2. TERTIARY FORAMINIFERA

BY

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INTRODUCTION.

In his review of the palaeozoology of Java, K. MARTIN could in 1919, record 49 foraminifera from tertiary strata of Java, on the strength of a critical study of the existant literature, and especially on the strength of his own studies and knowledge of the above mentioned fossils (Bibl. 49).

In composing the following list of the Foraminifera I have only been able to perform such a critical study for a few families. For the greater part, however, I have had to restrict myself to recording the results obtained by others, and even therein I have been obliged to restrict myself.

More than 640 species have been included in the list following hereafter, for the whole of the East Indian Archipelago. In reality a much greater number scattered throughout a very extensive geological literature could be mentioned.

This is especially the case with the so called „smaller Foraminifera". So little palaeontological detail work has been performed with regard to the smaller Foraminifera, that, with the exception of some papers that will be treated in extenso in the third chapter the statements of most of the authors are restricted to a record of the species which occur still recently and which have been classified on the strength of works such as BRADY's. Species that are not to be found in literature about recent Foraminifera are then indicated by „spec" sometimes by „var".

It would of course, be of no use to include in our list these latter species among which there are probably the stratigraphically important forms of which, however, we completely lack descriptions and pictures. Of the other smaller Foraminifera which still occur recently and of which the species could be mentioned, a record of their relative age is in a number of cases impossible — this applies especially to strata younger than the *Lepidocyclina* containing tertiary.

It is for these reasons that I have refrained from including all these enumerations and literature places in the list, where this would be of little or no value either palaeontologically or stratigraphically.

For those genera of which a recent monographic revision is in existence (*Lepidocyclina, Spiroclypeus, Pellatispira*) or soon to be expected (*Cycloclypeus, Clausulus, Fasciolites*) I have only referred to those literature statements and to possible more recent data. For older literature concerning species of these genera and for particulars regarding their stratigraphical distribution, as also for species that had to be deleted (e. q. *Lepidocyclina limbata, Spiroclypeus Yabei, Pellatispira pauperata* etc. etc.) or that have become synonyms (e. q. *Spiroclypeus Wolfgangi, Pellatispira Madarassi var. Douvillei, Alveolina spec. 3* etc. etc.) see those literature statements.

For the nomenclature and for the arrangement of the Foraminifera in families the systematic classification is used here as given by CUSHMAN in his work: „Foraminifera, their classification and economic use". The genera and species have been alphabetically arranged.

In a few cases only this system has been deviated from on the strength of more recent investigations. *Calcarina* and *Baculogypsina* have namely been brought under with the family Rotalidae (Bbl. 31) *Pellatispira* has been grouped with the Camerinidae (Bibl. 106); the nomenclature of the genera belonging to the family of the Clausulidae (= Alveolinidae) has been altered according to investigations of a very recent date (Bibl. 2).

For some genera, which are mentioned in the East Indian literature it was not possible to carry through CUSHMAN's nomenclature as a revision of the original material of those species would then have been necessary. This regards the following genera, which, according to more recent opinions have been split up into several other genera: *Biloculina, Cristellaria, Sagrina, Truncatulina, Pulvinulina, Cymbalopora.*

For further particulars regarding the systematic and the stratigraphical value of the genera and species the stratigraphical remarks following hereafter, should be consulted.

The indications: Tertiary a—f (Ta, Tb, etc.) are also further explained there.

LIST OF SPECIES.

FAM. RHIZAMMINIDAE.

Bathysiphon taurinensis Sacco, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.

FAM. HYPERAMMINIDAE.

Hyperammina friabilis Brady? — Miocene (T. e.) Borneo, Bibl. 37, p. 723.

Sagenina (= Sagenella) regularis H. Douvillé. — Miocene (T. f.), Java (Rembang beds) Bibl. 20, p. 33, Pl. V, fig. 5, Pl. VI, fig. 4.

FAM. REOPHACIDAE.

Haplostiche soldanii Jones et Parker. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.

Hormosina monile Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 723; recent.
Rheophax bacillaris Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 723; recent.
„ dentaliniformis Brady. — Pliocene Ceram, Bibl. 24, p. 29; recent.
„ nodulosa Brady. — Upper Miocene or Lower Pliocene, Java, Bibl. 35, p. 343; recent.
„ pilulifera Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.
„ scorpiurius Montf. — Pliocene Ceram, Bibl. 24, p. 24, 29.
„ spec. 11. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.

FAM. AMMODISCIDAE.

Ammodiscus charoïdes Jones et Parker. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.
„ gordialis Jones et Parker. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.
„ gordialis Jones et Parker, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.
„ incertus d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 723; recent.
„ irregularis Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 723, fig. 2.
„ tenuis Brady. — Oligocene (T. e.) Java, Bibl. 30, p. 7; recent.

FAM. LITUOLIDAE.

Cyclammina cancellata Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 724, recent.
„ cancellata Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.
„ cf. pusella Brady. — Oligocene (T. e.) Java, Bibl. 30, p. 7.
Haplophragmium agglutinans d'Orb. — Pliocene Ceram, Bibl. 24, p. 29; „ Miocene (T. e.) Borneo, Bibl. 37, p. 723; recent.
„ calcareum Brady. — Miocene (T.e.) Borneo, Bibl. 37, p. 723; recent.
„ calcareum Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.
„ foliaceum Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 723.
„ fontinense Terquem. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.
„ latidorsatum Bornemann, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.
Lituola spec. 22. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

FAM. TEXTULARIIDAE.

Bigenerina capreolus d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.
„ nodosaria d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.
„ pennatula Batsch. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
„ spec. — Oligocene? (T. d?) Borneo, Bibl. 130, p. 26, Pl. III, fig. 5.
Textularia agglutinans d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.
„ agglutinans d'Orbigny, var. porrecta Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.
„ aspera Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.
„ carinata d'Orbigny. — Lower Pliocene Ceram, Bibl. 35, p. 208; Borneo, Bibl. 37, p. 726; recent.
„ gramen d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Pliocene Ceram, Bibl. 24, p. 29; recent.
„ (Plecanium) laxatum Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 350; Pliocene Nicobar, Bibl. 85.
„ quadrilatera Schwager. — Upper Neogene, N. Guinea, Bibl. 82, p. 161; Pliocene Ceram, Bibl. 24, p. 29, 31; Pliocene Nicobar, Bibl. 85.
„ sagittula Defrance. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.
„ sagittula Defrance, var. fistulosa Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Upper Neogene, N. Guinea, Bibl. 82, p. 161; recent.
„ trochus d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.

FAM. VERNEUILINIDAE.

Clavulina angularis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Lower Pliocene Ceram, Bibl. 36, p. 208; Miocene (T. f.) Borneo, Bibl. 116, p. 137; Miocene (T. f.) Java (Progo beds), Bibl. 47, p. 276; recent.
„ communis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 352; Ceram, Bibl. 24, p. 29; Upper Neogene, N. Guinea, Bibl. 82, p. 161; recent.
„ parisiensis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Miocene (T. f.) Java (Progo beds), Bibl. 47, p. 276.
„ szabói Hantken. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.
Gaudryina baccata Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Pliocene Ceram, Bibl. 24, p. 29; Pliocene Nicobar, Bibl. 85.
„ baccata var. uva Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 350.

Gaudryina pupoides d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 352; Neogene, N. Guinea, Bibl. 82, p. 161; recent.
„ pupoïdes d'Orbigny, var. chilostoma Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.
„ rugosa d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.
„ scabra Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.
„ siphonella Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.
„ siphonella Reuss, var. obscura Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 726, fig. 17.
„ subrotundata Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 350, Bibl. 24, p. 29; Pliocene Nicobar, Bibl. 85.
„ spec. 55a. — Upper Miocene of Lower Pliocene Java, Bibl. 35, p. 350.

Tritaxia caperata Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.
„ indiscreta Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.

Verneuilina propinqua Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Neogene, N. Guinea, Bibl. 82, p. 161; recent.
„ pygmaea Egger. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 352.
„ spinulosa Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

FAM. MILIOLIDAE.

Bilocculina comata Brady. — Pliocene Ceram, Bibl. 24, p. 29; recent.
„ depressa d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 343; Miocene (T. e.) Borneo, Bibl. 37, p. 724; recent.
„ depressa d'Orbigny, var. murrhyna Schwager. — Upper Neogene, N. Guinea, Bibl. 82, p. 161; Pliocene Ceram, Bibl. 24, p. 24.
„ tubulosa Costa. — Miocene (T. f.) Sumatra, Bibl. 125, p. 169.

Lacazina wichmanni Schlumberger. — Eocene (?) N. Guinea, Bibl. 86, p. 295—298, Pl. XII, fig. 2—5; Bibl. 46, p. 90 (fragments!); Bibl. 55, p. 208, Pl. IX, fig. 1—3; Eocene (T. b.) N. Guinea, Bibl. 78, p. 412; Bibl. 72, p. 44, Pl. VIII, fig. 8—9; Celebes?, Bibl. 114, p. 82; Celebes, Bibl. 37a, p. 202, fig. 4; Eocene Kei-islands, Bibl. 8, p. 152, Pl. I, fig. 1; Bibl. 21, p. 114.

Miliolina agglutinans d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344; Pliocene Ceram, Bibl. 24, p. 24; recent.
„ alveoliniformis Brady. — Pliocene Ceram, Bibl. 24, p. 24; recent.
„ auberiana (d'Orb.) Brady. — Lower Pliocene Ceram, Bibl. 36, p. 207; Bibl. 24, p. 29; recent.

Miliolina cuvieriana (d'Orb.) Brady. — Lower Pliocene Ceram, Bibl. 36, p. 207; Bibl. 24, p. 24; recent.
„ insignis Brady. — Pliocene Ceram, Bibl. 24, p. 29; recent.
„ reticulata d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 207; Bibl. 24, p. 24; recent.
„ retusa Frz. var. plicata Fischer. — Pliocene Ceram, Bibl. 24, p. 24.
„ seminulum Linné. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 343; Pliocene Ceram, Bibl. 24, p. 29; Upper Neogene, N. Guinea, Bibl. 82, p. 161; recent.
„ tricarinata d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 207; recent.
„ trigonula Lamarck. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Ceram, Bibl. 24, p. 29; recent.
„ valvularis Reuss var. striata Fischer. — Pliocene Ceram, Bibl. 24, p. 29.
„ venusta Karrer. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344; Miocene (T. e.) Borneo, Bibl. 37, p. 724.

Quinqueloculina seminulum (Linn.) var. grandilinguata Van der Vlerk. — Miocene (Upper part T. f.) Java (Tji Lanang and Njalindoeng beds), Bibl. 118, p. 21, Pl. V, fig. 17, 18, p. 26.

Sigmoilina Schlumbergeri Silv. — Pliocene Ceram, Bibl. 24, p. 29, 31.

Spiroloculina arenarea Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Ceram, Bibl. 24, p. 29.
„ asperula Karrer. — Neogene, N. Guinea, Bibl. 82, p. 161.
„ crenata Karrer. — Miocene (T. f.) Java (Progo beds), Bibl. 47, p. 276.
„ grata Terquem. — Lower Pliocene Ceram, Bibl. 36, p. 207; Bibl. 24, p. 24.
„ impressa Terquem. — Lower Pliocene Ceram, Bibl. 36, p. 207; Bibl. 24, p. 24.
„ limbata d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 343; Miocene (T. e.) Borneo, Bibl. 37, p. 724; Lower Pliocene Ceram, Bibl. 36, p. 207; Upper Neogene, N. Guinea, Bibl. 82, p. 161; recent.
„ tenuisepta Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Ceram, Bibl. 24, p. 29; recent.

Trillina Howchini Schlumberger. — Miocene (T. e. and f?) Borneo, Bibl. 123, p. 16; Miocene (T. e.) Java. Bibl. 30, p. 9; Bibl. 30a, p. 27; Miocene, Victoria, Philippines, Zanzibar, Bibl. 12, p. 10, Pl. II, fig. 10, 11, Europe, Bibl. 95, Tav. III, fig. 12; Bibl. 94, Tav. IV, fig. 9, 10.

FAM. OPHTHALMIDIIDAE.

Cornuspira involvens Reuss. — Miocene (T. e. Borneo, Bibl. 37, p. 724.

Ophthalmidium inconstans Brady. — Pliocene Ceram, Bibl. 24, p. 29; recent.

Planispirina celata Costa. — Upper Miocene or Lower Pliocene, Java, Bibl. 35, p. 344; Miocene (T. e.) Borneo, Bibl. 37, p. 724; Neogene, N. Guinea, Bibl. 82, p. 161.

„ contraria d'Orb. — Miocene, N. Guinea, Bibl. 23, p. 125; recent.

„ exigua Brady. — Pleistocene (?) N. Guinea, Bibl. 23, p. 126, fig. 5; recent.

FAM. LAGENIDAE.

Cristellaria aculeata d'Orbigny Miocene (T. f.) Java, Bibl. 4, p. 11; recent.

„ arcuata striata Hantken, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ aff. austrica d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 349; recent.

„ calcar Linné. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Upper Miocene or Lower Pliocene, Java, Bibl. 35, p. 350; Low. Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 25, 30; recent.

„ cassis Fichtell et Moll. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ clypeiformis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

„ convergens Bornemann. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ costata F. et M. — Pleistocene Ceram, Bibl. 24, p. 27.

„ crassa d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.

„ crassa d'Orbigny spec. (pars similis d'Orbigny et cultrata Montfort). — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

„ crepidula Fichtell et Moll. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

„ cultrata Montfort. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

„ similis d'Orbigny (non cultrata (Montf.) Brady). — Miocene (T. e.) Borneo, Bibl. 37, p. 726, 741; recent.

„ cultrata Montfort. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 30.

„ cultrata Montfort var. — Lower Pliocene Ceram, Bibl. 36, p. 208.

„ disco-granulata Seguenza. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

„ echinata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

gibba d'Orbigny. — Miocene (T. f.) Sumatra, Bibl. 125, p. 169; recent.

Cristellaria gemmata Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 25, 29; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ inaequalis Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 726, fig. 12.

„ inornata d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

„ italica Defrance. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 30.

„ javana Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 349.

„ javana Koch, var. simplex Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 726, fig. 13.

„ kubinyii Hantken-Miocene (T. e.) Borneo, Bibl. 37, p. 726.

„ mamilligera Karrer. — Lower Pliocene Ceram, Bibl. 36, p. 208; Miocene (T. e.) Borneo, Bibl. 37, p. 726; Miocene (T. f.) Borneo, Bibl. 116, p. 137; Tertiary, Orokei bay, Bibl. 34.

„ nigrisepta Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 726, fig. 14.

„ nikobarensis Schwager. — Upper Miocene or Lower Pliocene, Java, Bibl. 35, p. 349; Low Pliocene Ceram, Bibl. 36, p. 208; Pliocene Nicobar, Bibl. 85.

„ obtusa Reuss, var. subalata Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

„ orbicularis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Miocene (T. f.) Java, Bibl. 4, p. 11; Lower Pliocene Ceram, Bibl. 36, p. 208, Bibl. 24, p. 25; Pleistocene Ceram, Bibl. 24, p. 27; Upper Neogene, N. Guinea, Bibl. 82, p. 161; recent.

„ polita Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 350; Low Pliocene Ceram, Bibl. 36, p. 208; Pliocene Nicobar,, Bibl. 85.

„ rana Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 726, fig. 15.

„ reniformis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.

„ rotulata Lamarck. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Pliocene Ceram, Bibl. 24, p. 25, 30; Pleistocene Ceram, Bibl. 24, p. 27; Upper Neogene, N. Guinea, Bibl. 82, p. 161; recent.

„ rotulata var. falcifer Schw. — Pliocene Ceram, Bibl. 24, p. 30.

„ tenuis Bornemann. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Pliocene Ceram, Bibl. 24, p. 30; Celebes, Bibl. 126, p. 758.

„ aff. vitrea Seguenza (— ? flexisepta Reuss). — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 350.

„ vortex d'Orbigny. — Miocene (T. f.) Java, Bibl. 4, p. 12 recent.

„ vortex Fichtel et Moll mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

Cristellaria wetherelli Parker et Jones. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

Frondicularia alata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.

„ costata Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 726, fig. 16.

„ inaequalis Costa. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 349; Bibl. 24, p. 29.

„ interrupta Karrer. — Pliocene Ceram, Bibl. 24, p. 29.

„ interrupta Karrer, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 726.

Lagena aspera Reuss. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 345.

„ auriculata Brady, var. obliqua, Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 724, fig. 2.

„ distoma-margaritifera Parker et Jones? Lower Pliocene Ceram, Bibl. 36, p. 207.

„ elongata Ehrenberg. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344.

„ sp., aff. fissurina Reuss. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344.

„ formosa Schw. — Pliocene Ceram, Bibl. 24, p. 31; Pliocene Nicobar, Bibl. 85.

„ formosa Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ gracillima Seguenza. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344; Pliocene Ceram, Bibl. 24, p. 29.

„ hispida Reuss. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 345; Pliocene Ceram, Bibl. 24, p. 24.

„ hispida Reuss. var. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 345.

„ laevis Montagu. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344.

„ laevis Montagu, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ marginata Walker et Boys. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344.

„ orbignyana Seguenza. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ perovalis Gümbel? — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 345.

„ rudis Reuss? — Lower Pliocene Ceram, Bibl. 36, p. 207.

„ staphyllearea Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ cf. staphyllearea Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 344.

„ stelligera Brady. — Miocene (T. e.) Borneo Bibl. 37, p. 724; recent.

„ striata d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

Lagena sulcata Walker et Jacob. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 345; Low Pliocene Ceram, Bibl. 36, p. 207; Bibl. 24, p. 25; Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ sulcata Walker et Jacob, var. quadrifida Koch. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 345, fig. 1.

„ trigona Koch. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 345.

Lingulina carinata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; recent.

„ cf. carinata var. seminuda v. Hantken. — Miocene (T. f.) Java (Njalindoeng-beds), Bibl. 118, p. 27, Pl. V, fig. 19.

Marginulina celata Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725, fig. 9.

„ costata Batsch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ glabra d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ glabra d'Orb., var. subbullata Hantken. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ gracilis Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725, fig. 10.

„ subtrigona Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

Nodosaria abyssorum Brady. — Pliocene Ceram, Bibl. 24, p. 31; recent.

„ adolphina d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 349; Miocene (T. e.) Borneo, Bibl. 37, p. 724; Upper Miocene or Lower Pliocene Java, Bibl 35, p. 349; Pliocene Nicobar, Bibl. 85; recent.

„ adolphina d'Orbigny, var. ovalis Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 724, fig. 3.

„ affinis d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 348; recent.

„ annulata Terq. et Berth. — Pliocene Ceram, Bibl. 24, p. 25.

„ arundinea Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Nicobar, Bibl. 85.

„ brevicula Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346; Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Nicobar, Bibl. 85.

„ brevicula Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724, fig. 4.

„ calomorpha Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ catenulata Brady, var. costulata Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Lower Pliocene Ceram, Bibl. 36, p. 207.

„ catenulata Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ comata Batsch. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ communis d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 207; Bibl. 24, p. 29; Miocene (T. e.) Borneo, Bibl. 37, p. 724; recent.

Nodosaria consobrina d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 207; Miocene (T. e.) Borneo, Bibl. 37, p. 724; Upper Neogene, N. Guinea, Bibl. 82, p. 161; recent.

„ consobrina d'Orbigny, var. emaciata Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Miocene (T. f.) Java, Bibl. 4, p. 11; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347.

„ costulata Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ crassitesta Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Nicobar, Bibl. 85.

„ elegans d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347; Pliocene Nicobar, Bibl. 85; recent.

„ farcimen Soldani. — Upper Miocene or Lower Pliocene. Bibl. 35, p. 347; Pliocene Ceram, Bibl. 24, p. 29; Miocene (T. e.) Borneo, Bibl. 37, p. 724; Upper Neogene N. Guinea, Bibl. 82, p. 161.

„ filiformis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ fistuca Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Nicobar, Bibl. 85.

„ glandigena Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346; Pliocene Nicobar, Bibl. 85.

„ glandigena Schwager, mut. — Miocene (T.e.) Borneo, Bibl. 37, p. 724.

„ haueriana mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ hircicornua Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 724.

„ hispida d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346; Low Pliocene Ceram, Bibl. 36, p. 207; Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 37, p. 724; recent.

„ hispida d'Orbigny, var. aculeata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; recent.

„ hochstetteri Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Pliocene Nicobar, Bibl. 85.

„ hochstetteri Schwager, var. spinicosta Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 724; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 349.

„ inconstans Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ inflexa Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ insecta Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347; Pliocene Ceram, Bibl. 24, p. 29, 31; Pliocene Nicobar, Bibl. 85.

„ insolita Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ intertenuata Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

Nodosaria koina Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ laevigata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; recent.

„ aff. laevigata d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346; recent.

„ lagenifera mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ lepidula Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Ceram, Bibl. 24, p. 25, 29, 31; Pliocene Nicobar. Bibl. 85; Pleistocene Ceram, Bibl. 24, p. 27.

„ lepidula Schwager, var. angusta Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725, fig. 5.

„ lepidula Schwager var. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346.

„ maculata Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

„ monstruosa Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725, fig. 6.

„ mucronata? — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ obliqua L. — Pliocene Ceram, Bibl. 24, p. 29; recent.

„ obliqua Linné var. torsa Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 348.

„ obliqua a Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ obliqua b Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ obliqua c Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ pauperata d'Orb. — Pliocene Ceram, Bibl. 24, p. 29; recent.

„ perversa Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347; Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

„ plicosuturata Derv. — Pliocene Ceram, Bibl. 24, p. 29.

„ polystoma Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346; Pliocene Nicobar, Bibl. 85.

„ protumida Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ pyrula d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 346; Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85; recent.

„ radicula Linné. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347; Pliocene Ceram, Bibl. 24, p. 25; Miocene (T. e.) Borneo, Bibl. 37, p. 725; Celebes, Bibl. 74, p. 310; recent.

„ radicula Linné, var. angulata Koch. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347, fig. 3.

„ radicula Linné, var. annulata Terquem et Berthelin. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347; Miocene (T. e.) Borneo, Bibl. 37, p. 725.

Nodosaria raphanus Linné. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 348; Low Pliocene Ceram, Bibl. 36, p. 207; Miocene (T. e.) Borneo, Bibl. 37, p. 725; Miocene (T. f.) Borneo, Bibl. 116, p. 137; recent.

„ raphanus Linné, var. recta Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725, fig. 7.

„ raphanus Linné, var. tubulata. — Lower Pliocene Ceram, Bibl. 36, p. 207.

„ raphanus Linné, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725, fig. 8.

„ recta Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

„ roemeri. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ scalaris Batsch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Ceram, Bibl. 24, p. 25, 29; Celebes, Bibl. 126, p. 758.

„ scalaris Batsch, var. separans Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; ? Pliocene Celebes, Bibl. 126, p. 758; Pleistocene Ceram, Bibl. 24, p. 27.

„ separans Brady, var. laticostata. — Lower Pliocene Ceram, Bibl. 36, p. 208.

„ setosa Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

„ skobina Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

„ skobina Schwager var. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347.

„ soluta Reuss. — Pliocene Ceram, Bibl. 24, p. 29; Miocene (T. e.) Borneo, Bibl. 37, p. 725; Upper Neogene N. Guinea, Bibl. 82, p. 161.

„ soluta Reuss, var. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ stimulea Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

„ subtertenuata Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Ceram, Bibl. 24, p. 29?; Pleistocene Ceram, Bibl. 24, p. 27?; Pliocene Nicobar, Bibl. 85.

„ tauricornis Schwager. — Pliocene Ceram, Bibl. 24, p. 29; Pliocene Nicobar, Bibl. 85.

„ tholigera-tornata Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ tosta Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 349; Pliocene Nicobar, Bibl. 85.

„ tosta Schwager, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.

„ aff. tumidiuscula Gümbel. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347.

„ tympaniplectriformis Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Pliocene Nicobar, Bibl. 85.

Nodosaria tympaniplectriformis Schwager mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.
„ vertebralis Batsch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 348; Pliocene Ceram, Bibl. 24, p. 24.
„ vertebralis Batsch, var. laevis Schubert. — Miocene (T. e.) Borneo, Bibl. 37, p. 725.
„ sp. 35. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 347.
Vaginulina brückenthali Neug. — Pliocene Ceram, Bibl. 24, p. 29; Celebes, Bibl. 126, p. 758.
„ legumen Linné. — Miocene (T. f.) Java, Bibl. 4, p. 11; recent.
„ legumen Linné, var. costata Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 725, fig. 11.
Valvulina conica Parker et Jones. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

FAM. POLYMORPHINIDAE.

Polymorphina communis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.
„ elegantissima Parker et Jones. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
Polymorphina ? lanceolata Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
„ oblonga d'Orb. — Pliocene Ceram, Bibl. 24, p. 30; recent.
„ ? sororia Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
Ramulina globulifera Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.

FAM. NONIONIDAE.

Nonionina orbicularis Brady. — Miocene (T. e.) Borneo, Bibl. 37, p 728; recent.
„ pompilioïdes Fichtel et Moll. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.
„ scapha F. et M. — Pliocene Obi, Bibl. 24, p. 36.
„ umbilicatula Montagu. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 357.

FAM. CAMERINIDAE (= NUMMULITIDAE).

Assilina granulosa d'Archiac. — Eocene (T. a.) Nias, Bibl. 17, p. 261, 263, Pl. XIX, fig. 3—5; Lower Eocene (Laki series) Br. India, Bibl. 56, p. 441—443, Pl. XXVI, fig. 1—5; Bibl. 1, p. 151, Pl. X, fig. 11—19. (See also A. Leymerici).
„ granulosa d'Archiac, var. minor Heim. — Eocene (T. a.) Borneo, Bibl. 131, p. 105, Pl. 18, fig. 6, 7.
„ leymeriei (d'Archiac et Haime) = forma A of Assilina granulosa, see Bibl. 56, p. 444, Pl. XXV, fig. 8 (Low Eocene of Sind and Punjab).

Assilina leymeriei d'Arch. et Haime var. Verbeek. — Eocene (T. a.) Java, Bibl. 113, p. 1150, Pl. VII, fig. 90—93.

„ orientalis Douvillé. — Eocene (T. a.) Nias, Bibl. 17, p. 263, Pl. XIX, fig. 6—9; Borneo, Bibl. 131, p. 105, Pl XVIII, fig. 4, 5.

„ spira de Roissy. — Eocene (T. a.) Java, Bibl. 113, p. 1149, Pl. V, fig. 86, Pl. VI, fig. 87—89; Eocene (Mid Kirthar) of India, Bibl. 60, p. 143, Pl. VI, fig. 8—9; Bibl. 1, p. 155, Pl. XI, fig. 1—5.

„ umbilicata Rutten. — Eocene (T. a.) Celebes, Bibl. 76, p. 61, 62, fig. 32—36.

Camerina (= Nummulites) acuta, Sowerby (mikrosph. form of C.djogjokartae Martin). — Eocene Java, Bibl. 18, p. 280—283, Pl. XXII, fig. 7 (synon.); Bibl. 41, p. 109, Pl. V, fig. 8; Bibl. 113, p. 1098, Pl. III, fig. 48, 52, Pl. IV, fig. 60—68 (C.javana var. β Verbeek); Nias, Bibl. 17, p. 261; Celebes, Bibl. 15, p. 972, Pl. IV; Br. India, Bibl. 60, p. 133—134, Pl. II, fig. 1—4.

„ atacica Leymerie (= Nummulites biaritzensis d'Archiac, pars). — Eocene Borneo, Bibl. 113, p. 1154; Bibl. 111, p. 155, 157, Pl. II, fig. 28—33; Bibl. 16, p. 441; Bibl. 67, p. 81, 82; Br. India, Bibl. 56, p. 444, Pl. XXV; Bibl. 60, p. 129; Africa and Europe, Bibl. 1, p. 131, Pl. VIII (see also Bibl. 60 and 56 C.subatacicus).

„ bagelensis I Verbeek. — Eocene (T. a, b.) and Oligocene (T. c, d.) Borneo, Bibl. 123, p. 18, fig. 8, 29*a*, *b*; Borneo, Bibl. 75, p. 8; Bibl. 77, p. 30; Nias, Bibl. 17, p. 262; Java, Bibl. 113, p. 1147, Pl. III, fig. 74, Pl. VI, fig. 76—81, Pl. VII, fig. 95—97; Celebes, Bibl. 15, p. 974—975; Eocene (T. b.) N. Guinea, Bibl. 78, p. 413; New Caledonia, Bibl. 14, p. 493; Eocene (T. a.) Java, Bibl. 4, p, 6, 8; Eocene (T. a.) Celebes, Bibl. 76, p. 62.

„ bagelensis II Verbeek. — Eocene Java, Bibl. 113, p. 1148, Pl. III, fig. 75, Pl. VI, fig. 82—85; New Caledonia, Bibl. 14, p. 493; Borneo, Bibl. 75, p. 15.

„ bagelensis II Verbeek var. megaspherica Rutten. — Eocene Celebes, Bibl. 76, p. 55, fig. 7—9.

„ djogokartae Martin (megaspheric form of C.acuta Sow). — Eocene Java, Bibl. 48, p. 194 (synonyms); Celebes, Bibl. 15, p. 973; New Caledonia, Bibl. 14, p. 495; Br. India, Bibl. 60, p. 134 (synonyms); see also Bibl. 60, p. 133; ? Eocene (T. a.) Java (Numm. Vredenburgi), Bibl. 4, p. 6,8; see also Bibl. 28, p. 15.

„ elegans Sow. — Eocene Celebes, Bibl. 65, p. 31—33, Tav. I, fig. 4.

„ fichteli Michelotti. — Oligocene (T. c. and d.), Borneo Bibl. 123, p. 18, fig. 9, 30; Bibl. 75, p. 9; Bibl. 67, p. 92; Oligocene, Bismarck Archipelago, Bibl. 91, p. 93, Tab. IV; Br. India (Nari Series) and Europe, Bibl. 57, p. 664, Pl. 38, fig. 1; Somaliland, Bibl. 63, p. 51, Pl. I, fig. 7, 8; Oliogene (T. c.) Java, Bibl. 30, p. 9.

Camerina gizehensis (Forksul) (= C. javana Verbeek var. γ Verbeek, see Bibl. 17, p. 261), Eocene Java, Bibl. 113, p. 1099, Pl. III, fig. 55, 56, Pl. V, fig. 69—72; Bibl. 27, p. 593; Br. India (Mid Kirthar of Sind), Africa and Europe; Bibl. 60, p. 139, Pl. III, fig. 3, 6 and 7; Eocene (T. a.) Java, Bibl. 4, p. 6; Celebes, Bibl. 76, p. 54.

„ guettardi d'Archiac. — Eocene Borneo, Bibl. 67, p. 83; Celebes, Bibl. 65, p. 30; Br. India and Europe, Bibl. 62, p. 112.

„ heeri de la Harpe. — Eocene Borneo, Bibl. 67, p. 86; Eocene Celebes, Bibl. 65, p. 31.

„ intermedius d'Archiac. — Oliogene (T. c. and d.) Borneo, Bibl. 123, p. 18, fig. 31; Bibl. 67, p. 93; Oligocene Bismarck Archipelago, Bibl. 91, p. 94; Br. India (Nari Series) and Europe, Bibl. 57, p. 662; Oliogene (T. c.) Java, Bibl. 30, p. 9; Somaliland, Bibl. 63, p. 50, Pl. I, fig. 5, 6.

„ javana var. α Verbeek (= var. soloensis). — Eocene (T. a.) Java, Bibl. 113, p. 1143, Pl. III, fig. 45—47, Pl. IV, fig. 58, 59, Pl. VII, fig. 94; Bibl. 4, p. 6, 8.

„ javana Verbeek var. δ Verbeek. — Eocene Java, Bibl. 113, p. 1146, Pl. III, fig. 57, Pl. V, fig. 73; Celebes, Bibl. 76, p. 26, 56, 63.

„ kelatensis Carter. — Eocene (T. a. b.) Borneo, Bibl. 123, p. 19, fig. 10, 32; Nias, Bibl. 17, p. 262; Celebes, Bibl. 15, p. 975.

„ mamilla Fichtel et Moll. — Eocene (T. a. and ? b.) Borneo, Bibl. 123, p. 19, fig. 33; Bibl. 67, p. 59—60, Pl. IV, fig. 1; Sind and Baluchistan, Bibl. 56, p. 445, Pl. XXVII, fig. 1—3 (Laki series).

„ nuttalli (Nuttall) L. M. Davies. — Eocene (T. a.) Borneo, Bibl. 123, p. 19, fig. 11, 34; Sind (Upper Ranikot beds), Bibl. 13, p. 266.

„ osimoi Provale. — Eocene Borneo, Bibl. 67, p. 62—63, Pl. IV, fig. 3—5.

„ pengaronensis Verbeek. — (Syn: C. nanggoulani Verbeek, Bibl. 18, p. 284), Eocene and Oligocene (T. a., b., c. and d.) Borneo, Bibl. 110, p. 3, Taf. I; Bibl. 123, p. 20, fig. 12, 35; Bibl. 111, p. 145—148, Pl. II, fig. 1—9; Bibl. 106, p. 24; Java, Bibl. 18, p. 284; Bibl. 113, p. 1153, 1152, Pl. VIII, fig. 111—113; New Caledonia, Bibl. 14, p. 494; Eocene (T. a.) Java, Bibl. 48, p. 196; Bibl. 4, p. 6, 8 — see also Bibl. 28, p. 17—20; Eocene (T. a.) Borneo, Bibl. 131, p. 104, Pl. XVIII, fig. 8 (?).

„ preveri Provale. — Eocene Borneo, Bibl. 67, p. 63, Pl. IV, fig. 9—11.

„ ramondi Brady (= Nummulites niasi II Verbeek = Nummulina ramondi (Defrance) Brady, see Bibl. 17, p. 254), Eocene Nias, Bibl. 5, p. 161, Pl. I, fig. 14; Bibl. 113, p. 1157, Pl. IX, fig. 123—125.

„ reticulata Tellini. — Eocene Borneo, Bibl. 67, p. 83—84.

„ spec. — Oligocene Borneo, Bibl. 75, p. 9—10, Pl. II, fig. 5—7.

„ striata d'Orbigny. — Eocene Borneo, Bibl. 67, p. 80—81.

Camerina striata d'Orb. var. f Verbeek. — Eocene Borneo, Bibl. 113, p. 1154; Bibl. 111, p. 157—159, Pl. II, fig. 34—40; Bibl. 110, p. 11, Pl. III, fig. 2.

„ sub-airaghii Prever. — Eocene Borneo and Europe, Bibl. 67, p. 61.

„ sub-Beaumonti de la Harpe. — Eocene Borneo, Bibl. 67, p. 83; Celebes, Bibl. 65, p. 30.

„ sub-Brongniarti Verbeek. — Eocene Borneo, Bibl. 110, p. 6, Taf. I, II; Bibl. 111, p. 152—155, Pl. II, fig. 10—27; Bibl. 131, p. 103, Pl. XVII, fig. 1—8; Java, Bibl. 113, p. 1154; Bibl. 16, p. 442—444.

„ sub-Formai Provale. — Eocene Borneo, Bibl. 67, p. 64—66, Pl. IV, fig. 16—20.

„ sub-Heeri de la Harpe (= C. irregularis Desh. Schlumberger 1883). — Eocene Borneo, Bibl. 67, p. 87, Taf. III, fig. 5—6.

„ sub-Osimoi Provale. — Eocene Borneo, Bibl. 67, p. 61—62, Pl. IV, fig. 6—8.

„ sub-Preveri Provale. — Eocene Borneo, Bibl. 67, p. 63, 64, Pl. IV, fig. 12—15.

„ sub-Tellini Prever. — Eocene Borneo, Bibl. 67, p. 60, Pl. IV, fig. 2.

„ thalicus L. M. Davies. — Eocene (T. a.) Borneo, Bibl. 123, p. 21, fig. 13, 36*a*, *b*; Thal. (Br. India), Bibl. 13, p. 269.

„ variolarius Sowerby. — Eocene Borneo, Bibl. 123, p. 21, fig. 14, 37; Nias, Bibl. 17, p. 256 (Nummulites subniasi Douvillé); Bibl. 5, p. 159, Pl. I, fig. 2—3; N. Caledonia, Bibl. 14, p. 494.

Cycloclypeus annulatus Martin. — Bibl. 100, p. 235, Miocene (Lower part of T. f.) Java, Madoera, Borneo and Philippines; Bibl. 8*a*.

„ annulatus (Martin) var. communis (Martin). — Bibl. 100, p. 235, Miocene (Lower part of T. f.) Java (Rembang beds) Madoera; Bibl. 8*a*.

„ annulatus (Martin) var. glabra Tan. — Bibl. 100, p. 235, Miocene (Lower part of T. e.) Java.

„ annulatus (Martin) var. martini (Van der Vlerk). — Bibl. 100, p. 235, Miocene (T. f.) Java, Madoera, Borneo and Philippines (?); Bibl. 8*a*.

„ carpenteri Brady. — Miocene (T. g.) Java; Bibl. 100, p. 235; Bibl. 40, p. 3; recent; Bibl. 8*a*.

„ communis (Martin) var. borneensis Rutten? — (see stratigr. part), Miocene (T. f.) Borneo, Bibl. 75, p. 305, Taf. XXIV, fig. 3—6 and Bibl. 100, p. 237; Bibl. 132, p. 73, Pl. IX, fig. 2, Pl. XI, fig. 1, 2, Pl. XII, fig. 4.

„ eidae Tan. — Bibl. 100, p. 235, Miocene (T. e.) Sumatra, Borneo, Bibl. 8*a*.

„ incertus Karrer, see stratigr. part.

„ koolhoveni Tan. — Bibl. 100, p. 235, Oligocene (transitory beds T. e. d.) Java.

Cycloclypeus neglectus (Martin). — Bibl. 100, p. 235, Miocene (Upper part of T. f.) Java, Borneo, Bibl. 8*a*.

„ neglectus (Martin) var. indopacificus Tan. — Bibl. 100, p. 235, Miocene (T. f.) Borneo, Java, Madoera Japan and Madagascar, Bibl. 8*a*.

„ neglectus (Martin) var. stellatus Tan. — Bibl. 100, p. 235, Miocene (Upper part of T. f.) Java, Borneo, Bibl. 8*a*.

„ neglectus (Martin) var. transiens Tan. — Bibl. 100, p. 235,

„ Miocene (Lower part of T. f.) Java, Madagascar, Bibl. 8*a*.

„ oppenoorthi Tan. — Bibl. 100, p. 235, Upper Oligocene (T. d.) Java.

„ reticulatus Caudri. — Young Neogene Java, Bibl. 8*a*.

Heterostegina borneensis Van der Vlerk. — Miocene (T. e.) Borneo, Bibl. 123, p. 16, fig. 6*a*—*c*, 25*a*—*b*; Miocene (T. e.) Java, Bibl. 27, p. 87, 95, Pl. XXVI, XXVII.

„ depressa d'Orbigny. — Miocene N. Guinea, Bibl. 72, p. 38; Japan, Bibl. 137, p. 43, Pl. II, XIII; Borneo, Bibl. 32, p. 247.

„ (?) depressa d'Orbigny var. cycloclypeus Silvestri. — Borneo, Bibl. 67, p. 74 (see Bibl. Bibl. 92, p. 147—148).

„ glabra Osimo. — Eocene Celebes, Bibl. 65, p. 34, Tav. I, fig. 5—6.

„ margaritata Schlumberger, see Spiroclypeus margaritatus.

„ reticulata Rütimeyer. — Eocene Celebes, Bibl. 65, p. 33, Taf. I, fig. 9; Borneo, Bibl. 67, p. 72; Oligocene Borneo, Bibl. 67, p. 93; Bibl. 123, p. 16, fig. 7, 26; recent (Bibl. 6).

„ ruida Schwager. — Upper Oligocene (T. d.) Borneo, Bibl. 123, p. 17, fig. 28; Bibl. 120, p. 17, fig. 18, 38, 60.

„ spec. — Miocene (T. e.) Celebes, Bibl. 81, p. 181, fig. 7, 9—11.

Operculina ammonoides Gron. — Pliocene Ceram, Bibl. 24, p. 31.

„ complanata Defr. — Pliocene Ceram, Bibl. 24, p. 25. See Bibl. 93, p. 29 (syn.); Miocene Zanzibar, Bibl. 12, p. 10; N. Guinea, Bibl. 23, p. 125; Borneo, Bibl. 32, p. 247.

„ complanata Defrance var. granulosa Leymerie. — Miocene (Upper part T. f.) Java (Tji Lanang-beds), Bibl. 118, p. 21; Borneo, Bibl. 74, p. 283, 284; Pliocene Borneo, Bibl. 74, p. 28; Celebes, Bibl. 74, p. 310; (T. f.) Java, Bibl. 74, p. 324; (T. f.) Borneo, Bibl. 116, p. 137; Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; Pliocene Obi, Bibl. 24, p. 36; Miocene (T. f.) Borneo, Bibl. 116, p. 137; Pliocene Celebes, Bibl. 126, p. 761; Java, Bibl. 8*a*.

„ granulosa Leym. var. Niasi Verbeek. — Eocene Nias, Bibl. 5, p. 158, Pl. I, fig. 1; Bibl. 113, p. 1158, Pl. IX; (? = Nummulites cf .Doengbroebroesi Verbeek), Bibl. 91, p. 94—95, Taf. III, fig. 2; New Guinea, Bibl. 23, p. 138.

„ javana Verbeek. — Bibl. 113, p. 1112, Pl. IX, fig. 132 et 133; N. Guinea, Bibl. 23, p. 134, 138.

Operculina pyramidum Ehrenberg. — Eocene Borneo, Bibl. 67, p. 71, Tav. V, fig. 6.

Operculinella cumingii (Carpenter) Yabe. — Miocene (T. e.) Borneo, Bibl. 37, p. 728; Miocene (T. f.) Borneo, Bibl. 116, p. 15?; recent.

„ venosa (Fichtell et Moll). — Eocene Borneo, Bibl. 67, p. 87, 88; Eocene Celebes, Bibl. 65, p. 29, 30; Miocene (T. e.) Sumatra, Bibl. 52, p. 324; Philippines, Bibl. 135, p. 185, Pl. XXI, XXII; Japan, Bibl. 137, p. 40; recent.

Pellatispira crassicolumnata Umbgrove. — Bibl. 106, p. 24, fig. 75—80, Eocene (T. b.) Borneo.

„ irregularis Umbgrove. — Bibl. 106, p. 23, fig. 69—74, Eocene (T. b.) Borneo.

„ glabra Umbgrove. — Bibl. 106, p. 22, fig. 62—68, Eocene (T. b.) Borneo.

„ inflata Umbgrove. — Bibl. 106, p. 21, fig. 42—56, Eocene (T. b.) Borneo.

„ rutteni Umbgrove. — Bibl. 106, p. 20, fig. 57—61, Eocene (T. b.) Borneo.

„ orbitoidea (Provale). — Bibl. 106, p. 18, fig. 2, 3, 5, 7, 9, 11—26, 34—41, Eocene (T. b.) Borneo, Java (?).

„ madaraszi von Hantken (?) — Eocene (T. a.) Borneo, Bibl. 106, p. 18, fig. 32*a*.

„ madaraszi von Hantken var. Provalei (Yabe). — Bibl. 106, p. 17, fig. 27—33, Eocene (T. a. b.) Borneo, Eocene of Japan.

„ spec. — Bibl. 106, p. 25, Eocene Celebes.

Spiroclypeus leupoldi (Van der Vlerk) (forma A et B). — Bibl. 38, p. 90, Pl. III, fig. 1—6; Miocene (T. e.) Java, Sumatra, Borneo, Philippines and Christmas Island (= S. globulus Nuttall); Japan, Bibl. 137, p. 41, Pl. I, XVI, V (= S. Wolfgangi).

„ margaritatus Schlumberger (forma A et B). — Bibl. 38, p. 89, Pl. I, fig. 1—3, 6—7; Miocene (T. e.) Borneo and Philippines; Nias, Bibl. 17, p. 274, 275; Celebes, Bibl. 15, p. 1006.

„ margaritatus Schlumberger var. umbonata Yabe and Hanzawa (forma A). — Bibl. 38, p. 89, Pl. I, fig. 4, 5; Miocene (T. e.) Borneo and Philippines.

„ orbitoideus Douvillé (forma B). — Bibl. 38, p. 91, Pl. III, fig. 7, 8; Miocene (T. e.) Borneo; ? Celebes, Bibl. 126, p. 751; Bibl. 81. p. 180; (T. e.) Bibl. 37*b*, p. 30; N. Guinea, Bibl. 72, p. 32, Taf. VII, fig. 4, p. 37; Nias, Bibl. 17, p. 274; Sumatra, Bibl. 19, p. 37.

„ pleurocentralis (Carter) (forma A et B). — Miocene (T. e.) Borneo, Bibl. 38, p. 90, Pl. I, fig. 8—12; N. Guinea, Bibl. 78, p. 411.

„ tidoenganensis Van der Vlerk (forma A et B). — Bibl. 38, p. 90, Pl, II, fig. 1—7; Miocene (T. e.) Borneo.

FAM. PENEROPLIDAE.

Archaias (= Orbiculina) spec. — Miocene (T. f.) Java (Njalindoeng-beds), Bibl. 118, p. 27, Pl. V, fig. 19.

„ cf. adunca Ficht et Moll. — Miocene (T. f.) Java, Bibl. 47, p. 277, Taf. V, fig. 142.

Marginopora vertebralis Quoy et Gaimard (syn: Orbitolites complanata Lam). — Miocene (T. f.) Java (Njalindoeng-beds), Bibl. 118, p. 26, Pl. IV, fig. 14, 15; N. Guinea, Bibl. 23, p. 125; Eocene Celebes, Bibl. 15, p. 982; Eocene (Laki series) India, Bibl. 56, p. 447 (see also Bibl. 96, Tav. III, fig. 15—17); Philippines, Bibl. 135, p. 182, Pl. XVIII, fig. 16, 17.

Maeandropsina spec. Tobler. — Miocene (Upper T. e.) Borneo, Bibl. 102, p. 322, Pl. VIII.

Orbitolites (Sorites) marginalis Lamk. — Miocene (T. f.) Java, Bibl. 47, p. 276.

„ (Sorites) Martini Verbeek. — Miocene (T. e.) Nias, Bibl. 17, p. 273, Pl. XX, fig. 6; Java, Bibl. 113, p. 1159, Pl. IX, fig. 134, 135; Waigeoe, Bibl. 21, p. 115, Pl. II, fig. 7, 8; N. Guinea, Bibl. 72, p. 45, Taf. VIII, fig. 4, 5; Philippines, Bibl. 135, p. 183.

„ (Sorites) spec. — Pleistocene Soembawa, Bibl. 101, p. 189, fig. 1.

„ spec. — Borneo, Bibl. 25, p. 145, Taf. XVIII, fig. 17

Peneroplis pertusus Forsk. — Pliocene Ceram, Bibl. 24, p. 24.

FAM. CLAUSULIDAE.

Alveolina bontangensis Rutten. — Miocene (T. f.) Borneo, Bibl. 123, p. 14, fig. 1—5; Bibl. 74, p. 221, Taf. XIV; Bibl. 116, p. 137; Bibl. 32, p. 246; Java (Rembang-beds), Bibl. 20, p. 32, Pl. IV, fig. 10; Bibl. 8*a*; N. Guinea, Soembawa, Bismarck Archipelago, Bibl. 115, p. 67, 68, Pl. II, fig. 9; Halmaheira, Bibl. 7, p. 20; Philippines, Bibl. 135, p. 181, Pl. XVII, fig. 7—9.

„ boscii Defrance. — Miocene (T. f.) Borneo, Bibl. 121, p. 11; Bibl. 84, p. 323; N. Guinea, Bibl. 46, p. 93; Celebes, Bibl. 74, p. 319, Taf. XXVII, fig. 3, 4; Soembawa, Bismarck Archipelago, Bibl. 115, p. 68, Pl. II, fig. 10; Philippines, Bibl. 135, p. 182, Pl. XXIII, fig. 8; recent (Bibl. 6).

„ fennemai Checchia Respoli (Tert f — recent) Java, Soembawa, Bibl. 115, p. 69, Pl. II, fig. 11.

„ globulosa Rutten. — Miocene T. f. Java, Bibl. 47, p. 276, Taf. V, fig. 140, 141; Soembawa, Bibl. 115, p. 69, Pl. II, fig. 12.

„ quoii d'Orbigny. — Miocene (T. f.) Java, Cebu (Philippines) Bibl. 115, p. 69; recent.

Clausulus pygmaeus Hanzawa, Tertiary (a—e) Java, Bibl. 113, p. 1141, Pl. II, fig. 40—41; Bibl. 29, p. 87; Borneo (Alveolina spec. 3 Verbeek), Bibl. 123, p. 11, 14; Celebes, Bibl. 126, p. 749, 751; Nias (?), Bibl. 17, p. 261; N. Guinea (?), Bibl. 55, p. 208; Philippines, Bibl. 135, p. 146, 152, 181, Pl. XV, fig. 12—13, p. 94, Pl. XXVI, fig. 14—15.

Fasciolites celebensis Bakx. — Eocene (T. a.) N. Guinea, Bibl. 82, p. 152; Celebes and Timor, Bibl. 2.

„ javana Verbeek. — Eocene and Oligocene (T. b. and c.) Java, Bibl. 113*b*, p. 111—114, fig. 4—7; Bibl. 123, p. 900—901, p. 1137, Pl. II, fig. 27—36, Pl. III, fig. 37—38; Celebes, Bibl. 15, p. 25, p. 141, p. 162, p. 259, p. 976; Borneo, Bibl. 75, p. 9.

„ oblonga d'Orb. (= timorense Verb.). — Eocene (T. a.) Timor, Bibl. 2; Bibl. 43, p. 268, 269; Bibl. 114, p. 384; Bibl. 113, p. 1140, Pl. II, fig. 39; Halmaheira, Bibl. 21, p. 110; Br. India (Ranikot and Kirthar series), Bibl. 56, p. 440, Pl. XXIV, fig. 7—8; Bibl. 61, p. 119; Bibl. 13, p. 282.

„ ovicula Nuttall. (= Alveolina javana Douvillé. — Bibl. 17, p. 266, Pl. XXIX, fig. 13); Eocene (T. a.) Java, Bibl. 113, p. 900—901; Bibl. 107, p. 92; (T. a.) Nias, Bibl. 17, p. 266; Celebes, Bibl. 74, p. 308; Timor, Bibl. 2; Br. India, Bibl. 56, p. 439, Pl. XXV, p. 9—10; see also Fasc. elliptica Bibl. 2.

„ wichmanni Rutten. — Eocene (T. b.) N. Guine, Bibl. 72, p. 40, p. 45, Pl. IX, fig. 1—2; Bibl. 78, p. 412; Bibl. 55, p. 207, Pl. VIII, fig. 1—6; Celebes, Bibl. 126, p. 742—743; Bibl. 74, p. 310, 315, Pl. XXXVI, fig. 3—4, Pl. XXXVII, fig. 2; Bibl. 76, p. 61?; Bibl. 37*a*, p. 202; Misool, Bibl. 127, p. 491—492.

FAM. BULIMINIDAE.

Bolivina aenariensis Costa. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 25.

„ amygdalaeformis Brady. — Pliocene Ceram, Bibl. 24, p. 25; recent.

„ costata d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

„ dilatata Reuss. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 352.

„ dilatata Reuss, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

„ hantkeniana Brady. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 25; recent.

„ karreriana Brady. — ? Pliocene Celebes, Bibl. 126, p. 759.

„ praelonga Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

„ punctata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 352; recent.

„ robusta Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent; Pliocene Ceram, Bibl. 24, p. 29, 31; Neogene N. Guinea, Bibl. 82, p. 161.

„ schwageriana Brady. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 25; Celebes, Bibl. 126, p. 759; recent.

Bulimina aculeata d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; Pliocene Ceram, Bibl. 24, p. 29; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ affinis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.

Bulimina elegans d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
„ elegans d'Orbigny, var. exilis Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.
„ elegantissima d'Orb. — Pliocene Ceram, Bibl. 24, p. 29; recent.
„ elongata d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 352; recent.
„ inflata Seguenza. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Upper Neogene, N. Guinea, Bibl. 82, p. 161; Pliocene Nicobar, Bibl. 85; recent.
„ marginata d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; recent.
„ ovata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.
„ pupoïdes d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
„ pyrula d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Miocene (T. f.) Sumatra, Bibl. 125, p. 169; Pliocene Ceram, Bibl. 24, p. 31; Neogene N. Guinea, Bibl. 82, p. 161; recent.
„ pyrula d'Orbigny, var. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

Sagrina columellaris Brady, mut. — Miocene T. e.) Borneo, Bibl. 37, p. 727.
„ dimorpha Parker et Jones. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 354; Pliocene Ceram, Bibl. 24, p. 31; Upper Neogene N. Guinea, Bibl. 82, p. 161.
„ raphanus Parker et Jones. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 25, 29; — Pleistocene Ceram, Bibl. 24, p. 27.
„ striata Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 354.
„ virgula Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
„ zitteli Karrer. — Pliocene Ceram, Bibl. 24, p. 29.

Trifarina (Rhabdogonium) tricarinatum d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 726; recent.

Uvigerina aculeata d'Orb. — Pliocene Ceram, Bibl. 24, p. 29, 31; recent.
„ asperula Czjzek. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; Pliocene Ceram, Bibl. 24, p. 25, 29; Pleistocene Ceram, Bibl. 24, p. 27.
„ asperula Czjzek, var. ampullacea Br. — Pliocene Ceram, Bibl. 24, p. 31.
„ asperula Czjzek, var. auberiana d'Orbigny. — Miocene (T.e.) Borneo, Bibl. 37, p. 727.
„ canariensis d'Orbigny. — Miocene (T.e.) Borneo, Bibl. 37, p. 727; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; recent.
„ crassicostata Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; Pliocene Nicobar, Bibl. 85.

Uvigerina hispida Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; Pliocene Nicobar, Bibl. 85.
„ javana Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353, fig. 7.
„ porrecta Brady. — Pliocene Ceram, Bibl. 24, p. 31; recent.
„ pygmaea d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; Bibl. 24, p. 29; Neogene N. Guinea, Bibl. 82, p. 161; recent.
„ schwageri Brady. — Miocene (T. f.) Java, Bibl. 41, p. 11; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; Pliocene Ceram, Bibl. 24, p. 25; Miocene (T. e.) Borneo, Bibl. 37; p. 727; recent.
„ tenuistriata Reuss. — Pliocene Ceram, Bibl. 24, p. 25.
„ spec. 75. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 354.
„ spec. Brady. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353.

FAM. ELLIPSOIDINIDAE.

Pleurostomella alternans Schwager. — Pliocene Ceram, Bibl. 24, p. 29; Pleistocene Ceram, Bibl. 24, p. 27; Pliocene Nicobar, Bibl. 85; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 353; Pliocene Ceram, Bibl. 24, p. 27; Miocene (T.e.) Borneo, Bibl. 37, p. 727.
„ brevis Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Pliocene Nicobar, Bibl. 85.
„ rapa Gümbel. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.
„ subnodosa Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

FAM. ROTALIIDAE.

Baculogypsina baculata (Montf.) Carpenter. — Lower Pliocene Ceram, Bibl. 35, p. 208; recent.
„ bonarellii Osimo. — Eocene Celebes, Bibl. 65, p. 47, Tav. II, fig. 8—12; Eocene Borneo, Bibl. 67, p. 89.
„ bonarellii var. tricuspidata Osimo. — Eocene Celebes, Bibl. 15, p. 48, Tav. II, fig. 13—16; Eocene Borneo, Bibl. 67, p. 89.
„ neotetraedra Tobler. — Pleistocene Soembawa, Bibl. 101, p. 190, 191, Taf. 35, fig. 3—5; Bibl. 115, p. 71, 77, 97.
„ saoneki Ruttten. — Miocene N. Guinea, Bibl. 72, p. 46, Taf. IX, fig. 9, 10.

Calcarina defrancii d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; N. Guinea, Bibl. 23, p. 134; recent.
„ hispida d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; recent.

Calcarina spengleri Linné. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; Celebes, Bibl. 126, p. 761; Miocene N. Guinea, Bibl. 72, p. 48, Taf. IX, fig. 8; Japan, Bibl. 137, p. 45, Pl. I, II; Pliocene Borneo, Bibl. 74, p. 285; N. Guinea, Bibl. 23, p. 133, fig. 8; recent.

Discorbina saulcii d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

„ araucana d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 728; recent.

„ cf. bertheloti d'Orbigny, var. baconica (Hantken) Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ orbicularis Terquem, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ patelliformis Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ tuberocapitata Chapman. — Pleistocene Celebes, Bibl. 92, p. 148, Taf. VIII, fig. 2; recent.

„ turbo d'Orbigny? — Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

Elphidium (= Polystomella) ? arctica Parker et Jones. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 357.

„ craticulata Fichtell et Moll. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; Pliocene Obi, Bibl. 24, p. 36; Celebes, Bibl. 126, p. 761; Miocene (T. f.) Sumatra, Bibl. 52, p. 324; Miocene (T. f.) Java, (Progo-beds), Bibl. 47, p. 276; (Njalindoeng beds), Bibl. 118, p. 24, Pl. V, fig. 26, 27; (T. e.) Sumatra, Bibl. 108, p. 109; (T. f.) Borneo, Bibl. 74, p. 283; Pliocene ibid. p. 285; Plio-Pleistocene Borneo, Bibl. 75, p. 13; recent.

„ crispa Linné. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; Pliocene Obi, Bibl. 24, p. 16; Celebes, Bibl. 126, p. 761; Miocene (T. f.) Sumatra, Bibl. 52, p. 324; Miocene (T. f.) Java, Bibl. 118, p. 24, Pl. V, fig. 28, 29; recent.

„ subnodosa Münster. — Miocene (T. e.) Borneo, Bibl. 37, p. 209; recent.

„ subdonosa Münster. — Miocene (T. e.) Borneo, Bibl. 37, p. 728; Lower Pliocene Ceram, Bibl. 36, p. 209.

Pulvinulina berthelotiana d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; recent.

„ canariensis d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 728; recent.

„ dispensa Brady? — Miocene (T. e.) Borneo. Bibl. 37, p. 728.

„ elegans d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 30; recent.

„ aff. elegans d'Orb. — Oligocene? (T. d.?) Borneo, Bibl. 130, p. 23, Pl. III, fig. 3.

„ elegans d'Orb. var. partschiana d'Orb. — Pliocene Ceram, Bibl. 24, p. 30, 31; recent.

Pulvinulina menardii d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25, 30; Celebes, Bibl. 126, p. 760; Neogene Celebes, Bibl. 74, p. 309, 310; N. Guinea, Bibl. 82, p. 161; Bibl. 23, p. 118; recent.

„ menardii d'Orb. var. tumida Brady. — Pliocene Ceram, Bibl. 24, p. 30; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ micheliniana d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 357; Pliocene Ceram, Bibl. 24, p. 30, 31; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ partschiana d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; recent.

„ partschiana d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ pauperata Parker et Jones. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 357; Pliocene Ceram, Bibl. 24, p. 31; Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ permaculata. — Pliocene Ceram, Bibl. 24, p. 25.

„ procera Brady. — Pliocene (?) Celebes, Bibl. 126, p. 760; recent.

„ schreibersii d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ tumida Brady. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 357; Low Pliocene Ceram, Bibl. 36, p. 209; Celebes, Bibl. 74, p. 309, 310; recent.

„ tumida Brady, var. flexuosa Koch. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 357; Bibl. 24, p. 25.

„ umbonata Reuss, var. multisepta Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 728, fig. 25.

„ sp. — Lower Pliocene Ceram, Bibl. 36, p. 209.

Rotalia cf. annectans Parker et Jones var. concinna Millett. — Miocene Celebes, Bibl. 92, p. 150, Taf. VIII, fig. 3.

„ beccarii Linné. — Lower Pliocene Ceram, Bibl. 36, p. 208; Miocene Sumatra, Bibl. 52, p. 324; recent.

„ beccarii (Linné) var. atjehensis Van der Vlerk. — Miocene (Upper part T. f.) Java (Njalindoeng-beds); Sumatra (Atjeh), Bibl. 118, p. 25, Pl. V, fig. 21—24; (T. e.) Sumatra, Bibl. 108, p. 109.

„ ? broeckhiana Karrer. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ calcar d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

„ costata. — Lower Pliocene Ceram, Bibl. 36, p. 208.

„ orbicularis d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; —?— Miocene (T. f.) Sumatra, Bibl. 125, p. 169; Miocene (T. e.) Borneo, Bibl. 37, p. 728; recent.

„ orbicularis d'Orbigny, var. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

Rotalia papillosa Brady. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 24; Pliocene Obi, Bibl. 24, p. 36; Celebes, Bibl. 126, p. 760; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ papillosa Brady, var. compressiuscula Brady. — Lower Pliocene Ceram, Bibl. 36, p. 208.

„ schroeteriana Parker et Jones. — Lower Pliocene Ceram, Bibl. 36, p. 209; Pliocene Borneo, Bibl. 74, p. 285; Pleistocene Celebes, Bibl. 92, p. 149, Taf. VIII, fig. 4; recent.

„ soldanii d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 728; Miocene (T. f.) Sumatra, Bibl. 125, p. 169; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Pliocene Ceram, Bibl. 24, p. 29, 31; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ venusta Brady, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ spec. — Lower Pliocene Ceram, Bibl. 36, p. 209.

Truncatulina aff. americana Cushman. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356.

„ ariminensis d'Orb. — Pliocene Ceram, Bibl. 24, p. 29; recent.

„ aff. boueana d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356.

„ culter Parker et Jones, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728; Miocene (T. f.) Java, Bibl. 4, p. 11, 12.

„ culter Parker et Jones. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; recent.

„ haidingeri d'Orb. — Pliocene Ceram, Bibl. 24, p. 24; recent.

„ aff. lobatula Walker et Jacob. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Lower Pliocene Ceram, Bibl. 36, p. 208.

„ lobatula Walker et Jacob, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ margaritifera Brady. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 24; Celebes, Bibl. 126, p. 760; recent.

„ margaritifera Brady, var. granulosa P. J. Fischer. — Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 24; Pleistocene Ceram, Bibl. 24, p. 27.

„ praecincta Karrer — Miocene (T. e.) Borneo, Bibl. 37, p. 728; Miocene (T. f.) Java, Bibl. 4, p. 11; Lower Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 24; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Low Pliocene Ceram, Bibl. 36, p. 208; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ aff. praecincta Karrer. — Miocene (T. f.) Borneo, Bibl. 75, p. 12.

„ praecincta-ungeriana. — Lower Pliocene Ceram, Bibl. 36, p. 208.

„ pygmaea Hantken, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

Truncatulina ? refulgens Montfort. — Lower Pliocene Ceram, Bibl. 36, p. 208.

„ reticulata Czjzek. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ robertsoniana Brady. — Bibl. 125, p. 169.

„ rostrata Brady. — Lower Pliocene Ceram, Bibl. 36, p. 208; Miocene (T. f.) Java, Bibl. 4, p. 11; Miocene (T. e.) Sumatra, Bibl. 52, p. 324; Plio-Pleistocene Borneo, Bibl. 75, p. 13; recent.

„ (Rotalina) ungeriana d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Low Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 29; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ wuellerstorfi Schwager. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ (Anomalina) wuellerstorfi Schwager. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Pliocene Ceram, Bibl. 24, p. 31; Pleistocene Ceram, Bibl. 24, p. 27; Neogene N. Guinea, Bibl. 82, p. 161.

„ wuellerstorfi Schwager, var. — Miocene (T. e.) Borneo, Bibl. 37, p. 728, fig. 24.

FAM. AMPHISTEGINIDAE.

Amphistegina lessonii d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; Miocene (T. f.) Java, Bibl. 4, p. 11, 12; Bibl. 118, p. 23, Pl. V, fig. 20; Bibl. 74, p. 324; (T. f.) Borneo, Bibl. 74, p. 283, 287; Bibl. 116, p. 137; Celebes, Bibl. 74, p. 310; Bibl. 15, p. 1008; Bibl. 92, p. 147; Pleistocene Soembawa, Bibl. 101, p. 189, 190; Oligocene? (T. d.) Borneo, Bibl. 130, p. 21, Pl. III, fig. 6, Pl. V, fig. 6; recent.

„ lessonii d'Orb. v. ornata. — Lower Pliocene Ceram, Bibl. 36, p. 209; recent.

„ radiata (Fichtel et Moll.) — Miocene (T. e.) Java, Bibl. 27, p. 87, 94.

„ verbeekiana (Brady) (= Nummulites niasi I Verbeek = Nummulina ramondi var. verbeekiana Brady, see Bibl. 17, p. 254). — Pliocene (?) Nias, Bibl. 5, p. 162, Pl. I, fig.5; Bibl. 113, p. 1155—1157, Pl. IX, fig. 120—122; Bibl. 1, p. 128; Eocene Celebes, Bibl. 65, p. 29, Taf. I, fig. 1—3; Neogene N. Guinea, Bibl. 23, p. 130; Bibl. 138, p. 273; recent.

„ wanneriana Fischer. — Pliocene Ceram, Bibl. 24, p. 25; Obi, Bibl. 24, p. 36.

FAM. CYMBALOPORETTIDAE.

Cymbalopora poeyi d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 209; Bibl. 24, p. 25; recent.

„ tabellaeformis Brady. — Lower Pliocene Ceram, Bibl. 36, p. 209; recent.

FAM. CASSIDULINIDAE.

Cassidulina calabra (Seguenza) Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.

„ subglobosa Brady. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 352; Pliocene Ceram, Bibl. 24, p. 31; recent.

Ehrenbergina serrata Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; Pliocene Ceram, Bibl. 24, p. 29.

FAM. CHILOSTOMELLIDAE.

Pullenia obliqueloculata Parker et Jones. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Low Pliocene Ceram, Bibl. 36, p. 208; Pliocene Ceram, Bibl. 24, p. 24, 29; Pleistocene Ceram, Bibl. 24, p. 27.

„ obliqueloculata d'Orbigny. — Upper Neogene N. Guinea, Bibl. 82, p. 161; Bibl. 23, p. 124, 133; recent.

„ quinqueloba Reuss. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

„ sphaeroides d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 356; Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.

Sphaeroidina bulloides d'Orb. — Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 37, p. 727; recent.

„ dehiscens Park. et Jon. — Pliocene Ceram, Bibl. 24, p. 24, 29; Pleistocene Ceram, Bibl. 24, p. 27.

FAM. GLOBIGERINIDAE.

Globigerina aequilateralis Brady. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355; Miocene N. Guinea, Bibl. 23, p. 131; recent.

„ aff. apertura Cushman. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355.

„ aspera Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 727, fig. 22, 23.

„ bilobata d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727, fig. 19; recent.

„ bulloïdes d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 354; Low Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 24, 29; Pliocene Obi, Bibl. 24, p. 36; Pleistocene Ceram, Bibl. 24, p 27; Miocene (T. e.) Borneo, Bibl. 37, p. 727; Neogene Celebes, Bibl. 74, p. 310; Bibl. 126, p. 759; N. Guinea, Bibl. 82, p. 161; Bibl. 23, p. 118; Miocene (T. f.) Java, Bibl. 4, p. 11; recent.

„ bulloïdes d'Orbigny var. tribola Reuss. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 354; Pliocene Ceram, Bbil. 24, p. 24, 29; Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 37, p. 727; ? (T. f.) Sumatra, Bibl. 51, p. 144.

Globigerina bulloïdes d'Orbigny, var. quadripartita Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 727, fig. 20.

„ bulloïdes d,Orbigny, var. tripartita Koch. — Miocene (T. e.) Borneo, Bibl. 37, p. 727, fig. 21.

„ conglobata Brady. — Miocene (T. f.) Sumatra, Bibl. 125, p. 169; Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355; Low Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 29; Pleistocene Ceram, Bibl. 24, p. 27; recent.

„ cretacea d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

„ dubia Egger? — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355; Pliocene Ceram, Bibl. 24, p. 29; Pleistocene Ceram, Bibl. 24, p. 27.

„ dutertrei d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355; Low Pliocene Ceram?, Bibl. 36, p. 208; recent.

„ fistulosa Schub. — Pleistocene Ceram, Bibl. 24, p. 27.

„ helicina d'Orbigny. — Miocene (T. e.) Borneo, Bibl. 37, p. 727; N. Guinea, Bibl. 23, p. 132; recent.

„ linnaeana d'Orbigny, Kei islands. — Bibl. 8, p. 153?

„ linnaeana d'Orbigny, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 727.

„ rubra d'Orbigny. — Miocene N. Guinea, Bibl. 23, p. 118; recent.

„ sacculifera Brady. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355; Low Pliocene Ceram, Bibl. 36, p. 208; Bibl. 24, p. 24, 29; Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 37, p. 727; N. Guinea, Bibl. 23, p. 133; recent.

„ subcretacea Chapm. — Pliocene Ceram, Bibl. 24, p. 24, 29; Pleistocene Ceram, Bibl. 24, p. 27.

„ triloba Reuss. — Celebes, Bibl. 74, p. 309, 310.

„ spec. 89. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355, fig. 8.

? Candeina nitida d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 355; recent.

Hastigerina pelagica d'Orbigny. — Lower Pliocene Ceram, Bibl. 36, p. 208; recent.

Orbulina universa d'Orbigny. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 354; Pliocene Ceram, Bibl. 24, p. 24, 29; Celebes, Bibl. 126, p. 759; Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 105, p. 32; Neogene Celebes, Bibl. 74, p. 309, 310; N. Guinea, Bibl. 82, p. 161; Bibl. 23, p. 118; Miocene (T. e.) Sumatra, Bibl. 125, p. 167 and (T. f.) ibid. p. 169; Miocene (T. e.) Borneo, Bibl. 37, p. 727, fig. 18; recent.

„ spec. 79. — Upper Miocene or Lower Pliocene Java, Bibl. 35, p. 354.

FAM. ANOMALINIDAE.

Anomalina ammonoides Reuss. — Lower Pliocene Ceram, Bibl. 36, p. 208; Miocene (T. e.) Borneo, Bibl. 37, p. 728.
„ ammonoïdes Reuss, var. tuberosa. — Lower Pliocene Ceram, Bibl. 36, p. 208.
„ grosserugosa Gümbel. — Miocene (T, e.) Borneo, Bibl. 37, p. 728.
„ polymorpha Costa. — Miocene (T. f.) Java, Bibl. 4, p. 11.
„ polymorpha Costa, mut. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

FAM. PLANORBULINIDAE.

Gypsina globulus Reuss. — Miocene (T. e.) Borneo, Bibl. 105, p. 32; Eocene (T. b.) Borneo, Bibl. 106, p. 19, 22, 24, 25; Miocene (T. f.) Borneo, Bibl. 74, p. 283; Celebes 74, p. 309; (T. f.) Java, Bibl. 74, p. 324; Miocene (T. f.) Borneo, Bibl. 116, p. 137; Java (T. f.) Bibl. 4, p. 11, 12; Bibl. 47, p. 276; Borneo, Bibl. 67, p. 78, Tav. VI, fig. 14, 15; Pleistocene Soembawa, Bibl. 101, p. 189, 190, fig. 2; recent.
„ inhaerens Schulze. — Pleistocene Soembawa, Bibl. 101, p. 189, 190; Miocene (T. e.) Borneo, Bibl. 37, p. 728; Oligocene? (T.d.?) Borneo, Bibl. 130, p. 22, Pl. IV, fig. 4,Pl. V, fig. 3, 4; Miocene Celebes (Polytrema planum Carter), Bibl. 92, p. 146, Taf. VIII, fig. 1; recent.
„ vesicularis (Parker et Jones). — Pliocene Caram, Bibl. 24, p. 25; Miocene (T. e.) Borneo, Bibl. 84, p. 303; Japan, Bibl. 137, p. 37, Pl. II, fig. 3; recent.

Linderina Paronai Osimo. — Eocene Celebes, Bibl. 65, p. 38, Tav. I, fig. 13—14, Tav. II, fig. 3—5; Eocene Borneo, Bibl. 67, p. 88, Tav. III, fig. 9—12; Neogene Soembawa, Bibl. 115; Young Neogene Batjan, Bibl. 69, p. 539, 540, fig. 1—5; Pleistocene New-Guinea, Bibl. 72, p. 45, Taf. VII, fig. 3; Bibl. 23, p. 120 (see also Bibl. 31, Planorbulina).

Planorbulina? cf. acervalis Brady. — Celebes, Bibl. 74, p. 310; recent.

Planorbulinella larvata Parker et Jones. — Pliocene Ceram, Bibl. 24, p. 24; Pleistocene Ceram, Bibl. 24, p. 27; Miocene (T. e.) Borneo, Bibl. 37, p. 728; Miocene (T. f.) Java, Bibl. 74, p. 324; Miocene (T. e.) Java, Bibl. 27, p. 87, 93, Pl. XXVII, fig. 16; Borneo, Bibl. 75, p. 16; Bibl. 116, p. 137; Pliocene Celebes, Bibl. 126, p. 759; recent.
„ spec. — Oligocene? (T. d.?) Borneo, Bibl. 130, p. 25, Pl. IV, fig. 9; Philippines, Bibl. 135, p. 177; Japan, Bibl. 137, p. 46.

FAM. RUPERTIIDAE.

Carpenteria capitata Jones et Chapman. — Miocene (T. e.?) Borneo, Bibl. 75, p. 12; Philippines, Bibl. 135, p. 177.

Carpenteria conoidea Rutten. — Miocene (T. e.) Borneo, Bibl. 74, p. 285; Miocene N. Guinea, Bibl. 23, p. 118; Bibl. 79, p. 1071; Bibl. 72, p. 47, Taf. VII, fig. 6—9; Bibl. 55, p. 209, Pl. IX, fig. 5.

„ proteiformis Goës. — Miocene (T. f.) Java, Bibl. 74, p. 324; Borneo, Bibl. 116, p. 137; Miocene N. Guinea, Bibl. 23, p. 122, 131; Bibl. 72, p. 47, Taf. VI, fig. 1; Philippines, Bibl. 135, p. 178.

„ spec. indet. — Miocene (T. e.) Java, Bibl. 27, p. 87, 94, Pl. XXVII, fig. 3.

„ spec. — Oligocene? (T. d.?) Borneo, Bibl. 130, p. 25, Pl. III, fig. 1—7.

Rupertia spec. — Eocene (T. b.) Borneo, Bibl. 106, p. 19, 21.

„ stabilis Wallich. — N. Guinea, Bibl. 23, p. 138; Miocene and Pleistocene N. Guinea, Bibl. 72, p. 47, Taf. VI, fig. 2.

FAM. HOMOTREMIDAE.

Sporadotrema cylindricum Carter. — Miocene (T. e.) Java, Bibl. 27, p. 87, 94, Pl. XXVII, fig. 1—2; Philippines, Bibl. 135, Pl. XXII, fig. 7; Japan, Bibl. 137, p. 36, Pl. V, fig. 4, 5; recent.

FAM. ORBITOIDIDAE.

Asterocyclina lanceolata Schlumberger. — Eocene Borneo, Bibl. 67, p. 75, Pl. VI, fig. 3—5; Bibl. 16, p. 44; Europe, Bibl. 90, p. 128—130, Pl. V, fig. 25—30.

„ stellata Gümbel. — Eocene Borneo, Bibl. 33, p. 531, Pl. XIV, fig. 7; New Caledonia, Bibl. 14, p. 508, Pl. XIX, fig. 28; Tonga, Bibl. 128, and Europe.

Discocyclina applanata Gümbel. — Eocene Borneo, Bibl. 33, p. 531, Pl. XIV, fig. 3 (see also Bibl. 16, p. 442).

„ archiaci Schlumberger. — Eocene Borneo, Bibl. 67, p. 74—75, Pl. VI; Celebes, Bibl. 15, p. 980; Madagascar and Europe (see Bibl. 15); see also Bibl. 56, p. 446, and Bibl. 89, p. 277, Pl. VIII, fig. 5—7, 11.

„ bartholomei Schlumberger. — Eocene Borneo, Bibl. 67, p. 79—80; Europe, Bibl. 89, p. 281—282, Pl. XI, fig. 45, Pl. XII, fig. 47—50.

„ decipiens Fritsch. — Eocene Borneo, Bibl. 25, p. 143—144, Taf. XVIII, fig. 12, Taf. XIX, fig. 4; Eocene (T. a.) Nias, Bibl. 17, p. 263, Pl. XIX, fig. 10; Eocene (T. b.) Java, Bibl. 18, p. 292, Pl. XXIII, fig. 4—6; Bibl. 89, p. 285, Pl. IX, XII („D. dispansa"); Tonga, Bibl. 128.

„ dispansa Sowerby. — Eocene (T. a.) Borneo, Bibl. 123, p. 21, fig. 15, 38; Eocene (T. b.) Borneo, Bibl. 67, p. 80; Bibl. 25, p. 142, Taf. XVIII, XIX; Bibl. 33, p. 530, Pl. XIV, fig. 6; Eocene (T. b.) Borneo, Bibl. 106, p. 19, 23, 24; Java, Bibl. 41, p. 112, Tab. VI, fig. 1—3; Bibl. 44, p. 209 (= D. papyracea Boubée (Verbeek); Eocene (T. a.) Java, Bibl. 4, p. 6, 8; Eocene (T. b.) Java, Bibl. 48, p. 196; Bibl. 18, p. 290, Pl. XXIII, fig. 3; Soemba, Bibl. 71, p. 395;

Celebes, Bibl. 15, p. 977; N. Guinea, Bibl. 72, p. 48, Taf. VIII, fig. 1, 2; Br. India, Bibl. 60, p. 145 (see also Bibl. 59, p. 22—42); N. Caledonia, Bibl. 14, p. 505, Pl. XVII, fig. 19; Europe, Bibl. 89, p. 285, Pl. XI, fig. 42—44,, Pl. XII, fig. 51, 52.

Discocyclina dispansa (Sow.) var. minor Rutten. — Eocene (T. b.) Borneo, Bibl. 74, p. 7, 10, Pl. I, fig. 4—5; Bibl. 106, p. 20; Bibl. 77, p. 30, 31; N. Guinea, Bibl. 72, p. 48, Pl. VIII, fig. 1—2; Celebes, Bibl. 126, p. 743.

„ fritschi Douvillé. — Eocene (T. b.) Java, Bibl. 18, p. 288, Pl. XXIV, fig. 2; Bibl. 48, p. 199; Tonga, Bibl. 128; Eocene (T. a.) Borneo, Bibl. 131, p. 106, Pl. XVII, fig. 12, Pl. XVIII, fig. 1 (?).

„ javana Verbeek (+ D. j. var. minor Verbeek). — Eocene (T. b.?) Java, Bibl. 18, p. 287, Pl. XXIII, fig. 1, 2, Pl. XXIV, fig. 1; Eocene (T. a.) Java, Bibl. 4, p. 6, 8; Eocene (T. b.) Borneo, Bibl. 106, p. 23, 24; Bibl. 75, p. 7; Bibl. 16, p. 440, 442; Soemba, Bibl. 71, p. 393; Celebes, Bibl. 15, p. 979, Pl. IV, fig. 323 B; New Caledonia, Bibl. 14, p. 502, Pl. XVII, fig. 13—14 (see also Bibl. 60, p. 147); Eocene (T. a.) Borneo, Bibl. 131, p. 105, Pl. XVIII, fig. 2, 3.

„ ephippium Schlothheim (non D. e. Sowerby). — Eocene Borneo, Bibl. 25, p. 141, Taf. XXVIII, XIX; Bibl. 33, p. 530, Pl. XIV, fig. 4: Bibl. 67, p. 74, Pl. V, fig. 13 (= D. sella); Eocene New Caledonia, Bibl. 14, p. 504, Pl. XVII, fig. 15—18 (= D. e. var. javana Verbeek); see also Bibl. 60, p. 149—150; Eocene (T. a.) Java (= D. Sowerbyi Nuttall) Bibl. 4, p. 6, 8; Europe, Bibl. 89, p. 278, Pl. IX, fig. 14—16, 25.

„ omphalus (Fritsch). — Eocene (T. b.) Borneo, Bibl. 25, p. 142, 143, Taf. XVIII, XIX; Bibl. 16, p. 440—441, fig. 1 et 2; Bibl. 67, p. 78—79, Taf. III, fig. 1—3; Bibl. 73, p. 75, Pl. I; Bibl. 106, p. 19; Eocene (T. b.) Java, Bibl. 18, p. 289, Pl. XXIV, fig. 3—5; Eocene (T. a.) Java, Bibl. 4, p. 6, 8.

„ papyracea Boubée. — Eocene Borneo, Bibl. 25, p. 140—141, Taf. XVIII; Bibl. 33, p. 530, Pl. XIV, fig. 5; S. Africa (D. pratti Mich.), Bibl. 8*b*, p. 296.

„ scalaris Schlumberger. — Eocene Borneo, Bibl. 67, p. 75, Pl. V, VI; Europe, Bibl. 89, p. 277; Pl. VIII, fig. 4, Pl. IX, fig. 12—13.

„ umbilicata Deprat. — Eocene New Guinea, Bibl. 72, p. 49, Pl. IX, fig. 4—7; Eocene New Caledonia, Bibl. 14, p. 497, Pl. XVI, fig. 2—11.

„ varians Kaufman. — Eocene Borneo, Bibl. 67, p. 72—73, Pl. V, fig. 7—10; Eocene N. Caledonia, Bibl. 14, p. 505, Pl. XVIII, fig. 20—22; Europe Bibl. 89, p. 281, Pl. X, fig. 31, 33, 35, 38; S. Africa, Bibl. 8*b*, p. 296.

„ varians Kaufman var. selliformis Provale. — Eocene Borneo, Bibl. 67, p. 73, Pl. V, fig. 11—12.

Lepidocyclina (forma B) acuta Rutten. — Miocene (Upper part T. e. — T. f.), Beboeloe and Poeloe Balang layers of Borneo, Soembawa, Bibl. 122, p. 189, fig. 33, Bibl. 123, p. 24.

„ (Eulepidina) andrewsiana J. et Ch. — Miocene (T. e.) Christmas Island, Bibl. 122, p. 190, fig. 1; (?) Sumatra, Bibl. 52, p. 327 (T. e.).

„ (Nephrolepidina) angulosa Provale. — Miocene (Upper part T. e. — T. f.) Borneo, Bibl. 122, p. 190, fig. 14; Bibl. 123, p. 22, fig. 17, 46; (T. e.) Sumatra, Bibl. 125, p. 167; Bibl. 52, p. 327; Flores, Bibl. 22*a*, p. 277; Java, Bibl. 8*a*; Celebes (T. e.) Bibl. 37*b*, p. 30, 31.

„ cfr. angulosa Provale. — Miocene (T. e.) Borneo, Bibl. 37, p. 728; Miocene (T. e.) Java, Bibl. 30, p. 11.

„ (Nephrolepidina) atjehensis Oppenoorth. — Miocene (Upper part T. e.) Sumatra, Bibl. 122, p. 191, fig. 15.

„ (Eulepidina) atuberculata Van der Vlerk (forma A et B). — Miocene (Mid- and Upper part T. e.) Borneo, Bibl. 122, p. 191, fig. 2; Bibl. 123, p. 22, fig. 41; Miocene (T. e.) Sumatra, Bibl. 52, p. 324, 327.

„ (Lepidocyclina) boetonensis Van der Vlerk. — Oligocene (T. d.) Boeton (S. Celebes), Bibl. 122, p. 191, fig. 30, 58.

„ (forma B) bonarellii (Provale). — Miocene (T. e. Pamaloean beds and T. f.) Borneo, Bibl. 122, p. 191, fig. 35; Bibl. 123, p. 24.

„ (Nephrolepidina) borneensis Provale. — Miocene (T. e. — Lower part T. f.) Borneo and Soembawa, Bibl. 122, p. 192, fig. 16; Bibl. 123, p. 22; Miocene (T. e.) Sumatra, Bibl. 52, p. 327; Java, Bibl. 8*a*.

„ (Nephrolepidina) brouweri Rutten. — Miocene (Upper part T. e. and f.) Celebes, Bibl. 122, p. 192, fig. 17; Bibl. 123, p. 23, fig. 19; Philippines, Bibl. 135, p. 173; Japan, Bibl. 137, p. 28.

„ (forma B) cebuensis Yabe et Hanzawa. — Miocene (T. e.) Cebu, Philippines, Bibl. 122, p. 192, fig. 36; (?) Miocene (T. e.) Sumatra, Bibl. 52, p. 327.

„ (forma B) dekroesi Van der Vlerk. — Miocene (T. e. and f.) Borneo, Bibl. 122, p. 192, fig. 37; Bibl. 123, p. 24.

„ (Eulepidina) dickersoni Yabe et Hanzawa. — Miocene (T. e.) Java, Philippines, Bibl. 27, p. 87, 90, Pl. XXVI, fig. 12.

„ (Eulepidina) dilatata Mich. (forma A et B). — Miocene (T. e.) Borneo, Moluccas, New Zealand, Nari series of Sind and Baluchistan, and S. W. Persia, Bibl. 122, p. 193, fig. 3, 38; Bibl. 123, p. 22, fig. 16, 39.

„ (forma B) dilatata (Michelotti) var. tidoenganensis Van der Vlerk. — Miocene (T. e.) Borneo, Bibl. 122, p. 193, fig. 39; Bibl. 123, p. 24.

Lepidocyclina (Nephrolepidina) douvillei Yabe et Hanzawa. — Miocene T. e.—f.) Sumatra, Borneo and Japan, Bibl. 122, p. 193, fig. 18; Bibl. 123, p. 23; Miocene (T. e.) Java, Bibl. 27, p. 87, 91, Pl. XXVI, XXVII; Java Bibl. 8*a*; (T. e.) Sumatra, Bibl. 125, p. 167, Taf. 16, fig. 1; (T. f.) Sumatra, Bibl. 125, p. 169; (T. e.) p. 170.

„ (Trybliolepidina) ephippoides Jones et Chapman. — Miocene (T. f.?) Christmas Island, Bibl. 122, p. 194, fig. 10; Bibl. 59, p. 34, Pl. V, fig. 1—3, 8, 10.

„ (Nephrolepidina) epigona Schubert. — Miocene (T. f.) Bismarck Archipelago and New Guinea, Bibl. 122, p. 194, fig. 19.

„ (forma B) euglabra Douvillé. — Miocene (T. e. Rembang beds) Java, Bibl. 122, p. 195, fig. 40.

„ (Nephrolepidina) ferreroi Provale. — Miocene (T. e.—f.) Pamaloean-, Gelingseh beds of Borneo; Soembawa and Madagascar, Bibl. 122, p. 195, fig. 20; Bibl. 123, p. 23; Java, Bibl. 27, p. 87, 92, Pl. XXVI, XXVII; Bibl. 4, p. 9; (Upp. part T. f.), Bibl. 4, p. 12; Bibl. 8*a*; Celebes (T. e.), Bibl. 37*b*, p. 30, 31.

„ (forma B) flexuosa Rutten. — Miocene (Upper part T. e.—Lower part T. f.) Borneo, Soembawa, Bibl. 122, p. 195, fig. 41; Bibl. 123, p. 24; Miocene (T. e.) Java, Bibl. 30, p. 9; (T. e.) Sumatra, Bibl. 125, p. 167, Taf. 16, fig. 4; Flores, Bibl. 22*a*, p. 277.

„ (Eulepidina) formosa Schlumberger (forma A et B). — Miocene (T. e.) Borneo, Sumatra, N. Guinea and Cebu, Bibl. 122, p. 196, fig. 4, 42; Bibl. 123, p. 22, Java, Bibl. 27, p. 87, 90, Pl. XXVI, fig. 13; Sumatra (?), Bibl. 52, p. 324, 327; Christmas Island, Bibl. 59, p. 29; N. Guinea, Bibl. 138, p. 279 (= L. murrayana).

„ (Eulepidina) formosa Schlumberger var. irregularis Rutten. — Miocene (Upper part T. e., Beboeloe horizon) Borneo, Bibl. 122, p. 197, fig. 5.

„ (Eulepidina) gibbosa Yabe. — Miocene (T. e.) Java, Bibl. 27, p. 87, 90, Pl. XXVI, fig. 6—9; Philippines (forma B) gigantea Martin; Miocene (T. e.) Bibl. 122, p. 297, fig. 44.

„ (forma B) glabra Rutten. — Miocene (T. f.) Borneo and Japan, Bibl. 122, p. 197, fig. 45; Java, Bibl. 8*a*.

„ (forma B) inaequalis (Jones et Chapman). — Miocene (T. e.) Christmas Island, Bibl. 122, p. 198, fig. 46; Miocene (T. e.) Sumatra, Bibl. 52, p. 327.

„ (Nephrolepidina) inflata Provale. — Miocene (T. e.—f.) Sumatra, Borneo, Soembawa and Philippines, Bibl. 122, p. 198, fig. 21; Bibl. 123, p. 23, fig. 18; Java, Bibl. 4, p. 9, 12; Flores, Bibl. 22*a*, p. 277.

Lepidocyclina (forma B) insulaenatalis Jones et Chapman. — Miocene (T. e.) Christmas Island, Bibl. 122, p. 199, fig. 47; Celebes, (T. e.), Bibl. 37*b*, p. 30.

„ (Nephrolepidina) isolepidinoides Van der Vlerk. — Miocene (Lower part of T. e.) Borneo, Bibl. 123, p. 23, fig. 20, 45, 48.

„ (Nephrolepidina) japonica Yabe. — Miocene (T. e. f.) Japan, Bibl. 122, p. 199, fig. 22; Borneo, Bibl. 123, p. 24, fig. 21, 44; Java, Bibl. 8*a*.

„ (Pliolepidina) luxurians Tobler (forma A et B). — Miocene (T. e. or f.) Sumatra, Bibl. 122, p. 199, fig. 31, 48; (T. e.) Bibl. 125, p. 170.

„ (Trybliolepidina) martini Schlumberger. — Miocene (T. e.—f.) Java, Madoera, N. Guinea, Madagascar, Australia, Bibl. 122, p. 200, fig. 23; Bibl. 98, p. 144; Java, Bibl. 8*a*.

„ (Eulepidina) mediocolumnata v. d. V. (forma A et B). — Miocene (T. e.) Borneo, Bibl. 122, p. 200, fig. 6, 49; (T. e.) Sumatra, Bibl. 125, p. 167, Taf. 26, fig. 5, p. 170.

„ (Trybliolepidina) orientalis Van der Vlerk. — Miocene (Upper part T. f., Njalindoeng-beds), Bibl. 122, p. 200, fig. 11.

„ (Eulepidina) papuaensis Chapman (forma A et B). — Upper Oligocene (T. d.) Borneo (Tempilan beds) and Australia, Bibl. 122, p. 200, fig. 7, 50; Bibl. 123, p. 22, fig. 40.

„ (forma B) papulifera Douvillé. — Miocene (T. e. Rembang beds) Java, Bibl. 122, p. 201, fig. 51.

„ (Nephrolepidina) parva Oppenoorth. — Miocene (T. e. and f) Sumatra, Bibl. 122, p. 201, fig. 24; Borneo, Bibl. 123, p. 24, fig. 22, 47.

„ (forma B) perornata Douvillé. — Miocene (T. f.) Northern Celebes, Bibl. 122, p. 201, fig. 52.

„ (Eulepidina) planata Oppenoorth. — Miocene (T. e.) Sumatra, Borneo, Bibl. 122, p. 201, fig. 8; Bibl. 123, p. 22; Java, Bibl. 27, p. 87, 91, Pl. XXVI, fig. 10—11.

„ (forma B) provalei Osimo. — Miocene (?) W. Celebes, Bibl. 122, p. 202, fig. 53.

„ (Nephrolepidina) radiata Martin. — Miocene (T. e.) Java, Bibl. 122, p. 202, fig. 25.

„ (Eulepidina) richthofeni (W. D. Smith). — Miocene (T. e.) Java, Bibl. 29, p. 87, 88, Pl. XXVI, XXVIII.

„ (Trybliolepidina) rutteni Van der Vlerk. — Miocene (Upper part T. f.) Java (Tji Lanang beds), Bibl. 122, p. 202, fig. 12*a*—*c*; Bibl. 4, p. 12; Bibl. 30*a*, p. 21; Bibl. 8*a*; Borneo (Menkrawit beds), Bibl. 123, p. 24; Sumatra (Gilas Beds), Bibl. 98, p. 145; and Philippines, Bibl. 122, p. 202.

Lepidocyclina (forma B) soebandii Van der Vlerk. — Miocene (T. e.) Borneo, Bibl. 122, p. 202, fig. 54; Bibl. 123, p. 24.

„ (Eulepidina) stereolata Oppenoorth. — Miocene (T. e.) Sumatra, Bibl. 122, p. 202, fig. 9.

„ (Pliolepidina) stigteri Van der Vlerk. — Miocene (T. e.) Borneo, Bibl. 122, p. 203, fig. 32, Bibl. 123, p. 22.

„ (forma B) subradiata Douvillé. — Miocene (T. e. Rembang beds) Java, Bibl. 122, p. 203, fig. 57.

„ (Nephrolepidina) sumatrensis Brady (forma A et B) Miocene (Upper part T. e. — Lower part T. f.) Sumatra, Borneo, Lombok, Soembawa, N. Guinea and Philippines, (see Bibl. 135); Bibl. 122, p. 203, fig. 26; Bibl. 123, p. 24; Java, Bibl. 4, p. 9; Japan, Bibl. 137, p. 31; Flores, Bibl. 22*a*, p. 277; Celebes (T. e.), Bibl. 37*b*, p. 30, 31.

„ (Nephrolepidina) sumatrensis Brady var. inornata Rutten. — Miocene (Upper part T. e. — Lower part T. f., Beboeloe horizon, Poeloe Balang beds) Sumatra, Borneo, Celebes and N. Guinea, Bibl. 122, p. 204, fig. 27; Miocene (T. e.) Java, Bibl. 30, p. 9; Bibl. 8*a*; (T. e.) Sumatra, Bibl. 125, p. 167, Taf. 16, fig. 3; (T. f.) Sumatra, Bibl. 125, p. 169; (T. e.) Bibl. 52, p. 324, 327.

„ (Nephrolepidina) sumatrensis Brady var. minor Rutten. Miocene (Upper part T. e.—T. f., Beboeloe horizon, Mentawir beds) Borneo, Bibl. 122, p. 204, fig. 28, 55; Bibl. 123, p. 24; (T. e.) Sumatra, Bibl. 52, p. 324, 327; Philippines, Bibl. 135, p. 171.

„ (Trybliolepidina) talahabensis Van der Vlerk. — Miocene (Upper part T. f.) Java (Njalindoeng beds), Bibl. 122, fig. 13; Borneo (Menkrawit-beds), Bibl. 123, p. 13.

„ (Trybliolepidina) transiens Umbgrove. — Miocene (T. e.) Sumatra, Bibl. 108, p. 109, fig. 1—5, Bibl. 98, p. 145.

„ (Nephrolepidina) verbeeki Newton et Holland (forma A et B) Miocene (T. e.—f.) Sumatra, Nias, Borneo, Soembawa, N. Guinea and Japan, Bibl. 122, p. 205, fig. 29, 56; (T. e.) Sumatra, Bibl. 125, p. 170; ? Bibl. 52, p. 327; Christmas Island, Bibl. 59, p. 34; Japan, Bibl. 137, p. 26; Celebes, Bibl. 37*b*, p. 31.

Miogypsina abunensis Tobler. — Miocene (T. f.) Serawak, Borneo, Bibl. 103, p. 328, fig. 3—5; Bibl. 123, p. 24, fig. 23, 49; Miocene (T. e.) Sumatra, Bibl. 125, p. 170, Taf. 16, fig. 9.

„ burdigalensis Gümbel. — Miocene (T. f.) Celebes, Australia, Europe, Bibl. 115, p. 52; Bibl. 87, p. 330, Pl. II, fig. 11, 12, Pl. III, fig. 22—25; (see also Bibl. 137, p. 34 et 35); America, Bibl. 26, p. 45.

„ complanata Schlumberger. — Miocene (T. e. and f.) Celebes, Bismarck Archipelago, Australia, Europe, Bibl. 115, p. 53; Bibl. 87, p. 330, Pl. II, fig. 13—16, Pl. III, fig. 18—21.

Miogypsina dehaarti Van der Vlerk. — Miocene (T. e.) N. Guinea, Molucca's, Bibl. 119, p. 429; Sumatra, Bibl. 125, p. 167, Pl. XVI, fig. 10; Bibl. 107; Bibl. 125, p. 167, Pl. XVI, fig. 10; see also Bibl. 137, p. 32.

„ aff. dehaarti Van der Vlerk. — Miocene Borneo, Bibl. 84, p. 321, Pl. I, fig. 1—9.

„ cf. epigona Schubert. — Miocene N. Guinea, Bibl. 72, p. 33, Taf. VII, fig. 5; (see also Bibl. 115, p. 54).

„ irregularis Michelotti. — Miocene Borneo, Nias, Celebes, Soembawa, Australia, Bibl. 115, p. 54; Miocene (T. f.) Sumatra, Bibl. 125, p. 169; Bibl. 51, p. 144, 158; Europe, Bibl. 87, p. 328, Pl. II, fig. 1—7, 9, 10, Pl. III. fig. 17; Somaliland, Bibl. 63, p. 50, Pl. I, fig. 1—4; (see also Bibl. 137. p. 33 et 35).

„ aff. irregularis Michelotti. — Miocene (T. f.) Borneo, Bibl. 74, p. 210, 283.

„ irregularis Michelotti var. orientalis Douvillé. — Miocene Nias, Philippines, Bibl. 115, p. 54; Bibl. 135, p. 174, Pl. XXVI, fig. 1, 2.

„ neodispansa Jones et Chapman. — Miocene (T. e.) Christmas Island, Bibl. 59, p. 37, Pl. V, fig. 4.

„ polymorpha (Rutten). — (Syn. M. biflida Rutten, Bibl. 74, p. 209, Taf. 12, fig. 10, 11); Miocene (T. f.) Borneo, Bibl. 123, p. 25, fig. 51; Bibl. 74, p. 207, Taf. 12, fig. 6—9, p. 283; Bibl. 132, p. 74, Pl. IX, XI; Bibl. 115, p. 55; Bibl. 132; Java, Bibl. 4, p. 11, 12 (Upper part T. f.); Bibl. 8*a*; Sumatra, Bibl. 125, p. 169 (Low. part T. f.); Philippines, Bibl. 135, p. 175.

„ polymorpha var. spiralis Rutten. — Miocene (T f.?) Borneo, Bibl. 84, p. 321, Pl. II, fig. 27, 28, 30—34.

„ thecideaeformis Rutten. — Miocene (T. e.—f.) Borneo, Bibl. 105, p. 32, Pl. II; Bibl. 123, p. 26, fig. 50; Bibl. 74, p. 204, Taf. 12, fig. 1—5; Borneo, Java, Soembawa, Bibl. 115, p. 56; Miocene (T. e.) Java, Bibl. 30, p. 11; Miocene (T. f.) Java, Bibl. 4, p. 11; Bibl. 47, p. 276; Bibl. 8*a*; (Upper part T.f.) Bibl. 4, p. 12; (T.f.) Sumatra, Bibl. 125, p. 169; Bibl. 52, p. 324, (T. e. and T. f.), p. 327; (T. e.) Miocene Zanzibar, Bibl. 12, p. 9, Pl. II, fig. 1—8.

„ cf. thecideaeformis Rutten. — Miocene (T. e.) Borneo, Bibl. 37, p. 728.

„ tuberosa Tobler. — Miocene (T. f.) from Popoh, Java, Bibl. 103, p. 324, fig. 1—2; Bibl. 8*a*.

Orthocyclina soeroeanensis Van der Vlerk. — Upper Eocene (T. b.) Java, Bibl. 117, p. 93, 96, fig. 1—2.

„ martini (Provale). — Lower Miocene Java, Bibl. 117, p. 94, 96.

„ spec. — Kei islands, Boeton and Peling, Bibl. 139, p. 317; Celebes?, Bibl. 37*a*, p. 202.

STRATIGRAPHICAL REMARKS.

In the preceding systematic list of the East Indian Foraminifera their distribution has, in the first place, been indicated by Eocene, Oligocene, Miocene and Pliocene.

The boundary between the first three of these divisions of the Tertiary, can, in the East Indies be indicated with rather great certainty on palaeontological grounds (Bibl. 107). The line dividing Miocene from Pliocene is much more difficult to fix. The fauna's of Java as well as those of N.W. India were at the time entirely autochthonous with respect to Europe, so that a direct comparison with European fauna's is out of the question. Perhaps this will be possible later with the aid of the widely distributed smaller pelagic Foraminifera.

About the boundary between marine Pliocene and Pleistocene strata nothing can be said with certainty.

By the side of these general names Eocene, Oligocene, etc., the stratigraphical horizons have, as far as possible, been more narrowly described in our list by the indications: Tertiary *a, b* ..... *f.*

A correct correlation of all subdivisions of the Tertiary series of the East Indies and Europe is not yet possible: and it is for this reason that Dr. I. M. VAN DER VLERK and the present author have introduced a consecutive classification by letter of the Indian Tertiary based on foraminifera (Bibl. 124 and 107). It is true that in some publications about the East Indian Tertiary names like „Aquitanien", „Vindobonien" etc. will be met with, but the different authors use these names for fauna's of different stratigraphical horizons, which can cause nothing but confusion. Up to now, the use of those names rests more on a matter of „feeling" than on scientific arguments. The classification by letter will prevent the use of names, the meaning and range of which are not fully grasped. Moreover later on when it has become possible to correlate the East Indian and European horizons exactly, it will enable the student to place the older literature in which this classification has been used at once, which, with names like „Older neogene", „Upper Miocene", „Aquitanien", etc. is far from being the case. The ensuing table indicates by what foraminifera combinations the horizons Tertiary *a, b,* etc. — *f* are characterised (For subdivisions and for Tertiary *g* and *h* see the article by LEUPOLD and VAN DER VLERK in this same Volume of „Leidsche Geologische Mededeelingen".

	Tertiary								Pleistocene
	a	b	c	d	e	f	g	h	
Cycloclypeus				×	×	×	×	×	×
Spiroclypeus					×				
Assilina	×								
Pellatispira	×	×							
Camerina	×	×	×	×					
Discocyclina	×	×							
Lepidocyclina (sensu lato)				×	×	×			
Miogypsina					×	×			
Trillina Howchini					×	×			
Lacazina	×								
Clausulus	×	×	×	×	×				
Fasciolites	×	×	×						
„*Flosculina*"	×								
Alveolina recent type						×	×	×	×
Alveolina bontangensis						×			
	a	b	c	d	e	f	g	h	
	Eocene		Oligocene		Miocene			Pliocene	Pleistocene
	Tertiary								

In comparison with the Orbitoididae, Camerinidae and other larger foraminifera, only very little palaeontological detail work about the so called smaller foraminifera of the East Indian Archipelago has been published.

If the Oil Companies that indeed use these smaller foraminifera already for stratigraphical correlations, especially for beds younger than the *Lepidocyclina* containing Tertiary, persist in keeping their data a secret, it will alas be necessary to do much double work concerning the smaller foraminifera of the East Indian Archipelago.

The data on smaller foraminifera I have mentioned in the systematic survey, are principally based on the following publications — they are

enumerated here in the arrangement of the horizons from old to young from which the material proceedes.

1. *Lacazina* was described, outside the East Indian Archipelago, from Cretaceous beds (Bibl. 86). Especially in the E. part of the Archipelago however, *L. Wichmanni* has repeatedly been found together with *Discocyclina* and *Camerina*.

In a number of rock samples I have, however, observed that the Lacazinae appear in older rock fragments which are imbedded in a younger sediment together with *Discocyclina* and *Camerina*. So it might be doubted if Lacazina did really live in the Eocene. It is not impossible that in cases where this cannot be so easily ascertained, *Lacazinae* have been washed in from Cretaceous marls during the Eocene sedimentation. It is, however, certain that in the East Indian Archipelago *Lacazina* has not yet been found in strata of which a cretaceous age has been ascertained but that *L. Wichmanni* has been repeatedly met with in strata of Eocene age.

2. KOCH (Bibl. 37) described a rich fauna of smaller foraminifera of Boeloengan (E. Borneo). In this fauna he came at the same time across *Lepidocyclina angulosa* and *Miogypsina thecideaeformis*. He surmises that this fauna is as old as the globigerina marls, which are in that area situated between Lepidocyclina-limestones and a sterile formation. So they must be regarded as belonging to Tertiary *e* (see Bibl. 124 Table). In the preceding list I have recorded the age of these foraminifera as such. In 1929 (Bibl. 107) I erroneously mentioned this fauna under „Lower Pliocene".

3. A Miliolide which has proved to be of especial stratigraphical importance is the Miocene species *Trillina Howchini* (T. *e* and *f*; Bibl. 124 and 107). This species was for the first time described by SCHLUMBERGER from Muddy Creek (Victoria) from beds which were then supposed to be Eocene but which have been proved to belong in reality to the Miocene. This species has further been found in Miocene beds from Cebu, Philippines; from the Chake Chake beds of Zanzibar; from Qurah Changh Dagh in Irak and from Paxos in Europe (Bibl. 3, 12, 94, 95).

4. Some small foraminifera have been described by VAN DER VLERK from the Tji Lanang beds and the Njalindoeng beds (Upper part of Tertiary *f*) from Java (Bibl. 118).

5. I have also included in the list the smaller foraminifera from the West Progo beds (lower part Tert. *f*) mentioned by RUTTEN (Bibl. 47).

6. Of „Lower Pliocene" or „Upper Miocene" (without *Lepidocyclina*) age is a fauna, (107 species) described by KOCH (Bibl. 35) from Kaboe, near Soerabaja, E. Java. He mentions *Uvigerina javana* KOCH and *Globigerina spec.* 89 KOCH as guide fossils for those beds. Many species are, moreover, identical to species described from „Pliocene beds" of the Nicobar islands by SCHWAGER (Bibl. 85).

7. A „Lower Pliocene" fauna is described by KOCH from E. Ceram (Bibl. 36).

8. FISCHER (Bibl. 24) described a microfauna from the Fufa beds, Ceram, and some from the island Obi. He could ascertain the Pliocene age of these beds with the aid of the Molluscs. In all probability these beds can be called „Middle Pliocene".

9. The same author (Bibl. 24, p. 27) has described foraminifera from Wai Duaha, Ceram, which he holds for Pleistocene.

For reasons mentioned in the Introduction I have not included in the list the numerous recent species of smaller foraminifera which are mentioned in the literature from Tertiary beds if these authors did not make a more extensive detailed study of the smaller foraminifera.

Recent occurrences of the smaller foraminifera are not fully mentioned in the systematic list.

About the most important genera of the larger foraminifera some stratigraphical details follow as yet. The genera follow in alphabetical arrangement.

ALVEOLINA, CLAUSULUS AND FASCIOLITES.

In the near future a monograph on the genera *Fasciolites* and *Clausulus* from the Indo-Pacific region will be published by L. A. J. Bakx; Mr. Bakx kindly gave me his manuscript and allowed me to quote here some of his results.

As the Flosculina type occurs with several species the genus *Flosculina* must be scratched and according to his opinion we should speak of "flosculinised *Fasciolites*".

The following table shows a shortened review from his list of generic synonyms.

			De Montfort 1808	Parkinson 1811	d'Orbigny 1826	Schubert 1910	Silvestri 1928	Yabe and Hanzawa 1929	Bakx 1931
Several rows of secondary chamberlets per one primary chambre					*Alveolina*	*Alveolinella*	*Alveolinella*	*Alveolina*	*Alveolina*
Two rows of secondary chamberlets per one primary chambre						*Flosculinella*	*Flosculinella*	*Flosculinella*	*Alveolina*
One row of secondary chambres per one primary chambre	embryonal chambers triloculinar		*Clausulus*		*Alveolina*		*Neoalveolina*	*Borelis*	*Clausulus*
	embr. chambre uniloculär	Basal sheet thin		*Fasciolites*	*Alveolina*	*Alveolina*	*Fasciolites*	*Fasciolites*	*Fasciolites*
		Basal sheet with irregular openings					*Eoalveolinella*	*Fasciolites*	*Fasciolites*
		Basal sheet thick					*Flosculina* Stache	*Flosculina*	*Fasciolites (flosculinised)*

The following table shows the stratigraphic distribution of *Clausulus* and *Fasciolites*, according to Mr. BAKX; to these I have added the two types of *Alveolina*.

	Tertiary						Tertiary — recent
	a	b	c	d	e	f	
Clausulus pygmaeus	———	———	———	·····	———		
Fasciolites javana	—	———	———				
Fasciolites ovicula	———						
Fasciolites oblonga	———						
Fasciolites Wichmanni	—	———					
Fasciolites celebensis	———						
Fasciolites flosculinised types	———						
Alveolina bontangensis						———	
Alveolina globosa						———	
Alveolina spec. diversae with more complicated structure						———	———

ASSILINA.

Only a few species of *Assilina* from the East Indian Archipelago have been described. Up to now they have not been used for a more detailed stratigraphy of the older Eocene, for which the *Assilina* species in British India have proved so suitable.

It seems to me that *Assilina ranikoti* (Bibl. 61) which occurs in British India at the basis of the Eocene, is very similar to *Assilina orientalis*, described by DOUVILLÉ from older Eocene of the island Nias.

According to VERBEEK *Assilina Nili* must be regarded as synonymous to *Assilina leymerieiri*.

CAMERINA (= NUMMULITES).

Camerina intermedius and *C. fichteli* have been found in Borneo, Java, Baluchistan, E. Africa and Europe.

It was proved in the open field by the exact stratigraphical survey of some profiles in E. Borneo especially by Dr. W. LEUPOLD that a horizon was found there, which is characterised by the frequent occurrence of *Camerina fichteli — intermedius*. We called the horizon Tertiary *c*. In a higher horizon, called Tertiary *d*, they occur accompanied by *Eulepidina*. *C. intermedius-fichteli* is characteristic for Oligocene (from Lattorfien to Chattien) of Europe.

In India NUTTALL looks upon the Nari series as Oligocene because these same reticulate *„Nummulites"* have been found (Bibl. 57 and 62).

It is for this reason that I have advocated that our horizons Tertiary *c* and *d* belong to the Oligocene (Bibl. 107).

The appearance of these two horizons with reticulate *Nummulites* in Europe as well as in British India and the East Indian Archipelago, indicates that in the Oligocene a temporal open sea connection must have existed between these areas (see Bibl. 107 where this question is further discussed and where more arguments in favour of this opinion can be found).

A short time ago VREDENBURG's study of the Molluscs of the Nari series has again been critically reviewed by MARTIN who pointed out that more than 40 European Mollusca species occur in the Nari series, which, according to him clearly points to an open sea connection between N.W. India and Europe at that time.

He says: (Bibl. 50)

„NARI. Es sind mehr als 40 europäische Arten vorhanden; von „javanischen kommt nur *Persona reticulata* LINN. vor; aber diese findet „sich auch im europäischen Oligocän und hat heute eine weltweite Ver„breitung."

And on p. 3 l. c. he comes to the conclusion that:

„Es ist also im Oligocän keine Verbindung von Java mit den euro„päischen Meeren zu erkennen."

For the sake of clearness I must mention that *Persona reticulata* has been found in Java: Young Miocene, Pliocene and Recent (Bibl. 49,

p. 87). No Mollusc fauna of the Dutch East Indies has been described from Oligocene strata (neither from Tertiary *c* nor from Tertiary *d*).

So we cannot ascertain on the strength of the Molluscs whether or not there was a close connection between the East Indies and Europe in that period. The presence of the same reticulate *„Nummulites"* in those areas shows that in all likelihood there must have existed an open sea connection in that period.

When an Oligocene Mollusc fauna will be found in the East Indian Archipelago, it may be expected that a comparative study of the species in Europe, British India and those of the East Indian Archipelago will lead to an analogous conclusion.

See for the stratigraphic value of other *Camerina* species the systematic list and the article by LEUPOLD and VAN DER VLERK in this same volume of „Leidsche Geologische Mededeelingen".

CYCLOCLYPEUS.

Fundamental studies on *Cycloclypeus* were given by MARTIN (Bibl. 40 and 44), VAN DER VLERK (Bibl. 115 and 116) and RUTTEN (Bibl. 75).

Very recently a provisional communication of a monograph on the indopacific genus *Cycloclypeus* by TAN has been published (Bibl. 100). The exhaustive monograph will be published by him in the series „Wetenschappelijke Mededeelingen".

As this publication will probably appear soon I have, when referring to literature, principally restricted myself to this provisional communication which for the rest gives sufficient data to classify the species distinguished by TAN. He could not place *C. communis var. borneensis* RUTTEN, *C. pustulosus* CHAPMAN and *C. incertus* KARRER because of insufficient data and pictures.

In the very near future a study on Cycloclypeus bearing strata from Java will be published by CAUDRI (Bibl. 8*a*). Some extensive comments are made in it on the stratigraphical value of TAN's Cycloclypeus species and a new species, *C. reticulatus*, is described. These results are not yet fully made use of in my systematic list and in the following stratigraphic table. Moreover, we should wait for the final results of TAN's monograph.

According to TAN the stratigraphical distribution of the *Cycloclypei* in the Oligocene and Miocene is as follows:

	Oligocene		Miocene			
	transition beds c – d	d	e	f Low part	f Upper part	g
C. carpenteri						+
C. neglectus				?	+	
C. „ *var. indopacificus*				+	+	
C. „ „ *stellatus*					+	
C. „ „ *transiens*				+		
C. annulatus				+		
C. „ *var. Martini*				+	+	
C. „ „ *glabra*				+		
C. „ „ *communis*				+		
C. eidae			+			
C. oppenoorthi		+				
C. koolhoveni	+					

Cycloclypeus may be considered as a typically Indo-Pacific genus. Some data from outside the Indo-Pacific region proved to be incorrect (see Bibl. 107, pag. 98).

DISCOCYCLINA.

VERBEEK (Bibl. 113) and DEPRAT (Bibl. 14) have summed up in tables the characteristics of some Discocyclina species. A monograph of the *„Orthophragmina"* species is, however, an urgent necessity. As yet, very little attention has been paid to the specific value of the dimensions and forms of the equatorial chambers, embryonal apparatus etc. Up to now the external form has been regarded as one of the most important characteristics of the species (the exactness of this may,- however, be questioned) and thus the *Discocyclina* mentioned in the preceding list can be divided into the following seven groups:

I. Lenticular disc gradually diminishing from the thickest central part to the circumference.

D. archiaci, barthelomei, decipiens, scalaris.

II. Disc suddenly diminishing in thickness from the centre.

D. varians, javana (+ javana minor).

III. Big central knob surrounded by a thin brim. *D. dispansa, dispansa var. minor, applanata.*

IV. Very thin disk-shaped object with a small round knob in the centre. *D. fritschi, D. papyracea.*

V. Central knob with depression surrounded by a thin brim. *D. omphalus.*

VI. Lenticular disc with a deep central depression. *D. umbilicata.*

VII. Saddle shaped (selliform). *D. sella, sella var. javana, varians var. selliformis.*

Flat varieties of *D. sella* (= *epphippium*) form as it were the transition to *D. paryracea*; perhaps they are young specimens of the same species.

The following may serve to illustrate the difficulties attending the distinction between the species of this genus (which for the rest could up to now not yet be used for a detailed stratigraphy).

DOUVILLÉ (Bibl. 18) mentioned *D. omphalus* of Java. This species must however, according to MARTIN (Bibl. 48) be taken together with *D. Fritschi. D. omphalus* was, however, very well described by DOUVILLÉ in 1905 (Bibl. 16) and by RUTTEN (Bibl. 73). According to RUTTEN it is doubtful if PROVALE (Bibl. 67) had indeed the same species among his material.

DOUVILLÉ distinguished (Bibl. 18): *D. decipiens, D. dispansa* and *D. javana.* According to MARTIN (Bibl. 48) these must be taken together under the name of *D. dispansa.*

VERBEEK did not describe the species „javana" on the strength of Nanggoelan material alone; without a closer investigation it is not quite clear what is left as a definition of „javana". In any case it seems that the name „decipiens" must be restricted to the originals of Von Fritsch.

D. javana and *D. paryracea* must perhaps be taken together as A and B forms.

VON FRITSCH mentions as synonyms: *D. discus* RÜST (VERBEEK) *D. fortisii* D'ARCHIAC and *D. pratti* MICHEL with *D. paryracea* BOUBÉE (Bibl. 25, p. 140); DOUVILLÉ, however, takes them to be separate species.

LEPIDOCYCLINA.

In 1928 VAN DER VLERK (Bibl. 122, p. 206) gave a survey of the stratigraphic value of the sub-genera in the Indo-Pacific. Since then new data (Bibl. 108 and 98) have shown that the distribution of *Trybliolepidina* is larger than was originally supposed.

The following scheme represents the present state of our knowledge:

			Eulepidina	*Tryblio-lepidina*	*Nephro-lepidina*	*Lepido-cyclina s. str. (= Iso lepidina)*	*Plio-lepidina*
Tertiary	Miocene	g					
		f		×	×		?
		e	×	×	×		×
	Oligocene	d	×			×	
		c					

Some species of *Lepidocyclina* have doubtlessly a small stratigraphical distribution, and so are of special importances e. g. *Trybliolep. Rutteni* which, up to now, seems to be restricted to the upper part of T. f.; further *L. papuaensis* which was only found in T. d. etc., etc.

The reader is further referred to the article by LEUPOLD and VAN DER VLERK which occurs in this same volume. An already very detailed Stratigraphy of the Tertiary of the East Indian Archipelago on the ground of the foraminifera species will be found there.

Continued field work will, undoubtedly, yield more exactly the vertical distribution of the subgenera, and more guide fossils among the species.

MIOGYPSINA.

YABE and HANZAWA [1]) proposed to unite *M. dehaarti* and *M. abunensis* into one species. This proposal has already been refuted by VAN DER VLERK and WENNEKERS (Bibl. 125); neither did they think it necessary to institute a separate subgenus, *Miogypsinoides,* for the *Miogypsina* species without lateral chambers.

In 1929 I pointed out that *M. dehaarti* probably is a good guide fossil for Tertiary *e* (Bibl. 107).

Data about the vertical range of *Miogypsina* species, as far as known up to now, are summarised in the following table:

[1]) Proc. Imp. Acad., Vol. 4, p. 535, 1928.

	Tertiary	
	e	f
M. abunensis	+	+
M. burdigalensis		+
M. complanata	+	+
M. dehaarti	+	
M. *epigona*	?	?
M. irregularis	?	+
M. irregularis var. orientalis	?	?
M. neodispansa	+	
M. polymorpha (+ bifida)		+
M. „ *var. spiralis*		+
M. *thecideaeformis*	+	+
M. tuberosa		+

PELLATISPIRA.

The species of the genus *Pellatispira* were treated by the present author in a monograph (Bibl. 106). Older literature and synonyma are mentioned there.

The seven species now described from the Eocene of the East Indian Archipelago, have all been found in Tert. *b*. One species only: *Pellatispira Madaraszi var. Provalei*, was at the same time found in Tert. *a*.

Since the said monograph, in which all then known finds of *Pellatispira* also outside the East Indies are mentioned, was published TOBLER (Bibl. 104) has recorded *Pellatispira* from Switserland and WHIPPLE (Bibl. 128) from Tonga (Pacific).

SPIROCLYPEUS.

VAN DER VLERK was the first to furnish important contributions for the systematic and the stratigraphical positions of this genus in the East Indian Archipelago.

In the survey the reader is, however, referred again and again to the monograph of KRIJNEN (Bibl. 38) where one can find older literature mentioned and made use of. A short note by TAN has appeared (Bibl. 99); it was published at about the same time as the above mentioned monograph but was not made use of. Newer stratigraphical date are indeed

not mentioned. The stratigraphical distribution is as follows: (According to LEUPOLD and VAN DER VLERK; see their paper in this same Volume of „Leidsche Geologische Mededeelingen").

	Tertiary-e.				
	e 1	e 2	e 3	e 4	e 5
S. margaritatus (A and B form)		—	—	—	—
S. pleurocentralis (A and B form)		—	—		
S. tidoenganensis (A and B form)		—	—	—	..
S. leupoldi (A and B form)		—	—	—	—
S. margaritatus var. umbonata (A form)				—	
S. orbitoideus (B form)				—	

As *S. orbitoideus* is a B-form and *S. margaritatus var. umbonata* an A-form and as the same stratigraphical distribution is known of both, it is not impossible that they belong to one and the same species. I noted that the following localities, where *Spiroclypeus* has been found, are not mentioned in the said monograph: Nias, Bibl. 17, p. 273, 274, 275; Sumatra, Bibl. 19, p. 37; Celebes, Bibl. 81, p. 180, fig. 2—8, 12—21; Bibl. 126, p. 751?; Bibl. 37*b*, p. 30; Bibl. 15, p. 1006; Flores, Bibl. 22*a*, p. 278; N. Guinea, Bibl. 21, p. 113; Bibl. 72, p. 32, Taf. VII, fig. 4, p. 37; Bibl. 138, p. 276; Japan, Bibl. 137, p. 41, Pl. I, V, XVI.

For *Spiroclypeus globulus, S. dispansus, S. bintoetensis, S. wolfgangi,* and *S. yabei,* now all placed among the synonyms, see KRIJNEN l. c.

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