiana* (RÉCLUZ, 1843). Both have stronger axial ribs on the early teleoconch whorls and densely and rather fine spiral sculpture on the body whorl, but *V. deshayesiana* is distinguished by a coarser spiral sculpture and axial riblets persisting to the body whorl. *V. helicoidea* is proportionally wider than high and has a more open umbilicus. Our shell from Safaga agrees perfectly with *V. solida* as figured by OKUTANI (2000). The figures of *V. helicoidea* and *V. cancellata* given by POPPE (2009: Pl. 274) are so similar to each other that they seem to show the same species (probably *V. cancellata* ?). *V. solida* is here recorded for the first time from the Red Sea

Number of specimens: QHS (-), QBS (-), Ql (1)

Feeding type: Probably detritus-feeder

Habitat: A single shell was found in sand on reef slope at 12 m water depth

Samples: *95/16*

Range: Indopacific

Superfamily Velutinoidea GRAY, 1840

Family Triviidae TROSCHEL, 1863

Austrotrivia rubramaculosa (FEHSE & GREGO, 2002)
(Pl. 27, Fig. 4)

2002 *Trivirostra rubramaculosa* FEHSE & GREGO: 43, Pl. 1, Figs 4–5
2008 *Austrotrivia rubramaculosa*, – RUSMORE-VILLAUME: 70, Fig.

Remarks: This species was transferred to the newly erected genus *Austrotrivia* by FEHSE (2002: 16).

Number of specimens: QHS (-), QBS (2), Ql (-)

Feeding type: Probably predator on tunicates

Habitat: Two shells were found in sand on reef slope in 12 m and 19 m water depth

Samples: *94/5*, *95/31*

Range: Red Sea

Trivirostra poppei Fehse, 1999
(Pl. 27, Fig. 5)

1984 *Trivia oryza* (Lamarck, 1810), – Sharabati: Pl. 12, Fig. 12 [non Lamarck, 1811]
1995 *Trivirostra oryza*, – Bosch et al.: 83, Fig. 300 [non Lamarck, 1811]
1999 *Trivirostra poppei* Fehse: 23, Figs 1–6, Pl. 1, Figs 1–4
2000 *Trivia oryza*, – Liltved: 186, Fig. 288 [non Lamarck, 1811]
2008 *Trivirostra* sp., – Rusmore-Villaume: 70, Fig.

Remarks: Fehse (1999, 2002) discussed the problems of identification of species of *Trivirostra* Jousseaume, 1884. He demonstrated (Fehse 2002: Tab. 1) that most published figures of *T. oryza* are misidentifications. However, without adequate material for comparison it is very difficult to recognize the distinguishing characters. True *T. oryza* (Lamarck, 1811) (see Fehse in Poppe 2008: Pl. 283, Fig. 6; Pl. 285, Figs 2, 6) is distinguished from our specimen by the nearly central aperture and the only rather weakly developped fossula. Our specimen agrees very well with the figures and descriptions of *T. poppei* which apparently is the hitherto only known species of the genus in the Red Sea.

Number of specimens: QHS (-), QBS (-), Ql (3)

Feeding type: Probably a predator on tunicates

Habitat: A living specimen was found in sand with seagrass at 1 m water depth, dead shells occurred in reef slope sands at 12 m and in muddy sand at 52 m water depth

Samples: *95/16*, B5/5, *©B7/1*

Range: South Africa, Eastern Africa to Red Sea

Family Velutinidae Gray, 1840

Coriocella safagae Wellens, 1999 ?
(Pl. 27, Fig. 6)

? 1999 *Coriocella safagae* Wellens: 17, Figs 1–7
? 2003 *Coriocella safagae*, – Dirkx & Verbinnen: 57

Remarks: According to Dirkx & Verbinnen (2003) this species has been found several times in the Safaga/Hurghada region. The species can be identified confidently only by examination of living specimens. Empty shells, however, can practically not be identified because differences between shells of various species and even genera are minute. Wellens did not even describe nor figure the shell of his new species. It is only stated that it is similar to other lamellariid species. Our shell is translucent and much more elongated than the shell figured by Bosch et al. (1995: 84, Fig. 307) under the name *C. nigra* (Blainville, 1824). *C. safagae* is the only Velutinidae listed by Dekker & Orlin (2000) for the Red Sea. So we believe that most probably our shell will belong to that species described from the same area.

Number of specimens: QHS (-), QBS (1), Ql (-)

Feeding type: Probably predator on tunicates or sponges

Habitat: A single shell was found in reef slope sand at 19 m water depth

Samples: *94/5*

Range: Red Sea

Superfamily Vermetoidea Rafinesque, 1815

Family Vermetidae Rafinesque, 1815

Dendropoma maximum **(G. B. Sowerby (I), 1825)**
(Pl. 28, Figs 3–6)

1825 *Serpula maxima* Sowerby: app. i
1984 *Dendropoma maxima*, – Sharabati: Pl. 1, Fig. 9
2000 *Dendropoma maximum*, – Okutani: 207, Pl. 103, Fig. 5

Number of specimens: QHS (598), QBS (-), Ql (-)

Feeding type: Ciliary mucous feeder

Habitat: Very abundant on reef flats near the reef edge, rare on reef slopes

Samples: 1, 2, 3, 14, 17, 20, 25, 27, 38, 63, 75, 76, 85

Range: Indopacific

Superfamily Xenophoroidea Troschel, 1852

Family Xenophoridae Troschel, 1852

Xenophora **(*****Xenophora*****)** ***cerea*** **(Reeve, 1845)**
(Pl. 27, Fig. 7)

1845 *Phorus cereus* Reeve: Pl. 3, Fig. 9
1983 *Xenophora* (*Xenophora*) *cerea*, – Ponder: 23, Figs 7c, 14j, k, 18d-f, 20f, g, 23a-i, 33
1999 *Xenophora* (*Xenophora*) *cerea*, – Kreipl & Alf: 31, Pl. 1, Figs 1–1b; Pl. 2, Figs 1c-1e
2001 *Xenophora cerea*, – Higo et al.: 37, Fig. G 1146
2008 *Xenophora cerea*, – Kreipl in Poppe: Pl. 287, Fig. 2

2009 *Xenophora cerea*, – Verbinnen & Buijse: 22, Pl. 1, Figs 1–3

Number of specimens: QHS (-), QBS (-), Ql (3)

Feeding type: Detritus-feeder

Habitat: Three shells were found on muddy sand at 51 m water depth

Samples: *B14/1*

Range: Indopacific

Xenophora (_Xenophora_) _solarioides solarioides_ (Reeve, 1845)
(Pl. 27, Fig. 8)

1845 *Phorus solarioides* Reeve: Pl. 3, Fig. 8
1983 *Xenophora* (*Xenophora*) *solarioides solarioides*, – Ponder: 47, Figs 10a, 12b, 14e, 27a-j, 37
1999 *Xenophora* (*Xenophora*) *solarioides solarioides*, – Kreipl & Alf: 53, Pl. 16, Figs 14–14c
2001 *Xenophora solarioides*, – Higo et al.: 37, Fig. G 1141
2008 *Xenophora solarioides solarioides*, – Kreipl in Poppe: Pl. 289, Fig. 2
2009 *Xenophora solarioides solarioides*, – Verbinnen & Buijse: 23, Pl. 2, Fig. 4

Number of specimens: QHS (-), QBS (1), Ql (1)

Feeding type: Detritus-feeder

Habitat: Shells were found in muddy sand with seagrass at 39 m water depth and on muddy sand at 52 m water depth

Samples: *C1/3*, *©B7/1*

Range: Indopacific

Supplement to part 1

Vetigastropoda

Trochoidea Rafinesque, 1815

Family Skeneidae Clark, 1851

Conradia eutornisca (Melvill, 1918)
(Fig. 7a-c)

1918 *Fossarus eutorniscus* Melvill: 148, Pl. 5, Fig. 21

Remarks: Our material fits very well with the species described by Melvill (1918) from Karachi. It differs from it only by having seven spiral cords on the body whorl instead of five. This species seems to belong to the genus *Conradia* A. Adams, 1860. In principal shell features it looks rather similar to the various species belonging to that ge-

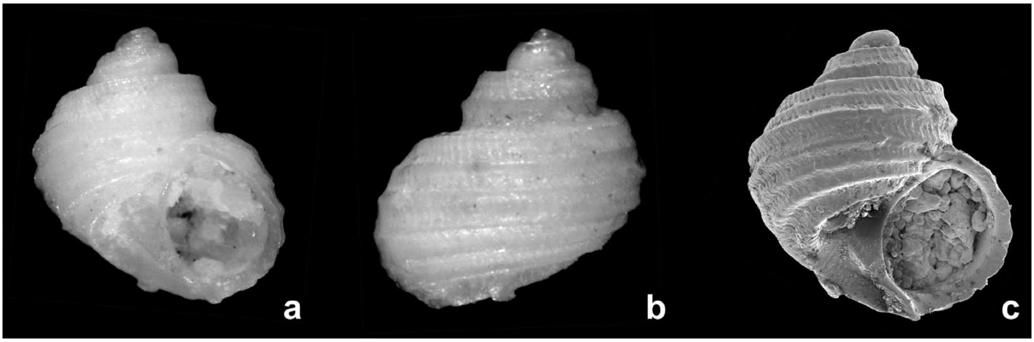


Fig. 7. *Conradia eutornisca* (MELVILL, 1918) [Vetigastropoda: Trochoidea: Skeneidae]; A: frontal view (L/D = 1.64/1.47 mm); B: back view; C: SEM frontal view.

nus described from Japan and figured by OKUTANI (2000: p. 83, Pl. 41). However, it can not be identified with either of these. To our knowledge nothing similar has been reported from the Red Sea so far. It differs from the similar looking skeneid genus *Parviturbo* PILSBRY & MCGINTY, 1945 by less acute and strong spiral ribs and a wider umbilicus. From the tornid genus *Lophocochlias* PILSBRY, 1921 it is distinguished by its paucispiral white and smooth protoconch instead of the brown coloured, multispiral and delicately sculptured embryonic shell of that genus.

Number of specimens: QHS (-), QBS (4), Ql (-)

Feeding type: Unknown

Habitat: Few shells were found in sand between coral patches and seagrass

Samples: *94/1/a*, *B5/8*, *C1/3*

Range: Indian Ocean, Red Sea

Acknowledgements

This monograph would not have been possible without the supporting activity of many colleagues and institutions. The mapping of bottom facies in the 1980s by R. GOLEBIOWSKI, K. KLEEMANN, A. MANSOUR, J.H. NEBELSICK, P. PERVESLER, W.E. PILLER, C. RUPP and F.F. STEININGER provided the base for the detailed survey on molluscs. Gastropods collected from these initial surveys were identified by O. SCHULTZ. A. MANSOUR, W.E. PILLER, M. RASSER and B. RIEGL supported later fieldwork of M. ZUSCHIN from 1994 to 1997. In the immediate preparation of this monograph W. SLEURS identified some lots of rissoinid species. H. DEKKER is thanked for providing copies of some articles of Dutch authors. We thank M. HARZHAUSER and G. KRONENBERG for constructive reviews of our manuscript.

The help of the Austrian Cultural Institute of the Austrian Embassy in Cairo, the Department of Geology of the University of Assiut/Qena and the Department of Geology of the South Valley

University, Qena, made field work possible. The study was financially supported by three projects funded by the Austrian Fonds zur Förderung der wissenschaftlichen Forschung (FWF): projects P5877 and P10715–Geo to F.F. STEININGER, and project P19013–B17 to M. ZUSCHIN.

WERNER PILLER was a driving force in the Safaga projects and we dedicate this monograph to his 60th birthday.

References

ABBOTT, R.T. (1960): The genus *Strombus* in the Indo-Pacific. – Indo-Pacific Mollusca, **1**/2: 33–146.

—— (1961): The genus *Lambis* in the Indo-Pacific. – Indo-Pacific Mollusca, **1**/3: 147–174.

ADAMS, A. (1850): Monographs of *Cyclostrema*, MARRYAT, and *Separatista*, GRAY; two genera of Gasteropodous Mollusks. – Proceedings of the Zoological Society of London, **18** (1850): 41–45, Pl. 8.

—— (1851): Descriptions of sixteen new species of *Rissoina*, a genus of Marine Gasteropodous Mollusks, from the Cumingian collection. – Proceedings of the Zoological Society of London, **19** (1851): 264–267.

—— (1853): Contributions towards a monograph of the Trochidae, a family of gasteropodous mollusca. – Proceedings of the Zoological Society of London, **19** (1851): 150–192.

—— (1855): A monograph of *Cerithidea*, a genus of Mollusca, with descriptions of several new species, from the collection of Hugh CUMING, Esqu.: to which are added, descriptions of two new species of *Colina*, and one of *Donax*. – Proceedings of the Zoological Society of London, **22** (1854): 83–87.

—— (1860a): Mollusca Japonica: New species of *Aclis*, *Ebala*, *Dunkeria* &c. – Annals and Magazine of Natural History, (3) **6**: 118–121.

—— (1860b): On some new genera and species of Mollusca, from Japan. – Annals and Magazine of Natural History, (3) **5**: 405–413; **6**: 331–337.

—— (1862): On the animal and affinities of *Scaliola*, a genus of mollusca from Japan. – Annals and Magazine of Natural History, (3) **10**: 420–421.

—— (1864): Monographs of the genera *Cyclostrema*, *Adeorbis*, and *Teinostoma*. – In: SOWERBY, G. B.: Thesaurus conchyliorum, **3** (23): 249-261, Pls 255–256; London

ADAMS, H. (1872): Further descriptions of new species of shells collected by ROBERT M'ANDREW, Esq., in the Red Sea. – Proceedings of the Zoological Society of London, **1872**: 9-12, Pl. 3.

BANDEL, K. (2006): Families of the Cerithioidea and related superfamilies (Palaeo-Caenogastropoda; Mollusca) from the Triassic to the Recent characterized by protoconch morphology – including the description of new taxa. – Freiberger Forschungshefte, **C 511**/psf 14: 59-138, Pls 1–12.

—— (2007): About the larval shell of some Stromboidea, connected to a review of the classification and phylogeny of the Strombimoprha (Caenogastropoda). – Freiberger Forschungshefte, **C 524**/psf 15: 97–206, Pls 1–11.

BAYLE, E. (1880): Liste rectificative de quelques noms de genres et d'espèces. – Journal de Conchyliologie, **28**/3: 240–251.

Beesley, P.L., Ross, G.J.B. & Wells, A. (1998): Mollusca: The Southern Synthesis. Fauna of Australia, vol. **5**, part B: 565–1234; Melbourne (CSIRO Publishing)

Beu, A.G. (1998): Indo-West Pacific Ranellidae, Bursidae and Personidae (Mollusca: Gastropoda). A monograph of the New Caledonian fauna and revisions of related taxa. – Mémoires du Muséum national d'Histoire naturelle de Paris, **178** = Résultats des Campagnes Musorstom, **19**: 255 pp.

—— (1999): Ranellidae, Bursidae and Personidae (Gastropoda: Tonnoidea) of Yamaguchi Prefecture, western Honshû, Japan. – The Yuriyagai. Journal of the malacozoological Association of Yamaguchi, **7**/1: 1–91.

—— (2010): Neogene Tonnoidean gastropods of tropical and South America: Contributions to the Dominican Republic and Panama Paleontology Projects and Uplift of the Central American Isthmus. – Bulletins of American Paleontology, **377–378**: 1–550.

Biggs, H. E. J. (1971): On a proposed new genus of Cerithid Mollusca from the Dahlak Islands, Red Sea. – Journal of Conchology, **27**/4: 221–223.

Blainville, H. M. D. de (1828–1830): Malacozoaires. – In: Faune francaise: 1–80 (1828), 81–240 (1829), 241–320 (1830); 41 Pls.; Paris (Levrault)

Boettger, O. (1887): Die ostasiatischen Vertreter der Gattung *Rissoina*. I. – Jahrbücher der deutschen malakozoologischen Gesellschaft, **14**: 125–135, Pl. 6.

Born, I. v. (1778): Index rerum naturalium Musei Caesarei Vindobonensis. Pars 1. Testacea: 458 pp, 1 Pl.; Vindobonum

Bosch, D.T., Dance, P., Moolenbeek, R.G. & Oliver, P.G. (1995): Seashells of Eastern Arabia. – 296 pp.; Dubai, London (Motivate Publishing)

Bouchet, P. & Danrigal, F. (1982): Napoleon's Egyptian campaign (1798–1801) and the Savigny collection of shells. – Nautilus, **96**/1: 9-24.

—— & Rocroi, J.-P. (2005): Classification and nomenclator of Gastropod families. – Malacologia, **47**: 1–397.

Brocchi, G. (1821): Continuazione e fine del catalogo delle conchiglie raccolte dal sig. Forni nel Seno Arabico. – Bibliotheca Italiana, **24**: 209-226. [not seen]

Bruguière, J.G. (1789-1792): Histoire naturelle des vers. – In: Encyclopédie Méthodique, **1** (1): 1–344 (1789); (2): 345–758 (1792); Paris (Pankoucke)

Carpenter, P. (1856): Description of new species and varieties of Calyptraeidae, Trochidae, and Pyramidellidae, principally in the collection of *Hugh Cuming*, Esq. – Proceedings of the Zoological Society of London, **1856**: 166–171.

Cate, C. N. (1979): A review of the Triviidae (Mollusca: Gastropoda). – San Diego Society of Natural History Memoir, **10**: 1–126.

Cernohorsky, W.O. (1971): The family Naticidae (Mollusca: Gastropoda) in the Fiji Islands. – Records of the Auckland Institute and Museum, **8**: 169-208.

—— (1978): Tropical Pacific Marine Shells. – 352 pp. incl. 68 Pls.; Sydney + New York (Pacific Publications)

Cossignani, T. (1994): Bursidae of the world. – 119 pp.; Ancona (L'informatore Picena)

Dautzenberg, P. (1932): Mollusques testacés marins de Madagascar. supplément. – Journal de Conchyliologie, **76**: 5–119.

DEKKER, H. & VAN GEMERT, L.J. (2008): A new list with corrections to the shells pictured in "Red Sea shells" (1984) by DOREEN SHARABATI. – De Kreukel, **44**/7–8: 123–136.

—— & ORLIN, Z. (2000): Check-list of Red Sea Mollusca. – Spirula, **47**/Suppl.: 3–46.

DESHAYES, G.P. (1838): Histoire naturelle des animaux sans Vertèbres. 2cd edition, **8**: 1–660.

—— (1844): [No title]. – Magazin de Zoologie, Mollusques: Pl. 109, with 2 unnumbered pages of text [not seen; cited after BOUCHET & DANRIGAL 1982]

DILLWYN, L.W. (1817): A descriptive Catalogue of Recent Shells, ...vol. **2**: 581–1092; London (ARCH).

DIRKX, M. & VERBINNEN, G. (2003): Red Sea Mollusca. Part 14: Family Vanikoridae. – Gloria Maris, **42**/2–3: 51, Figs. 32–34.

—— & —— (2003): Red Sea Mollusca. Part 15: Family Lamellariidae. – Gloria Maris, **42**/2–3: 52–53.

—— & —— (2004): Addendum Red Sea Mollusca. Part 14: Family Vanikoridae. – Gloria Maris, **43**/1: 28.

DRIVAS, J. & JAY, M. (1989): Shells from Réunion. XXII. Family Vanikoridae GRAY 1845. – La Conchiglia, **21**/242–245: 40–46.

DUNKER, W. (1862): Species nonnullae Bursarum vel Ranellarum collectionis Cumingianae. – Proceedings of the Zoological Society of London, **1862**: 238–240.

DUNKER, W. (1882): Index Molluscorum Maris Japonici. – 301 pp., 16 Pls.; Cassel (Th. FISCHER)

FEHSE, D. (1999): A new *Trivirostra* from Mozambique (Mollusca: Triviidae). – La Conchiglia, **30**/290: 23–30, Pls 1–2.

—— (2002): Beiträge zur Kenntnis der Triviidae (Mollusca: Gastropoda). V. Kritische Beurteilung der Genera und Beschreibung einer neuen Art der Gattung *Semitrivia* COSSMANN, 1903. – Acta conchyliorum, **6**: 1–48 incl. 7 Pls.

—— & GREGO, J. (2002): Contributions to the knowledge of the Triviidae (Mollusca: Gastropoda). IV. New species in the genus *Trivirostra* JOUSSEAUME, 1884 and *Dolichupis* IREDALE, 1930. – La Conchiglia, **34**/302: 43–56.

FISCHER, P. (1878): Diagnoses molluscorum novorum. – Journal de Conchyliologie, **26**/3: 211–212.

GARCIA TALAVERA, F. (1985): Two new species of Cymatids from the Indo-Pacific (Gasteropoda: Cymatiidae). – La Conchiglia, **17**/194–195: 28–30.

GEMERT, L. J. VAN (2008): A new book on shells from the Red Sea by MARYLYN RUSMORE-VILLAUME. – De Kreukel, **44**/7–8: 143–150.

GIANNUZZI-SAVELLI, R., PUSATERI, F., PALMERI, A. & EBREO, C. (1997): Atlante delle conchiglie marine del Mediterraneo. – 258 pp.; Roma (La Conchiglia)

GMELIN, J.F. (1791): CAROLI a LINNÉ Systema naturae per regna tria naturae. Editio decima tertia, pt. **6** (Vermes): 301–390; Leipzig

GOULD, A.A. (1849): Shells collected by the United States Exploring Expedition under the command of CHARLES WILKES. – Proceedings of the Boston Society of Natural History, **3**: 83–85, 89-92, 106–109, 118–121, 140–144.

HABE, T. (1961): Notes on some Japanese Mollusca described by A. ADAMS, whose specimens are deposited in the British Museum (Natural History) (1). – Professor Jiro MAKIYAMA Memorial vol.: 191–205, Pls. 1–4.

—— (1977): Six species of Japanese shells described by A. ADAMS. – Venus, **36**/3: 157–159.

HANLEY, S. (1860): Systematic list of the species of *Dolium* restricted. – Proceedings of the Zoological Society of London, **27**: 487–493.

HEDLEY, C. (1907): The Mollusca of Mast Head reef, Capricorn group, Queensland. – Proceedings of the Linnean Society of New South Wales, **1907**: 476–513, Pls 16–21.

HEIMANN, E. & MIENIS, H.K. (1999): *Erronea caurica nabeqensis* n. ssp. from the east coast of Sinai, Red Sea (Gastropoda Prosobranchia: Cypraeidae). – La Conchiglia, **31**/293: 11–18.

—— & —— (2000): Variability of *Mauritia arabica grayana* SCHILDER, 1930 in the Sinai area of the Gulf of Aqaba. – La Conchiglia, **32**/297: 29-38.

HENNING, T. & HEMMEN, J. (1993): Ranellidae and Personidae of the world. – 263 pp. incl. Pls. 1–30; Wiesbaden (HEMMEN)

HIGO, S., CALLOMON, P. & GOTO, Y. (2001): Catalogue and bibliography of the marine shell-bearing Mollusca of Japan. Type figures. – 208 pp.; Osaka (Elle Scientific Publications)

HORNUNG, A. & MERMOD, G. (1926): Mollusques de Mer Rouge recueillis par A. ISSEL...Troisième partie, Litiopidés. – Annali del Museo Civico di Storia Naturale di Genova, **52**: 202–209.

HOUBRICK, R.S. (1978): The family Cerithiidae in the Indo-Pacific. Part 1: The genera *Rhinoclavis*, *Pseudovertagus* and *Clavocerithium*. – Monographs of Marine Mollusca, **1**: 1–130.

—— (1980): Reappraisal of the gastropod genus *Varicopeza* GRÜNDEL (Cerithiidae: Prosobranchia). – Proceedings of the Biological Society of Washington, **93**/3: 525–535.

—— (1985): Genus *Clypeomorus* JOUSSEAUME (Cerithiidae: Prosobranchia). – Smithsonian Contributions to Zoology, **403**: 1–131.

—— (1986): The systematic position of *Royella sinon* (BAYLE) (Prosobranchia: Cerithiidae). – Veliger, **28** (4): 429-435.

—— (1987): Anatomy, reproductive biology, and phylogeny of the Planaxidae (Cerithiacea: Prosobranchia). – Smithsonian Contributions to Zoology, **445**: 1–57.

—— (1990): Aspects of the anatomy of *Plesiotrochus* (Plesiotrochidae, fam. n.) and its systematic position in Certhioidea (Prosobranchia, Caenogastropoda). – In: WELLS, F. E. et al. (eds.): Proceedings of the Third International Marine Biological Workshop: The Marine Flora and Fauna of Albany, Western Australia. Vol. **1**: 237–249. Perth (Western Australian Museum)

—— (1992): Monograph of the genus *Cerithium* BRUGUIÈRE in the Indo-Pacific (Cerithiidae: Prosobranchia). – Smithsonian Contributions to Zoology, **510**: 1–211.

—— (1993): Two confusing Indo-Pacific Cerithiids. – Nautilus, **107**/1: 14–23.

ISSEL, A. (1869): Malacologia del Mar Rosso. – i-xi, 1–387, Pls 1–5; Pisa.

IREDALE, T. (1917): On some new species of marine Mollusca from Christmas Island, Indian O. – Proceedings of the Malacological Society of London, **12**/6: 331–334, Pl. 13.

JANSSEN, A. W. (2007): Holoplanktonic Mollusca (Gastropoda) from the Gulf of Aquaba, Red Sea and Gulf of Aden (Late Holocene-Recent). – The Veliger, **49**/3: 140–195.

JICKELI, C.F. (1882): Diagnosen neuer Conchylien. – Jahrbücher der deutschen malakozoologischen Gesellschaft, **9**: 366–370.

—— (1884): Studien über die Conchylien des rothen Meeres. IV. Die Gattungen *Pyramidella*, *Obeliscus*, *Elusa*, *Syrnola*, *Orina* und *Rissoina*. – Jahrbücher der deutschen malakozoologischen Gesellschaft, **11**: 245–263, Pl. 6.

Jousseaume, F.P. (1930): Cerithiidae de la Mer Rouge. – Journal de Conchyliologie, **74**: 270–296.

Jung, P. & Abbott, R. T. (1967): The genus *Terebellum* (Gastropoda: Strombidae). – Indo-Pacific Mollusca, **1**/7: 445–454.

Kabat, A.R. (1990): Species of Naticidae (Mollusca: Gastropoda) descibed by Linnaeus in the Systema Naturae (1758). – Zoological Journal of the Linnean Society, **100**: 1–25.

––– (2000): Results of the Rumphius biohistorical Expedition to Ambon (1990). Part 10. Mollusca, Gastropoda, Naticidae. – Zoologische Mededeelingen Leiden, **73**/25: 345–380.

Kay, E. A. (1979): Hawaiian marine shells. – Bernice P. Bishop Museum Special Publication, **64** (4): 1–653. Honolulu (Bishop Museum Press)

Kennard, M.C. & Smith, A.J. (1961): A simple micro-sample splitter. Journal of Paleontology **35**: 396–397, Tulsa, Oklahoma

Kiener, L.-C. (1841): Spécies général et iconographie des coquilles vivantes, vol. **5**: Genre Cérite: 1–104, Pls. 1–32; Paris (Rousseau, Baillière)

––– (1843): Spécies général et iconographie des coquilles vivantes, vol. **4**: Genre Ptérocère: 1–14, Pls. 1–10; Paris (Rousseau, Baillière)

Kilburn, R. N. (1988): Description of a new species of *Eunaticina* (*Gennaeosinum*), with notes on some other members of the subgenus (Mollusca: Gastropoda: Naticidae). – Annals of the Natal Museum, **29**/2: 523–527.

Kreipl, K. (1997): Recent Cassidae. – 151 pp. incl. 24 Pls.; Wiesbaden (Chr. Hemmen)

––– & Alf, A. (1999): Recent Xenophoridae. – 147 pp. incl. 28 Pls.; Hackenheim (Conchbooks)

––– Poppe, G. T., Man in't Veld, L. & De Turck, K. (1999): The family Strombidae. – In: Poppe, G.T. & Groh, K. (eds): A conchological Iconography: 60 pp., 130 Pls.; Hackenheim (Conchbooks)

Kronenberg, G.C. & Berkhout, J. (1986): Strombidae: Addenda et corrigenda. – Vita Marina, **36**/2: 363–368.

––– & Vermeij, G. J. (2002): *Terestrombus* and *Tridentarius*, new genera of Indo-Pacific Strombidae (Gastropoda), with comments on included taxa and on shell characters in Strombidae. – Vita Malacologica, **1**: 49-54.

–––, Liverani, V. & Dekker, H. (2009): On the identity of *Strombus coniformis* Sowerby II, 1842 (Gastropoda, Strombidae), with additional notes on its distribution. – Journal of Conchology, **39**/6: 659-668.

Lamarck, J.B. de (1816): Tableau encyclopédique et méthodique des trois règnes de la nature. Part **23**: Pls. 391–488, 431 bis; liste des objects: 1–16. Paris

––– (1822): Histoire naturelle des animaux sans vertèbres, **6**/2: 232 pp.; **7**: 711 pp.; Paris (Lamarck)

Laseron, C. F. (1956): The families Rissoinidae and Rissoidae (Mollusca) from the Solanderian and Dampierian zoogeographical provinces. – Australian Journal of marine and freshwater Research, **7**/3: 384–484.

Le Renard, J. & Bouchet, P. (2003): New species and genera of the family Pickworthiidae (Mollusca, Caenogastropoda). – Zoosystema, **25**/4: 569-591.

[Lightfoot, J.] (1786): A catalogue of the Portland museum, ...194 pp., 1 Pl.; London [not seen]

Liltved, W. R. (2000): Cowries and their relatives of southern Africa. Second Edition: 224 pp.; Cape Town (Seacomber Publications)

Linnaeus, C. (1758): Systema naturae per regna tria naturae. Editio decima, reformata, vol. **1**: Regnum animale: 824 pp.; Stockholm

—— (1771): Regnis animalis appendix. – In: Mantissa plantarum altera, etc., vol. **2**/ 2: 521–552. Holmiae [not seen]

Lorenz, F. & Fehse, D. (2009): The living Ovulidae. A manual of the families of allied cowries: Ovulidae, Pediculariidae and Eocypraeidae. – 651 pp. incl. 203 Pls.; Hackenheim (Conchbooks)

—— & Hubert, A. (1993): A guide to worldwide cowries.1st ed. – 571 pp. incl. 124 Pls; Wiesbaden (Hemmen)

Martens, E. v. (1882): Mollusken. – In: Möbius, K.: Reise nach Mauritius. Beiträge zur Meeresfauna der Insel Mauritius und der Seychellen: pp. 181–352, Pls 19-22; Berlin

—— (1882): Zwei neue Arten von Meeres-Conchylien, welche von der Expedition S. M. Sch. Gazelle stammen. – Sitzungsberichte der Gesellschaft naturforschender Freunde in Berlin, **1882**: 107.

Marwick, J. (1957): A generic revision of the Turritellidae. – Proceedings of the Malacological Society of London, **32**/4: 144–166.

Melvill, J.C. (1888): A survey of the genus *Cypraea* (Linn.), its nomenclature, geographical distribution and distinctive afinities; with descriptions of two new species and several varieties. – Memoirs and Proceedings of the Manchester Literary and Philosophical Society, (4) **1**: 184–252, Pls. 1–2.

—— (1904): Descriptions of twenty-three species of gastropoda from the Persian Gulf, Gulf of Oman and Arabian Sea, dredged by Mr. F. W. Townsend of the Indo-European Telegraph Service in 1903. – Proceedings of the Malacological Society of London, **6**: 51–60, Pl. 5.

—— (1906): A revision of the species of Cyclostrematidae and Liotiidae occurring in the Persian Gulf and North Arabian Sea. – Proceedings of the Malacological Society of London, **7**: 20–28, Pl. 3.

Michaud, A. L. G. (1830): Descriptions de plusieurs nouvelles espèces de coquilles du genre *Rissoa* (Fréminville): 19 pp., 1 Pl.; Lyon.

Mörch, O. A. L. (1850): Catalogus conchyliorum quae reliquit C. P. Kierulf.: 1–33, 2 Pls., Hafniae (Trier)

Moolenbeek, R.G. & Dekker, H. (1993): On the identity of *Strombus decorus* and *Strombus persicus*, with the description of *Strombus decorus masirensis* n. ssp. and a note on *Strombus fasciatus*. – Vita Marina, **42**/1: 3–10.

Okutani, T. (Ed.) (2000): Marine Mollusks in Japan. – 1173 pp. incl. 542 Pls., Tokyo (Tokay University Press).

Ostini, M. & Rigoletti, L. (1983): A new species from Red Sea . *Strombus* (*Conomurex*) *dehelensis*. – La Conchiglia, **15**/168–169: 21.

Pallary, P. (1926): Explications des planches de J.C. Savigny. – Mémoirs de l'Institut d'Egypte, **11**: viii + 138 pp., Pls. 1–18.

Pease, W.H. (1861): Descriptions of forty-seven new species of shells from the Sandwich Islands, in the collection of Hugh Cuming. – Proceedings of the Zoological Society of London, **28**: 431–438.

—— (1868): Descriptions of sixty-five new species of marine Gasteropodae, inhabiting Polynesia. – American Journal of Conchology, **3**/4: 271–297, Pls 23–24.

Philippi, R.A. (1846): Descriptions of a new species of *Trochus*, and of eighteen new species of *Littorina*, in the collection of H. Cuming, Esq. – Proceedings of the Zoological Society of London, **1845**: 138–143.

—— (1848–1849): Centuria tertia testaceorum novorum. – Zeitschrift für Malakozoologie, **5**/2: 17–27 (1848); **6**/2: 33–35 (1849).

—— (1851): Centuria quinta testaceorum novorum. – Zeitschrift für Malakozoologie, **8**/6: 81–96.

Pickery, R. & Wellens, W. (1998): Red Sea Mollusca, Part 4. Family Strombidae. – Gloria Maris, **36**/4: 59-62, Figs 1–15.

Piller, W.E. (1994): The Northern Bay of Safaga (Red Sea, Egypt): an actuopalaeontological approach. IV. Thin section analysis. Beiträge zur Paläontologie, **18**: 1–73, 18 Pls, 19 Figs, 5 Tabs.

—— & Mansour, A. (1990): The Northern Bay of Safaga (Red Sea, Egypt): an actuopalaeontological approach. II. Sediment analyses and sedimentary facies. – Beiträge zur Paläontologie von Österreich, **16**: 1–102.

—— & —— (1994): Origin and transport of non-carbonate sediments in a carbonatedominated environment (Northern Safaga Bay, Egypt). – Abhandlungen der Geologischen Bundesanstalt, **50**: 369–379.

—— & Pervesler, P. (1989): The Northern Bay of Safaga (Red Sea, Egypt): An Actuopalaeontological Approach. I. Topography and Bottom Facies. – Beiträge zur Paläontologie von Österreich, **15**: 103–147.

Pilsbry, H.A. (1921): Marine mollusks of Hawaii – XIV, XV. – Proceedings of the Academy of Natural History of Philadelphia, **72**: 360–382, Pl. 12.

—— & McGinty, T.L. (1945): "Cyclostrematidae" and Vitrinellidae of Florida, II. – Nautilus, **54**: 52–59, Pl. 6.

—— & Olsson, A.A. (1952): Vitrinellids of the Panamic Province: II. – Proceedings of the Academy of Natural Sciences of Philadelphia, **104**: 35–88, Pls 1–13.

Ponder, W.F. (1983): Xenophoridae of the world. – The Australian Musum Memoir, **17**: 126 pp.

—— (1985): A review of the genera of the Rissoidae (Mollusca: Mesogastropoda: Rissoacea). – Records of the Australian Museum, suppl. **4**: 221 pp.

—— (1994): The anatomy and relationships of *Finella* and *Scaliola* (Caenogastropoda: Cerithioidea: Scaliolidae). – In: Morton, B. (ed.): The Malacofauna of Hong Kong and Southern China III: 215–241.

—— & De Keyzer, R. (1992): A Revision of the Genus *Diala* (Gastropoda: Cerithioidea: Dialidae). – Invertebrate Taxonomy, **6**: 1019-1075.

Poppe, G.T. (2008): Philippine marine mollusks. vol. 1 (Gastropoda – part 1): 758 pp. incl. 312 Pls.; Hackenheim (Conchbooks)

Récluz, C.A. (1844): Descriptions of new species of *Navicella*, *Neritina*, *Nerita* and *Natica* in the cabinet of H. Cuming, Esq. – Proceedings of the Zoological Society of London, **11**: 197–214.

—— (1844): Descriptions of new species of the genus *Narica*, discovered by Hugh Cuming, Esq. – Proceedings of the Zoological Society of London, **1843**: 136–144.

Reeve L.A. (1843–1845): Monograph of the genus *Phorus*. – Conchologia Iconica, **1**: Pls 1–2 (1843), Pl. 3 (1845); London (Reeve)

—— (1844): Monograph of the genus *Triton*. – Conchologia Iconica, **2**: Pls. 1–20; London (Reeve)

—— (1849): Monograph of the genus *Turritella*. – Conchologia Iconica, **5**: Pls. 1–11; London (Reeve)

—— (1858): Monograph of the genus *Calyptraea*. – Conchologia Iconica, **11**: Pls. 1–8; London (Reeve)

Reid, D.G. (1986): The genus *Littoraria* (Mollusca, Gastropoda, Littorinidae). – 227 pp.; London (British Museum (Natural History))

—— (1989): Systematic revision of the Recent species of *Peasiella* Nevill, 1885 (Gastropoda: Littorinidae), with notes on the fossil species. – Nautilus, **103**/2: 43–69.

——, Dyal, P., Lozouet, P., Glaubrecht, M. & Williams, S.T. (2008): Mudwhelks and mangroves: The evolutionary history of an ecological association (Gastropoda: Potamididae). – Molecular phylogenetics and evolution, **47**: 680–699.

—— & Mak, Y.-M. (1998): Additions and corrections to the taxonomy of the genus *Peasiella* Nevill, 1885 (Gastropoda: Littorinidae). – Nautilus, **112**/1: 6–33.

Röding, P.F. (1798): Museum Boltenianum, ...Pars secunda: 199 pp. Hamburg (J. Christ)

Romagna Manoja, E. (1980a): Superfamily Stromboidea. VI Part: Subgenus *Canarium*. – La Conchiglia, **12**/130–131: 12–16, 18.

—— (1980b): Superfamily Stromboidea. Part VIII: Subgenus *Canarium*. – La Conchiglia, **12**/136–137: 3–5.

Rusmore-Villaume, M.L. (2008): Seashells of the Egyptian Red Sea: The illustrated handbook. – xi + 307 pp.; Cairo (American University in Cairo Press)

Schilder, F.A. (1930): Beiträge zur Kenntnis der Cypraeacea (Moll. Gastr.) – III. – Zoologischer Anzeiger, **92**/3–4: 67–78.

Schumacher, C.F. (1817): Essai d'un nouveau système des habitations des Vers testacés. – 287 pp., 22 Pls; Copenhague (Schultz)

Schwartz von Mohrenstern, G. (1860): Über die Familie der Rissoiden, insbesondere die Gattung *Rissoina*. – Denkschriften der kaiserlichen Akademie der Wissenschaften in Wien, Mathemat.-naturwiss. Classe, **169**: 70–188, Pls 1–11.

Selli, R. (1973): Molluschi quaternari di Massaua e di Gibuti. – In: Missione geologica dell'azienda generale Italiana petroli (A.G. I. P.) nella dancalia meridionale e sugli altipiani Hararini (1936–1938). vol. 4: Documentazione paleontologica, parte seconda: 153–444, Pls 1–30; Roma (Accademia Nazionale dei Lincei)

Sharabati, D. (1984): Red Sea shells. – 17 pp. incl. 49 Pls.; London (KPI Ltd.)

Sleurs, W. (1993): A revision of the Recent species of *Rissoina* (*Moerchiella*), *R*. (*Apataxia*), *R*. (*Ailinzebina*) and *R*. (*Pachyrissoina*) (Gastropoda: Rissoidae). – Bulletin de l'Institut Royal des Sciences naturelles de Belgique, Biologie, **63**: 71–135.

—— (1996): A Revision of the Recent species of the Genus *Stosicia* (Gastropoda: Rissoidae). – Academiae Analecta Brussels, **58**/1: 115–158, 19 Figs.

SOWERBY, G.B. (I) (1825): A catalogue of the shells contained in the collection of the late EARL OF TANKERVILLE. – 92 pp.; appendix: 34 pp., 9 Pls; London [not seen]

—— (1834): *Cerithium*. – In: The genera of Recent and Fossil shells, part 42: 3 pp, 2 Pls.; London (SOWERBY)

SOWERBY, G.B. (II) (1832): A catalogue of the recent species of Cypraeadae. – In: The conchological illustrations: 18 + vii pp., 37 Pls.; London (SOWERBY)

—— (1835): *Renella* [sic!]. – In: The conchological illustrations: 2 pp., Pls. 84–85, 88–89; London (SOWERBY)

—— (1842): Monograph of the genus *Strombus*. – Thesaurus conchyliorum, **1**: 25–39, Pls. 6–10; London (SOWERBY)

—— (1855): Monograph of the genus *Cerithium*, ADANSON. – Thesaurus Conchyliorum, **2**: 847–899, Pls 176–186; London (SOWERBY)

SOWERBY, G.B. (III) (1870): Monograph of the genus *Cypraea*. – Thesaurus conchyliorum, **4**: 1–58, Pls. 1–37; London (SOWERBY)

—— (1875): Monograph of the genus *Vanikoro*. – Conchologia Iconica, **20**: Pls. 1–3; London (REEVE)

—— (1887): Genus *Vanikoro* and *Neritopsis*. – Thesaurus Conchyliorum, **5**: 167–170, Pl. 482; London (SOWERBY)

STURANY, R. (1903): Gastropoden des Rothen Meeres. – In: Expeditionen S. M. Schiff „Pola“ in das Rothe Meer. Nördliche und südliche Hälfte, 1895/96 – 1897/98. Zoologische Ergebnisse. XXII. – Denkschriften der kaiserlichen Akademie der Wissenschaften in Wien, Mathemat.-naturwiss. Classe, **73**: 209-283, Pls. 1–7.

SWAINSON, W. (1821): Zoological illustrations, (1) **2**: Pls. 19-83; London (BALDWIN & CRADOCK) [not seen].

TODD, J.A. (2001): Neogene Marine Biota of Tropical America: Molluscan Life Habit Databases. Last updated 27 March, 2001. http://eusmilia.geology.uiowa.edu/database/mollusc/mollusclifestyles.htm.

TRYON, G. (1887): Manual of Conchology. Vol. **9** (Solariidae, Janthinidae, Trichotropidae, Scalariidae, Cerithiidae, Rissoidae, Littorinidae): 488 pp., 71 Pls.; Philadelphia.

VERBINNEN, G. & BUIJSE, J.A. (2007): Red Sea Mollusca. Part 25: Family Bursidae. – Gloria Maris, **46**/3: 51–58, Pls 1–2.

—— & —— (2009): Red Sea Mollusca. Part 27: Fanmily Xenophoridae. – Gloria Maris, **48**/1: 22–26, Pls 1–3.

—— & DIRKX, M. (1997–1998a): Red Sea Mollusca. Part 2: Family Cerithiidae. – Gloria Maris, **36**/3: 53–56, Figs 1–18 (1997); **36**/4: 57–58 (“59” in error!) (1998a).

—— & —— (1997–1998b): Red Sea Mollusca. Part 3: Family Potamididae. – Gloria Maris, **36**/3: Fig. 19 (1997); **36**/4: “59” = 58 (1998b).

—— & —— (2005a): Red Sea Mollusca. Part 21: Family Littorinidae. – Gloria Maris, **44**/5: 110–114, Pl.1.

—— & —— (2005b): Red Sea Mollusca. Part 22: Family Planaxidae. – Gloria Maris, **44**/5: 116–117, Pl.1, Figs 6, 8.

—— & PICKERY, R. (2001a): Red Sea Mollusca. Part 8: Family Tonnidae. – Gloria Maris, **40**/1: 5–6, 12, Figs 1–5.

—— & —— (2001b): Red Sea Mollusca. Part 10: Family Cassidae. – Gloria Maris, **40**/1: 7–11, 13–14, Figs 6–10.

—— & Wils, E. (2008): Red Sea Mollusca. Part 26: Family Naticidae. – Gloria Maris, **47**/1–2: 30–40, Pls 1–3.

Vermeij, G. J. (1998): *Sabia* on shells: a specialized Pacific-type commensalism in the Caribbean Neogene. – Journal of Paleontology, **72**/3: 456–472.

Vos, C. & Terryn, Y. (2007): The family Tonnidae. – In: Poppe, G.T. & Groh, K. (eds): A conchological Iconography: 121 pp. 63 Pls; Hackenheim (Conchbooks)

Watson, R. B. (1886): Report on the Scaphopoda and Gasteropoda collected by HMS Challenger during the years 1873–1876. – Challenger Reports, **15**: 756 pp., 50 Pls.

Weinkauff, H. C. (1877–1885): Die Gattungen *Rissoa* und *Rissoina*. – In: Küster, H. C. (ed.): Systematisches Conchylien-Cabinet von Martini und Chemnitz, **1** (22): 1–16 (1877); 17–40, Pls 7–12 (1880); 41–80, Pls 13–15c (1881); 81–128, Pls 15d, 18–22 (1884); 120–206, Pls 23–25 (1885); Nürnberg (Bauer & Raspe)

Wellens, W. (1999): *Coriocella safagae* n. sp., a new Lamellariid (Gastropoda: Prosobranchia) from Safaga, Red Sea, Egypt. – Journal of Conchology, **36**/5: 17–24.

World Register of Marine species (WoRMS) (2010) – http://www.marinespecies.org.

Yokoyama, M. (1924): Mollusca from the Coral-bed of Awa. – Journal of the College of Science, Imperial University Tokyo, **45**/1: 1–62, Pls 1–4.

Zenetos, A., Gofas, S., Russo, G. & Templado, J. (2003): CIESM Atlas of exotic species in the Mediterranean. Vol. **3**. Molluscs. – 376 pp.; Monaco (CIESM Publishers)

Zuschin, M. & Hohenegger, J. (1998): Subtropical coral-reef asssociated sedimentary facies characterized by molluscs, Northern Bay of Safaga, Red Sea, Egypt. – Facies, **38**: 229–254.

—— & Piller, W.E. (1997): Gastropod shells recycled – an example from a rocky tidal flat in the northern Red Sea. – Lethaia, **30**: 127–134.

——, Hohenegger, H. & Steininger F.F. (2000): A comparison of living and dead molluscs on coral reef associated hard substrata in the northern Red Sea – implications for the fossil record.- Palaeogeography, Palaeoclimatology, Palaeoecology, **159**: 167–190.

——, Hohenegger, H. & Steininger, F.F. (2001): Molluscan assemblages on coral reefs and associated hard substrata in the northern Red Sea. Coral Reefs, **20**: 107–116.

—— & Oliver, P.G. (2003): Bivalves and bivalve habitats in the northern Red Sea. The Northern Bay of Safaga (Red Sea, Egypt): An actuopalaeontological approach. VI. Bivalvia., 304 pp. Wien (Naturhistorisches Museum).

——, Janssen, R. & Baal, C. (2009): Gastropods and their habitats from the northern Red Sea (Egypt, Safaga). Part 1: Patellogastropoda, Vetigastropoda and Cycloneritimorpha. – Annalen des Naturhistorischen Museums Wien, Serie A, **111**: 73–158.

Plate 1

Cerithoidea – Cerithiidae

***Cerithium caeruleum* G. B. Sowerby (II), 1855**

Fig. 1a frontal view (L = 32.49 mm) NHMW Mollusca 107 881

Fig. 1b back view

Fig. 2a frontal view (L = 26.24 mm) NHMW Mollusca 107 882

Fig. 2b back view

Fig. 3a frontal view (L = 33.01 mm) NHMW Mollusca 107 883

Fig. 3b back view

Fig. 3c lateral view

***Cerithium columna* G. B. Sowerby (I), 1834**

Fig. 4a frontal view (L = 27.94 mm) NHMW Mollusca 107 884

Fig. 4b back view

***Cerithium echinatum* Lamarck, 1822**

Fig. 5a fronatal view (L = 50.75 mm) NHMW Mollusca 107 885

Fig. 5b back view

Fig. 6a frontal view, semiadult specimen (L = 29.38 mm) NHMW Mollusca 107 886

Fig. 6b back view

***Cerithium egenum* Gould, 1849**

Fig. 7a frontal view (L = 10.34 mm) NHMW Mollusca 107 887

Fig. 7b back view

Fig. 7c spire whorls (scale bar = 0.5 mm)

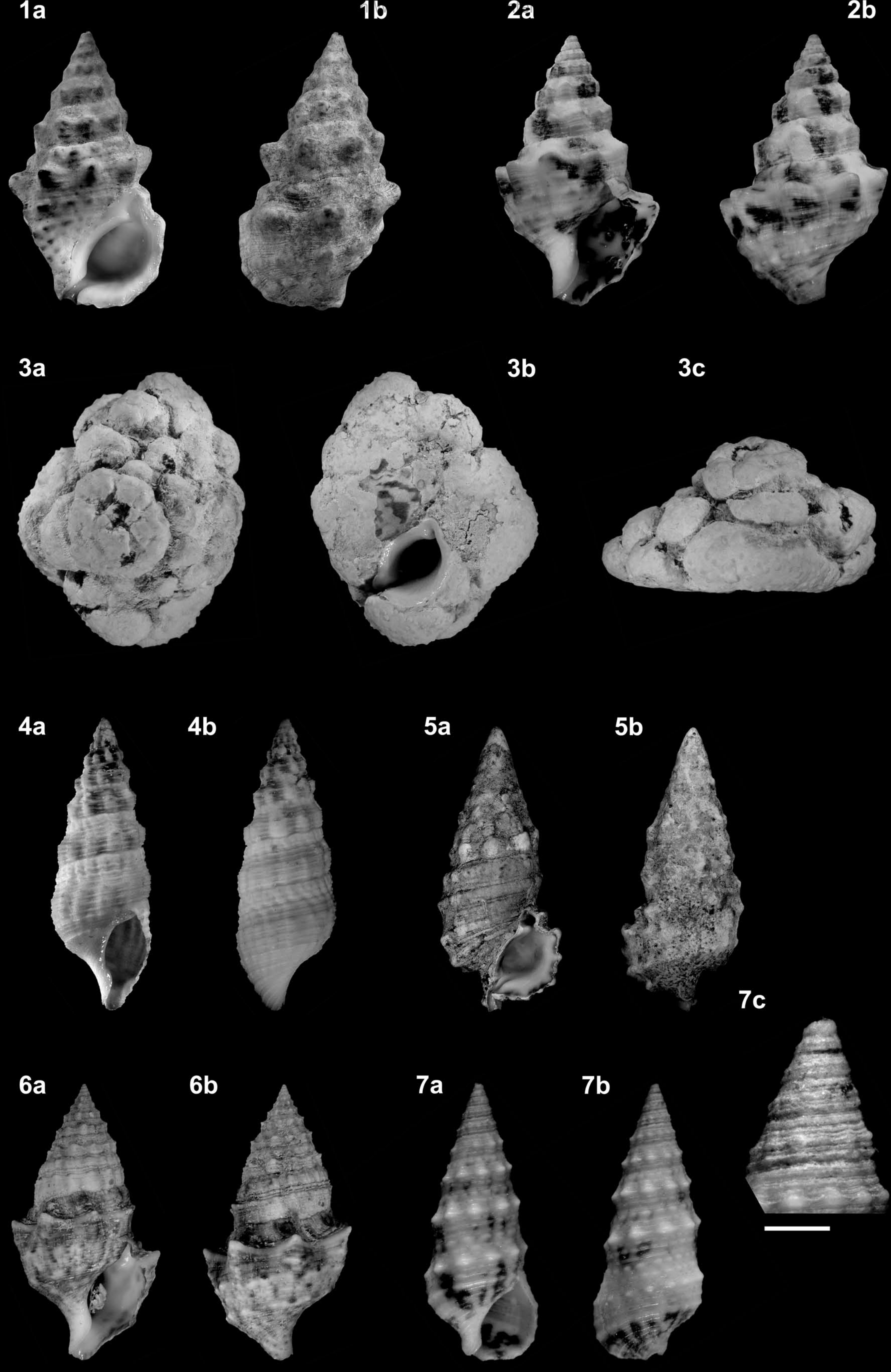

1a
1b
2a
2b
3a
3b
3c
4a
4b
5a
5b
7c
6a
6b
7a
7b

Plate 2

Cerithoidea – Cerithiidae

***Cerithium egenum* GOULD, 1849**

Fig. 1a SEM frontal view (L = 3.05 mm) NHMW Mollusca 107 888

Fig. 1b SEM protoconch (scale bar = 100 µm)

***Cerithium nodulosum adansonii* BRUGUIÈRE, 1792**

Fig. 2a frontal view (L = 53.10 mm) NHMW Mollusca 107 889

Fig. 2b back view

Fig. 2c spire whorls (scale bar = 0.5 mm)

Fig. 3 frontal view (L = 61.65 mm) NHMW Mollusca 107 890

Fig. 4 frontal view (L = 66.65 mm) NHMW Mollusca 107 891

***Cerithium rostratum* G. B. SOWERBY (II), 1855**

Fig. 5a frontal view (L = 13.90 mm) NHMW Mollusca 107 892

Fig. 5b back view

Fig. 6a back view (L = 10.04 mm) NHMW Mollusca 107 893

Fig. 6b spire whorls (scale bar = 100 µm)

Fig. 7a SEM frontal view, spire whorls (L = 2.75 mm) NHMW Mollusca 107 894

Fig. 7b SEM protoconch (scale bar = 100 µm)

***Cerithium ruppelli* PHILIPPI, 1848**

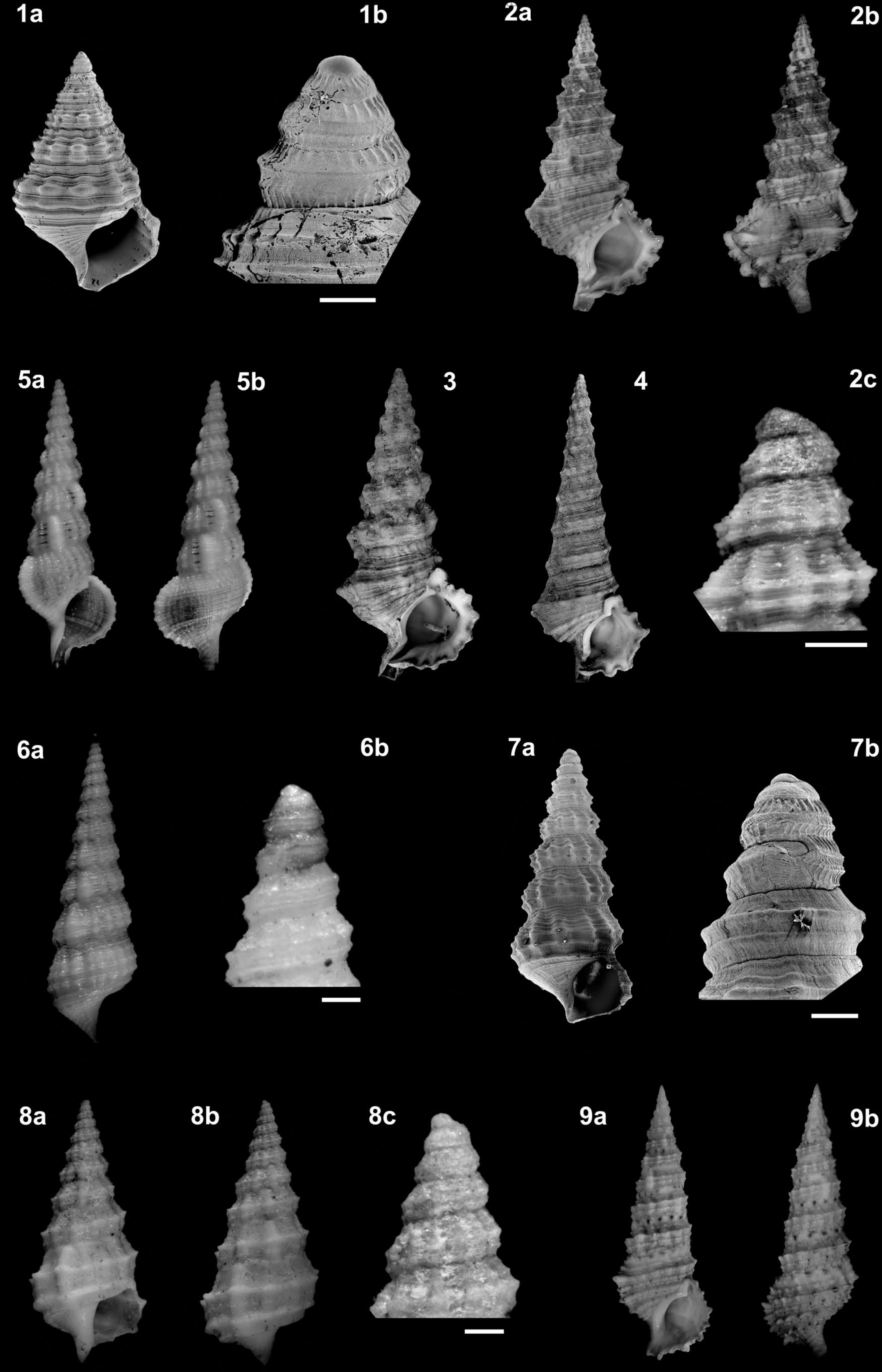
Fig. 8a frontal view (L = 10.21 mm) NHMW Mollusca 107 895

Fig. 8b back view

Fig. 8c spire whorls (scale bar = 0.5 mm)

Fig. 9a frontal view (L = 51.95 mm) NHMW Mollusca 107 896

Fig. 9b back view



1a
1b
2a
2b
5a
5b
3
4
2c
6a
6b
7a
7b
8a
8b
8c
9a
9b

Plate 3

Cerithoidea – Cerithiidae

***Cerithium zebrum* KIENER, 1841**

Fig. 1a frontal view (L = 3.97 mm) NHMW Mollusca 107 897

Fig. 1b back view

Fig. 2a frontal view (L = 2.73 mm) NHMW Mollusca 107 898

Fig. 2b back view

Fig. 2c protoconch (scale bar = 100 µm)

Fig. 3a SEM frontal view (L = 4.28 mm) NHMW Mollusca 107 899

Fig. 3b SEM protoconch (scale bar = 100 µm)

Fig. 3c SEM detail of sculpture (scale bar = 100 µm)

Fig. 4a frontal view (L = 3.03 mm) NHMW Mollusca 107 901

Fig. 4b back view

Fig. 5a SEM frontal view, juvenile specimen (L = 2.55 mm) NHMW Mollusca 107 902

Fig. 5b SEM protoconch (scale bar = 100 µm)

***Clypeomorus bifasciata bifasciata* (G. B. SOWERBY (II), 1855)**

Fig. 6a frontal view (L = 19.76 mm) NHMW Mollusca 107 903

Fig. 6b back view

***Dahlakia protea* (JOUSSEAUME, 1930)**

Fig. 7a frontal view (L = 4.95 mm) NHMW Mollusca 107 904

Fig. 7b back view

Fig. 8a frontal view (L = 8.09 mm)

Fig. 8b back view

Fig. 9a SEM frontal view (L = 5.03 mm) NHMW Mollusca 107 905

Fig. 9b SEM protoconch (scale bar = 100 µm)

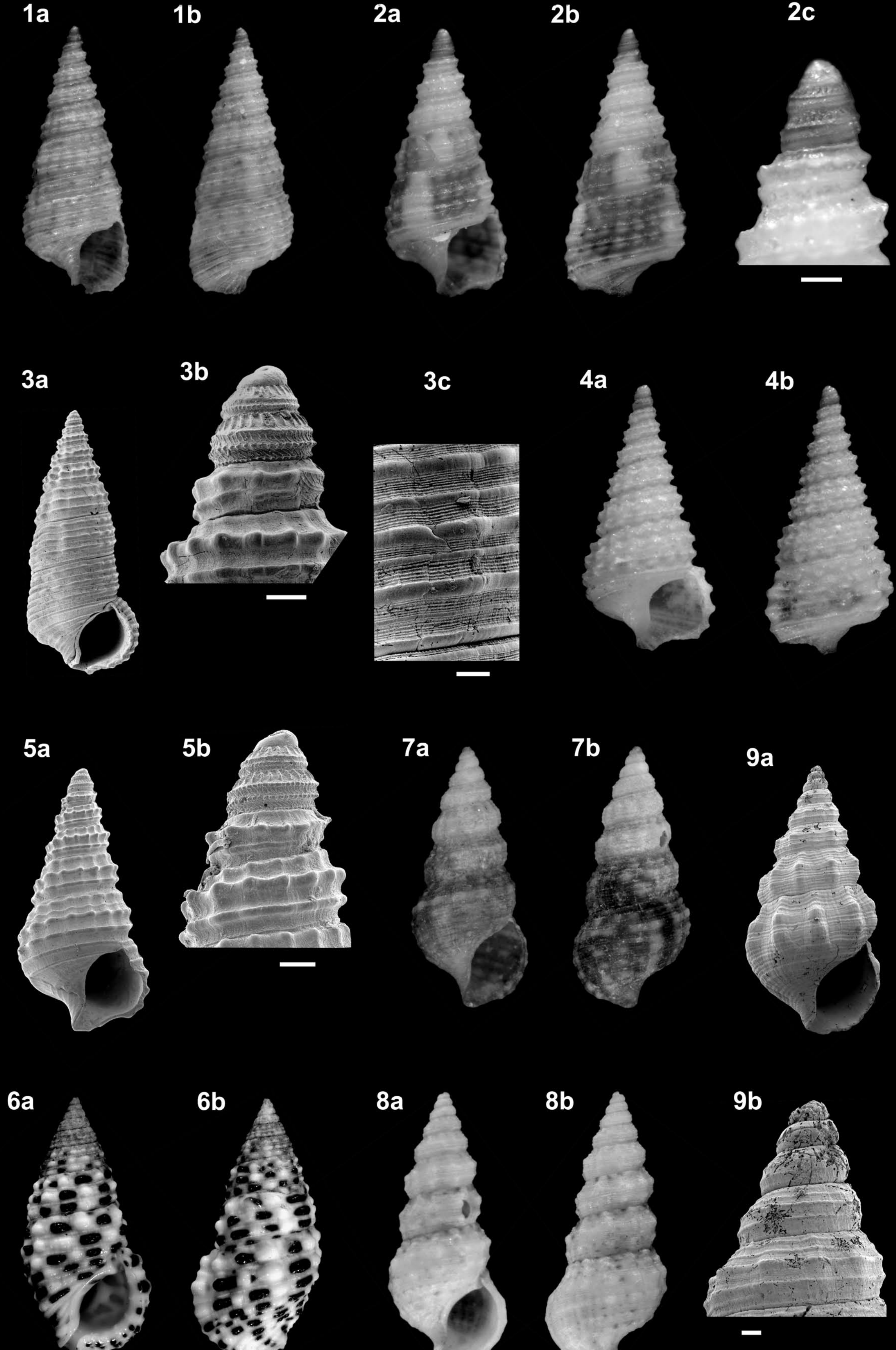

1a
1b
2a
2b
2c
3a
3b
3c
4a
4b
5a
5b
7a
7b
9a
6a
6b
8a
8b
9b

Plate 4

Cerithoidea – Cerithiidae

***Rhinoclavis* (*Rhinoclavis*) *fasciata* (Bruguière, 1792)**

Fig. 1a frontal view (L = 60.60 mm) NHMW Mollusca 107 906

Fig. 1b back view

Fig. 2 frontal view (L = 64.15 mm) NHMW Mollusca 107 907

Fig. 3 frontal view (L = 68.75 mm) NHMW Mollusca 107 900

***Rhinoclavis* (*Proclava*) *kochi* (Philippi, 1848)**

Fig. 4a frontal view, forma recurva (L = 2.54 mm) NHMW Mollusca 107 908

Fig. 4b back view

Fig. 4c early spire whorls (scale bar = 100 µm)

Fig. 5 SEM frontal view, spire whorls (L = 2.93 mm) NHMW Mollusca 107 909

Fig. 6a frontal view, with coral (L = 19.83 mm) NHMW Mollusca 107 910

Fig. 6b back view, with coral

Fig. 7a frontal view, forma recurva (L = 27.89 mm) NHMW Mollusca 107 911

Fig. 7b back view, forma recurva

Fig. 8a frontal view, forma recurva (L = 27.11 mm) NHMW Mollusca 107 912

Fig. 8b back view, forma recurva

Fig. 9a frontal view (L = 27.81 mm) NHMW Mollusca 107 913

Fig. 9b back view

***Rhinoclavis* (*Proclava*) *sordidula* (Gould, 1849)**

Fig. 10a frontal view (L = 15.68 mm) NHMW Mollusca 107 914

Fig. 10b back view

Fig. 10c spire whorls (scale bar = 0.5 mm)

Fig. 11a SEM frontal view (L = 9.31 mm) NHMW Mollusca 107 915

Fig. 11b SEM early spire whorls (scale bar = 100 µm)

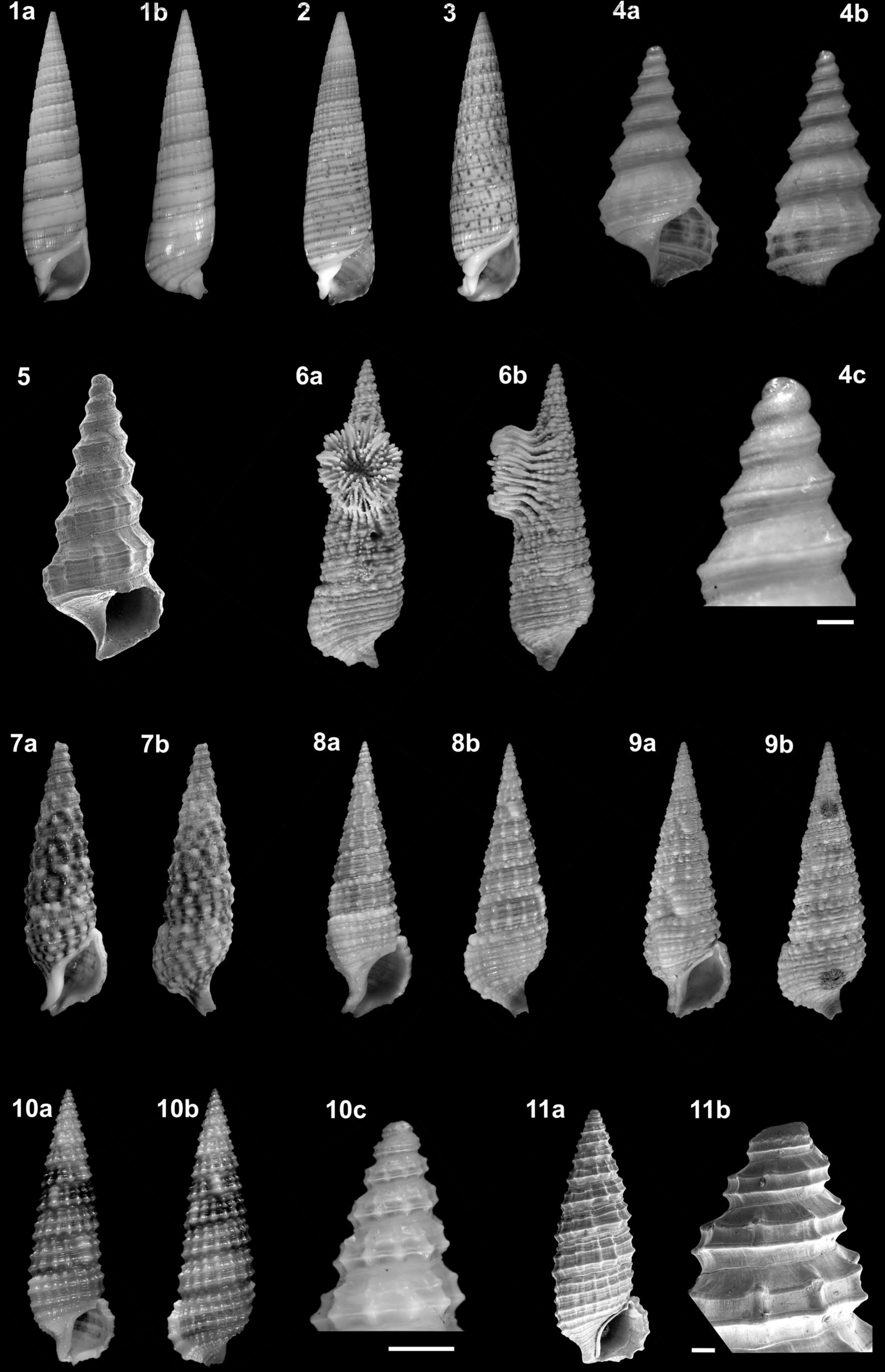

1a
1b
2
3
4a
4b
5
6a
6b
4c
7a
7b
8a
8b
9a
9b
10a
10b
10c
11a
11b

Plate 5

Cerithoidea – Cerithiidae

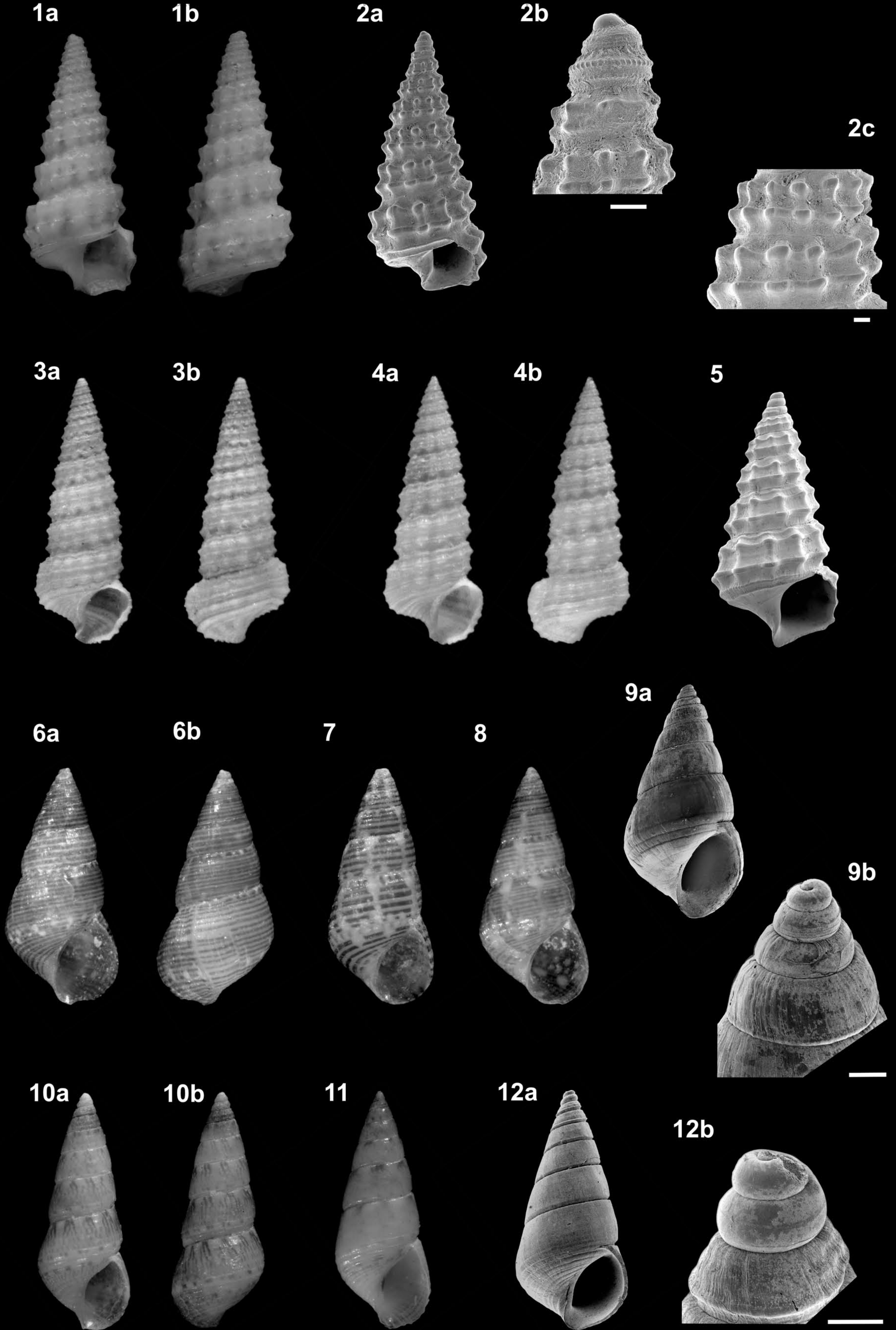
Royella sinon **(Bayle, 1880)**
Fig. 1a frontal view, semiadult specimen (L = 6.30 mm) NHMW Mollusca 107 916
Fig. 1b back view
Fig. 2a SEM frontal view, semiadult specimen (L = 3.18 mm) NHMW Mollusca 107 917
Fig. 2b SEM protoconch (scale bar = 100 µm)
Fig. 2c SEM early spire whorls (scale bar = 100 µm)

Varicopeza pauxilla **(A. Adams, 1855)**
Fig. 3a frontal view (L = 7.92 mm) NHMW Mollusca 107 918
Fig. 3b back view
Fig. 4a frontal view (L = 7.81 mm) NHMW Mollusca 107 919
Fig. 4b back view
Fig. 5 SEM frontal view, semiadult specimen (L = 2.59 mm) NHMW Mollusca 107 920

Cerithoidea – Dialidae

Diala albugo **(Watson, 1886)**
Fig. 6a frontal view (L = 2.63 mm) NHMW Mollusca 107 921
Fig. 6b back view
Fig. 7 frontal view (L = 3.27 mm) NHMW Mollusca 107 922
Fig. 8 frontal view (L = 2.97 mm) NHMW Mollusca 107 923
Fig. 9a SEM frontal view (L = 2.21 mm) NHMW Mollusca 107 924
Fig. 9b SEM protoconch (scale bar = 100 µm)

Diala semistriata **(Philippi, 1849)**
Fig. 10a frontal view (L = 3.41 mm) NHMW Mollusca 107 925
Fig. 10b back view
Fig. 11 frontal view (L = 4.86 mm) NHMW Mollusca 107 926
Fig. 12a SEM frontal view (L = 3.00 mm) NHMW Mollusca 107 927
Fig. 12b SEM protoconch (scale bar = 100 µm)



1a
1b
2a
2b
2c
3a
3b
4a
4b
5
6a
6b
7
8
9a
9b
10a
10b
11
12a
12b

Plate 6

Cerithoidea – Litiopidae

***Styliferina goniochila* A. Adams, 1860**

Fig. 1a frontal view (L = 4.23 mm) NHMW Mollusca 107 928

Fig. 1b back view

Fig. 2a frontal view (L = 3.60 mm) NHMW Mollusca 107 929

Fig. 2b back view

Fig. 3a SEM frontal view (L = 1.98 mm) NHMW Mollusca 107 930

Cerithoidea – Modulidae

***Modulus tectum* (Gmelin, 1791)**

Fig. 4a frontal view (L = 4.47 mm) NHMW Mollusca 107 931

Fig. 4b back view

Fig. 4c apical view

Fig. 5a frontal view (L = 17.17 mm) NHMW Mollusca 107 932

Fig. 5b back view

Fig. 5c apical view

Cerithoidea – Planaxidae

***Planaxis savignyi* Deshayes, 1844**

Fig. 6a frontal view (L = 2.95 mm) NHMW Mollusca 107 933

Fig. 6b back view

Fig. 7 frontal view (L = 5.90 mm) NHMW Mollusca 107 934

Fig. 8a frontal view (L = 10.35 mm) NHMW Mollusca 107 935

Fig. 8b back view

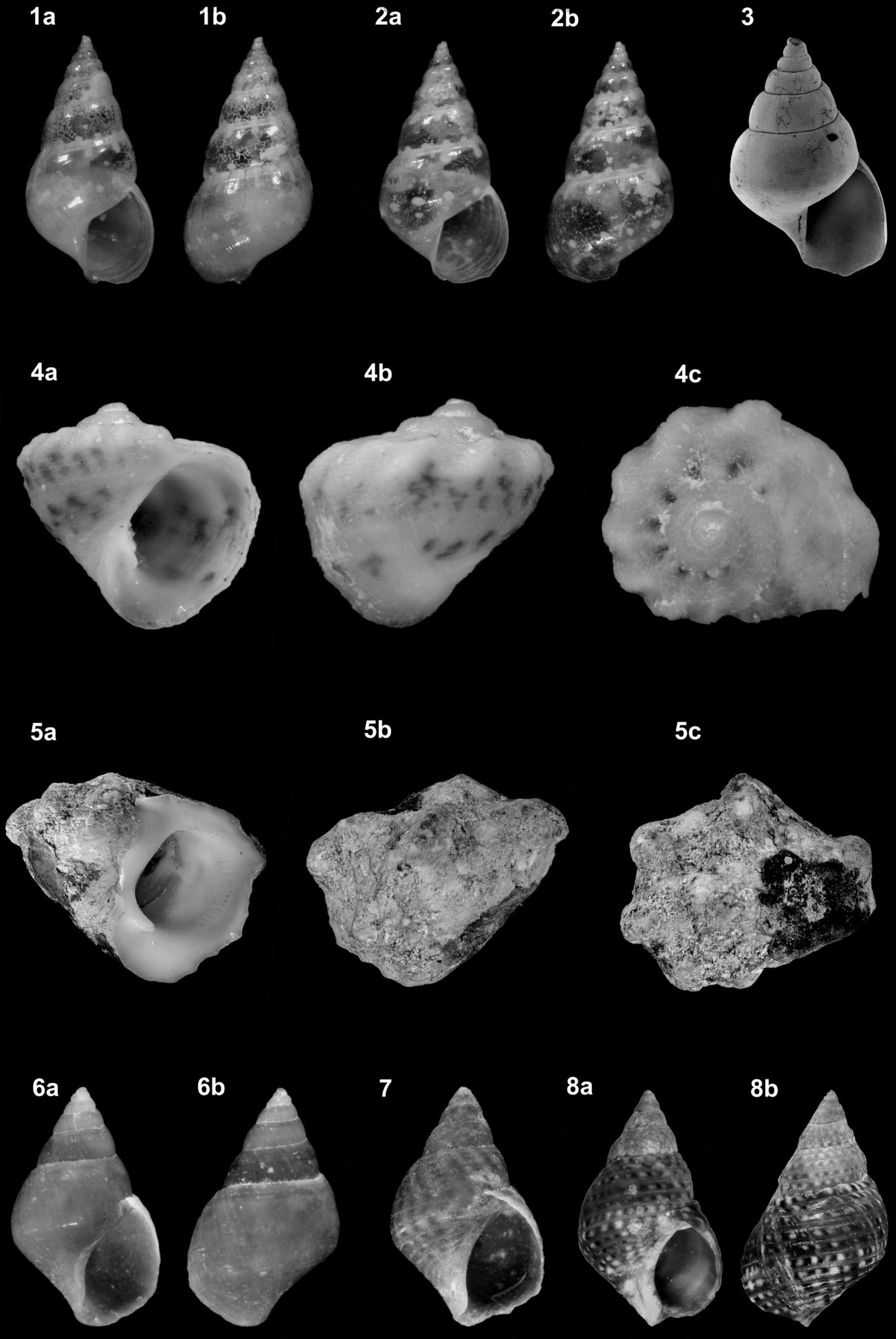

1a
1b
2a
2b
3
4a
4b
4c
5a
5b
5c
6a
6b
7
8a
8b

Plate 7

Cerithoidea – Potamididae

***Pirenella conica* (Blainville, 1829)**

Fig. 1 SEM frontal view, juvenile specimen (L = 2.84 mm) NHMW Mollusca 107 936

Fig. 2a frontal view (L = 9.68 mm) NHMW Mollusca 107 937

Fig. 2b back view

Cerithoidea – Scaliolidae

***Clathrofenella cerithina* (Philippi, 1849)**

Fig. 3a frontal view (L = 3.08 mm) NHMW Mollusca 107 938

Fig. 3b back view

Fig. 4a frontal view (L = 2.78 mm) NHMW Mollusca 107 939

Fig. 4b back view

Fig. 4c early spire whorls (scale bar = 100 µm)

Fig. 5a frontal view (L = 3.46 mm) NHMW Mollusca 107 940

Fig. 5b back view

Fig. 6 SEM frontal view (L = 3.53 mm) NHMW Mollusca 107 941

Fig. 7a SEM frontal view (L = 3.20 mm) NHMW Mollusca 107 942

Fig. 7b SEM protoconch (scale bar = 100 µm)

Fig. 7c SEM protoconch, apical view (scale bar = 100 µm)

***Finella pupoides* A. Adams, 1860**

Fig. 8a frontal view (L = 2.57 mm) NHMW Mollusca 107 943

Fig. 8b back view

Fig. 8c early whorls (scale bar = 100 µm)

Fig. 9 SEM frontal view (L = 3.34 mm) NHMW Mollusca 107 944

Fig. 10a SEM frontal view (L = 2.48 mm) NHMW Mollusca 107 945

Fig. 10b SEM protoconch (scale bar = 100 µm)

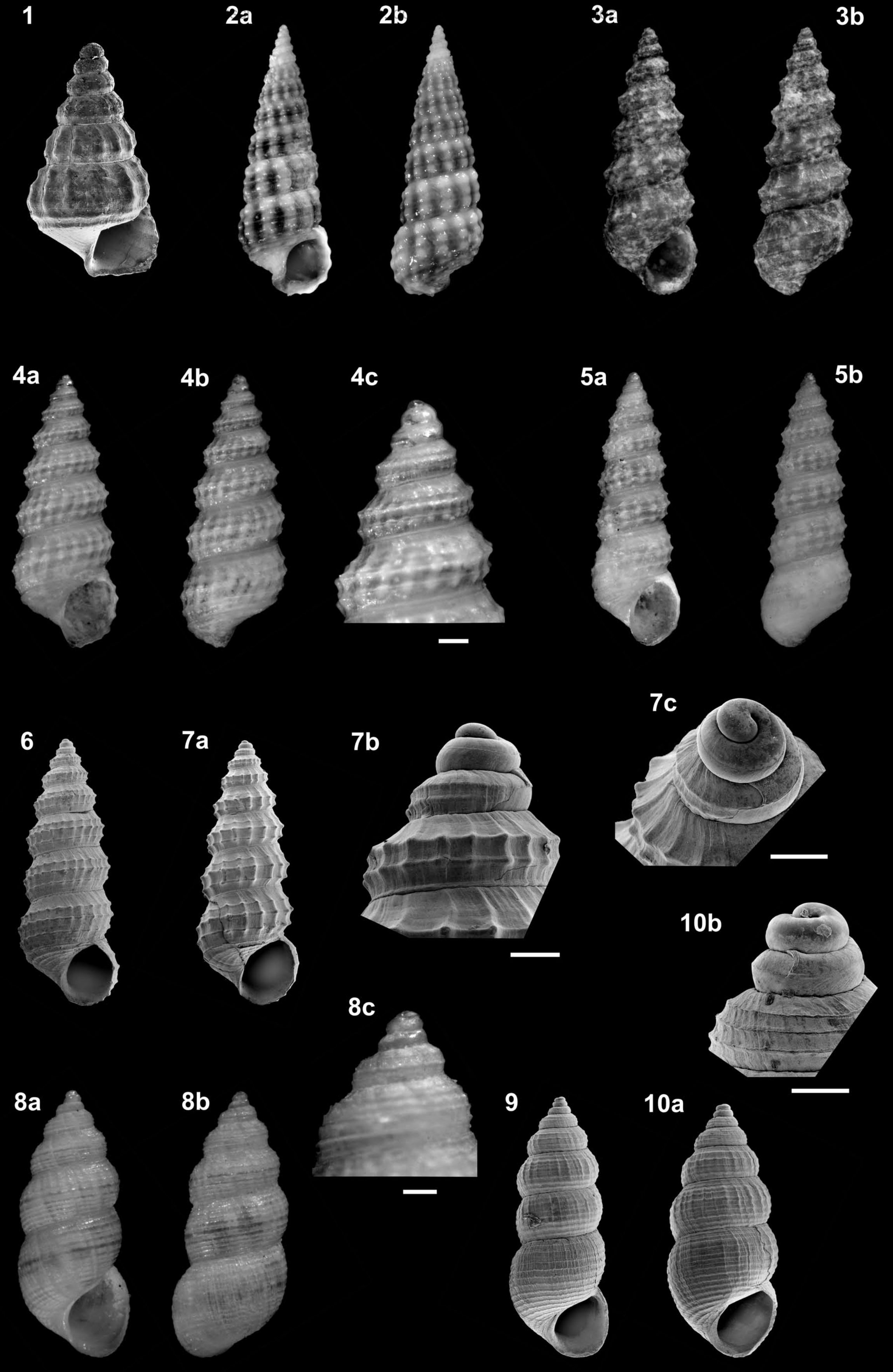

1
2a
2b
3a
3b
4a
4b
4c
5a
5b
6
7a
7b
7c
10b
8c
8a
8b
9
10a

Plate 8

Cerithoidea – Scaliolidae

***Scaliola bella* A. Adams, 1860**

Fig. 1a frontal view (L = 2.75 mm) NHMW Mollusca 107 946

Fig. 1b back view

Fig. 1c back view, early whorls (scale bar = 100 µm)

***Scaliola elata* Issel, 1869**

Fig. 2a frontal view (L = 2.90 mm) NHMW Mollusca 107 947

Fig. 2b back view

Fig. 2c back view, early whorls (scale bar = 100 µm)

Cerithoidea – Siliquariidae

***Tenagodus* sp.**

Fig. 3a frontal view (L = 2.98 mm) NHMW Mollusca 107 948

Fig. 3b back view

Fig. 3c apical view

Fig. 4a frontal view (L = 3.85 mm) NHMW Mollusca 107 949

Fig. 4b back view

Cerithoidea – Turritellidae

***Archimediella maculata* (Reeve, 1849)**

Fig. 5a frontal view, early whorls (L = 4.43 mm) NHMW Mollusca 107 950

Fig. 5b back view

Fig. 6a frontal view (L = 73.00 mm) NHMW Mollusca 107 951

Fig. 6b back view

***Haustator aurocinctus* (Martens, 1882)**

Fig. 7a frontal view, early whorls (L = 2.61 mm) NHMW Mollusca 107 952

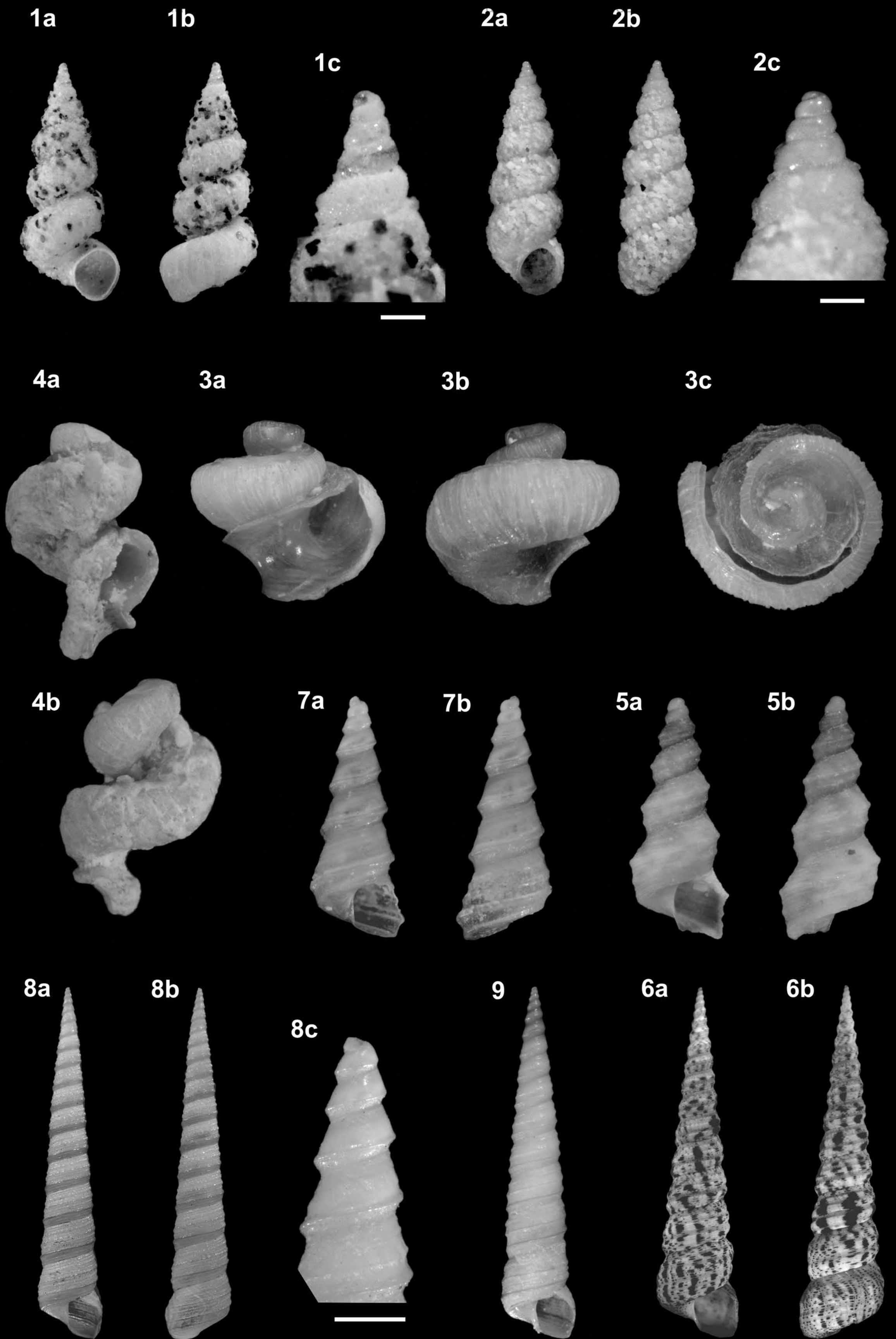
Fig. 7b back view

Fig. 8a frontal view (L = 26.94 mm) NHMW Mollusca 107 953

Fig. 8b back view

Fig. 8c back view, early whorls (scale bar = 0.5 mm)

Fig. 9 frontal view (L = 13.55 mm) NHMW Mollusca 107 954



1a
1b
1c
2a
2b
2c
4a
3a
3b
3c
4b
7a
7b
5a
5b
8a
8b
8c
9
6a
6b

Plate 9

Cerithoidea – Turritellidae

***Turritella* (s. lat.) *alba* H. Adams, 1872**

Fig. 1a frontal view (L = 3.96 mm) NHMW Mollusca 107 955

Fig. 1b back view

Fig. 2a frontal view, early whorls (L = 2.40 mm) NHMW Mollusca 107 956

Campaniloidea – Plesiotrochidae

***Plesiotrochus* aff. *acutangulus* (Yokoyama, 1924)**

Fig. 3a frontal view (L = 5.09 mm) NHMW Mollusca 107 957

Fig. 3b back view

Fig. 4a SEM frontal view (L = 2.48 mm) NHMW Mollusca 107 958

Fig. 4b SEM protoconch (scale bar = 100 µm)

***Plesiotrochus unicinctus* (A. Adams, 1853)**

Fig. 5a frontal view (L = 4.72 mm) NHMW Mollusca 107 959

Fig. 5b back view

Fig. 5c protoconch (scale bar = 100 µm)

Fig. 6 SEM frontal view (L = 3.58 mm) NHMW Mollusca 107 960

Capuloidea – Capulidae

***Separatista helicoides* (Gmelin, 1791)**

Fig. 7a frontal view (L = 3.02 mm) NHMW Mollusca 107 961

Fig. 7b back view

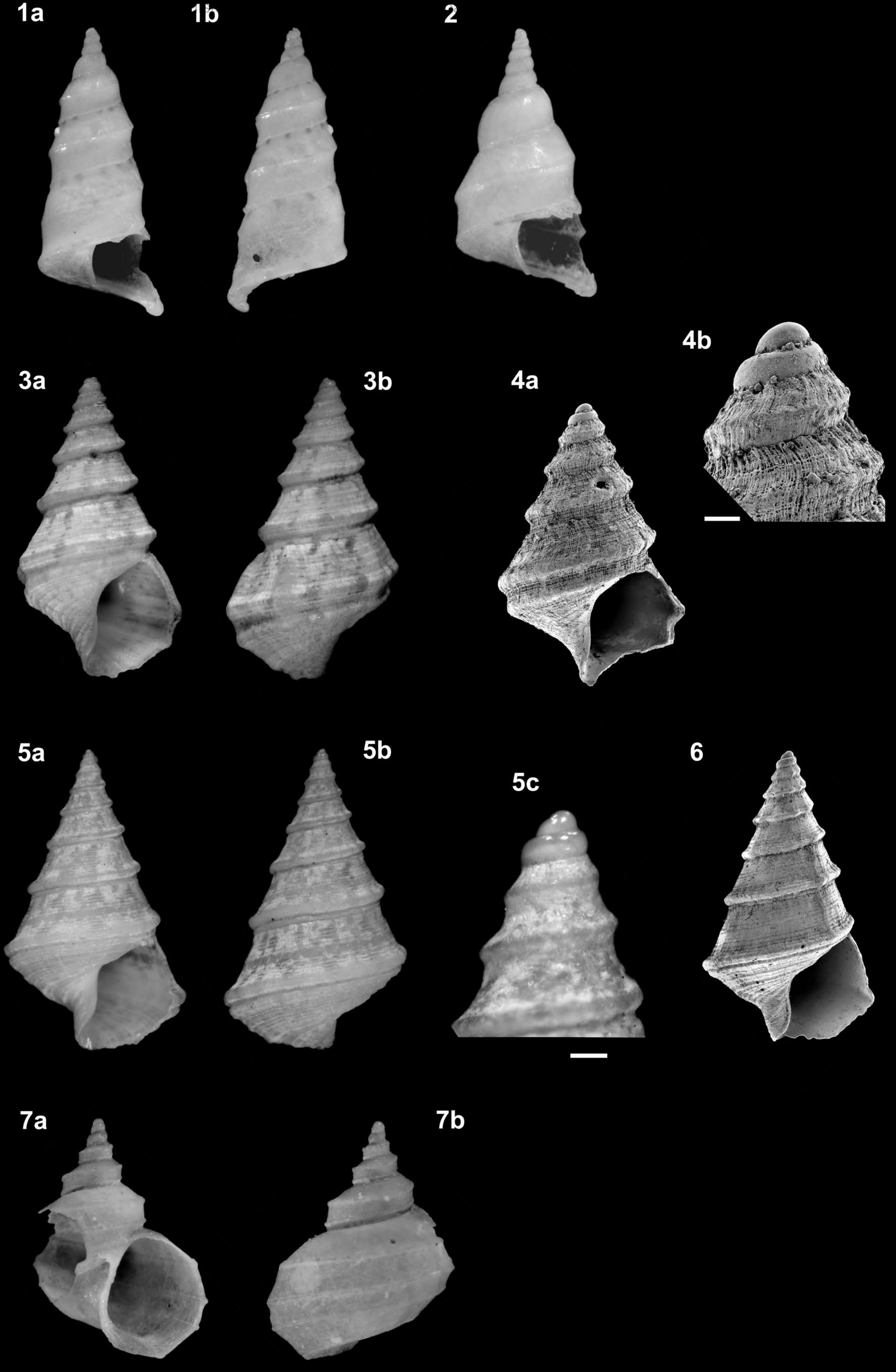

1a
1b
2
3a
3b
4a
4b
5a
5b
5c
6
7a
7b

Plate 10

Cypraeoidea – Cypraeidae

***Erosaria macandrewi* (G. B. Sowerby (III), 1870)**

Fig. 1a dorsal view (L = 17.29 mm) NHMW Mollusca 107 962

Fig. 1b ventral view

Fig. 1c lateral view

***Erosaria nebrites* (Melvill, 1888)**

Fig. 2a dorsal view (L = 46.57 mm) NHMW Mollusca 107 963

Fig. 2b ventral view

Fig. 2c lateral view

Fig. 3 dorsal view (L = 29.92 mm) NHMW Mollusca 107 964

Fig. 4 dorsal view (L = 30.10 mm) NHMW Mollusca 107 965

Fig. 5 dorsal view (L = 26.53 mm) NHMW Mollusca 107 966

***Erronea caurica quinquefasciata* (Röding, 1798)**

Fig. 6a dorsal view (L = 39.73 mm) NHMW Mollusca 107 967

Fig. 6b ventral view

Fig. 6c lateral view

***Luria isabella isabella* (Linnaeus, 1758)**

Fig. 7a dorsal view (L = 26.13 mm) NHMW Mollusca 107 968

Fig. 7b ventral view

Fig. 7c lateral view


1a
1b
1c
2a
2b
2c
3
4
5
6a
6b
6c
7a
7b
7c

Plate 11

Cypraeoidea – Cypraeidae

***Lyncina carneola* (Linnaeus, 1758)**

Fig. 1a dorsal view (L = 44.72 mm) NHMW Mollusca 107 969

Fig. 1b ventral view

Fig. 1c lateral view

***Mauritia arabica grayana* (Schilder, 1930)**

Fig. 2a dorsal view (L = 50.70 mm) NHMW Mollusca 107 970

Fig. 2b ventral view

Fig. 2c lateral view

***Staphylaea staphylaea laevigata* (Dautzenberg, 1932)**

Fig. 3a dorsal view (L = 17.31 mm) NHMW Mollusca 107 971

Fig. 3b ventral view

Fig. 3c lateral view

Cypraeoidea – Pediculariidae

***Pseudocypraea adamsonii* (G. B. Sowerby (II), 1832)**

Fig. 4a dorsal view (L = 8.39 mm) NHMW Mollusca 107 972

Fig. 4b ventral view

Fig. 4c lateral view


1a
1b
1c
2a
2b
2c
3a
3b
3c
4a
4b
4c

Plate 12

Cypraeoidea – Cypraeidae

Cypraeidae juv. indet.

Fig. 1a frontal view (L = 8.17 mm) NHMW Mollusca 107 973

Fig. 1b back view

Littorinoidea – Littorinidae

***Littoraria intermedia* (Philippi, 1846)**

Fig. 2a frontal view (L = 6.08 mm) NHMW Mollusca 107 974

Fig. 2b back view

Fig. 3a frontal view (L = 12.29 mm) NHMW Mollusca 107 975

Fig. 3b back view

***Peasiella infracostata* (Issel, 1869)**

Fig. 4a frontal view (L = 2.04 mm) NHMW Mollusca 107 976

Fig. 4b back view

Fig. 5 SEM dorsal view (L = 1.42 mm) NHMW Mollusca 107 977

***Peasiella isseli* (Issel, 1869)**

Fig. 6a fronatal view (L = 2.15 mm) NHMW Mollusca 107 978

Fig. 6b back view

Littorinoidea – Pickworthiidae

***Mareleptopoma* nov. spec.**

Fig. 7a frontal view (L = 1.53 mm) NHMW Mollusca 107 979

Fig. 7b back view

Fig. 8a SEM frontal view (L = 1.36 mm) NHMW Mollusca 107 980

Fig. 8b SEM protoconch (scale bar = 100 µm)

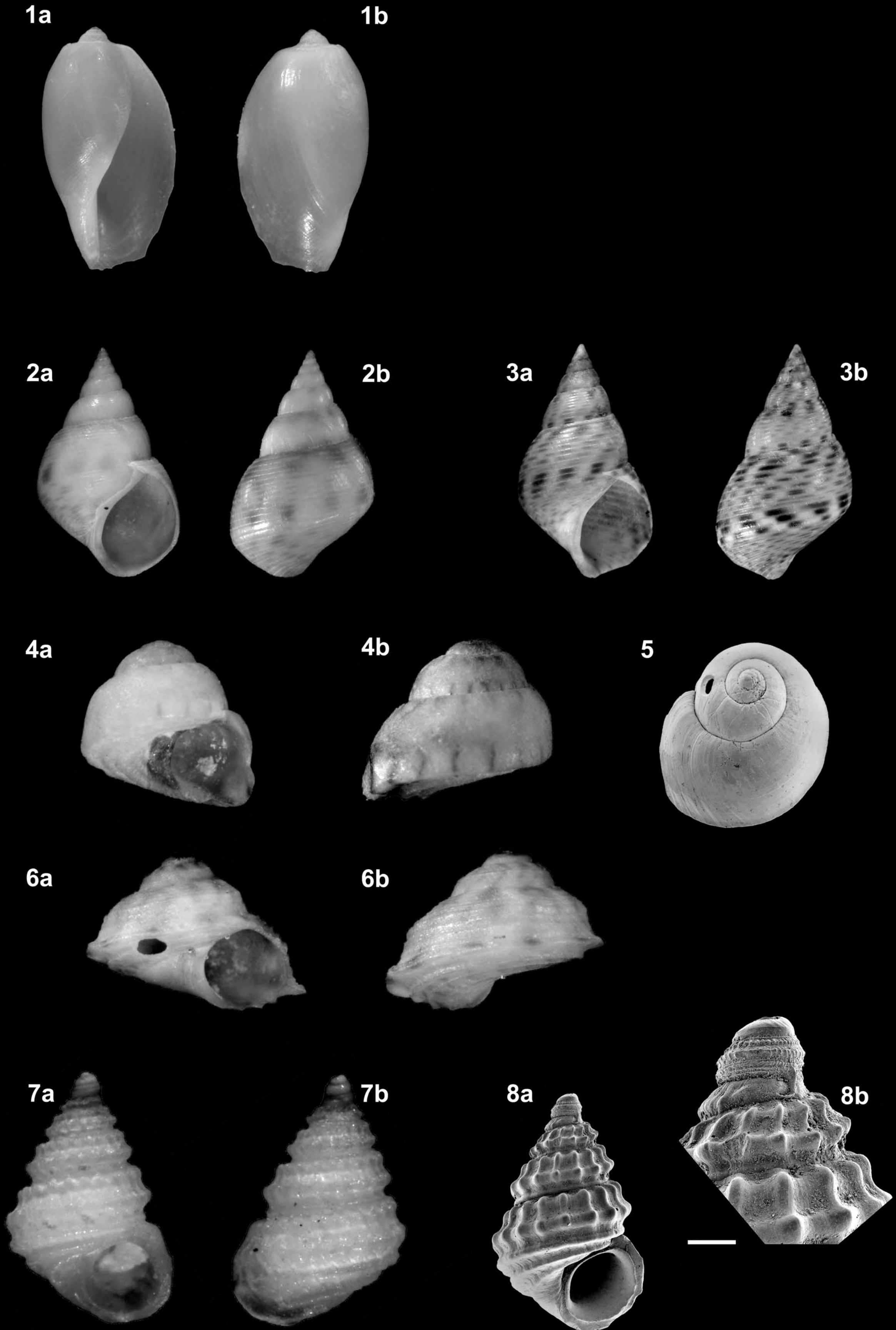

1a
1b
2a
2b
3a
3b
4a
4b
5
6a
6b
7a
7b
8a
8b

Plate 13

Naticoidea – Naticidae

***Mammilla melanostoma* (Gmelin, 1791)**

Fig. 1a frontal view (L = 19.06 mm) NHMW Mollusca 107 981

Fig. 1b back view

Fig. 2a frontal view (L = 34.30 mm) NHMW Mollusca 107 982

Fig. 2b back view

***Mammilla simiae* (Deshayes, 1838)**

Fig. 3a frontal view (L = 17.46 mm) NHMW Mollusca 107 983

Fig. 3b back view

Fig. 4a frontal view (L = 10.23 mm) NHMW Mollusca 107 984

Fig. 4b back view

***Natica buriasiensis* Récluz, 1844**

Fig. 5a frontal view (L = 6.50 mm) NHMW Mollusca 107 985

Fig. 5b back view

***Naticarius onca* (Röding, 1798)**

Fig. 6a frontal view (L = 3.66 mm) NHMW Mollusca 107 986

Fig. 6b back view

Fig. 7a frontal view (L = 7.24 mm) NHMW Mollusca 107 987

Fig. 7b back view

Fig. 8a frontal view (L = 18.87 mm) NHMW Mollusca 107 988

Fig. 8b back view

***Notocochlis gualteriana* (Récluz, 1844)**

Fig. 9a SEM frontal view, juvenile specimen (L = 3.22 mm)
NHMW Mollusca 107 989

Fig. 9b SEM protoconch (scale bar = 100 µm)

Fig. 10a frontal view (L = 9.51 mm) NHMW Mollusca 107 990

Fig. 10b back view

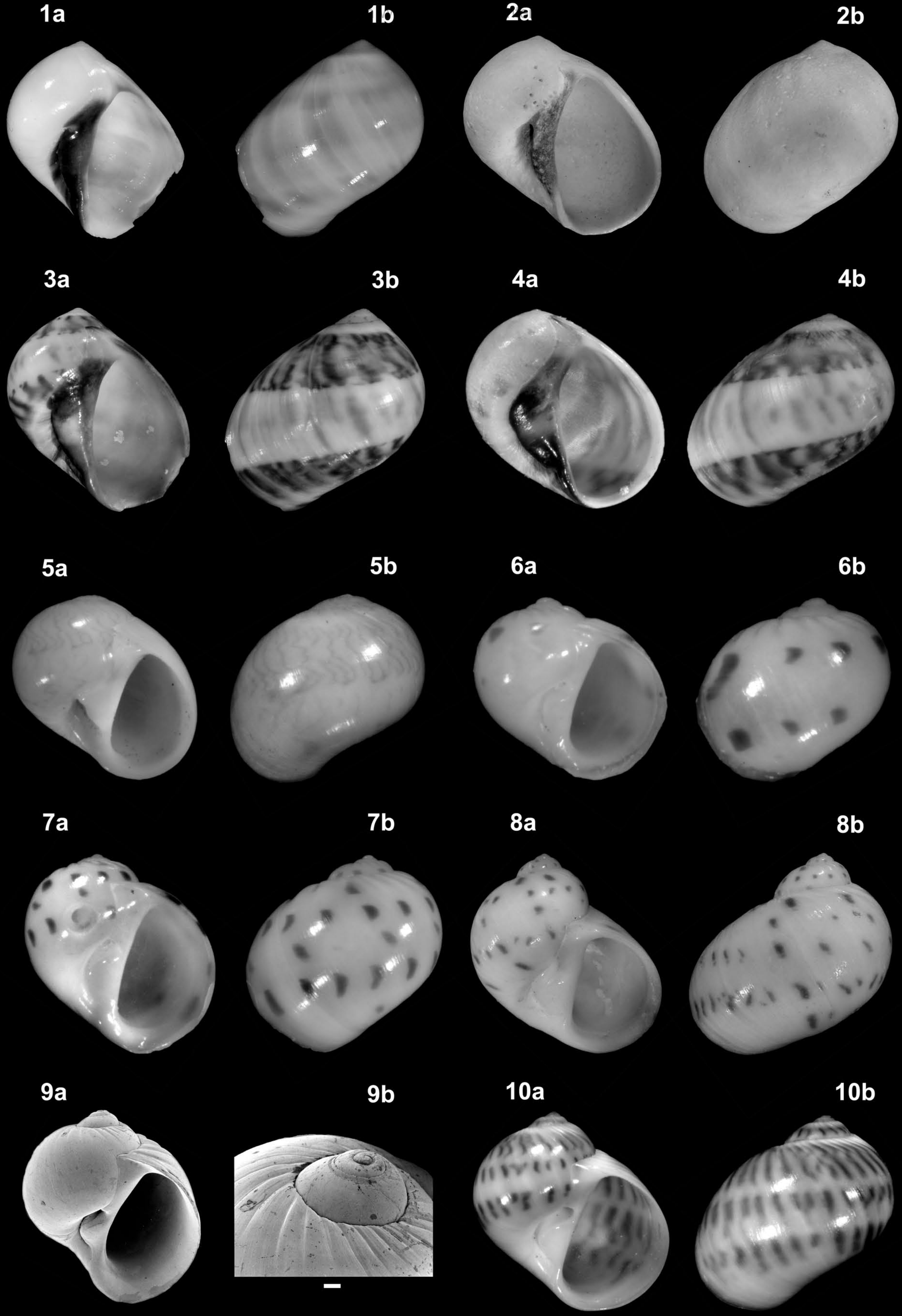

1a
1b
2a
2b
3a
3b
4a
4b
5a
5b
6a
6b
7a
7b
8a
8b
9a
9b
10a
10b

Plate 14

Naticoidea – Naticidae

***Notocochlis gualteriana* (Récluz, 1844)**

Fig. 1a frontal view (L = 14.39 mm) NHMW Mollusca 107 991

Fig. 1b back view

Fig. 2a frontal view, juvenile specimen (L = 2.04 mm) NHMW Mollusca 107 992

Fig. 2b back view

Fig. 3a frontal view (L = 4.39mm) NHMW Mollusca 107 993

Fig. 3b back view

***Tanea euzona* (Récluz, 1844)**

Fig. 4a frontal view (L = 6.79 mm) NHMW Mollusca 107 994

Fig. 4b back view

***Polinices flemingianus* (Récluz, 1844)**

Fig. 5a frontal view (L = 34.55 mm) NHMW Mollusca 107 995

Fig. 5b back view

***Polinices mammilla* (Linnaeus, 1758)**

Fig. 6a frontal view (L = 16.53 mm) NHMW Mollusca 107 996

Fig. 6b back view

***Sigatica mienisi* (Kilburn, 1988)**

Fig. 7a frontal view (L = 16.62 mm) NHMW Mollusca 107 997

Fig. 7b back view

Fig. 7c apical view

Fig. 7d umbilical view

Fig. 8a frontal view (L = 11.12 mm) NHMW Mollusca 107 998

Fig. 8b back view

Fig. 9a frontal view, juvenile specimen (L = 5.53 mm) SMF 336 130

Fig. 9b back view

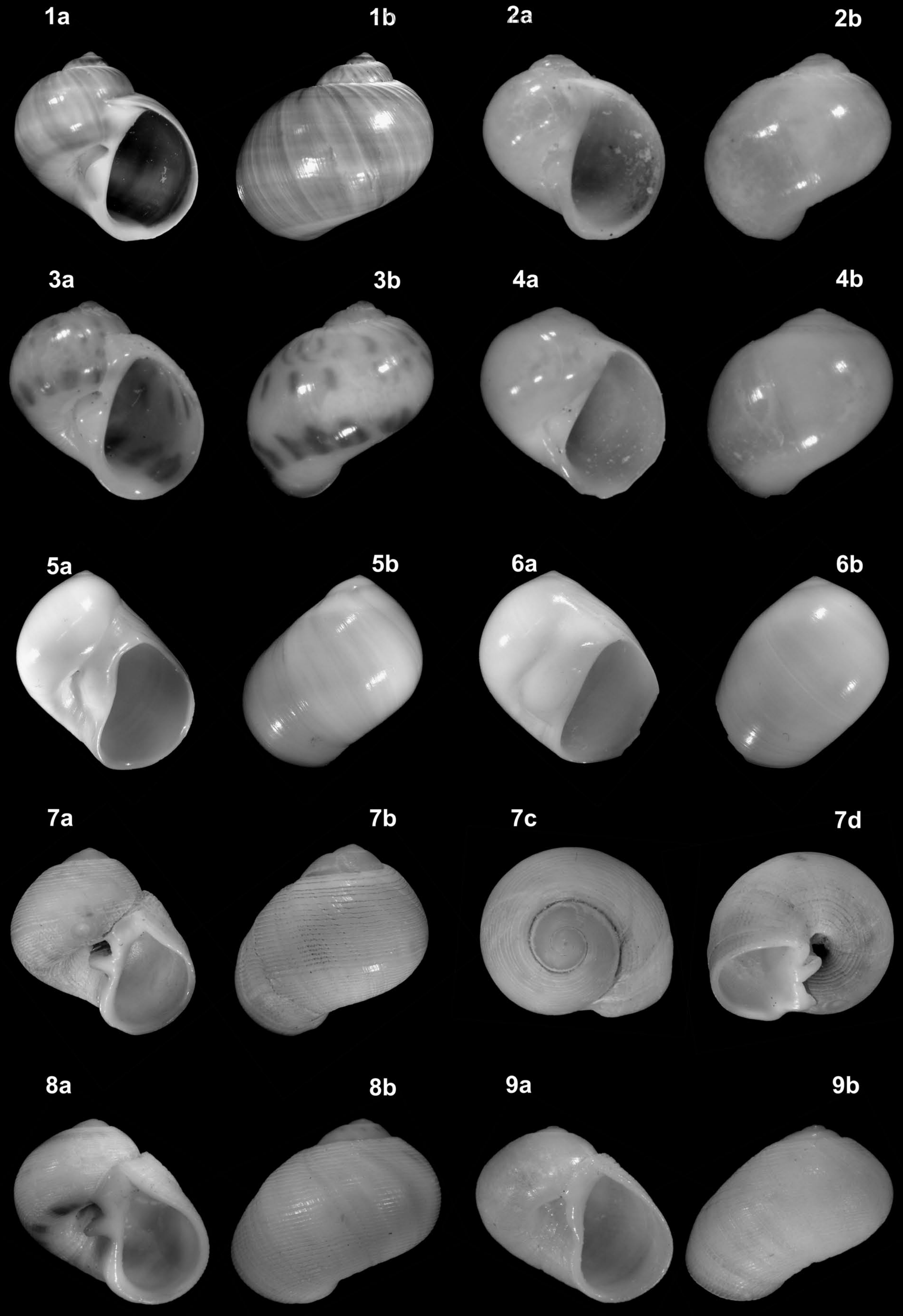

1a
1b
2a
2b
3a
3b
4a
4b
5a
5b
6a
6b
7a
7b
7c
7d
8a
8b
9a
9b

Plate 15

Pterotracheoidea – Atlantidae

***Atlanta* sp**

Fig. 1a dorsal view (L = 0.61 mm) NHMW Mollusca 108 000

Fig. 1b ventral view

Fig. 2a dorsal view (L = 0.67 mm) NHMW Mollusca 108 001

Fig. 2b ventral view

Fig. 2c frontal view

Rissooidea – Rissoidae – Rissoinae

***Parashiela* sp.**

Fig. 3a frontal view (L = 1.38 mm) NHMW Mollusca 108 002

Fig. 3b back view

Fig. 3c SEM frontal view

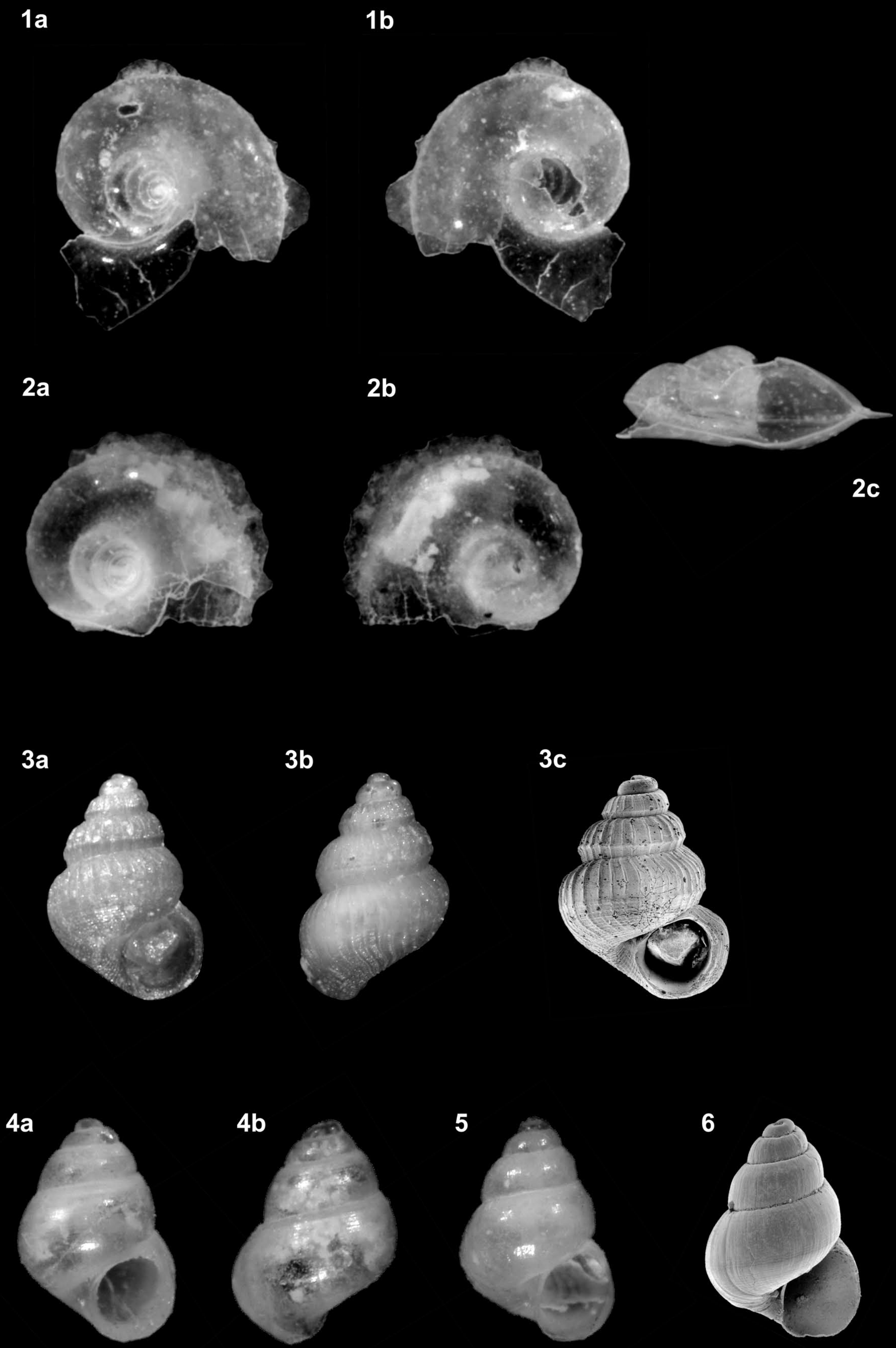
***Voorwindia tiberiana* (Issel, 1869)**

Fig. 4a frontal view (L = 1.27 mm) NHMW Mollusca 108 003

Fig. 4b back view

Fig. 5 frontal view (L = 1.51 mm) NHMW Mollusca 108 004

Fig. 6 SEM frontal view (L = 1.10 mm) NHMW Mollusca 108 005



1a
1b
2a
2b
2c
3a
3b
3c
4a
4b
5
6

Plate 16

Rissooidea – Rissoidae – Rissoininae

***Rissoina* (*Apataxia*) *cerithiiformis* Tryon, 1887**

Fig. 1a frontal view (L = 3.47 mm) NHMW Mollusca 108 006

Fig. 1b back view

Fig. 2a SEM frontal view (L = 3.54 mm) NHMW Mollusca 108 007

Fig. 2b SEM protoconch (scale bar = 100 µm)

***Rissoina* (*Moerchiella*) *dorbignyi* A. Adams, 1851**

Fig. 3a frontal view, fragment spire whorls (L = 2.52 mm) NHMW Mollusca 108 008

Fig. 3b back view

***Rissoina* (*Phosinella*) *digera* Laseron, 1956**

Fig. 4a frontal view (L = 2.39 mm) NHMW Mollusca 108 009

Fig. 4b back view

Fig. 5a SEM frontal view (L = 2.41 mm) NHMW Mollusca 108 010

Fig. 5b SEM apical view (scale bar = 100 µm)

***Rissoina* (*Rissoina*) *ambigua* (Gould, 1849)**

Fig. 6a frontal view (L = 4.50 mm) NHMW Mollusca 108 011

Fig. 6 b back view

Fig. 7 SEM frontal view (L = 3.99 mm) NHMW Mollusca 108 012

***Rissoina* (*Rissoina*) *dimidiata* Jickeli, 1882**

Fig. 8a frontal view (L = 3.51 mm) NHMW Mollusca 108 013

Fig. 8b back view

Fig. 9a SEM frontal view (L = 4.38 mm) NHMW Mollusca 108 014

Fig. 9b SEM protoconch (scale bar = 100 µm)

***Rissoina* (*Rissolina*) *bertholleti* Issel, 1869**

Fig. 10a frontal view, fragment spire whorls (L = 2.15 mm) NHMW Mollusca 108 015

Fig. 10b back view

Fig. 11a SEM frontal view, fragment spire whorls (L = 2.68 mm) NHMW Mollusca 108 016

Fig. 11b back view

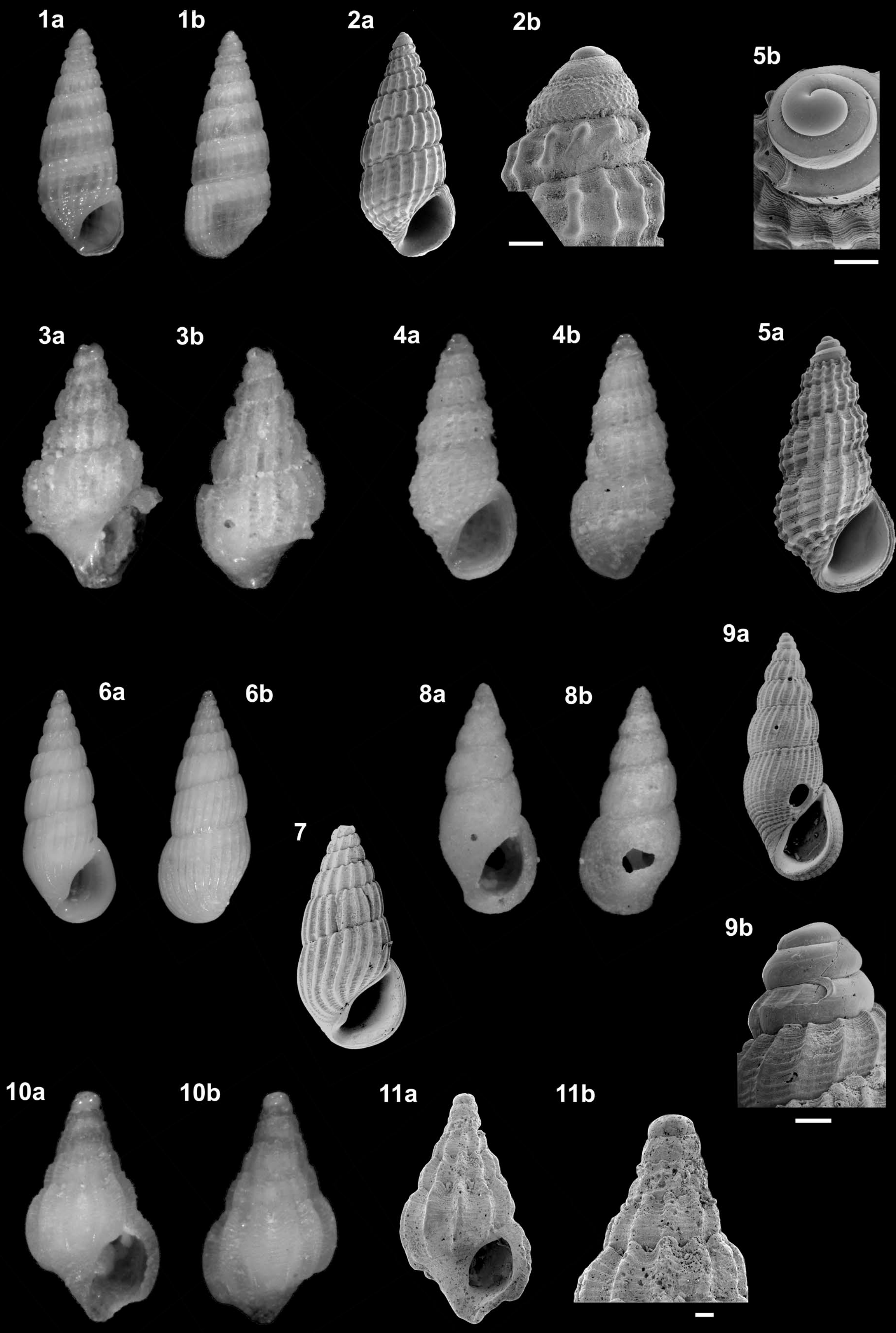

1a
1b
2a
2b
5b
3a
3b
4a
4b
5a
9a
6a
6b
8a
8b
7
9b
10a
10b
11a
11b

Plate 17

Rissooidea – Rissoidae – Rissoininae

***Schwartziella* (*Pandalosia*) *ephamilla* (Watson, 1886)**

Fig. 1a frontal view (L = 1.95 mm) NHMW Mollusca 108 017

Fig. 1b back view

Fig. 2a frontal view (L = 2.32 mm) NHMW Mollusca 108 018

Fig. 2b back view

Fig. 3a SEM frontal view (L = 2.32 mm) NHMW Mollusca 108 019

Fig. 3b SEM protoconch (scale bar = 100 µm)

***Schwartziella* (*Pandalosia*) *subfirmata* (O. Boettger, 1887)**

Fig. 4 SEM frontal view (L = 2.96 mm) NHMW Mollusca 108 020

***Schwartziella* (*Schwartziella*) *triticea* (Pease, 1861)**

Fig. 5a frontal view (L = 2.88 mm) NHMW Mollusca 108 021

Fig. 5 back view

Fig. 6 SEM frontal view (L = 2.71 mm) NHMW Mollusca 108 022

***Stosicia lochi* Sleurs, 1996**

Fig. 7a frontal view (L = 3.82 mm) NHMW Mollusca 108 023

Fig. 7b back view

Fig. 8 SEM back view (L = 3.96 mm) NHMW Mollusca 108 024

Fig. 9a SEM frontal view (L = 4.17 mm) NHMW Mollusca 108 025

Fig. 9b SEM protoconch (scale bar = 100 µm)

***Zebina* (*Zebina*) *stoppanii* (Issel, 1869)**

Fig. 10a frontal view (L = 2.84 mm) NHMW Mollusca 108 026

Fig. 10b back view

***Zebina* (*Zebina*) *tridentata* (Michaud, 1830)**

Fig. 11a frontal view, semiadult specimen (L = 8.52 mm) NHMW Mollusca 108 027

Fig. 11b back view

Fig. 12 frontal view, juvenile specimen (L = 1.76 mm) NHMW Mollusca 108 028

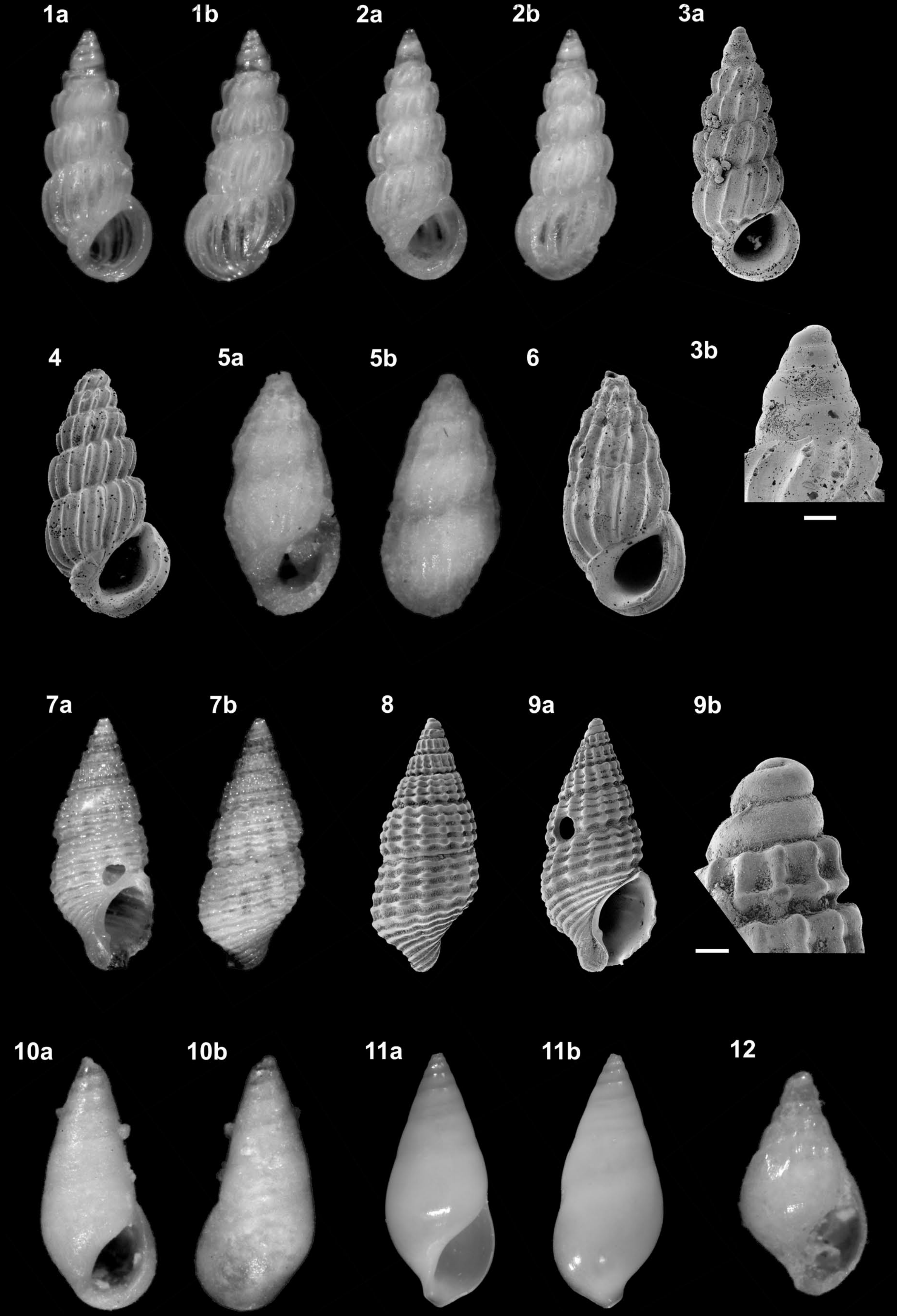

1a
1b
2a
2b
3a
4
5a
5b
6
3b
7a
7b
8
9a
9b
10a
10b
11a
11b
12

Plate 18

Rissooidea – Tornidae

***Circulus novemcarinatus* (Melvill, 1906)**

Fig. 1a dorsal view (L = 1.79 mm) NHMW Mollusca 108 029

Fig. 1b ventral view

Fig. 1c frontal view

Fig. 1d SEM dorsal view

Fig. 1e SEM frontal view

***Circulus octoliratus* (Carpenter, 1856)**

Fig. 2a dorsal view (L = 0.92 mm) NHMW Mollusca 108 030

Fig. 2b ventral view

Fig. 2c frontal view

Fig. 2d SEM dorsal view

Fig. 2e SEM frontal view

***Lodderia* sp.**

Fig. 3a dorsal view (L = 1.60 mm) NHMW Mollusca 108 031

Fig. 3b ventral view

Fig. 3c frontal view

Fig. 3d SEM dorsal view

Fig. 3e SEM frontal view

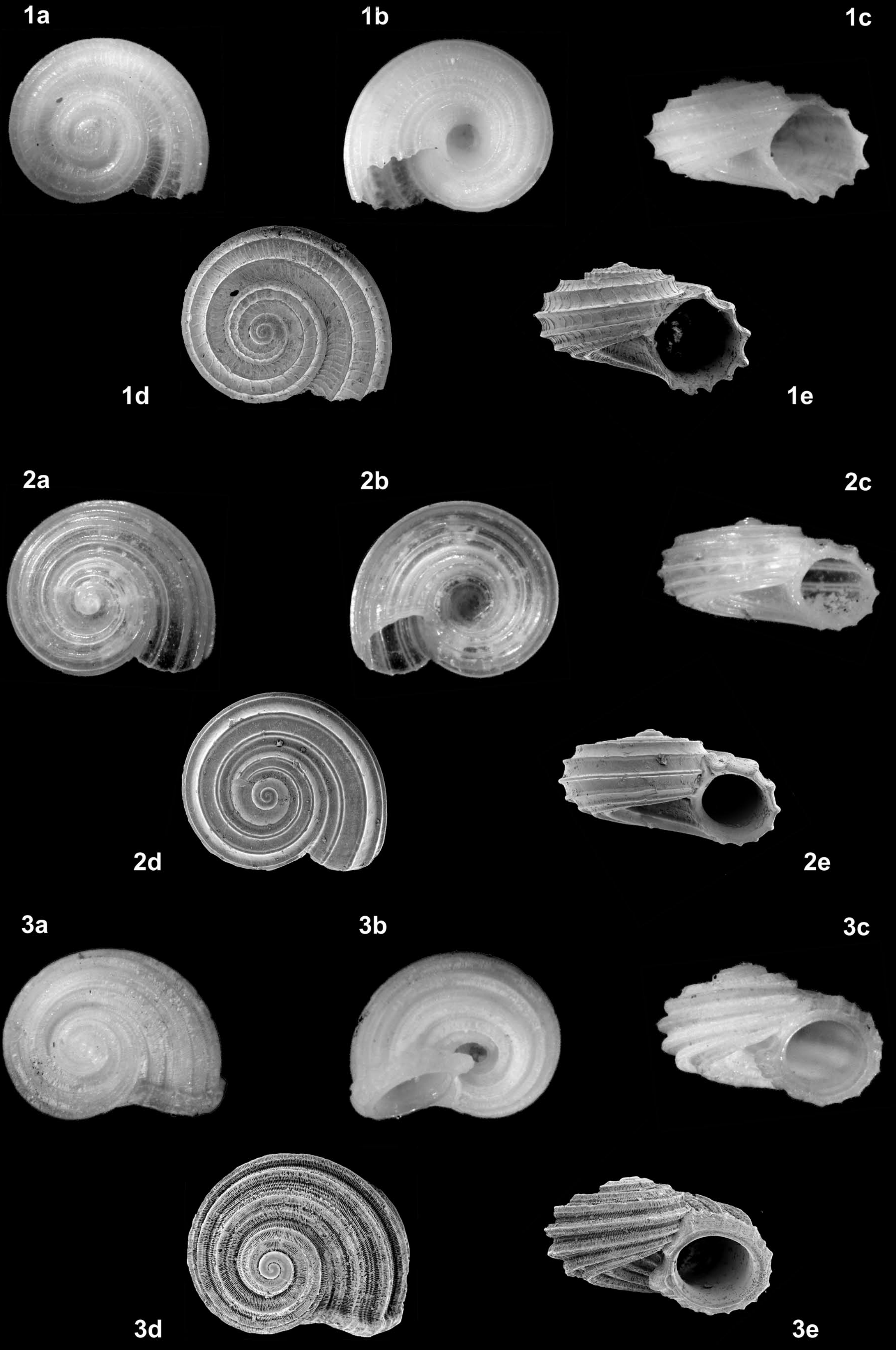

1a
1b
1c
1d
1e
2a
2b
2c
2d
2e
3a
3b
3c
3d
3e

Plate 19

Rissooidea – Tornidae

***Pygmaerota* sp.**

Fig. 1a dorsal view (L = 0.64 mm) NHMW Mollusca 108 032

Fig. 1b ventral view

Fig. 1c SEM dorsal view

Fig. 1d SEM frontal view

***Teinostoma* (*Esmeralda*) *aloysii* Selli, 1973**

Fig. 2a dorsal view (L = 0.69 mm) NHMW Mollusca 108 033

Fig. 2b ventral view

Fig. 2c back view

Fig. 2d frontal view

Fig. 2e SEM dorsal view

Fig. 2f SEM frontal view

***Vitrinella* (s. lat.) sp.**

Fig. 3a dorsal view (L = 0.48 mm) NHMW Mollusca 108 034

Fig. 3b ventral view

Stromboidea – Strombidae

Strombidae juv. indet.

Fig. 4a frontal view (L = 8.54 mm) NHMW Mollusca 108 035

Fig. 4b back view

Fig. 5a frontal view (L = 10.99 mm) NHMW Mollusca 108 036

Fig. 5b back view

Fig. 6a frontal view (L = 2.57 mm) NHMW Mollusca 108 037

Fig. 6b back view

Fig. 7a frontal view (L = 3.84 mm) NHMW Mollusca 108 038

Fig. 7b back view

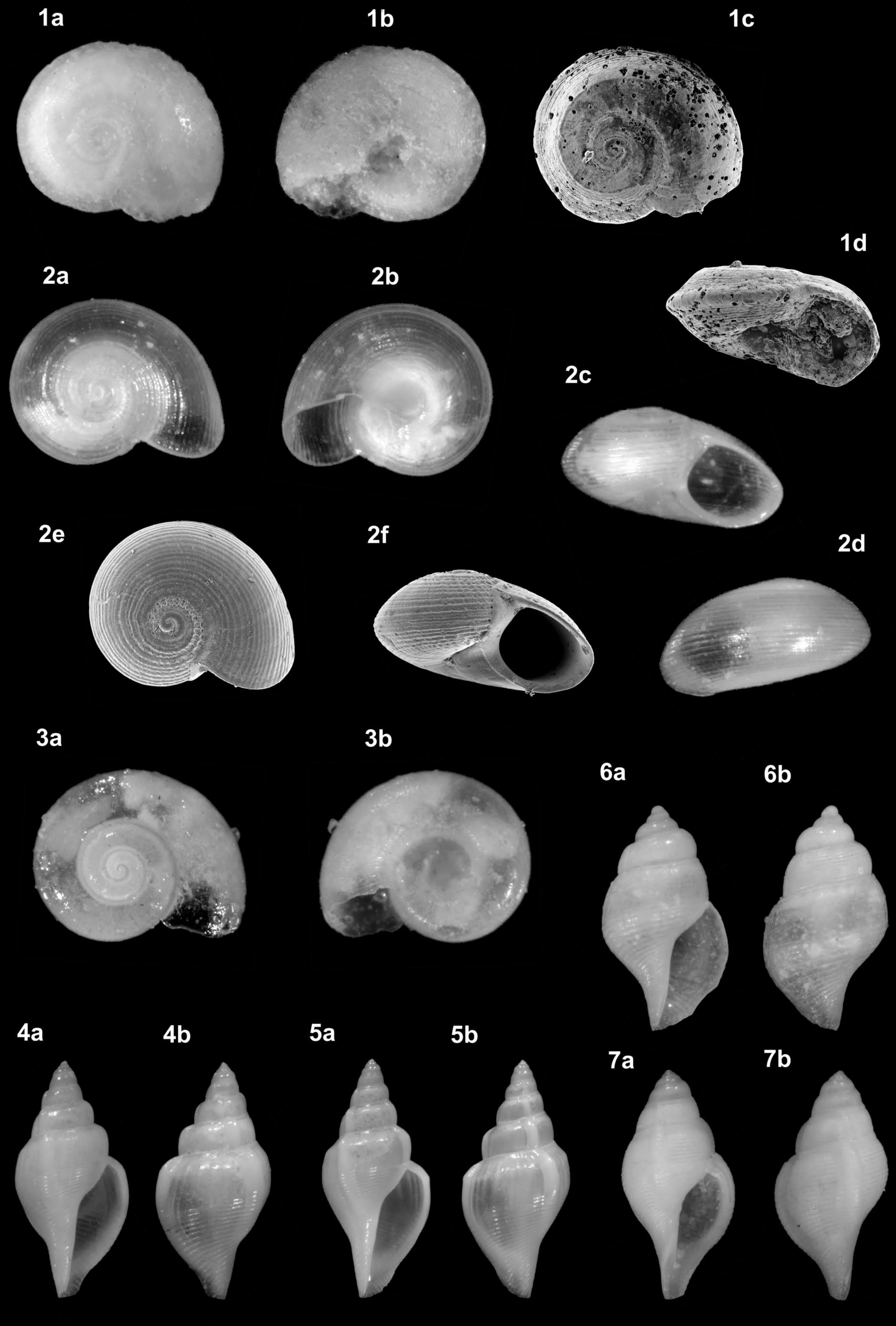

1a
1b
1c
1d
2a
2b
2c
2e
2f
2d
3a
3b
6a
6b
4a
4b
5a
5b
7a
7b

Plate 20

Stromboidea- Seraphsidae

***Terebellum terebellum* (Linnaeus, 1758)**

Fig. 1a frontal view (L = 28.07 mm) NHMW Mollusca 108 039

Fig. 1b back view

Stromboidea – Strombidae

***Canarium erythrinum* (Dillwyn, 1817)**

Fig. 2a frontal view (L = 37.12 mm) NHMW Mollusca 108 040

Fig. 2b back view

Fig. 3a frontal view (L = 24.64 mm) NHMW Mollusca 108 041

Fig. 3b back view

***Canarium fusiforme* (G. B. Sowerby (II), 1842)**

Fig. 4a frontal view (L = 30.64 mm) NHMW Mollusca 108 042

Fig. 4b back view

***Canarium mutabile* (Swainson, 1821)**

Fig. 5a frontal view (L = 26.76 mm) NHMW Mollusca 108 043

Fig. 5b back view

Fig. 6a frontal view, semiadult specimen (L = 20.56 mm) NHMW Mollusca 108 044

Fig. 6b back view

***Conomurex fasciatus* (Born, 1778)**

Fig. 7a frontal view (L = 36.05 mm) NHMW Mollusca 108 045

Fig. 7b back view

Fig. 8a frontal view, semiadult specimen (L = 25.14 mm) NHMW Mollusca 108 046

Fig. 8b back view

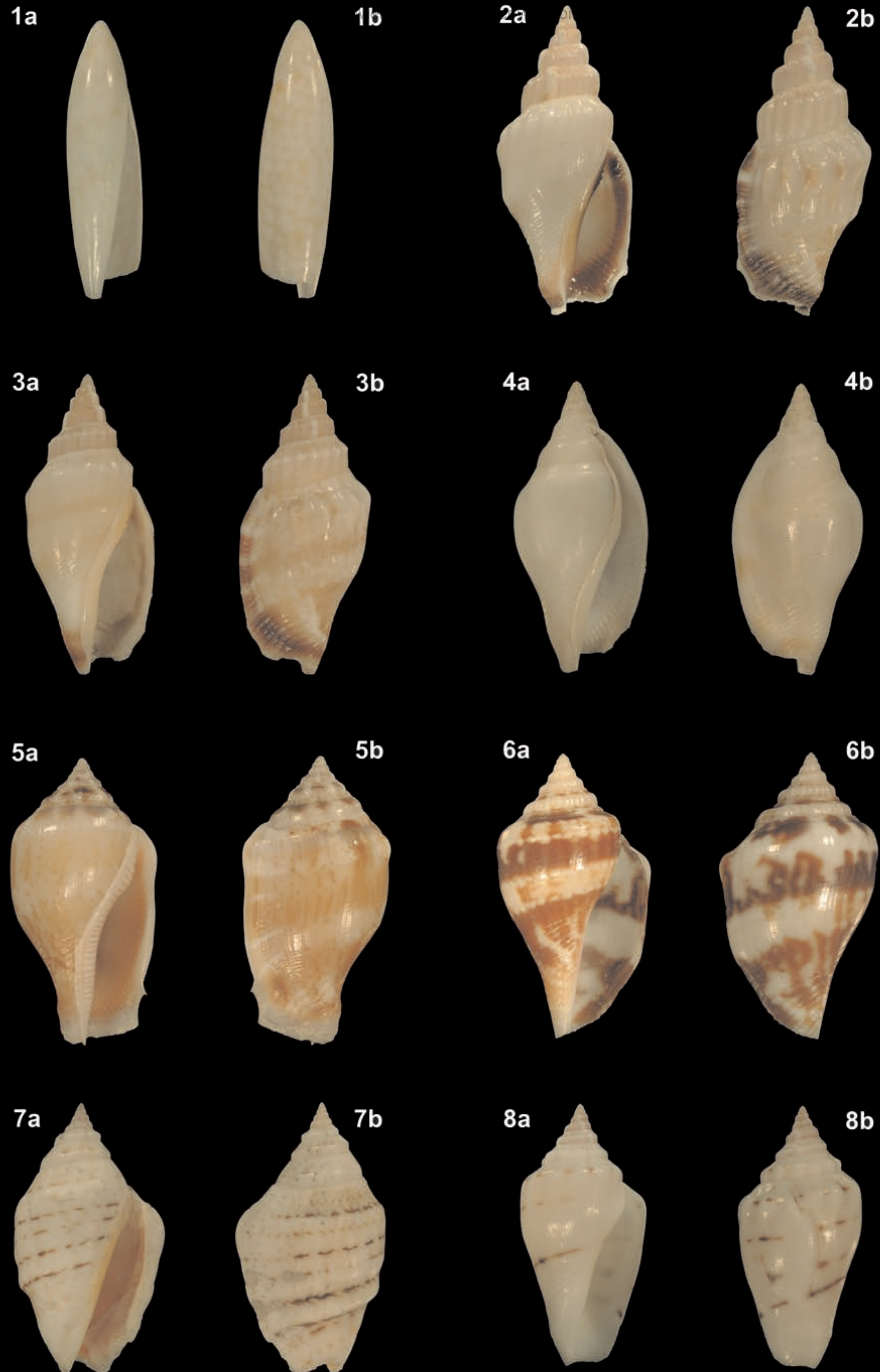

1a
1b
2a
2b
3a
3b
4a
4b
5a
5b
6a
6b
7a
7b
8a
8b

Plate 21

Stromboidea – Strombidae

***Dolomena plicata plicata* (Röding, 1798)**

Fig. 1a frontal view (L = 52.70 mm) NHMW Mollusca 108 047

Fig. 1b back view

Fig. 2a frontal view, semiadult specimen (L = 31.53 mm) NHMW Mollusca 108 048

Fig. 2b back view

***Gibberulus gibberulus albus* (Mörch, 1850)**

Fig. 3a frontal view (L = 40.04 mm) NHMW Mollusca 108 049

Fig. 3b back view

Fig. 4a frontal view (L = 40.72 mm) NHMW Mollusca 108 050

Fig. 4b back view

Fig. 5a frontal view, semiadult specimen (L = 22.92 mm) NHMW Mollusca 108 051

Fig. 5b back view

Fig. 6a frontal view, semiadult specimen (L = 15.90 mm) NHMW Mollusca 108 052

Fig. 6b back view

***Lambis truncata sebae* (Kiener, 1843)**

Fig. 7a frontal view, juvenile specimen (L = 139.15 mm) NHMW Mollusca 108 053

Fig. 7b back view

Fig. 8a frontal view, adult specimen (L = 259.90 mm) NHMW Mollusca 108 054

Fig. 8b back view

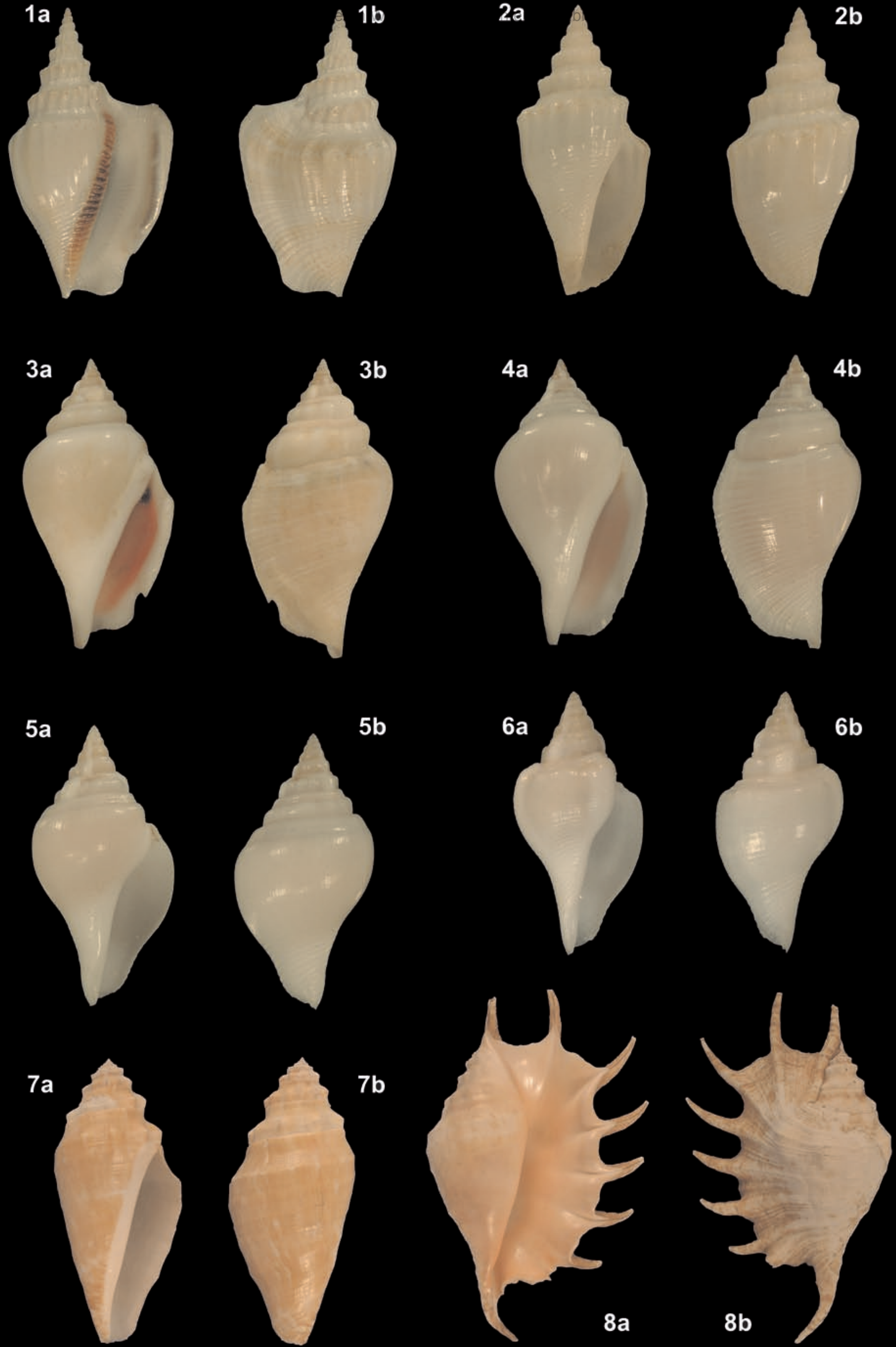

1a
1b
2a
2b
3a
3b
4a
4b
5a
5b
6a
6b
7a
7b
8a
8b

Plate 22

Stromboidea – Strombidae

***Terestrombus terebellatus* (G. B. Sowerby (II), 1842)**

Fig. 1a frontal view (L = 46.95 mm) NHMW Mollusca 108 055

Fig. 1b back view

***Tricornis tricornis* [Lightfoot, 1786]**

Fig. 2a frontal view, semiadult specimen (L = 53.80 mm) NHMW Mollusca 108 056

Fig. 2b back view

Fig. 3a frontal view (L = 118.35 mm) NHMW Mollusca 108 057

Fig. 3b back view

Tonnoidea – Bursidae

***Bursa granularis* (Röding, 1798)**

Fig. 4a frontal view (L = 46.70 mm) NHMW Mollusca 108 058

Fig. 4b back view

***Bursa rhodostoma* (G. B. Sowerby (II), 1835)**

Fig. 5a frontal view (L = 25.37 mm) NHMW Mollusca 108 059

Fig. 5b back view

***Tutufa bufo* (Röding, 1758)**

Fig. 6a frontal view (L = 68.85 mm) NHMW Mollusca 108 060

Fig. 6b back view

Tonnoidea – Cassidae

***Casmaria ponderosa unicolor* (Dautzenberg in Pallary, 1926)**

Fig. 7a frontal view, semiadult specimen (L = 4.35 mm) NHMW Mollusca 108 061

Fig. 7b back view

Fig. 8a frontal view (L = 18.87 mm) NHMW Mollusca 108 062

Fig. 8b back view

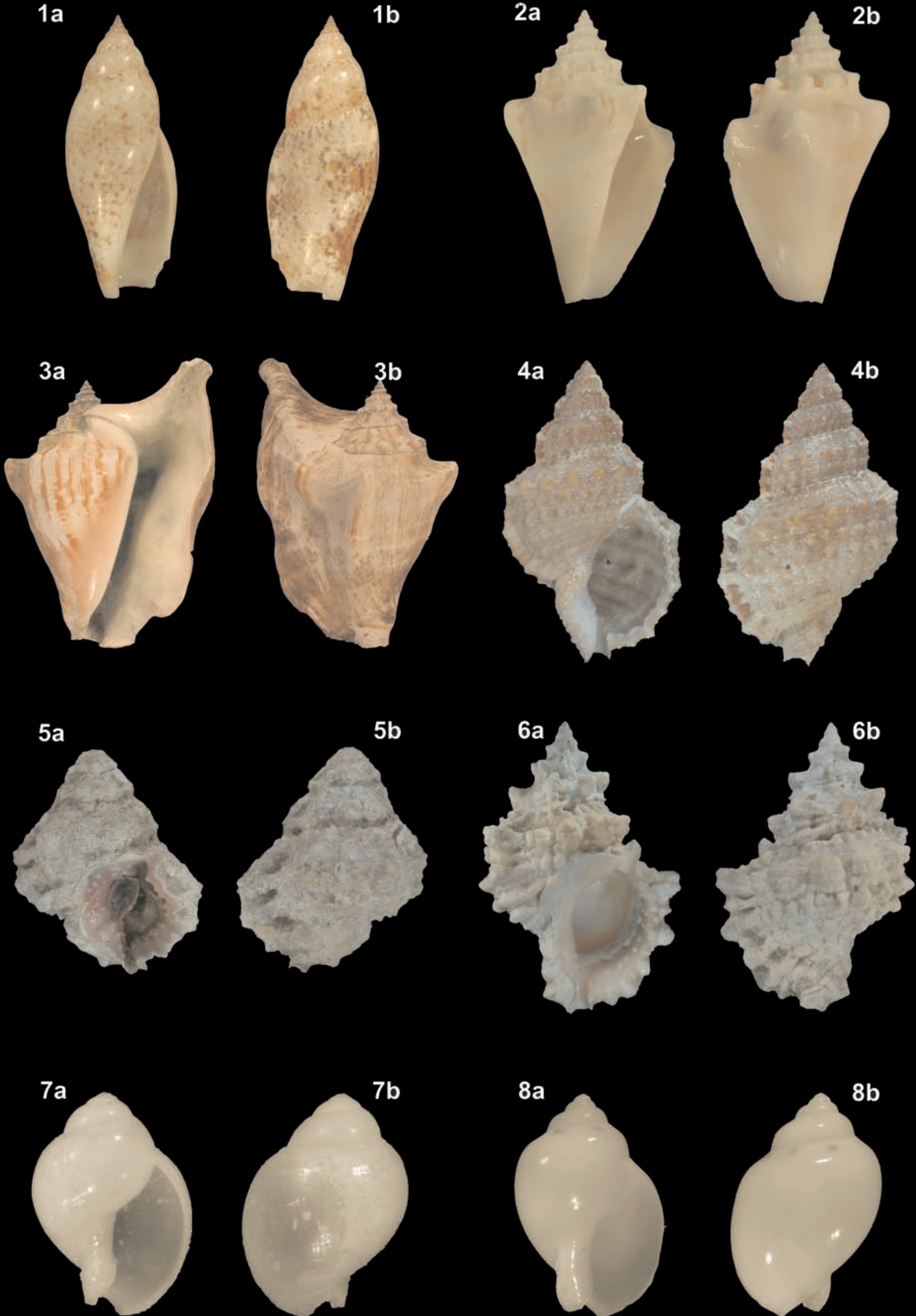

1a
1b
2a
2b
3a
3b
4a
4b
5a
5b
6a
6b
7a
7b
8a
8b

Plate 23

Tonnoidea – Cassidae

Casmaria ponderosa unicolor **(Dautzenberg in Pallary, 1926)**

Fig. 1a frontal view (L = 27.61 mm) NHMW Mollusca 108 063

Fig. 1b back view

Fig. 1c lateral view

Tonnoidea – Personidae

Distorsio anus **(Linnaeus, 1758)**

Fig. 2a frontal view (L = 31.96 mm) NHMW Mollusca 108 064

Fig. 2b back view

Fig. 3a frontal view (L = 45.70 mm) NHMW Mollusca 108 065

Fig. 3b back view

Tonnoidea – Ranellidae

Charonia tritonis **(Linnaeus, 1758)**

Fig. 4a frontal view (L = 138.40 mm) NHMW Mollusca 108 066

Fig. 4b back view

Gelagna succincta **(Linnaeus, 1771)**

Fig. 5a frontal view (L = 18.71 mm) NHMW Mollusca 108 067

Fig. 5b back view

Linatella cingulata **(Lamarck, 1822)**

Fig. 6a frontal view, semiadult specimen (L = 19.13 mm) NHMW Mollusca 108 068

Fig. 6b back view

Monoplex aquatilis **(Reeve, 1844)**

Fig. 7a frontal view (L = 81.85 mm) NHMW Mollusca 108 069

Fig. 7b back view

Ranularia exilis **(Reeve, 1844)**

Fig. 8a frontal view (L = 46.55 mm) NHMW Mollusca 108 070

Fig. 8b back view

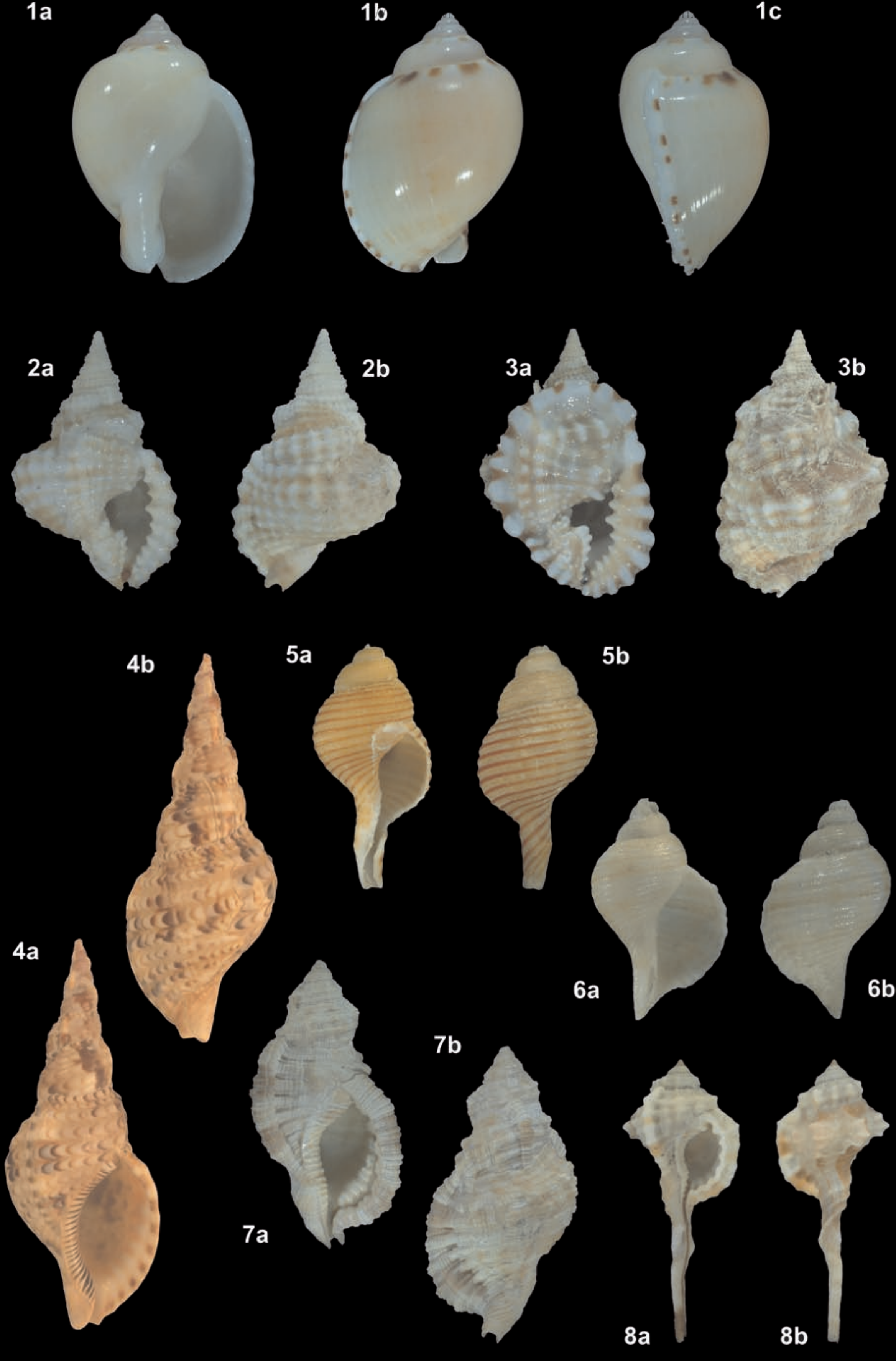

1a
1b
1c
2a
2b
3a
3b
4b
5a
5b
4a
6a
6b
7b
7a
8a
8b

Plate 24

Tonnoidea – Ranellidae

***Ranularia trilineata* (Reeve, 1844)**

Fig. 1a frontal view, semiadult specimen (L = 22.43 mm) NHMW Mollusca 108 071

Fig. 1b back view

Fig. 2a frontal view (L = 29.05 mm) NHMW Mollusca 108 072

Fig. 2b back view

***Septa rubecula marerubrum* (Garcia Talavera, 1985)**

Fig. 3a frontal view (L = 29.88 mm) NHMW Mollusca 108 073

Fig. 3b back view

***Gyrineum concinnum* (Dunker, 1862)**

Fig. 4a frontal view (L = 15.32 mm) NHMW Mollusca 108 074

Fig. 4b back view

Fig. 5a frontal view (L = 21.00 mm) NHMW Mollusca 108 075

Fig. 5b back view

Tonnoidea – Tonnidae

***Malea pomum* (Linnaeus, 1758)**

Fig. 6a frontal view (L = 29.48 mm) NHMW Mollusca 108 076

Fig. 6b back view

***Tonna galea* (Linnaeus, 1758)**

Fig. 7a frontal view (L = 36.73 mm) NHMW Mollusca 108 077

Fig. 7b back view

Fig. 8a frontal view (L = 87.05 mm) NHMW Mollusca 108 078

Fig. 8b back view

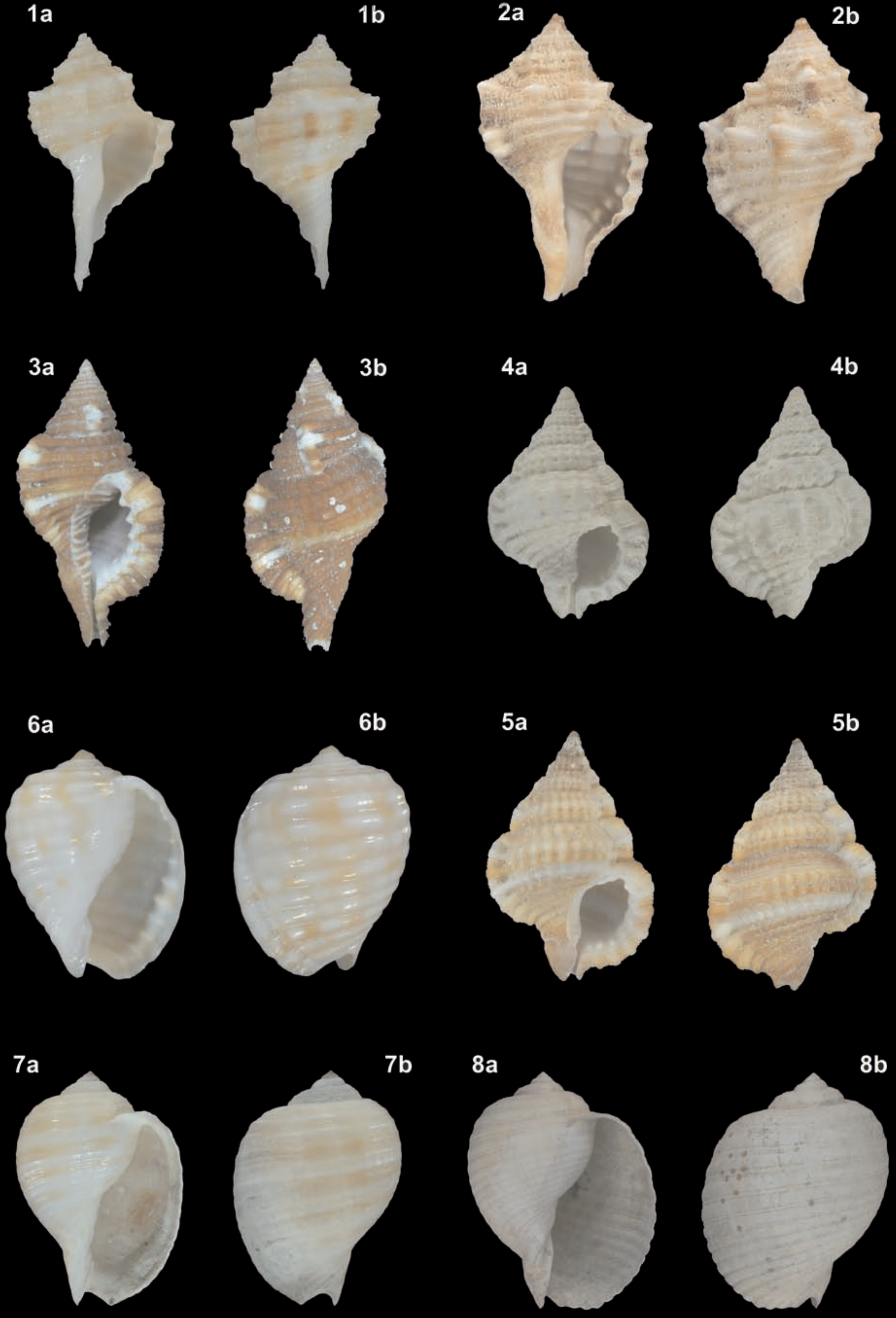

1a
1b
2a
2b
3a
3b
4a
4b
6a
6b
5a
5b
7a
7b
8a
8b

Plate 25

Vanikoroidea – Hipponicidae

***Cheilea cicatricosa* (Reeve, 1858)**

Fig. 1a external view (L = 21.94 mm) NHMW Mollusca 108 079

Fig. 1b internal view

Fig. 1c lateral view

Fig. 2a external view (L = 40.35 mm) NHMW Mollusca 108 080

Fig. 2b internal view

Fig. 2c lateral view

***Cheilea tectumsinense* (Lamarck, 1822)**

Fig. 3a external view (L = 14.35 mm) NHMW Mollusca 108 081

Fig. 3b internal view

Fig. 3c lateral view

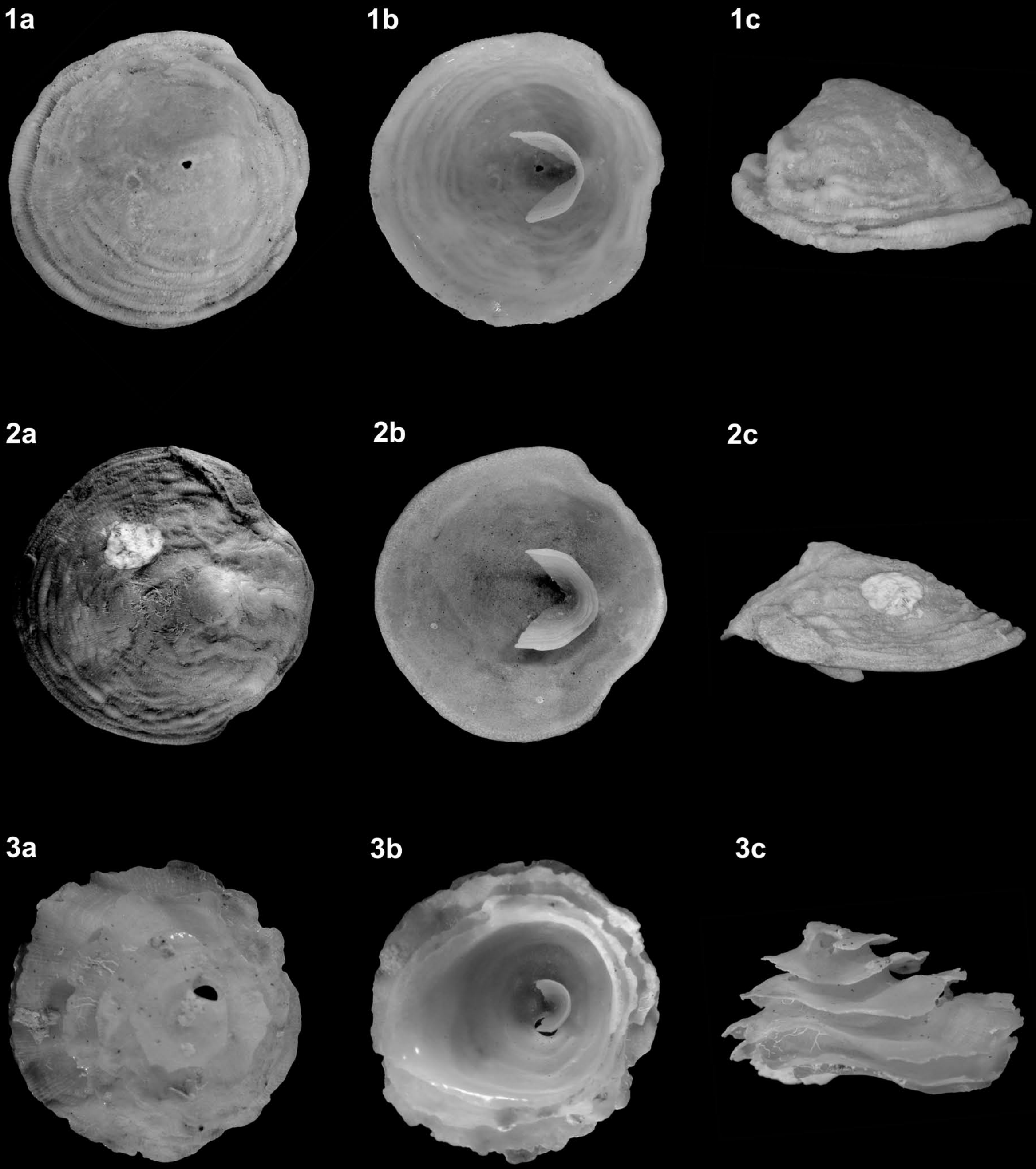

1a
1b
1c
2a
2b
2c
3a
3b
3c

Plate 26

Vanikoroidea – Hipponicidae

***Sabia conica* (SCHUMACHER, 1817)**

Fig. 1a external view (L = 11.62 mm) NHMW Mollusca 108 082

Fig. 1b internal view

Fig. 1c lateral view

Fig. 2a external view (L = 14.00 mm) NHMW Mollusca 108 083

Fig. 2b internal view

Fig. 2c lateral view

Fig. 3a SEM external view (L = 3.46 mm) NHMW Mollusca 108 084

Fig. 3b SEM protoconch (scale bar = 100 µm)

Fig. 4a SEM external view (L = 2.05 mm) NHMW Mollusca 108 085

Fig. 4b SEM protoconch (scale bar = 100 µm)

Fig. 4c SEM protoconch (scale bar = 100 µm)

Fig. 5 specimens attached to *Mitra rueppellii* REEVE, 1844 (L = 28.84 mm) NHMW Mollusca 108 086

Fig. 6 specimens attached to *Drupella cornus* RÖDING, 1798 (L = 32.35 mm) NHMW Mollusca 108 087

***Sabia* sp.**

Fig. 7a external view (L = 5.22 mm) NHMW Mollusca 108 088

Fig. 7b internal view

Fig. 7c lateral view

Fig. 8 SEM protoconch (scale bar = 100 µm) NHMW Mollusca 108 089

Fig. 9 SEM protoconch (scale bar = 100 µm) NHMW Mollusca 108 090

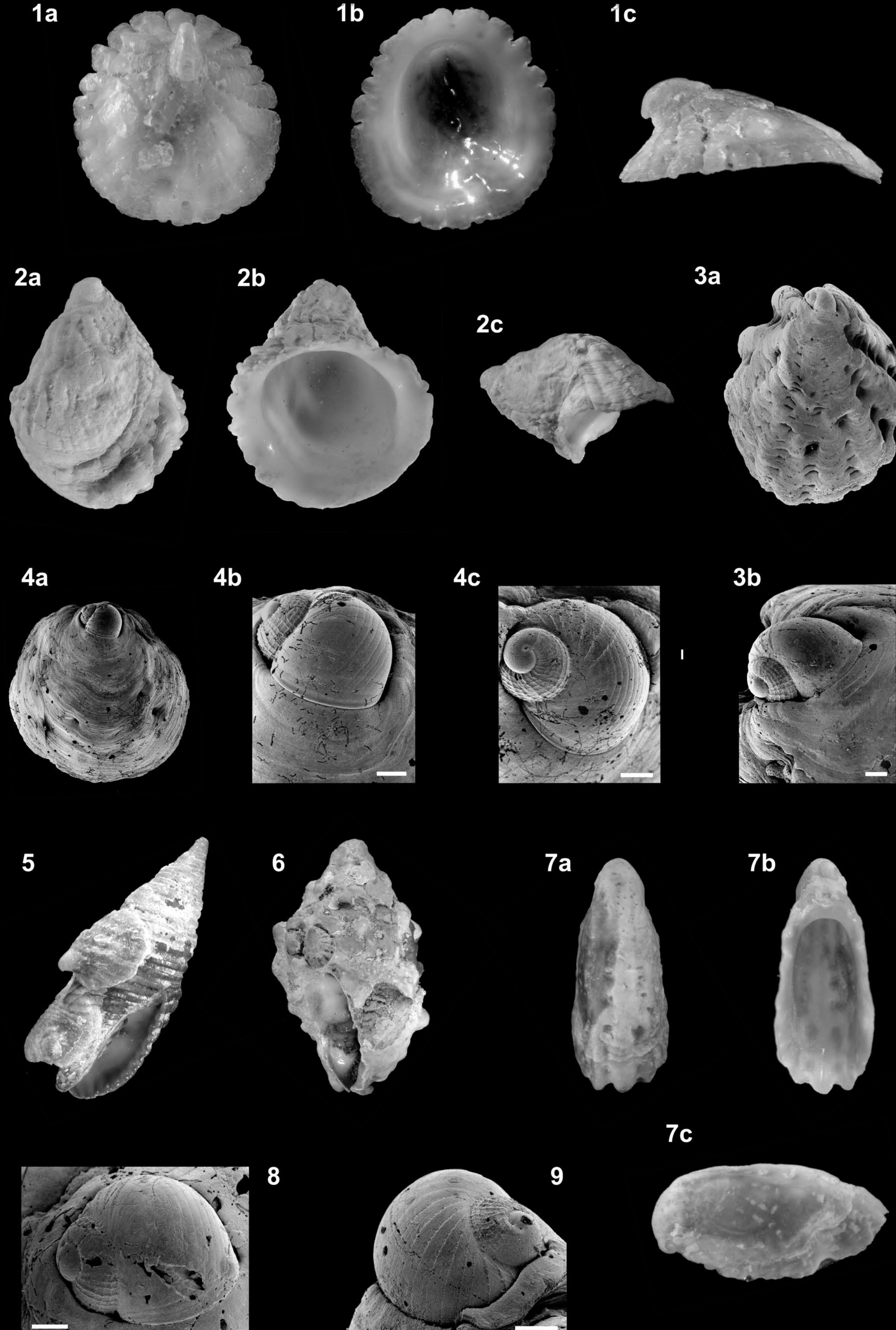

1a
1b
1c
2a
2b
2c
3a
4a
4b
4c
3b
5
6
7a
7b
7c
8
9

Plate 27

Vanikoroidea – Vanikoridae

***Macromphalus* sp.**
Fig. 1 frontal view (L = 2.04 mm) NHMW Mollusca 108 091

Vanikoroidea – Vanikoridae

***Vanikoro plicata* Récluz, 1844**
Fig. 2a frontal view (L = 4.60 mm) NHMW Mollusca 108 092
Fig. 2b back view

***Vanikoro solida* G. B. Sowerby (III), 1875**
Fig. 3a frontal view (L = 8.73 mm) NHMW Mollusca 108 093
Fig. 3b back view
Fig. 3c apical view

Velutinoidea – Triviidae

***Austrotrivia rubramaculata* (Fehse & Grego, 2002)**
Fig. 4a ventral view (L = 3.20 mm) NHMW Mollusca 108 094
Fig. 4b dorsal view
Fig. 4c lateral view

***Trivirostra poppei* Fehse, 1999**
Fig. 5a ventral view (L = 7.91 mm) NHMW Mollusca 108 095
Fig. 5b dorsal view
Fig. 5c lateral view

Velutinoidea – Velutinidae

***Coriocella safagae* Wellens, 1999 ?**
Fig. 6a frontal view (L = 1.08 mm) NHMW Mollusca 108 096
Fig. 6b back view

Xenophoroidea – Xenophoridae

***Xenophora* (*Xenophora*) *cerea* (Reeve, 1845)**
Fig. 7a frontal view (L = 68.20 mm) NHMW Mollusca 108 097
Fig. 7b dorsal view
Fig. 7c ventral view

***Xenophora* (*Xenophora*) *solarioides solarioides* (Reeve, 1845)**
Fig. 8a dorsal view (L = 21.69 mm) NHMW Mollusca 108 098
Fig. 8b ventral view

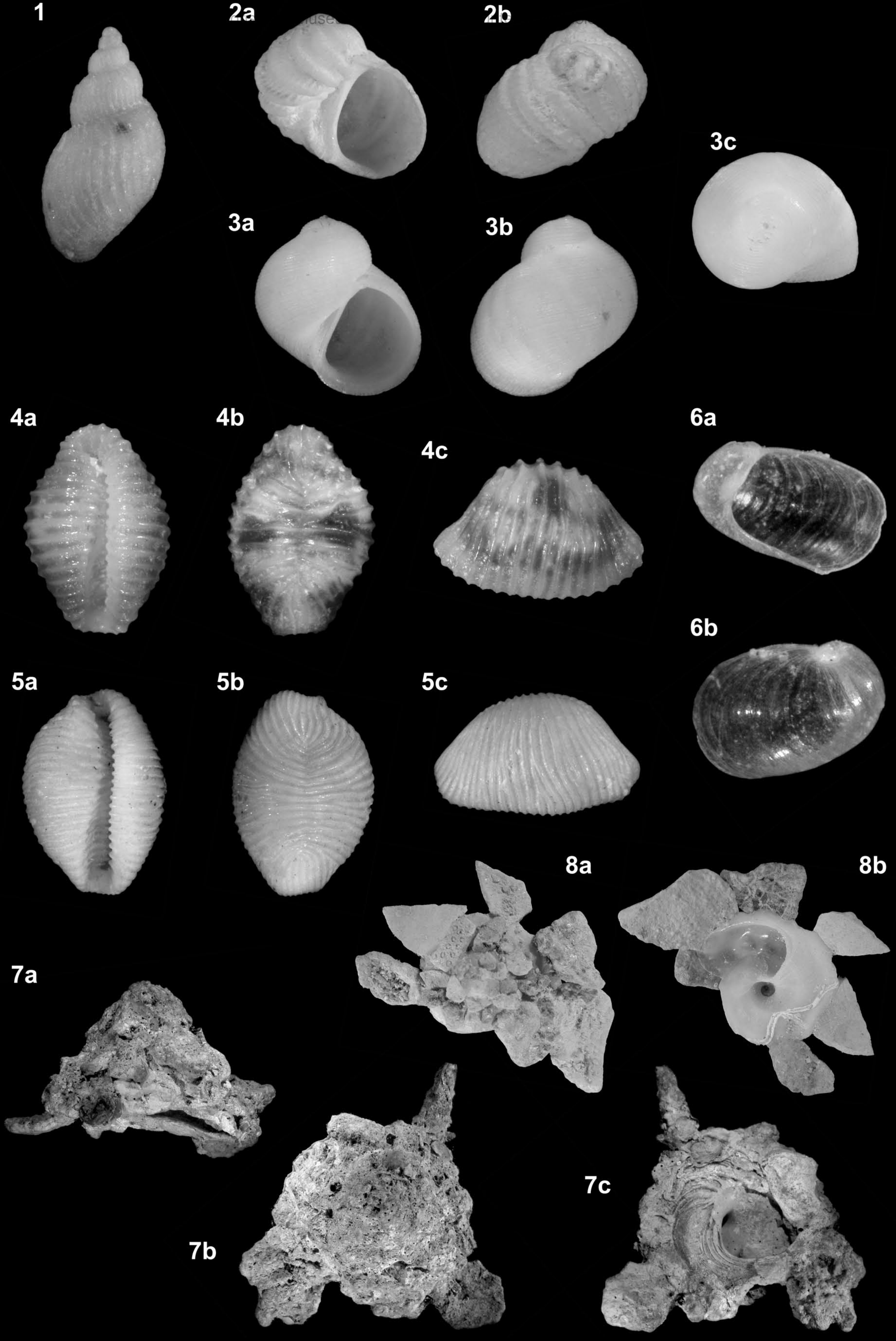

1
2a
2b
3a
3b
3c
4a
4b
4c
5a
5b
5c
6a
6b
7a
7b
7c
8a
8b

Plate 28

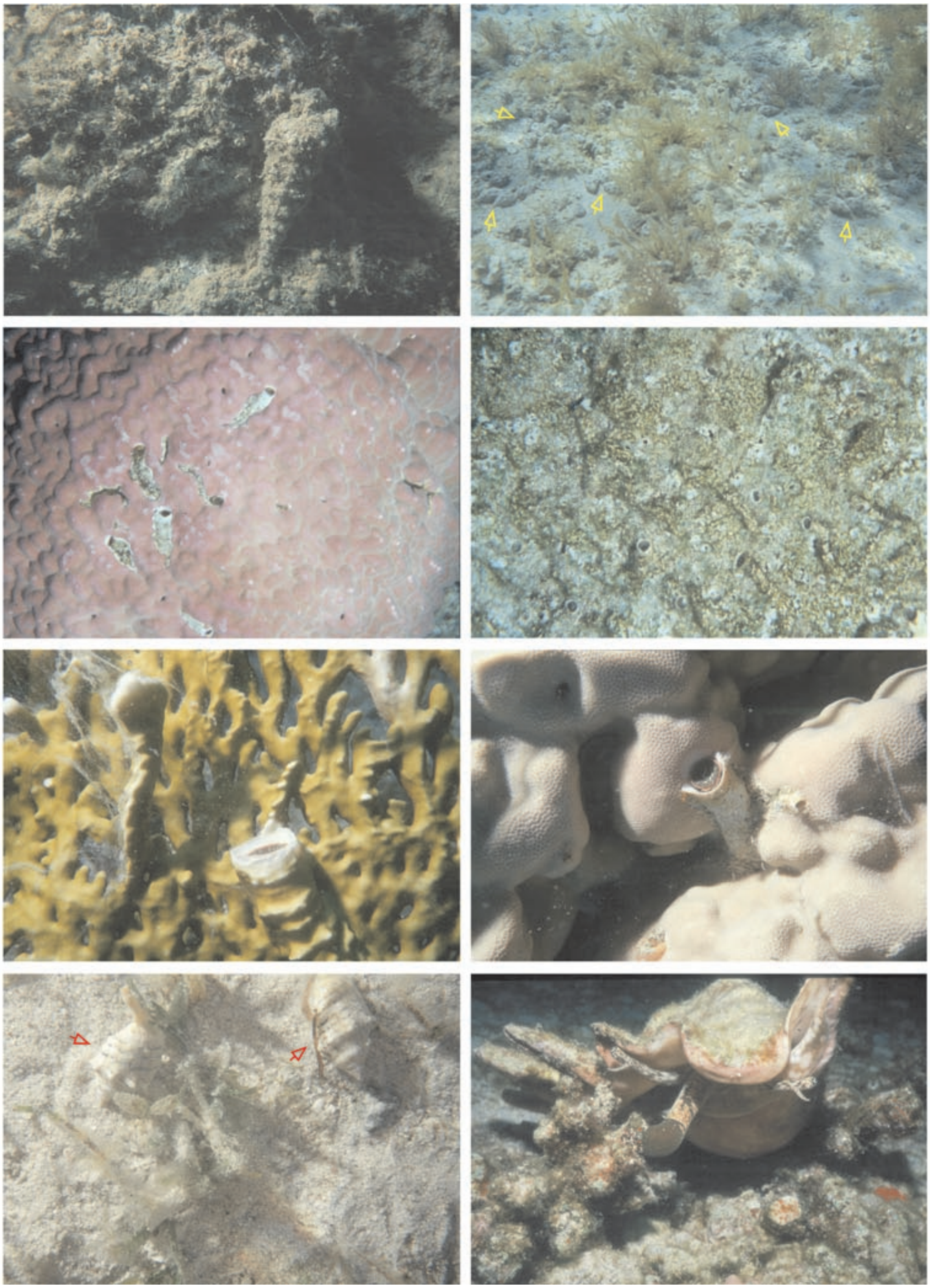
Fig. 1 *Cerithium nodulosum adansonii* Bruguière, 1792

Fig. 2 *Cerithium caeruleum* G. B. Sowerby (II), 1855

Figs 3–6 *Dendropoma maximum* (G. B. Sowerby (I), 1825)

Fig. 7 *Conomurex fasciatus* (Born, 1778)

Fig. 8 *Lambis truncata sebae* (Kiener, 1843)



1 2 3 4 5 6 7 8