

NON-MARINE MOLLUSCA OF SUMBA.

By

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During the months March-May 1925 Dr. K. W. DAMMERMAN undertook a collecting trip on the island of Sumba. The molluscs were kindly put into my hands for identification and I gladly accept the opportunity of giving here an annotated list of the non-marine mollusc fauna of Sumba in which are enclosed as well all previous malacological investigations in that island.

At every species I will mention the original description and the first record of its occurrence on Sumba. In this way all the literature on Sumba molluscs will be quoted so that a bibliographical summary can be omitted.

For details about the localities the reader may be referred to DR. DAMMERMAN's narrative of the voyage (Een tocht naar Soemba, Natuurk. Tijdsch. Ned. Ind. Dl. LXXXVI, 1926), which contains also a sketch-map of the island.

***Neritina turrita* (CHEMNITZ) var. *strigillata* (LAMARCK).**

Neritina strigillata LAMARCK, Anim. s. Vert. Ed. I, 1815-1822, Vol. 6, p. 187.

Neritina turrita var. *strigillata* MARTENS, MART.-CHEMN. N. Syst. Conch. Cab. Vol. II. Abt. 10, 1879, p. 105-109, pl. 2, fig. 5, pl. 11, fig. 18-23. Sumba (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 160).

***Neritina flavovirens* VON DEM BUSCH.**

Neritina flavovirens VON DEM BUSCH, PHILIPPI, Abb. und Beschr. I, 1842, p. 26, pl. 1, fig. 6.

Neritina flavovirens MARTENS, MART.-CHEMN. N. Syst. Conch. Cab. Vol. II, Abt. 10, 1879, p. 184, pl. 19, fig. 1, 2.

Kambera, N. E. Sumba, March 1925 1 spec.
It is the first record from Sumba.

***Bithynia truncata* (EYDOUX & SOULEYET).**

Paludina truncata EYDOUX & SOULEYET, Voy. de la Bonite, Zool. II, 1852, p. 548, pl. 31, fig. 22-24.

Bithynia truncata MARTENS, WEBER's *Ergebn.* Vol. IV, 1897, p. 25-26, pl. 9, fig. 11, 11-b.

Laora, N. W. Sumba, from sawahs, April 1925 1 spec.

The shell is somewhat different from those I know from Java and Sumatra as it is a little broader. It is the first record from Sumba.

Littorina scabra (LINNÉ).

Helix scabra LINNÉ, *Syst. Nat.* Ed. X, 1758, p. 770.

Littorina scabra MARTENS, WEBER's *Ergebn.* Vol. IV, 1897, p. 194-196.

Waikelo, W. Sumba, on mangrove-trees in brackish water, April 25-th 1925 numerous spec.

Though the species is very common in the whole archipelago this is the first record from Sumba.

Leptopoma albicans FULTON.

Leptopoma albicans FULTON, *Journ. Malac.* Vol. 10, 1903, p. 101, pl. 9, fig. 5.

Sumba (FULTON, l.c.).

Kambera, N. E. Sumba, March 1925 1 spec.

Mao Marroe, Sumba, May 1925 1 "

Leptopoma vitreum (LESSON) var. **minus** MARTENS.

Leptopoma vitreum var. *minus* MARTENS, *Ostas. Landschn.* 1867, p. 144, pl. 4, fig. 6.

Laora, N. W. Sumba, April 1925 3 spec.

Two of the specimens belong to the colour variety *c.* (MARTENS, l.c.). It is the first record from Sumba.

Leptopoma cinctellum PFEIFFER.

Leptopoma cinctellum PFEIFFER, *Proc. Zool. Soc. London*, 1861, p. 388, pl. 37, fig. 11.

Leptopoma cinctellum KOBELT, *Tierreich*, 1902, p. 6.

Laora, N. W. Sumba, April 1925 1 spec.

Mao Marroe, Sumba, May 1905 5 "

The specimens agree sufficiently with the above-quoted descriptions, but they are larger and a little coarser. It is the first record from Sumba.

Diplommatina baliana FULTON.

Diplommatina baliana FULTON, *Proc. Malac. Soc.* Vol. 3, 1899, p. 213 and 216.

Sumba (FULTON, l.c.).

Cyclotus reticulatus MARTENS.

Cyclotus reticulatus MARTENS, *Monatsber. Akad. Berlin*, 1864, p. 117.

Cyclotus reticulatus MARTENS, Oostas. Landschn. 1867, p. 120, pl. 2, fig. 3.

” ” KOBELT, Tierreich, 1902, p. 194.

Mao Marroe, Sumba, May 1925 1 spec.

It is the first record from Sumba.

***Cyclotus sumbaensis* SCHEPMAN.**

Cyclotus sumbaensis SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 158, pl. 6, fig. 3, a, b, c, d.

Near Waingapoe at the Makwai river, Sumba (SCHEPMAN, l.c.).

Laora, N. W. Sumba, on forest soil, April 1925 6 spec.

***Cyclotus* spec.**

Mao Marroe, Sumba, on the soil, May 1925 1 spec.

Unfortunately I cannot make out which species it is.

***Melania mucronata* VON DEM BUSCH.**

Melania mucronata VON DEM BUSCH, Zeitschr. f. Malak. Vol. 10, 1853, p. 177 — 178.

Melania mucronata BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 118.

Melania mucronata DAUTZENBERG, Ann. Soc. Roy. Malac. Belg. Vol. 34, 1899, p. 14-15, pl. 2, fig. 11-11e.

Kamera river, N. E. Sumba, lower part, March 1925 5 spec.

” ” ” ” , 1 hour upstream from Kambaniroo, April 3-rd 1925 11 spec.

DAUTZENBERG (l. c.) mentions the species from Sumatra and gives excellent figures of adult and juvenile forms which helped me considerably in identifying the Sumba shells. It is the first record from Sumba.

***Melania punctata* LAMARCK.**

Melania punctata LAMARCK, Anim. s. Vert. Ed. I, 1815 — 1822, Vol. 6, no. 4.

Melania albescens LEA, Proc. Zool. Soc. London, 1850, p. 188 — 189.

” *punctata* BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 168 — 169, pl. 20, fig. 4, 4a.

Rivulet near Pajeti, Sumba, July 1924, 6 spec., coll. Rev. P. J. LAMBOOY. It is the first record from Sumba.

***Melania clavus* LAMARCK.**

Melania clavus LAMARCK, Anim. s. Vert. Ed. I, 1815 — 1822, Vol. 6, no. 8.

” ” BROT.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 175 — 176, fig. 17, 17a-c.

Hills near Waingapoe, Sumba; one subfossil specimen (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 156).

Melania tenkatei SCHEPMAN.

Melania tenkatei SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 156, pl. 6, fig. 2.

Waingapoe; Massoe; a brook near Lentang, N. Sumba (SCHEPMAN, l.c.).

Melania scabra (MÜLLER).

Buccinum scabrum MÜLLER, Hist. Verm. II, 1774, p. 136.

Melania scabra BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 266-267, pl. 27, fig. 14, 14a-c. 15, 15a.

Melania scabra MARTENS, WEBER's Ergebn. Vol. IV, 1897, p. 62, pl. 4, fig. 6-12, pl. 9, fig. 8, 9.

Rivers of N. W. Sumba; Massoe, central S. E. Sumba; Waingapoe; hills and rivershores near Waingapoe, Sumba, mixed with sea-shells (subfossil) (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 157).

Kambara river, lower part, N. E. Sumba, March 1925, many spec. with transitions to var. *mutica* MARTENS.

Melania acanthica LEA.

Melania acanthica LEA, Proc. Zool. Soc. London 1850, p. 194.

" " BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 278—279, pl. 28, fig. 10, 10a-c.

Melania scabra var. *acanthica* MARTENS, WEBER's Ergebn. Vol. IV, 1897, p. 62—63.

Kambara river, N. E. Sumba, 1 hour upstream from Kambariroe, April 3rd 1925 32 spec.

Laora, N. W. Sumba, 100 m., April 1925 1 spec.

It is the first record from Sumba.

Melania setosa SWAINSON.

Melania setosa SWAINSON, BRAND's Qua. Journ. Sci. 1824, no. 33.

" " BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. 8, Abt. 24, 1874, p. 297—298, pl. 30, fig. 5, 5a, 6, pl. 31, fig. 1, 1a.

Melania setosa MARTENS, WEBER's Ergebn. Vol. IV, 1897, p. 66-67.

Kambara river, N. E. Sumba, 1 hour upstream from Kambariroe, April 3rd 1925. 6 spec.

It is the first record from Sumba.

Melania armillata LEA.

Melania armillata LEA, Proc. Zool. Soc. London 1850, p. 195-196.

" " BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 309, pl. 32, fig. 5.

Hills and rivershores near Waingapoe, Sumba, mixed with sea-shells (subfossil) (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 157).

Melania lateritia LEA.

Melania lateritia LEA, Proc. Zool. Soc. London, 1850 p. 196.

" " BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 319-320, pl. 33, fig. 1, 1a, b.

Massoe; rivers of N. W. Sumba; hills and rivershores near Waingapoe (subfossil) (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 158).

Rivulet near Pajeti, Sumba, July 1924, 30 spec., coll. Rev. P. J. LAMBOOY.
Kambara, N. E. Sumba, from rivulet near camp, March 1925, 38 spec.

Melania mauiensis LEA.

Melania mauiensis LEA, Proc. Ac. Nat. Sci. Philadelphia, Vol. 8, 1856, p. 145.

Melania mauiensis BROT, MART.-CHEMN. N. Syst. Conch. Cab. Vol. I, Abt. 24, 1874, p. 322-323, pl. 33, fig. 8, 8a and 7.

Karita river, Melolo, Massoe, Waingapoe, hills and rivershores near Waingapoe, Sumba (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 158).

Mao Marroe, E. Sumba, 450 m., May 1925 3 spec.

Kananggar, river Waidjelo, Sumba, May 14-th 1925 . . . 12 spec.

" tributary river of Waidjelo, Sumba, May 14-th 1925, 33 spec.

Cerithidea ornata (A. ADAMS).

Cerithium ornatum A. ADAMS, SOWERBY, Thes. Conch. Vol. 2, 1855, p. 887, pl. 16, fig. 277, 278. •

Potamides ornatus MARTENS, WEBER's Ergebn. Vol. IV, 1897, p. 189.

Rivers of North West Sumba (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 155).

Limnaea javanica (MOUSSON).

Limnaeus succineus (DESH.) var. *javanica* MOUSSON, Land- & Süßw. Moll. Java's, 1849, p. 42, pl. 5, fig. 1.

Limnaea javanica MARTENS, WEBER's Ergebn. Vol. IV, 1897, p. 3-6, pl. 1, fig. 3-7, pl. 12, fig. 2 and 4.

Waingapoe, N. Sumba (SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 154).

Laora, N. W. Sumba, from sawahs, April 1925 9 spec.

Mao Marroe, Sumba, from rivulet, 450 m., May 1925 . . . 16 spec.

Planorbis convexiusculus HUTTON.

Planorbis convexiusculus HUTTON, Journ. As. Soc. Bengal (2) Vol. 18, 1850, p. 657.

Planorbis compressus MARTENS, WEBER's Ergebn. Vol. IV, 1897, p. 13, pl. 1, fig. 17-22, pl. 12, fig. 7 and 10.

Gyraulus convexiusculus ANNANDALE & PRASHAD, Rec. Ind. Mus. Vol. 18, 1919, p. 52-54, fig. 7B and 8B.

Laora, N. W. Sumba, 100 m., April 1925 35 spec.
It is the first record from Sumba.

Succinea javanica SCHEPMAN.

Succinea javanica SCHEPMAN, Proc. Malac. Soc. Vol. 10, 1912, p. 235, pl. 10, fig. 12 and 13.

Laora, N. W. Sumba, April 1925 1 spec.
It is the first record from Sumba.

Opeas gracile (HUTTON).

Bulimus gracilis HUTTON, Journ. As. Soc. Bengal, Vol. 3, 1834, p. 84.

Opeas gracile PILSBRY, Man. of Conch. Vol. 18, 1906, p. 125, pl. 18, fig. 3-6.

Kambera, N. E. Sumba, March 1925 1 spec.

Laora, N. W. Sumba, 100 m., April 1925. 1 "

Mao Marroe, E. Sumba, 450 m., May 1925 1 "

It is the first record from Sumba.

Amphidromus latestrigatus SCHEPMAN.

Amphidromus latestrigatus SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 151-152.

Amphidromus latestrigatus FULTON, Ann. Mag. Nat. Hist. (6) Vol. 17, 1896, p. 89, pl. 7, fig. 1.

Amphidromus latestrigatus PILSBRY, Man. of Conch. Vol. 13, 1900, p. 207, pl. 67, fig. 10.

Massoe, central South East Sumba; near Waingapoe, Sumba (SCHEPMAN, l.c. p. 151).

Mao Marroe, E. Sumba, May 1925. 33 spec.

One young specimen from Kambera, N. E. Sumba, may also belong to this species.

Amphidromus floresianus FULTON.

Amphidromus floresianus FULTON, Ann. Mag. Nat. Hist. (6) Vol. 20, 1897, p. 211, pl. 6, fig. 2.

Amphidromus floresianus PILSBRY, Man. of Conch. Vol. 13, 1900, p. 205-206, pl. 65, fig. 17-20.

Laora, N. W. Sumba, April 1925 7 spec.

It is curious that this species until now only known from Flores occurs on that part of Sumba mostly lying opposite Flores.

One juvenile specimen of *Amphidromus* with incomplete peristome resembles *floresianus* in colour but is much more elongate (like *annae*

MRTS. from Saleyer). It has been collected at Sedikiri bay, S. W. Sumba, 3. II. 1909 by VAN DE SANDE.

Amphidromus sumbaensis FULTON.

Amphidromus sumbaensis FULTON, Ann. & Mag. Nat. Hist. (6) Vol. 18, 1896, p. 102; *ibid.* Vol. 20. 1897, pl. 6, fig. 1.

Amphidromus sumbaensis PILSBRY, Man. of Conch. Vol. 13, 1900, p. 208, pl. 67, fig. 5—8.

Sumba (FULTON, l.c.).

Kambera, N. E. Sumba, on trees and shrubs, March 1925, . 7 spec.

One shell has been damaged and repaired, but became abnormally stretched afterwards.

Amphidromus consobrinus FULTON.

Amphidromus consobrinus FULTON, Ann. & Mag. Nat. Hist. (6) Vol. 20, 1897, p. 211—212, pl. 6, fig. 3.

Amphidromus consobrinus PILSBRY, Man. of Conch. Vol. 13, 1900, p. 208, pl. 67, fig. 9.

Sumba, (FULTON, l.c.).

Amphidromus suspectus (MARTENS).

Bulinus suspectus MARTENS, Ostas. Landschn. 1867, p. 362, pl. 21, fig. 8.

Amphidromus suspectus PILSBRY, Man. of Conch. Vol. 13, 1900, p. 213, pl. 65, fig. 30.

SCHEPMAN (Notes Leyden Museum, Vol. 14, 1892, p. 153) mentions the species from Sumba with a ?, but PILSBRY (l. c.) rejects the possibility altogether.

Rhagada supracostulata (SCHEPMAN).

Helix supracostulata SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 150—151, pl. 6, fig. 1.

Ka-Tokawai, E. Sumba, and "Sumba", without more definite locality (SCHEPMAN, l. c.).

Plectotropis rotatoria (VON DEM BUSCH).

Helix rotatoria VON DEM BUSCH, PHILIPPI, Abb. und Beschr. I, 1842, p. 10, pl. 1, fig. 5.

Helix rotatoria MARTENS, Ostas. Landschn. 1867, p. 264.

Laora, N. W. Sumba, soil of forest, April 1925 11 spec.

The shells have their umbilicus somewhat narrower than generally is the case. It is the first record from Sumba.

Plectotropis intumescens (MARTENS).

Helix intumescens MARTENS, Ostras. Landschn. 1867, p. 263, pl. 13, fig. 10.

Kamera, N. E. Sumba, March 1925 1 spec.

The specimens differ slightly from shells which I could compare from Malang, Java, by their somewhat higher spire and narrower umbilicus. It is the first record from Sumba.

Kaliella indifferens BÖTTGER.

Kaliella indifferens BÖTTGER, Ber. Senckenb. Naturf. Ges. 1891, p. 256-257, pl. 3, fig. 4.

Kamera, N. E. Sumba, March 1925 5 spec.

It is the first record from Sumba.

Kaliella miliacea (MARTENS).

Helix miliacea MARTENS, Monatsber. Ak. Berlin, 1864, p. 524.

„ „ MARTENS, Ostras. Landschn. 1867, p. 268-269, pl. 12, fig. 15.

Kananggar, E. Sumba, 700 m., May 1925 1 spec.

It is the first record from Sumba.

Kaliella convexoconica MÖLLENDORFF.

Kaliella convexoconica MÖLLENDORFF, Nachr. Blatt, Vol. 29, 1897, p. 60.

Laora, N. W. Sumba, 100 m., April 1925 2 spec.

Mao Marroe, E. Sumba, 450 m., May 1925 2 „

It is the first record from Sumba. Another *Kaliella* from Kananggar E. Sumba, 700 m., May 1925, resembles *macrostoma* in structure, but has a different shape.

Chloritis conjector SMITH.

Chloritis conjecta SMITH, Ann. & Mag. Nat. Hist. (7) Vol. 3, 1899, p. 410-411.

Chloritis conjector FULTON, Proc. Malac. Soc. Vol. 3, 1899, p. 213. Sumba (SMITH, l.c.).

Chloritis argillacea (FÉRUSAC).

Helix argillacea FÉRUSAC, Hist. Nat. gén. et part. Moll. 1821, pl. 26, fig. 1-3.

Helix argillacea MARTENS, Ostras. Landschn. 1867, p. 273-275.

The species seems to be very common on Sumba: SCHEPMAN (Notes Leyden Museum, Vol. 14, 1892, p. 149-150) mentions it from: Ka-Tokawai, E. Sumba; Waingapoe, Massoe, seacoast of Melolo, Sumba. — Subfossil from hills and from the rivershore near Waingapoe, mixed with sea-shells and from a brook between Pengadoe Kapal and 'Ndatar, Sumba. Dr. DAM-MERMAN collected it at:

Kambera, N. E. Sumba, from trees and shrubs, March 1925	29 spec.
Pajeti, E. Sumba, March 1925	12 "
Laora, N. W. Sumba, April 1925	1 "
Mao Marroe, E. Sumba, May 1925	1 "
Kananggar, E. Sumba, May 1925	13 "

Trochomorpha planorbis (LESSON).

Helix planorbis LESSON, Voy. Coq. Zool. Vol. II, 1829, p. 312, pl. 13, fig. 4.

Trochomorpha planorbis MARTENS, Ostas. Landschn. 1867, p. 249-250, pl. 13, fig. 4, 7, 8.

Laora, N. W. Sumba, April 1925 2 spec.
It is the first record from Sumba.

At Mao Marroe, E. Sumba, Dr. DAMMERMAN collected in May 1925 one other specimen which is a little doubtful as it is not full grown.

Xesta cochlostyloides (SCHEPMAN).

Nanina cochlostyloides SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 148-149.

Xesta cochlostyloides FULTON, Proc. Malac. Soc. Vol. 3, 1899, p. 213.

Ka-Tokawai, E. Sumba, many specimens; Massoe, central S. E. Sumba, one broken specimen; seashore of Melolo, one empty specimen, and a subfossil one from a brook between Pengadoe Kapal and 'Ndatar. (SCHEPMAN, l. c.).

Kambera, E. Sumba, March 1925	5 spec.
Laora, N. W. Sumba, April 1925	34 "
Mao Marroe, E. Sumba, May 1925	16 "

Xesta baliensis (MOUSSON) var. **soembaensis** SCHEPMAN.

Nanina baliensis var. *soembaensis* SCHEPMAN, Notes Leyden Museum, Vol. 14, 1892, p. 147.

SCHEPMAN (l.c.) mentions the following localities:

Massoe, central Sumba, one fine specimen; near Waingapoe, one rather bad specimen; from the coast of Taimanoek, N. Sumba, and from a brook between Pengadoe Kapal and 'Ndatar, bleached specimens (subfossil?).

Pisidium spec.

Laora, N. W. Sumba, 100 m., April 1925 1 spec.

I would rather abstain from giving a name to this very young and defectuous shell. The only thing I can say that this is the first record of a *Pisidium* from Sumba.

Psammotellina semmelinki MARTENS.

Psammotellina semmelinki MARTENS, WEBER's Ergebn. Vol. IV, 1897, p. 236-237, pl. 10, fig. 23-24.

Lower part of the Kambera river, Kambera, Sumba, 31 III 1925, 18 spec. Native name "hillir". It is the first record from Sumba.

Among the molluscs which Dr. DAMMERMAN collected at Sumba there are no species new to science, but 22 of the lot are new records for the mollusc fauna of the island, the whole inventory now amounting to 43.

On analysing this fauna we find 9 species and varieties particular to the island and not recorded beyond, 15 species common on several Moluccan islands, and 19 which come from the west: Bali, Java, Sumatra, but not a single Papuan element.

The inquiry after the origin of the animal life on Sumba thus receives from the study of the mollusca an excellent confirmation that its fauna is undoubtedly most intimately related to the fauna of the Greater Sunda Islands albeit in severely impoverished condition (cfr. DAMMERMAN, Een tocht naar Soemba, 1926, p. 22).