

HOOFDSTUK I.

DE PALAEOLOGIE VAN NEDERLANDSCH WEST-INDIË.

21. OUR PALAEOLOGICAL KNOWLEDGE OF THE NETHERLANDS WEST-INDIES IN 1930

BY

L. M. R. RUTTEN.

INTRODUCTION.

The number of fossils that have been described from the Netherlands Territory in America is not very large. The descriptions are, however, scattered over a rather large number of publications, many of which will be found only incidentally by a reader who occupies himself intensely with the geological literature on the Antilles. It has therefore seemed to me to be a useful work to gather the data on these fossils as completely as possible, and the making of this catalogue has been especially agreeable to me, as a very large part of the fossils under discussion have been collected by Prof. MARTIN, in whose honour this book is edited.

Some remarks may precede the catalogue.

It was easy to arrange the very few plants in a systematic way. As for the fossil animals, I have arranged them according to the last edition of ZITTEL's renowned „Lehrbuch“. I know very well that specialists have serious objections to the systematic arrangement of some or possibly of many of the groups of animal fossils in „ZITTEL“, but I thought it better to rely on the authority of the best textbook of palaeontology than to assume the difficult task of inquiring for each class of animals, which specialist is the most reliable.

All the fossils, described from the region under discussion have been taken down in the catalogue, even, if by later investigations it

has become clear that fossils had been contributed erroneously to the region. In this case the necessary rectifications will be found in the „Annotations”. Some remarks on synonymy and on possibly erroneous determinations will be equally found in the „Annotations”.

LIST OF SPECIES.

PLANTAE.

Phylum THALLOPHYTA.

Class ALGAE.

Order SIPHONEAE.

Siphoneae indet. — †Upper Cretac., Curaçao, Bibl. 37.

Order FLORIDEAE.

FAM. CORALLINACEAE.

Amphiroa sp. — Pleist., Curaçao, Bibl. 23, p. 29, Pl. V, stratigr. table.
Archaeolithothamnium curasavicum (K. Martin). — Upper Cretac.,
 Curaçao, Bibl. 19, p. 26—27, 34, Pl. II, fig.
 22—25; Bibl. 10; Bibl. 8.

„ sp. — Upp. Eoc. and Pleist., Curaçao, Bibl. 23,
 p. 28, 29, stratigr. table.

Corallina sp. — Upper Eoc., Curaçao, Bibl. 23, p. 28.

Jania sp. — Upper Eoc., Curaçao, Bibl. 23, p. 28, stratigr. table.

Lithophyllum sp. — Upper Eoc. and Pleist., Curaçao, Bibl. 23, p. 28, 29,
 strat. table, Pl. V, fig. 1.

Lithoporella sp. — Upper Eoc. and Pleist., Curaçao, Bibl. 23, p. 28, 29,
 strat. table, Pl. V, fig. 1.

Lithothamnium lato sensu. — †Upper Cretac., Upper Eoc., Pleist.,
 Curaçao, †Upp. Cret., Bonaire, Bibl. 19, p. 82, 86,
 Bibl. 18; Bibl. 12, p. 82; Bibl. 27; Bibl. 23, p. 28, 29,
 strat. table; Bibl. 37; Bibl. 25.

Mesophyllum sp. — Upper Eoc. and †Pleist., Curaçao, Bibl. 23, p. 28,
 29, strat. table.

Porolithon sp. — Pleistoc., †Curaçao, Bibl. 23, p. 29, strat. table.

ANIMALIA.

Phylum PROTOZOA.

Class RHIZOPODA.

Order RADIOLARIA.

Radiolaria indet. — Cretac., Bonaire and Curaçao, Bibl. 12, p. 105; Bibl. 19, p. 73; Bibl. 26, p. 272; Bibl. 23, p. 15, 16, 17, 24, strat. table, Pl. I—III.

Order FORAMINIFERA.

FAM. MILIOLIDAE.

Miliolidae indet. — ? Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 27, p. 1063.

Spiroloculina sp. — ? Mioc., S. Martin, Bibl. 4, p. 24, 66, Pl. 5, fig. 9, 12.

Alveolina sp. — ? Mioc., S. Martin, Bibl. 4, p. 24, 71, Pl. 5, fig. 14; ? Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160.

Orbitolites (*Sorites*) *duplex* Carp. — ? Mioc., S. Martin, Bibl. 4, p. 24.

FAM. LAGENIDAE.

Nodosaria sp. — ? Upper Cretac. and ? Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 37.

FAM. TEXTULARIDAE.

Textularidae indet. — ? Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 27, p. 1063.

Textularia sp. — Upper Cretac., Curaçao, Bibl. 12, p. 82; Bibl. 18; Bibl. 19, p. 26; Bibl. 23, p. 24; Bibl. 37; Pleist., Surinam, Bibl. 40, p. 36.

FAM. GLOBIGERINIDAE.

Globigerina sp. — ? Upper Cretac., Curaçao, Bibl. 12, p. 82; Bibl. 19, p. 34; Bibl. 23, p. 24; Bibl. 37.

FAM. ROTALIDAE.

Rotalidae indet. — Upper Cretac., Curaçao and Bonaire, Upper Eoc., Curaçao, Bibl. 19, p. 34, 73; Bibl. 27, p. 1063; Pleist., Surinam, Bibl. 40, p. 36.

Carpenteria sp. — ? Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 27, p. 1063.

Discorbina sp. — ? Upper Cretac., Curaçao and Bonaire, Bibl. 12, p. 82, 105; Bibl. 19, p. 34.

FAM. NUMMULINIDAE.

Amphistegina sp. — ? Upper Eoc. and Pleist., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 23, p. 29.

Orbitoides sensu lato¹⁾. — Bonaire, Bibl. 19, p. 81.

Discocyclus sp. — ? Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160.

- Lepidocyclina* l.s. sp. sp. — (?) Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 27, p. 1063 sqq.
- „ l.s. *brachiofera* Rutten. — Upper Eoc., Curaçao, Bibl. 27, p. 1067—1068, f. 40, Pl. fig. A, B.
- „ l.s. *curasavica* Koch. — ? Upper Eoc., Curaçao, Bibl. 13, p. 52—56, Pl. III; Bibl. 14, p. 160; Bibl. 27.
- „ (Isolepidina) cf. *hubbardi* Hodson. — ? Upper Eoc. Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160.
- „ (Isolepidina) *macdonaldi* Cushman. — ? Upper Eoc. Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062.
- „ (Isolepidina) *pustulosa* H. Douv. — ? Upper Eoc. Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27; p. 1062.
- „ (Isolepidina) cf. *raulini* Lem. et R. Douv.²). — ? Upper Eoc., Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062.
- „ (Isolepidina) *trinitatis* H. Douv. — (?) Upper Eoc., Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062, 1063.
- „ (Nephrolepidina) *morgani* Lem. et R. Douv. — ? Upper Eocene, Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062.
- „ (Nephrolepidina) *sumatrensis* H. Brady³). — ? Upper Eoc. Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062.
- „ (Nephrolepidina) *ournoueri* Lem. et R. Douv. — ? Upper Eoc., Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062.
- „ (Nephrolepidina) *yurnagunensis* Cushman. — ? Upper Eoc., Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062.
- „ (Pliolepidina) *panamensis* Cushman. — ? Upper Eoc. Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160; Bibl. 27, p. 1062.
- „ (Pliolepidina) *tobleri* H. Douv. — Upper Eoc. Curaçao, Bibl. 27, p. 1063 sqq., fig. 19—35, Pl. fig. C, D.
- „ (Pliolepidina) *tobleri* H. Douv. var. — Upper Eocene, Curaçao, Bibl. 27, p. 1065, fig. 36—39.
- „ (Polylepidina) cf. *proteiformis* Vaughan. — Upper Eoc., Curaçao, Bibl. 27, p. 1063 sqq., fig. 10—16.
- „ (Polylepidina) spec. — ? Upper Eoc., Curaçao, Bibl. 13, p. 52; Bibl. 14, p. 160.
- Operculina* spec. — (?) Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 27, p. 1063 sqq.
- Nummulites striatoradiatus* Rutten. — Upper Eoc., Curaçao, Bibl. 27, p. 1065 sqq., f. 41—50, Pl. fig. F—J.
- „ sp. — (?) Upper Eoc., Curaçao, Bibl. 13, p. 56; Bibl. 14, p. 160; Bibl. 27, p. 1063.

Phylum PORIFERA.

Spongia indet. — Pleist., Surinam, Bibl. 40, p. 36.

Phylum COELENTERATA.

Class ANTHOZOA.

Order HEXACORALLA.

FAM. AMPHIASTRAEIDAE.

Eusmilia fastigiata (Pallas) ⁴). — Quaternary, Curaçao, Bibl. 32, p. 13;
Bibl. 34, p. 361.

FAM. ASTRAEIDAE.

Diploria labyrinthiformis (L) emend. Esper. — Quaternary, Curaçao,
Bonaire, Bibl. 32, p. 48.

Favia fragum Esper. — Quaternary, Curaçao, Aruba, Bibl. 32, p. 40.
Goniastraea curasavica Gerth. — Upper Cretac., Curaçao, Bibl. 8, p. 2,
Pl. I, fig. 2.

Maeandra ciivosa (Ell. et Sol.) ⁵). — Quaternary, Curaçao, Bibl. 32,
p. 60; Bibl. 34, p. 419.

„ *strigosa* (Dana) ⁶). — Quaternary, Curaçao, Aruba, Bonaire,
Bibl. 32, p. 57; Bibl. 34, p. 420.

Maeandrina maeandrites (L.). — Quaternary, Curaçao, Bibl. 32, p. 20.

Manicina gyrosa (Ell. et Sol.) ⁷). — Quaternary, Curaçao, Bibl. 32, p. 44;
Bibl. 34, p. 422.

Orbicella annularis (Ell. et Sol.) ⁸). — Quaternary, Curaçao, Aruba,
Bonaire, Bibl. 32, p. 27; Bibl. 34, p. 364 sqq.

„ *cavernosa* (L.) — Quaternary, Curaçao, ? Oligocene, Aruba ⁹),
Bibl. 32, p. 32.

„ *tenuis* (Duncan) ¹⁰). — ? ? Oligocene Aruba ⁹), Bibl. 32, p. 33;
Bibl. 34, p. 407, 408.

Rhabdophyllia sp. — Upper Cretac., Curaçao, Bibl. 8, p. 4.

Scolymia sp. ind. — Quaternary, Curaçao, Bibl. 32, p. 34.

FAM. FUNGIDAE.

Agaricia agaricites (L.). — Quaternary, Curaçao, Bibl. 32, p. 67.

„ *fragilis* (Dana). — Quaternary, Curaçao, Bibl. 32, p. 68.

Siderastraea radians (Pallas). — Quaternary, Curaçao, Bibl. 32, p. 62.

„ *siderea* (Ell. et Sol.). — Quaternary, Curaçao, Aruba,
Bibl. 32, p. 63.

FAM. EUPSAMMIDAE.

Astraraea cf. *multiradiata* (Reuss). — Upper Cretac., Curaçao, Bibl. 8,
p. 2.

FAM. STYLOPHORIDAE.

Astrocoenia cf. *ramosa* Edw. et H. — Upper Cretac., Curaçao, Bibl. 8,
p. 3.

„ sp. — Upper Cretac., Curaçao, Bibl. 8, p. 4.

Multicolumnastraea parvula Gerth. — Upper Cretac., Curaçao, Bibl. 8, p. 3, Pl. I, fig. 3.

Stephanocoenia intersepta (Esper). — Quaternary, Curaçao, Aruba, Bibl. 32, p. 20.

FAM. MADREPORIDAE.

Aeropora muricata (L.)¹¹. — Quaternary, Curaçao, Bibl. 32, p. 71; Bibl. 34, p. 481, 482.

Alveopora molengraaffi Gerth. — Upper Cretac., Curaçao, Bibl. 8, p. 1, Pl. I, fig. 1.

FAM. PORITIDAE.

Goniopora regularis (Duncan)¹². — ?? Oligocene, Aruba⁹), Bibl. 32, p. 73; Bibl. 34, p. 491.

Porites astreoides Lam. — Quaternary, Curaçao, Aruba, Bibl. 32, p. 77.
 „ *porites* (Pallas). — Quaternary, Curaçao, Bibl. 32, p. 74.

Phylum VERMES.

Serpula (*Rotularia*) *clymenoides* Guppy. — Upper Eoc., Curaçao, Bibl. 23, p. 26, strat. table, Pl. XXXIII.

Phylum ECHINODERMATA.

Class ECHINOIDEA.

Order REGULARES.

FAM. ARBACIIDAE.

Arbacia punctulata Lam. — Quaternary, Surinam, Bibl. 19, p. 201.

FAM. ECHINIDAE.

Echinometra subangularis Leske. — Quaternary, Bibl. 15; Bibl. 19, p. 127.

Order IRREGULARES.

FAM. CLYPEASTRIDAE.

Péronella kloosi G. J. Molengraaff. — Upper Eoc., Curaçao, Bibl. 23, p. 26, 76, 77, strat. table, Pl. XXVI.

„ *martini* G. J. Molengraaff. — Upper Eoc. Curaçao, Bibl. 23, p. 26, 73, 74, strat. table, Pl. XXV, XXVI.

„ cf. *martini* sp.n. — Upper Eoc., Curaçao, Bibl. 23, p. 26, 75, 76, strat. table.

FAM. CASSIDULIDAE.

Conolampas sp. — Pleist., Curaçao, Bibl. 23, strat. table.

Echinolampas lycopersicus Guppy. — ? Mioc., S. Martin, Bibl. 22.

Oligopygus curasavica C. J. Molengraaff. — Upper Eoc., Curaçao, Bibl. 23, p. 26, 77—83, strat. table, Pl. XXVII, XXVIII.

FAM. SPATANGIDAE.

- Antillaster sp. — Pleist., Curaçao, Bibl. 23, strat. table.
 Eupatagus cf. depressus Jackson. — Upper Eoc., Curaçao, Bibl. 23, p. 26,
 strat. table.
 „ grandiflorus Cotteau. — Upper Eoc., Curaçao, Bibl. 23, p. 25,
 72, strat. table, Pl. XXIV, XXV.
 Spatangus cf. purpureus. — Pleist., Curaçao, Bibl. 23, strat. table.

Phylum MOLLUSCA.

Class LAMELLIBRANCHIATA.

Order HOMOMYARIA.

Sub-order TAXODONTA.

FAM. NUCULIDAE.

- Leda sp. — †Upper Cretac., Curaçao, Bibl. 23, strat. table; Pleist.,
 Surinam, Bibl. 40, p. 36.

FAM. ARCIDAE.

- Arca americana Gray. — Quatern., Surinam, Bibl. 28, p. 160; Bibl. 19,
 p. 201; Bibl. 29.
 „ (Cunearca) brasiliana Lam. — Quatern., Surinam, Bibl. 28, p. 160;
 Bibl. 19, p. 201; Bibl. 29; Bibl. 40, p. 36.
 „ aff. bullata Reeve²⁸). — Quatern., Curaçao, Bibl. 15, p. 120.
 „ (Argina) campechiensis Gmel. — Quatern., Surinam, Bibl. 40,
 p. 36.
 „ (Barbatia) candida Chemn.²⁸). — †Quatern., Curaçao, Bibl. 19,
 p. 126; Bibl. 29.
 „ chemnitzii Phil. — Quatern., Surinam, Bibl. 28, p. 160; Bibl. 19,
 p. 201; Bibl. 29.
 „ deshayesii Hanley. — Quatern., Curaçao; Pleist., St. Eustatius,
 Bibl. 15, p. 116, Pl. I, fig. 9; Bibl. 19, p. 126; Bibl. 21.
 „ (Scapharca) halidonata Dall. — „Oligoc.“, Curaçao, Bibl. 6,
 p. 646. Erroneous mention¹³).
 „ cf. Kraussi Phil. — Quaternary, Curaçao, Aruba, Bibl. 15, p. 119;
 Bibl. 29¹⁴).
 „ listeri Phil.²⁸). — Quaternary, Curaçao, Bibl. 15, p. 120.
 „ (Noetia) martinii Recl. — Quatern., Surinam, Bibl. 28, p. 161;
 Bibl. 19, p. 201; Bibl. 29; Bibl. 40, p. 36.
 „ cf. nivea Chemn.²⁸). — Quaternary, Curaçao, Aruba, Bibl. 15,
 p. 118, Pl. I, fig. 10, 13.
 „ noae L.²⁸). — Quaternary, Curaçao, Aruba, Pleist., St. Eustatius,
 Bibl. 15, p. 119, Bibl. 21.
 „ occidentalis Phil. — „Mioc.†“, Curaçao, Bibl. 6, p. 620; Erroneous
 mention¹³); Pleist., St. Eustatius, Bibl. 21.
 „ umbonata Lam.²⁸). — Quaternary, Curaçao, Aruba, Pleist., St.
 Eustatius, Bibl. 19, p. 126; Bibl. 21; Bibl. 29.

- Area velata* Sow. ²⁸). — Quaternary, Curaçao, Bibl. 15, p. 119, Pl. I, fig. 11, 12.
 „ sp. sp. — ? Upper Cretac., Curaçao; Pleist., Aruba, Bibl. 23, strat. table; Bibl. 19, p. 89.
Pectunculus (*Glycimeris*) *castaneus* Lam. — Pleist., St. Eustatius, Bibl. 21.
 „ (*Glycimeris*) *pectinatus* Reeve. — Pleist., St. Eustatius, Bibl. 21.
 „ (*Glycimeris*) *pennaceus* Lam. — Pleist., St. Eustatius, Bibl.

Sub-order HETERODONTA.

FAM. ASTARTIDAE.

- Cardita* sp. — ? Upper Cretac., Curaçao, Bibl. 23, strat. table.

FAM. CHAMIDAE.

- Chama arcinella* L. — Pleist., St. Eustatius, Bibl. 21.
 „ *gryphoides* Chemn. ²⁸). — Quatern., Curaçao, Aruba; Pleist., St. Eustatius, Bibl. 15, p. 121, Pl. I, fig. 14; Bibl. 21.
 „ *macrophylla* Chemn. — Quatern., Curaçao, Aruba, Bibl. 15, p. 122; Bibl. 19, p. 17, 125, 126, 130.
 „ cf. *unicornis* Lam. ¹⁸) ²⁸). — Quaternary, Curaçao, Aruba, Bibl. 15, p. 121, Pl. I, fig. 15.

FAM. RUDISTAE.

- Radiolites* sp. ¹⁶). — Upper Cret., Curaçao, Bibl. 19, p. 22, 24, 25, Pl. II, fig. 14—21.

FAM. LUCINIDAE.

- Lucina antillarum* Reeve ²⁸). — Quaternary, Curaçao, Aruba, Bibl. 19, p. 126; Bibl. 29.
 „ *aurantia* Desh. — Pleist., St. Eustatius, Bibl. 21.
 „ *chrysostoma* Phil. ²⁸). — Quatern., Curaçao, Bibl. 19, p. 126; Bibl. 29.
 „ *divaricata* L. ²⁸). — Quatern., Curaçao, Pleist., St. Eustatius, Bibl. 15, p. 123; Bibl. 21.
 „ *edentula* Lam. ²⁸). — Quatern., Curaçao, Bibl. 15, p. 122.
 „ *pecten* Lam. ²⁸). — Quaternary, Curaçao, Aruba, Bibl. 15, p. 123.
 „ *jamaicensis* Lam. ²⁸). — Pleist., Aruba, St. Eustatius, Bibl. 19, p. 89; Bibl. 21; Bibl. 29.
 „ *pensylvanica* L. — Quaternary, Curaçao, Aruba; Pleist., St. Eustatius, Bibl. 19, p. 126; Bibl. 15, p. 122, Pl. I, fig. 16, 17; Bibl. 21; Bibl. 29.
 „ *serrata* d'Orb. ²⁸) (?). — Quaternary, Curaçao, Bibl. 19, p. 126.
 „ *tigrina* L. — Quaternary, Curaçao, Aruba; Pleist., St. Martin, Bibl. 15, p. 123, Pl. I, fig. 18, 19; Bibl. 19, p. 126, 130; Bibl. 21.
Phacoides (Here) *podagrinus* Dall. — „Oligoc.“, Curaçao, Bibl. 6, p. 1365; Erroneous mention ²⁸).

FAM. CARDIIDAE.

- Cardium* aff. *ciliare* Gmel.²⁸). — Pleist., Aruba, Bibl. 15, p. 125.
 „ (*Hemicardium*) cf. *fragum* L.¹⁴). — Quaternary, Aruba, Bibl. 15, p. 124, Pl. I, fig. 21; Bibl. 29.
 „ *laevigatum* Lam.²⁸). — Quaternary, Curaçao, Aruba; Pleist., St. Eustatius, Bibl. 15, p. 124, Pl. I, fig. 20; Bibl. 21.
 „ *medium* L. — Quaternary, Curaçao, Aruba; Pleist., St. Eustatius, Bibl. 15, p. 126, Pl. I, fig. 22; Bibl. 19, p. 126; Bibl. 21.
 „ (*Trachycardium*) *muricatum* L. — Quatern., Curaçao, Aruba, Bibl. 15, p. 125, Pl. II, fig. 23; Bibl. 19, p. 89, 126, 201; Quatern. Surinam, Bibl. 28, p. 160; Bibl. 19, p. 201; Bibl. 40, p. 36.
 „ aff. *papyraceum* Chemn.¹⁴). — Pleist., Aruba, Bibl. 15, p. 125; Bibl. 29.
 „ *serratum* L.²⁸). — Quaternary, Curaçao, Bibl. 19, p. 126.
 „ sp. — Quaternary, Curaçao, Aruba, Bibl. 19, p. 89, 126.

FAM. CYRENIDAE.

- Cyrena ordinaria* Prime. — Quaternary, Surinam, Bibl. 28, p. 159; Bibl. 19, p. 201; Bibl. 29.
 „ sp. — Quaternary, Surinam, Bibl. 28, p. 160; Bibl. 19, p. 201.

FAM. VENERIDAE.

- Cryptogramma flexuosa* L. — Quaternary, Surinam, Bibl. 28, p. 159; Bibl. 19, p. 201; Bibl. 29.
Cytherea (*Caryatis*) *albida* Gmel. — Quaternary, Surinam, Bibl. 19, p. 126.
 „ (*Ventricola*) *blandiana* Guppy. — „? Oligoc.,” Curaçao, Bibl. 6, p. 1277; Erroneous mention¹⁸).
 „ (*Tivela*) *mactroides* Born. — Quaternary Surinam, Bibl. 28, p. 159; Bibl. 19, p. 201.
 „ *maculata* L. — Quaternary, Curaçao, Aruba, Bibl. 15, p. 127, Pl. II, fig. 27—29.
 „ sp. — Upper Eoc., Curaçao; Pleist., Aruba; Bibl. 23, strat. table; Bibl. 19, p. 89.
Meretrix (*Tivela*) *mactroides* Born. — Quaternary, Surinam, Bibl. 40, p. 36.
Venus cancellata Lam. — Quaternary, Curaçao, Aruba; Pleist., St. Eustatius, Bibl. 15, p. 126, Pl. II, fig. 24—26; Bibl. 19, p. 16, 126, 130; Bibl. 29; Bibl. 21.
 „ *cardioides* Lam. — Quaternary, Surinam, Bibl. 28, p. 159; Bibl. 19, p. 201; Bibl. 40, p. 36.
 „ *listeri* Gray²⁸). — Quaternary, ? Curaçao, ? Aruba, Bibl. 19, p. 126.
 „ *paphia* L. — Pleist., Eustatius, Bibl. 21.
 „ *portesiana* d'Orb. — Quatern., Surinam; Bibl. 28, p. 158; Bibl. 19, p. 201; Bibl. 40, p. 36, 48.
 „ cf. *rugosa* L.²⁸) — Quatern., Curaçao, Aruba, Bibl. 15, p. 126.
 „ *rugosa* Gmel. — Pleist., St. Eustatius, Bibl. 21.
 „ sp. — Pleist., Aruba, Bibl. 19, p. 89.

FAM. DONACIDAE.

- Donax denticulatus* L. — Quatern., Surinam, Bibl. 28, p. 158; Bibl. 19, p. 201; Bibl. 40, p. 36.
 „ *striatus* L. — Quatern., Surinam, Bibl. 28, p. 158; Bibl. 19, p. 201; Bibl. 29; Bibl. 40, p. 36.
Iphigenia brasiliensis Lam. — Quatern., Surinam, Bibl. 28, p. 158; Bibl. 19, p. 201; Bibl. 29.

FAM. TELLINIDAE.

- Tellina constricta* Brug. — Quatern., Surinam, Bibl. 28, p. 157; Bibl. 19, p. 201; Bibl. 29.
 „ *fausta* Donovan. — Quatern., Curaçao, Aruba, Bibl. 19, p. 89, 126; Bibl. 29.
 „ *interrupta* Wood. — Quatern., Curaçao, Aruba; Pleist. St. Eustatius, Bibl. 15, p. 128, Pl. II, fig. 32; Bibl. 19, p. 89, 126, 130; Bibl. 21.
 „ *punicea* Born. — Quatern., Surinam, Bibl. 28, p. 158; Bibl. 19, p. 201; Bibl. 29.
 „ *remies* L. — Quatern., Curaçao, Aruba, Bibl. 15, p. 127, Pl. II, fig. 30, 31; Bibl. 29¹⁷).
 „ *aff. virgata* L. — Pleist. Aruba, Bibl. 15, p. 128, Pl. II, fig. 33; Bibl. 29¹⁴).
 „ *sp.* — Quatern., Curaçao, Aruba, Bibl. 19, p. 126.

FAM. SOLENIDAE.

- Tagelus caribaeus* Lam. — Quatern., Surinam, Bibl. 28, p. 157; Bibl. 19, p. 201; Bibl. 29.
 „ *gibbus* Speng. — Quatern., Surinam, Bibl. 40, p. 36.

FAM. SCROBICULARIIDAE.

- Amphidesma reticulata* Sow. — Quatern., Curaçao, Bibl. 19, p. 126; Bibl. 29.

FAM. MACTRIDAE.

- Mactra* (*Mulina*) *guadelupensis*. — Quatern., Surinam, Bibl. 40, p. 36.
 „ *portoricensis* Shuttleworth. — Quatern., Surinam, Bibl. 28, p. 157; Bibl. 19, p. 201; Bibl. 29.
 „ (*Spisula*) *tellinoides* Reeve. — Quatern., Surinam, Bibl. 28, p. 157; Bibl. 29.
 „ *sp.* — Quaternary, ? Curaçao, Bibl. 19, p. 126.

Sub-order DESMODONTA.

FAM. PLEUROMYIDAE.

- Pleuromya* cf. *californica* Adams.¹⁸) — Quaternary, Curaçao, Bibl. 15, p. 129, Pl. II, fig. 35, 36.

FAM. PHOLADOMYIDAE.

- Pholadomya candida* Sow. — Pleist. Aruba, Bibl. 15, p. 90; Bibl. 19, p. 90; Bibl. 29.

FAM. MYIDAE.

- Corbula cf. biradiata Sow. — Quatern., Surinam, Bibl. 40, p. 36, 48.
 „ sp. Quatern., Curaçao, Aruba, Bibl. 19, p. 126.

FAM. PHOLADIDAE.

- Pholas campechiensis Gmelin. — Quatern., Surinam, Bibl. 28, p. 156;
 Bibl. 19, p. 201; Bibl. 29.
 „ costata L. — Quatern., Surinam, Bibl. 28, p. 156; Bibl. 19,
 p. 201; Bibl. 29.
 Teredo sp. — Quatern., ? Surinam, Bibl. 28, p. 162; Bibl. 19, p. 201.

Order ANISOMYARIA.

FAM. PERNIDAE.

- Perna sp. — Quatern., Bonaire, Bibl. 16.

FAM. LIMIDAE.

- Lima glacialis Gmelin.²⁸⁾ — Quatern., Curaçao, Bibl. 15, p. 115, Pl. I,
 fig. 5.
 „ scabra Born.²⁸⁾ — Quatern., Curaçao; Pleist. St. Eustatius, Bibl.
 19, p. 126; Bibl. 21.
 „ tenera Chemn.²⁸⁾ — Quatern., Curaçao, Bibl. 19, p. 126; Bibl. 29.

FAM. PECTINIDAE.

- Pecten (Aequipecten) inaequalis Sow. „Oligoc.“. — Curaçao, Bibl. 6,
 p. 714; Erroneous mention¹³⁾.
 „ muscosus Woodw. — Pleist., St. Eustatius, Bibl. 21.
 „ nodosus L. — Pleist., Curaçao, St. Eustatius, Bibl. 19, p. 126;
 Bibl. 21; Bibl. 29.
 „ nucleus Born. — Pleist. St. Eustatius, Bibl. 21.
 „ aff. senatorius Lam.¹⁴⁾ — Pleist., Aruba, Bibl. 15, p. 115, Pl. I,
 fig. 6; Bibl. 29.
 „ sowerbyi Reeve. — Quatern., Surinam, Bibl. 28, p. 161; Bibl. 19,
 p. 201; Bibl. 29.
 „ (Aequipecten) thetidis Sow. — „Olig.“, Curaçao, Bibl. 6, p. 714;
 Erroneous mention¹³⁾.
 „ sp. sp. — Pleist., Curaçao, Aruba, Bonaire, Bibl. 19, p. 89, 126;
 Bibl. 20; Quatern., Surinam, Bibl. 40, p. 36; Bibl. 7.

FAM. SPONDYLIDAE.

- Plicatula ramosa Lam. — Pleist., St. Eustatius, Bibl. 21.
 Spondylus americanus Lam. — Quatern., Curaçao, Bibl. 15, p. 114;
 Bibl. 19, p. 126; Bibl. 29.
 „ coccineus Lam. — Pleist., St. Eustatius, Bibl. 21.
 „ echinatus Martyn. — Quatern., Curaçao, Bibl. 39, p. 82.
 „ sp. — Pleist., Curaçao, Aruba, Bibl. 19, p. 89, 126.

FAM. ANOMIIDAE.

- Anomia humphreysiana* Reeve. — Quatern., Surinam, Bibl. 28, p. 161;
Bibl. 19, p. 201; Bibl. 29; Bibl. 40, p. 37.

FAM. OSTREIDAE.

- Ostrea cucullata* Lam²⁸). — Quatern., Curaçao, Bibl. 15, p. 114, Pl. I,
fig. 1—4.
„ *folium* L. — Quatern., Curaçao, Bibl. 15, p. 114; Bibl. 19, p. 126;
Bibl. 23, strat. table; Bibl. 29.
„ *frons* L. — Quatern.,²⁸), Curaçao, Bibl. 19, p. 125, 126; Bibl.
23, strat. table; Bibl. 29.
„ *cf. frons* L. — Quatern., Surinam, Bibl. 40, p. 37.
„ *parasitica* Gmelin. — Quatern., Surinam, Bibl. 19, p. 201; Bibl.
28, p. 161¹⁹).
„ *rhizophorae* Guilding.²⁸) — Quatern., Curaçao, Bibl. 15, p. 114
„ *rubella* Lam. — Pleist., St. Eustatius, Bibl. 21.
„ *sp. sp.* — Upper Eoc., Pleist., Curaçao, Bibl. 23, strat table; Bibl.
19, p. 15.

FAM. MYTILIDAE.

- Lithodomus antillarum* d'Orb. — Pleist., St. Sustatius, Bibl. 21.
„ *sp.* — Pleist., Curaçao, Aruba, Bibl. 19, p. 17, 89.
Modiola antillarum Phil. — Pleist., Aruba, Bibl. 15, p. 116, Pl. I, fig. 7.
„ *caribaea* Phil. — Pleist., Aruba, Bibl. 15, p. 116, Pl. I, fig. 8.
„ *sp. sp.* — Quatern., Aruba, Bibl. 19, p. 129; Quatern., Surinam,
Bibl. 40, p. 37.

Class GASTROPODA.

Order PROSOBRANCHIA.

FAM. FISSURELLIDAE.

- Fissurella larva* Reeve. — Quatern., Curaçao, Bibl. 19, p. 126; Bibl. 29
„ *neglecta* Desh. — Quatern., Curaçao, Bibl. 15, p. 129.

FAM. TURBINIDAE.

- Turbo castaneus* Gmelin. — Pleist., St. Eustatius, Bibl. 21.
„ *crenulatus* Gmelin. — Pleist., St. Eustatius, Bibl. 21.
„ *pica*. — vide *Trochus pica*.

FAM. TROCHIDAE.

- Trochus luctuosus* d'Orb. — Pleist., St. Eustatius, Bibl. 21.
„ (*Livona pica* L. — Quatern., Curaçao, Aruba, Bibl. 15, p. 129,
Pl. II, fig. 37; Bibl. 19, p. 81, 90, 126, 130.

FAM. SOLARIIDAE.

- Solarium sp.* — Upper Eoc., Curaçao, Bibl. 23, strat. table.

FAM. LITTORINIDAE.

- Littorina columellaris* d'Orb. — Quatern., Surinam, Bibl. 28, p. 155;
Bibl. 19, p. 201; Bibl. 29.
„ (*Melaraphe*) *nebulosa* Lam. — Quatern., Surinam, Bibl. 40,
p. 36.

FAM. CYCLOSTOMIDAE.

- Cyclostoma megachile* Pot. et Mich. — Quatern, Curaçao, Bibl. 15, p. 131;
Bibl. 19, p. 97, 127.

FAM. CAPULIDAE.

- Calyptraea* cf. *mamillaris* Brod. — Quatern., Surinam, Bibl. 40, p. 36.
Hipponyx sp. — Pleist., Aruba, Bibl. 19, p. 90.

FAM. NATICIDAE.

- Natica canrena* L. — Pleist., St. Eustatius, Bibl. 21; Pleist., Surinam,
Bibl. 40, p. 36.
„ (*Pollinices*) *caribaea* Phil. — Quatern., Curaçao, Bibl. 19, p. 126;
Bibl. 29.
„ *lactea* Guild. — Pleist., St. Eustatius, Bibl. 21.
„ *mamillaris* Lam. — Pleist., St. Eustatius, Bibl. 21.
„ *maroccana* Chemn. — Quatern., Surinam, Bibl. 28, p. 155; Bibl.
19, p. 201; Bibl. 29.
„ *marochiensis* Gmel. — Pleist., Surinam, Bibl. 40, p. 36.
„ *pennata* Schröter²⁰). — Quatern., Surinam, Bibl. 28, p. 154;
Bibl. 19, p. 201; Bibl. 29.
„ cf. *rhodostoma* Phil. — Quatern., Curaçao, Bibl. 15, p. 131¹⁴).

FAM. TURRITELLIDAE.

- Turritella imbricata* L. — Pleist., Aruba, Bibl. 15, p. 130.

FAM. MODULIDAE.

- Modulus modulus* L. — Quatern., Curaçao, Bibl. 19, p. 126.

FAM. VERMETIDAE.

- Vermetus arenarius* L. — Pleist., Aruba, Bibl. 15, p. 130, Pl. II, fig. 38.
„ sp. — Quatern., Bonaire, Bibl. 16.

FAM. MELANIIDAE.

- Doryssa devians* Brot. — Quatern., Surinam, Bibl. 28, p. 155; Bibl. 19,
p. 201; Bibl. 29.

FAM. CERITHIIDAE.

- Cerithium eburneum* Brug. — Pleist., St. Eustatius, Bibl. 21.
„ cf. *stercus-muscarum* Say. — Quatern., Curaçao, Bibl. 15,
p. 131.
„ sp. — Upper Eoc., Quatern., Curaçao, Bibl. 19, p. 127; Bibl. 23,
strat. table.

FAM. STROMBIDAE.

- Strombus gigas* L. — Quatern., Curaçao, Aruba; Pleist., St. Eustatius, Bibl. 15, p. 132, Pl. II, fig. 39; Bibl. 19, p. 15, 16, 17, 81, 87, 90, 127, 130; Bibl. 21.
- „ *pugilis* L. — Quatern., Aruba; Pleist., St. Eustatius, Bibl. 15, p. 132; Bibl. 19, p. 127; Bibl. 21.
- „ sp. — Pleist., Aruba, Bibl. 19, p. 90.

FAM. CYPRAEIDAE.

- Cypraea* cf. *exanthema* L. — Pleist., Curaçao, Aruba, Bibl. 15, p. 133, Pl. II, fig. 40.
- „ *flaveola* Reeve. — Pleist., St. Eustatius, Bibl. 21.
- „ cf. *sordida* L. — Pleist., Aruba, Bibl. 15, p. 134.
- „ sp. — Pleist., Aruba, Bibl. 19, p. 90.

FAM. CASSIDIDAE.

- Cassis tuberosa* Lam. — Pleist., St. Eustatius, Bibl. 21.

FAM. DOLIIDAE.

- Dolium antillarum* Mörch. — Quatern., Surinam, Bibl. 28, p. 154; Bibl. 19, p. 200; Bibl. 29²¹).

FAM. TRITONIDAE.

- Bursa* (*Marsupina*) *crassa* Dillw.²²). — Quatern., Surinam, Bibl. 40, p. 36; Bibl. 28, p. 154; Bibl. 19, p. 201; Bibl. 29.
- Triton antillarum* d'Orb. — Quatern., Curaçao, Bibl. 19, p. 127; Bibl. 29.
- „ aff. *sinensis* Reeve¹⁴). — Quatern., Curaçao, Bibl. 15, p. 127; Bibl. 29.

FAM. BUCCINIDAE.

- Nassa* (*Nassarius*) *antillarum* d'Orb. — Quatern., Surinam, Bibl. 28, p. 153; Bibl. 19, p. 200; Bibl. 29; Bibl. 40, p. 36.
- „ *guadeloupensis* Petit. — Pleist., St. Eustatius, Bibl. 21.

FAM. PURPURIDAE.

- Purpura* (*Thais*) *coronata* Lam. — Quatern., Suriname, Bibl. 28, p. 152; Bibl. 19, p. 200; Bibl. 40, p. 36.
- „ (*Thais*) *floridana* Conr. — Quatern., Surinam, Bibl. 28, p. 152; Bibl. 19, p. 200; Bibl. 40, p. 36; Bibl. 11²³).

FAM. MURICIDAE.

- Latirus* sp. — Quatern., Curaçao, Bibl. 19, p. 127.
- Murex* aff. *bellus* Reeve²³). — Quatern., Curaçao; Pleist., St. Eustatius, Bibl. 19, p. 127; Bibl. 29; Bibl. 21.
- „ *brevifrons* Lam.²³). — Quatern., Curacao, Bibl. 15, p. 136, Pl. II, fig. 41.
- „ *calcitrata* L.²³). — Quatern., Curaçao, Bibl. 19, p. 127; Bibl. 29.
- „ (*Chicoreus*) *salleanus* A. Ad. — Quatern., Surinam, Bibl. 40, p. 36.

- Pyrua* (*Melongena*) cf. *citrina* Lam. — Quatern., Aruba, Bibl. 15, p. 135; Bibl. 29¹⁴).
- „ (*Melongena*) *melongena* L. — Quatern., Curaçao, Aruba, Bibl. 15, p. 135; Bibl. 19, p. 16, 90, 127, 130; Quatern., Surinam, Bibl. 19, p. 200; Bibl. 28, p. 152; Bibl. 29.
- „ (*Melongena*) *morio* L. — Quatern., Surinam, Bibl. 28, p. 153; Bibl. 19, p. 200; Bibl. 29.
- „ sp. — Quatern., Curaçao, Bibl. 19, p. 127.
- Turbinella* sp. — Pleist., Aruba, Bibl. 19, p. 90.

FAM. VOLUTIDAE.

- Marginella prunum* Gmelin. — Quatern., Surinam, Bibl. 28, p. 153; Bibl. 19, p. 200; Bibl. 29; Bibl. 40, p. 36.
- Voluta musica* L. — Quatern., Aruba, Bibl. 15, p. 137; Bibl. 19, p. 127; Bibl. 29.
- „ sp. — Upper Eoc., Curaçao, Bibl. 23, strat. table.

FAM. OLIVIDAE.

- Oliva fusiformis* Lam. — Pleist., St. Eustatius, Bibl. 21.
- „ *reticularis* Lam.²⁸). — Pleist., Aruba, St. Eustatius, Bibl. 19, p. 127; Bibl. 21.
- „ *venulata* Lam.²⁸). — Pleist.; Aruba, Bibl. 15, p. 138, Pl. II, fig. 42.
- „ sp. — Pleist., Aruba, Bibl. 19, p. 90; Quatern., Surinam, Bibl. 7.
- Olivella* sp. — Quatern., Surinam, Bibl. 40, p. 36.

FAM. TEREBRIDAE.

- Terebra hastata* Kien. — Pleist., St. Eustatius, Bibl. 21.

FAM. PLEUROTOMIDAE.

- Pleurotoma* sp. — Pleist., St. Eustatius, Bibl. 21.

FAM. CONIDAE.

- Conus* aff. *hebraeus* L.¹⁴). — Pleist., Aruba, Bibl. 15, p. 139; Bibl. 29.
- „ *pygmaeus* Reeve. — Pleist., St. Eustatius, Bibl. 21.
- „ sp. — Pleist., Aruba, Bibl. 19, p. 90.

Order OPISTHOBRANCHIA.

FAM. ACTAEONIDAE.

- Actaeonella* sp. — Upper Cret., Curaçao, Bibl. 8, p. 4.
- Volvulina laevis* d'Orb. ? — Upper Cretac., Curaçao, Bibl. 8, p. 4—5.

FAM. BULLIDAE.

- Bulla maculata* Martini²⁸). — Quatern., Curaçao, Aruba, Bibl. 15, p. 140, Pl. II, fig. 43.
- „ *media* Phil.²⁸). — Quatern., Curaçao, Aruba, Bibl. 19, p. 127; Bibl. 29.
- „ *striata* Brug. — Pleist., St. Eustatius, Bibl. 21.

Order PULMONATA.

FAM. AURICULIDAE.

- Auricula pellucens* Menke. — Quatern., Surinam, Bibl. 28, p. 156; Bibl. 19, p. 201.
Auris distorta Chemn. — Quatern., Surinam, Bibl. 29.
Melampus coffea L. — Quatern., Surinam, Bibl. 28, p. 156; Bibl. 19, p. 201; Bibl. 29.

FAM. HELICIDAE.

- Bulimus distortus* Chemn. var. — Quatern., Surinam, Bibl. 28, p. 155; Bibl. 19, p. 201.
 Pupa (*Cerion*) *uva* L. — Quatern., Curaçao, Bibl. 15, p. 140; Bibl. 19, p. 17, 97, 125, 127.

Class SCAPHOPODA.

- Dentalium* sp. — Pleist., St. Eustatius, Bibl. 21.

Class CEPHALOPADA.

- Ammonites* sp. indet. — ? Cretaceous, Aruba²⁴), Bibl. 19, p. 60, Pl. I, fig. 13.

Phylum VERTEBRATA.

Class PISCES.

- Pisces* indet. — Pleist., Aruba, Bibl. 24.

Order SELACHII.

FAM. LAMNIDAE.

- Carcharodon* aff. *megalodon* Ag. — Quatern., Bonaire, Bibl. 16; Bibl. 19, p. 81, 104, 105, Pl. I, fig. 3—7.
Oxyrhina ? *gomphodon* Müll. Henle. — Quatern., Bonaire, Bibl. 16; Bibl. 19, p. 105, Pl. I, fig. 8—10²⁸).

FAM. RHINORAJIDAE.

- Myliobatis* sp. — Quatern., Bonaire, Bibl. 19, p. 105, Pl. I, fig. 11.

Order TELEOSTEI.

FAM. GYMNODONTIDAE.

- ?? *Diodon*. — Quatern., Bonaire, Bibl. 19, p. 105, Pl. I, fig. 12.

Class REPTILIA.

Order TESTUDINATA.

FAM. CHELONIIDAE.

?? Chelonia. — Pleist., Aruba, Bibl. 24.

Class MAMMALIA.

Order RODENTIA.

FAM. CASTOROIDEA.

Amblyrhiza inundata Coppe. — ?? Quaternary, S. Martin, Bibl. 1;
Bibl. 3; Bibl. 22; Bibl. 31²⁷).

Order SUBUNGULATA.

Sub-order SIRENIA.

Manatus sp. — Pleist., Aruba, ? Quatern., Bonaire, Bibl. 19, p. 89,
101—103, Pl. I, fig. 1, 2; Bibl. 24.

ANNOTATIONS TO THE LIST OF SPECIES.

1. The „*Orbitoides*” from Bonaire have been regarded by MARTIN (Bibl. 19) to be of cretaceous age. Their age, however, is certainly Lower Tertiary.
2. *Lepidocyclina raulini* belongs to the subgenus *Eulepidina* (Bibl. 27, p. 1062).
3. It is very improbable, that *Lep. (Nephrolepidina) sumatrensis* occurs in America (Bibl. 27, p. 1062).
4. This fossil has been called by VAUGHAN in 1901 „*E. knorri* (M. EDW. a. H.)”; in 1919 VAUGHAN has changed the name into „*E. fastigiata*”.
7. In 1901 VAUGHAN called the fossil „*Colpophyllia gyrosa* (ELL. a. SOL.)”; in 1919 he changed the name into „*M. clivosa*”.
6. In 1901 VAUGHAN called the fossil „*Platygyra viridis* (LE SUEUR)”; in 1919 he changed the name into „*Maeandra strigosa*”.
7. In 1901 VAUGHAN called the fossil „*Colpophyllia syrosa* (ELL. a. SOL.)”; in 1919 he changed the name into „*Manicina gyrosa*”.
8. In 1901 VAUGHAN called the fossil „*Orbicella acropora* (L.)”; in 1919 he changed the name into „*O. annularis*”.

9. It is very improbable that the phosphate rock of Cerro Colorado, Aruba, which contains this fossil, is of oligocene age. See, however, Bibl. 34, p. 207; Bibl. 35; Bibl. 36.
10. Probably part of the fossils might be called „*Antiguastraea cellulosa* (DUNCAN)". Bibl. 34, p. 407—408.
11. In 1901 VAUGHAN called the fossil „*Isopora muricata* (L.), forma *muricata*"; in 1919 he changed the name into „*Acropora muricata* (L.)".
12. In 1901 VAUGHAN called the fossil „*Alveopora regularis* DUNCAN"; in 1919 he changed the name into „*Goniopora regularis*".
13. In the American palaeontological literature there are some references to the occurrence of „Oligocene" or „Miocene" (Bowden Beds) in Curaçao (Bibl. 9, p. 304; Bibl. 5, p. 340; Bibl. 6). DALL, in his monography of Floridan tertiary mollusca (Bibl. 6) has mentioned some „Bowden Fossils" from Curaçao, namely: *Arca halidonata* DALL, *Arca occidentalis* PHIL., *Phacoides (Here) podagrinus* DALL, *Cytherea (Ventricola) blandiana* GUPPY, *Pecten (Aequipecten) inaequalis* SOW. and *Pecten (Aequipecten) thetidis* SOW. WOODRING (Bibl. 38, p. 25, footnote; Bibl. 39, p. 82) has proved that the „Bowden fossils" from Curaçao most probably have not been found on this island and that they originate from the type locality Bowden on Jamaica.
14. J. LORIÉ (Bibl. 15) has compared rather many quaternary fossils from Curaçao and Aruba with recent species which inhabit regions, very far away from the Caribbean sea. They are: *Arca cf. Kraussi* PHIL. (recent coast of Natal); *Cardium (Hemicardium) cf. fragum* L. (Indian and Pacific Ocean); *Cardium aff. papyraceum* CHEMN. (Philippines); *Tellina aff. virgata* L. (Indian Ocean); *Pecten aff. senatorius* LAM. (Moluccas); *Natica cf. rhodostoma* PHIL. (Philippines); *Triton aff. sinensis* REEVE (East Asia, W. Africa); *Pyrula cf. citrina* LAM. (Ceylon, Mozambique); *Conus aff. hebraeus* L. (Ceylon). SCHEPMAN (Bibl. 29) supposes that all these determinations are erroneous.
15. According to Bibl. 11 the name should be *Chama unicornis* BRUG.
16. The specimens of *Radiolites* from Curaçao have been described originally as *Dania curasavica* (Bibl. 17, corrected in Bibl. 18).
17. According to Bibl. 29 the determination is probably incorrect.
18. According to „ZITTEL" *Pleuromya* does not occur in Kaenozoic deposits.
19. According to Bibl. 11 *Ostrea parasitica* GMEL. should be called *Ostrea virginica* var. *parasitica*.
20. According to Bibl. 29 *Natica pennata* SCHRÖTER is synonymous with *Natica canrena* L.
21. According to Bibl. 29 *Dolium antillarum* MÖRCH is very near to, if not synonymous with *Dolium perdix* L.
22. Called *Ranella crassa* in Bibl. 28, p. 154. There occurs in Surinam also a *Ranella crassa* var. *bituberculata*.
23. According to Bibl. 11 the name should be *Purpura haemostoma* L. var. *floridina* (CONRAD).

24. The „*Ammon sp. indet.*” from Aruba has been compared by MARTIN (Bibl. 19, p. 60) with *Ammonites treffryanus* KARSTEN from the Cretaceous of Columbia. In modern nomenclature this is *Hoplites treffryanus* (KARSTEN). Possibly the fossil from Aruba might also be compared with *Pulchellia aff. pulchella* D'ORB. from the Cretaceous of Columbia (compare: GERHARDT, Neues Jahrbuch etc. Beil. Bd. 11, 1897, p. 154, pl. III, fig. 9).
25. The teeth of *Carcharodon* from Bonaire have originally been determined as *C. megalodon* AG. (Bibl. 16); the phosphatic limestone wherein they occur have been regarded as Tertiary. Afterwards the determination has been changed into *C. ? megalodon* AG. (Bibl. 19, p. 81, 104, 105), whilst the phosphatic limestones from Bonaire have been regarded as Quaternary. MARTIN points to the fact that the fossil teeth from Bonaire certainly differ from those of recent species of *Carcharodon*.
26. Originally the teeth have been determined as *Oxyrhina gomphodon* MÜLL. HENLE (Bibl. 16). Afterwards MARTIN has observed that the teeth are as well comparable with *O. glauca* MÜLL. HENLE.
27. The data on the occurrence of *Amblyrhiza inundata* COPE on St. Martin are somewhat vague. In his first description (Bibl. 2) COPE only mentions remains of *A. inundata* from Anguilla. In his definite publication (Bibl. 3), the title of which is „On the contents of a bone cave in the island of Anguilla”, COPE writes on p. 9: „The remains of this large rodent (*A. inundata*) were found in a mass of a breccia which was thrown out in the excavations made in a cavern in the Virgin Island of St. Martin”. I feel sure that this is a slip of the pen, as nowhere else in this publication St. Martin is mentioned as the findspot. Some years later, however, MOLENGRAAFF (Bibl. 22) mentions the occurrence of *Amblyrhiza* on St. Martin on the authority of COPE. J. W. SPENCER, in his first publication on St. Martin (Bibl. 30) does not mention the occurrence of *Amblyrhiza* on the island. In 1910, however, (Bibl. 31) he states that he has found remains of *Amblyrhiza* on St. Martin „a notice of its occurrence in that island not having been published until the present time”. H. E. ANTHONY (Bibl. 1) mentions the occurrence of *A. inundata* on St. Martin. I saw in MOLENGRAAFF's collection remains of a large rodent.
- So, it is certain that remains of a rather large rodent have been found in St. Martin; I am however, not convinced that this animal is *Amblyrhiza inundata*.
28. It is necessary to point to the fact that there exists some confusion in the determination of quaternary Mollusca from Curaçao and Aruba, even, if we do not regard the erroneous determinations, mentioned in Ann. 14 and 17. The fossils under discussion have been described by LORÉ in 1887 (Bibl. 15), whilst a list, based on determinations by SCHEPMAN has been inserted in MARTIN's book on the West Indies (Bibl. 19, p. 125, 126, 127). This list is from 1888. There are great differences between LORÉ's and MARTIN-SCHEPMAN's lists.

Apparently MARTIN has regarded the determinations of SCHEPMAN as the most reliable (Bibl. 19, p. 127, footnote 3). In the following list the main differences between the two fossil-lists come to the fore (The capitals refer to the following findspots: B: Beekenburg, Cur., Br: Brievengat, Cur., C: Seroe colorado, Ar., D: Daimari, Ar., F: Fuikbay, Cur., H: Spanish harbour, Cur., J: Klein St. Joris, Cur., N: Fort Nassau, Cur., P: Seroe Plat, Ar., S: Spanish lagoon, Ar., V: Veeris, Cur.).

LORIÉ.

- Arca deshayesi* HANLEY B. V.
 „ *velata* SOW. N. V.
 „ *aff. bullata* RVE. V. (1 specimen).
 „ *listeri* PHIL. V.
 „ *cf. nivea* CHEMN. B. V.
 „ *noae* L. J. S.
Chama macrophylla CHEMN. J. N. S.
 „ *gryphoides* CHEMN. B. C. N. S. V.
 „ *cf. unicornis* LAM. B. C. N. S. V.
Lucina pensylvanica L. Br. C. F. H.
 „ *tigrina* L. Br. C. D. F. H. N.
 „ *divaricata* L. F. (1 specimen).
 „ *edentula* LAM. V.
 „ *pecten* LAM. B. S. V.
Cardium medium L. Br. F. H.
 „ *muricatum* L. C. V.
 „ *aff. ciliare* GMEL. C.
 „ *laevigatum* LAM. S. V.:
 ? syn. with: *C. serratum* L. S.
Venus cancellata LAM. B. N. V.
 „ *cf. rugosa* L. N. S.
Lima glacialis GMEL. B. Vr. V.
Ostrea folium L. B.
 „ *cucullata* LAM. B. V.
 „ *rhizophorae* GUILD. N. (1 specimen).
Murex brevifrons LAM. B. F.
Oliva venulata LAM. P. C.
Bulla maculata MART. B. E. N. S.

MARTIN-SCHPEPMAN.

- Arca deshayesi* H. B. N. V.
 ? „ *candida* CHEMN. B. N. V.
 „ *umbonata* LAM. B. J. N. S. V.
Chama macrophylla B. J. N. S. V.
Lucina pensylvanica Br. F. S.
 „ *tigrina* Br. F. H. N.
 „ *antillarum* RVE. B. S. V.
 „ *chrysostoma* PHIL. N. V.
 „ *jamaicensis* LAM. C.
 ? „ *serrata* D'ORB. F.
Cardium medium H. S.
 „ *muricatum* V.
Venus cancellata B. N. S. V.
 ? „ *listeri* GRAY. N. S.
Lima scabra BORN. B. Br.
 „ *tenera* CHEMN. V.
Ostrea folium B.
 „ *frons* L. B.
Murex aff. bellus RVE. F.
 „ *calcitrapa* L. B.
Oliva reticularis LAM. P.
Bulla media PHIL. B. F. S.

BIBLIOGRAPHY.

1. ANTHONY, H. E. Mammals of Porto Rico, living and extinct. New York Academy of Science. Scient. Surv. of Porto Rico and the Virgin Islands, IX, 1, 2, 1925—1926, p. 1—238, 54 pl.
2. COPE, E. D. Description of two large extinct rodents from Anguilla, West Indies. Proc. Amer. Philos. Soc. XI, 1869, p. 183—188.
3. COPE, E. D. On the contents of a bone cave in the island of Anguilla, West Indies. Smithsonian Contributions to knowledge, XXV, 1883, 30 pp. 5 pl.
4. CUSHMAN, J. Fossil Foraminifera from the West Indies. In: Th. Wayland Vaughan, Contr. to the Geol. and Palaeont. of the West Indies, 1919, Publ. Carn. Inst. Washington no. 291, 1919, p. 21—72.
5. DALL, W. H. A table of the N. American Tertiary horizons, correlated with one another and with those of Western Europe, with annotations, 18th Ann. Rep. U. S. Geol. Surv. pt. 2, 1898, p. 323—348.
6. DALL, W. H. Contributions to the tertiary fauna of Florida. Wagner Free Institute, Philadelphia, 1890—1903, 1620 pp. LXpl.
7. ESSED, E. A contribution to the knowledge of the geological formation of the Copename valley (Dutch Guyana). Verhandl. Geol. Mijnbouwk. Genootsch. voor Nederland en Koloniën. Geol. Serie, VII, 1926, p. 229—249.
8. GERTH, H. Beiträge zur Kenntnis der Mesoz. Korallenfaunen von Süd Amerika. Leidsche Geol. Mededeelingen, III, 1, 1928, p. 1—17, 1 pl.
9. LECHMERE GUPPY, R. J. and DALL, W. H. Description of tertiary fossils from the Antillean region. Proc. U. S. Nat. Museum. 19, 1897, p. 303—331.
10. HOWE, M. Tertiary calcareous algae from the islands of St. Bartholomew, Antigua and Anguilla. In: Vaughan, Contr. to the Geol. a. Palaeont. of the West Indies. Publ. Carn. Inst. Wash. no. 291, 1919, p. 11—19, pl. I—VI.
11. VAN BENTHEM JUTTINK, TERA. Marine Molluscs of the island of Curaçao, Bijdrage tot de Dierkunde, uitgegeven door het Zoöl. Genootschap Natura Artis Magistra, Amsterdam, XXV, 1927, p. 1—36.
12. KLOOS, J. H. Untersuchungen über Gesteine und Mineralien aus West Indien. Samml. Geol. Reichsmus. Leiden. Beitr. zur Geol. u. Palaeont. von Nederl. Indien (II), I, 1887, p. 1—110.
13. KOCH, R. Tertiärer Foraminiferenkalk von der Insel Curaçao. Niederl. West Indien. Eclogae. geol. Helvetiae, 21, 1928, p. 52—56, pl. III.
14. KOCH, B. Berichtigung und Ergänzung zu der Notiz „Tert. For. Kalk von der Insel Curaçao“. Ecl. geol. Helv. 22, 1929, p. 159—161.
15. LORIÉ, J. Fossile Mollusken von Curaçao, Aruba und der Küste von Venezuela. Samml. Geol. Reichsmus. Leiden. Beitr. z. Geol. u. Palaeont. v. Nederl. Indien (II), I, 1887, p. 111—149, 2 T.
16. MARTIN, K. Phosphoritische Kalke von der Westindischen Insel Curaçao. Zeitschr. d. Deutsch. Geol. Ges. 31, 1879, p. 473—479.
17. MARTIN, K. Ueber das Vorkommen von Dania auf Curaçao. Neues Jahrb. 1885, II, p. 239—240.
18. MARTIN, K. (Short communication on Curaçao). Versl. en Meded. Kon. Akad. van Wetensch., Amsterdam, Afd. Natuurkunde (III), II, 1886, p. 238—240.
19. MARTIN, K. Bericht über eine Reise nach Nederl. West Indien und darauf gegründete Studien, II, Geologie, 1888.
20. MEYN, L. Das Phosphoritlager von Curaçao. Zeitschr. d. Deutsch. Geol. Ges. 31, 1879, p. 697—704.
21. MOLENGRAAFF, G. A. F. De geologie van het eiland St. Eustatius. Diss. 1886, 66 pp.
22. MOLENGRAAFF, G. A. F. Het geologisch verband tusschen de Westindische eilanden. Handel. Eerste Nederl. Nat. en Geneesk. Congr. 1888, p. 287—296.

23. MOLENGRAAFF, G. J. H. Geologie en Geohydrologie van het eiland Curaçao. Diss. Delft, 1929.
24. VAN OORT, E. D. Ueber einen Sirenenwirbel aus dem Serro Colorado auf Aruba. Samml. Geol. Reichsmus. Leiden. Beitr. zur Geol. und Palaeont. v. Niederl. Indien (II), II, 1902, p. 164—168.
25. PIJPER, P. The occurrence of foreign pebbles on the isle of Bonaire. Proc. Kon. Akad. v. Wetensch. Amsterdam, XXXIV, 1931, p. 168—174.
26. RUTTEN, L. Cuba, The Antilles and the Southern Moluccas. Proc. Kon. Akad. van Wetensch. Amsterdam, XXV, 1922, p. 263—274, 1 pl.
27. RUTTEN, L. On tertiary foraminifera from Curaçao. Proc. Kon. Akad. v. Wetensch. Amsterdam, XXXI, 1928, p. 1061—1070, 1 pl.
28. SCHEPMAN, M. M. Bijdrage tot de kennis der Molluskenfauna van de schelp-ritsen van Suriname. Samml. Geol. Reichsmus. Leiden. Beitr. z. Geol. u. Palaeont. v. Niederl. Indien (II), I, 1887, p. 150—168.
29. SCHEPMAN, M. M. „Mollusca”, in: Encyclopaedie van West-Indië, 1914—1918, p. 477—482.
30. SPENCER, J. W. The geol. and phys. development of Anguilla, St. Martin etc. Q. J. Geol. Soc. London, 57, 1901, p. 520—533.
31. SPENCER, J. W. Note on the discovery of fossil mammals in Cuba. Geol. Magaz. (5), VII, 1910, p. 512—513.
32. VAUGHAN, T. WAYLAND. Some fossil corals from the elevated reefs of Curaçao, Aruba and Bonaire. Samml. Geol. Reichsmus. Beitr. z. Geol. u. Palaeont. v. Niederl. Indien (II), II, 1901, p. 1—91.
33. VAUGHAN, T. WAYLAND. Résumé of the present status of geol. correlation of the cretac. and tert. form. of the Antilles. J. Acad. Sc. Washington, V, 1915, p. 489.
34. VAUGHAN, T. WAYLAND. Fossil corals from Central America etc. Bull. U.S. Nat. Museum, 103, 1919, p. 189—524.
35. VAUGHAN, T. WAYLAND. Correlation of the Tertiary formations of Central America and the West Indies. Proc. First Pan Pacific Sc. Conf. Honolulu, III, 1921, p. 819—845.
36. VAUGHAN, T. WAYLAND. Criteria and status of correlation and classification of tertiary deposits. Bull. Geol. Soc. Amer. 35, 1924, p. 677—742.
37. VERMUNT, L. W. J. and RUTTEN, M. G. Geology of Central Curaçao. Proc. Kon. Akad. v. Wetensch. Amsterdam, XXXIV, 1931, p. 275 sqq.
38. WOODRING, W. P. Miocene Mollusks from Bowden, Jamaica. Contr. to the Geol. and Pal. of the West. Indies. Publ. Carn. Inst. no. 366, 1925.
39. WOODRING, W. P. Miocene Mollusks from Bowden, Jamaica. Contr. to the Geol. and Pal. of the West Indies. Publ. Carn. Inst. no. 385, 1928.
40. IJZERMAN, E. Outline of the Geology and Petrology of Surinam. Diss. Utrecht, 1931.