

A BRIEF HISTORY OF THE CONCHOLOGICAL COLLECTIONS AT THE ZOOLOGICAL MUSEUM OF AMSTERDAM, WITH SOME REFLECTIONS ON 18TH CENTURY SHELL CABINETS AND THEIR PROPRIETORS, ON THE OCCASION OF THE CENTENARY OF THE ROYAL ZOOLOGICAL SOCIETY "NATURA ARTIS MAGISTRA"

BY

W. S. S. VAN BENTHEM JUTTING

Curator of the Zoological Museum of Amsterdam

With three Portraits and three Tables

At the time when the Royal Zoological Society *Natura Artis Magistra* known in Holland as "Artis" was founded in 1838 the ground for the study of malacology lay already well prepared.

For ever since the days when the early Dutch seafarers explored the commercial routes to East and to West, all kinds of curiosities and natural history objects found their way to the motherland, brought back by the homebound sailors.

Especially the wonderful products of the tropical seas, the shells with brilliant colours and infinite diversity of form attracted and appealed to the imagination. Amateur conchology grew and flourished and found enthusiasts among all classes. The new vogue spread rapidly and many private natural history collections which, at this time, were predominantly conchological, were started.

Particularly during the 18-th century Holland occupied a post of note and standing in this branch, a position which it shared only with France. Neither in Germany nor in England was much attention paid to this branch of science.

In another paper in this Jubilee volume my colleague Dr. H. ENGEL gives an account of all the natural history collections known in Holland during the last four centuries. Among the 18-th century cabinets about 250 were partly or entirely devoted to conchology. These are listed in the tables I and II, appended to my paper, and classified according to the towns where they were housed and to the social position of their owners respectively.

They clearly demonstrate what private initiative, skill and perseverance can attain and it is grievous to see how many cabinets have perished and how

few have succeeded in surviving the stormy social and political events at the transition of the 18-th to the 19-th century.

In the 19-th century, shortly after the restoration of the Kingdom in 1813, the interest in natural history and in exploration rose again and achieved at once a far more scientific character than the standard prevailing before the Revolution.

Though the number of conchological cabinets in the 19-th century was not more than a fourth of that which existed in the previous century yet quality was much improved, as for most of the collectors conchology was no longer a hobby, a distraction or a mental ornament, but their interest was awakened and inspired by genuine scientific curiosity.

A short time after its foundation in 1838 the Society *Natura Artis Magistra* purchased the REINDERT DRAAK Collection¹⁾ and this formed the basis for the Zoological Museum. It was more or less a curiosity cabinet, a medley of stuffed mammals and birds and probably animals in alcohol, but, so far as we know, contained no molluscs. The loss of this collection in 1840, in consequence of a quarrel between the Society's Council and DRAAK, therefore did not mean a loss for the shell-collection.

Meanwhile *Artis* had started an independent Museum collection, chiefly composed of stuffed animals which had died in the Zoo. They were on exhibition in a small building situated in "Middenhof" on the "Fransche Laan" (French Lane), now the Parrot's Lane of *Artis*²⁾. As a matter of fact this primitive Museum was mainly limited to Vertebrates. The Director of *Artis* was also in charge of the Museum.

From the very beginning of 1838 a register of new acquisitions was started and the first mollusc received for the cabinet was a Paper Nautilus (*Argonauta argo*) presented by Mr. LEHMAN DE LEHNSFELD on Dec. 16-th 1840. Unfortunately I could not trace the actual specimen in the collection. Some other donations in the following years shared the same regrettable fate. Even the important collection of shells of Miss M. E. A. OLTMANS in The Hague purchased from her brother Mr. A. OLTMANS on May 1-st 1844³⁾ seems to have perished, unless they are mixed with other material of unknown origin.

On June 16-th 1844 the Museum obtained a valuable donation from Mr. H.

1) This DRAAK collection was originally housed in a garret of the Burgerweeshuis (Municipal Orphanage) of which DRAAK was an attendant. When the Orphanage had to be rebuilt DRAAK was forced to find another house for his collection. At that time, Mr. G. F. WESTERMAN, one of the Founders of the Society, and later its first Director, raised the funds to purchase DRAAK's Collection. (cfr. Jubilee Volume of the 60th anniversary of the Society 1898, p. 18 seq.).

2) A survey of the old country residences and the way in which *Artis* like a mosaic was originated may be found in: R. T. MAITLAND, *Ontstaan, ontwikkeling en bloei van het Kon. Zool. Gen. Natura Artis Magistra te Amsterdam*, Bijdr. t. d. Dierk. Feestno. 1888, 30 pp. + 1 kaart.

3) R. T. MAITLAND, *De Musea van het Kon. Zool. Gen. Natura Artis Magistra op 1 Mei 1863*, Ned. Tijdschr. Dierk. Vol. I, 1863, p. XLIX—LX.

C. ROETERS VAN LENNEP in Amsterdam. Most of these shells are still present.

In rapid succession this gift was followed by several small and large donations: Dr C. DALEN, 1844; G. SCHEEPMAKER, 1844; D. D. BUCHLER, 1844; D. HAVERKAMP Jr., 1844; G. KRAMER, 1844; Jonkheer J. C. MARTENS, 1844; H. KOOPMAN, 1844; G. F. WESTERMAN, 1845; J. DE LEEUW, 1846; G. DE SERIÈRE, 1847; H. C. MULLER, 1847; E. VERREAUX, 1849; Dr. C. DALEN, 1852. The most notable are the contributions by DALEN, SCHEEPMAKER, Jhr. MARTENS and DE SERIÈRE.

HERMAN CHRISTIAAN ROETERS VAN LENNEP was born in Amsterdam December 20-th 1820 and died at "De Parkeler" near Twello August 15-th 1879. He belonged to the well-known Amsterdam commercial house VAN LENNEP & Co, which is still in existence. He lived in Amsterdam till 1862, when he moved to Twello.

He started a shell collection when only a boy and later spared neither efforts nor money to increase it. He was a friend of Mr. F. VAN HEUKELOM (see below) and of the curator of Artis, Mr. A. OLTMANS. With both gentlemen he now and then made exchanges and occasionally he spent large sums of money in buying shells in public sales (i.a. VOORHOEVE, 1872), private agreements (i.a. VAN DER HUUCHT, 1858) or from foreign dealers like BERNARDI (1856), G. B. SOWERBY (1866), B. WRIGHT (1866, 1871), R. DAMON (1872). At the VOORHOEVE sale he purchased the magnificent *Lucina voorhoevei* Desh., a unique specimen, for f.40.50. To this shell VAN HEUKELOM had already referred in a paper in 1866 (see under VAN HEUKELOM).

In a meeting of the editing committee in charge of the "Bijdragen tot de Dierkunde" of November 22-nd 1852 Mr. ROETERS VAN LENNEP showed a specimen of *Delphinula arion* (Meuschen) 1787 (= *D. sphaerula* Kiener, 1838). This specimen once formed part of the famous cabinet of ALBERT SEBA (1665—1736) and—by devious ways—reached the ROETERS VAN LENNEP collection. It was mentioned in the catalogue of the ROETERS VAN LENNEP sale, page 33 (A Catalogue of this valuable and extensive collection of shells ...comprising a large number of exceedingly rare species ...which will be sold by auction, by Mr. J. N. EVERTS,... on Tuesday, 18th of July, 1876, and five following days), but in the ms. catalogue of the collection (now in the Library of Artis, presented by his son, Mr. G. J. A. ROETERS VAN LENNEP, on January 15-th, 1885) there is no reference to the illustrious origin of the shell. It is unknown whence ROETERS VAN LENNEP had obtained it, or where it has gone to.

The auction of the ROETERS VAN LENNEP cabinet was attended by the then curator of Artis, Jonkheer W. N. M. VAN DE BLOQUERY. In an interleaved copy of the catalogue (now in the Library of the Society) he made annotations as to which specimens he purchased for Artis and at what prices. There were a few rare or unique species among them: *Meroe roetersiana* Crosse, *Fusus couci* Petit, *Murex lienardi* Crosse.

In general the prices fetched were far from bad. Thus I quote *Conus cervus* f. 240.—, *Conus cedonulli* f. 132.—, *Rostellaria powisi* f. 100.—. About the destiny of the famous *Lucina voorhoevei* I have no further information.

Among the other purchasers I found the names of Dr. IJ. KEYZER and Mr. M. M. SCHEPMAN.

The Library of Mr. ROETERS VAN LENNEP was sold in Amsterdam at FREDERIK MULLER's in 1876. Various books passed into the Library of of Artis.

In 1874 he published a short notice on Dutch Mollusca (Mededeeling op conchologisch gebied, Tijdschr. Ned. Dierk. Ver. 1, p. 47—49) and in 1876 a Catalogue alphabétique des Cones actuellement connus faisant suite au catalogue de Mr. H. CROSSE, 8 pp.

A crayon portrait of Mr ROETERS VAN LENNEP by COUWENBERG is now in the possession of Mr. J. ROETERS VAN LENNEP, at Voorburg.

CORNELIS DALEN M. D., was born at Rotterdam December 31-st 1765 and died in this town October 24-th 1854. On several occasions he presented shells to Artis (vide MAITLAND, Ned. Tijdschr. Dierk. Vol. 1, 1863, p. LVIII). His collection was sold in 1853 (Catalogue d'une collection de livres, d'ouvrages d'estampes et de livres d'histoire naturelle; d'une collection magnifique de Mollusques et enfin d'une collection superbe de Lépidoptères et de Coléoptères qui ont formé le célèbre Cabinet de feu Mr. C. DALEN. La vente publique se fera jeudi 23 juin 1853 et jours suivants...). The entire amount fetched by the shell collection was f 2817.50 according to a note by Mr. A. OLTMANS, curator of Artis, in the catalogue (now in the Library of Artis). The Society only bought one single shell: *Unio* (now *Amblema*) *heros* for f 3.— The majority of the collection, however, went to the Rijksmuseum van Natuurlijke Historie at Leiden (HORST & SCHEPMAN, Catalogue systématique des Mollusques, 1908, Introduction, p. VIII).

Dr DALEN was Ridder in de Orde van den Nederlandschen Leeuw (Knight in the Dutch Order: De Nederlandsche Leeuw).

Jonkheer JACOB CAREL MARTENS was born at Utrecht December 19-th 1817 and died at "Rhijnsoever" near De Meern (Vleuten, prov. Utrecht) July 2-nd 1872. He started studying Law in Utrecht in 1836, continuing in this Faculty in Leiden in 1837. Unfortunately he did not like his study at all and after a short time he gave it up. Another branch of science was not considered becoming enough for a man of his social position. Thus he lived independently and took up a fancy for natural history, especially conchology and entomology in both of which he soon became a serious amateur. In 1846 he married JOHANNA FRANÇOISE HENRIETTE MEERTENS who died as soon as 1852 leaving her husband with two daughters. Entrusting his children to relations Mr. MARTENS went to live in Paris for many years, before he settled at "Rhijnsoever".

There are two oil paintings of him: one by TESTAS (circa 1863) representing Jhr. MARTENS and his two daughters standing by the side of a riding-horse, and a smaller one by an unknown painter (circa 1870) with Jhr. MARTENS in hunting outfit taking a rest before a rustic tavern. Both pictures are in the possession of his granddaughter Douairière H. J. M. BARCHMAN WUYTIERS née VAN BEECK CALKOEN at The Hague.

His shell collection which he presented to Artis in 1844 contained species from all over the world, in the first place from the Indo-Australian Archipelago. It is especially strong in samples with accurate indications of provenience, certainly a rare phenomenon in amateur cabinets of that time. How he obtained his shells I have not been able to ascertain. As far as I am informed Jhr. MARTENS never visited the tropics.

GUILLAUME DE SÉRIÈRE was born at Naarden January 3-rd 1788 and

died at The Hague September 17-th or 19-th 1868. He was the son of a Walloon clergyman and was also bred for the Church himself, studying theology at Leiden. In 1811 he received an appointment at Zutphen, afterwards at Deventer. In 1821 he went to Java as a clergyman and at the same time in the Board of Education for primary and secondary instruction. Two years later the Governor General VAN DER CAPELLEN charged him with removing and reorganizing an old archive and appointed him as historiographer of the Government. In 1825 he became vicar and school-inspector at Soerabaja, but soon he came to Buitenzorg, collecting data for a statistical description of Java, at the same time being an Editor of the *Javasche Courant* (Java Newspaper). In 1828 a sort of experiment station was founded in Tjilangkap (residency of Krawang), of which SERIÈRE became the Director. He acted as an Assistant-Resident of the district and was promoted to Resident in 1831. In the following year the Chinese coolies mutinied against the management and set fire to the experiment station. SERIÈRE lost all his private possessions and could hardly escape himself. After two short periods as Resident in Banjoemas and in Rembang he went on leave to Holland in 1839 where he stayed till 1841. In this year he returned to Java and was soon appointed Governor of the Moluccas (1842—1845). It was probably in this period that SERIÈRE brought together the valuable collection of shells which he presented to Artis in 1847. In 1845 he retired and settled in a country-house near Zwolle, removing to Rijswijk and finally to The Hague. He married twice. His first wife (her name?) died in 1837. His second wife was MARIA MARGARETHA BIK (1802—1864). The Society *Natura Artis Magistra* nominated him as "Honorair Dirigeerend Lid" (Honorary Directing Member). SERIÈRE was a man of multifarious attainments, either highly revered, or fiercely despised. In 1849 he wrote an autobiography "Mijne loopbaan in Indië" (My career in the Indies), an eloquent plea in justification of his deeds and events.

His extensive collection contains many fine sets of marine shells and their variations, mostly in immaculate condition.

The old Museum was soon suffering from lack of space for all the new acquisitions and the Society had to look round for better accommodation for its cabinet. With a real far-seeing energy a huge new building was erected, not very elegant, it is true, but large enough to satisfy the growing requirements for years to come. The eastern wing was finished in 1851, the western one in 1854. The building is still in existence and is popularly called the *Groote Museum* (Great Museum) ¹).

In November 1854 Mr. OLTMANS who had attended to the shell collection for almost 10 years as an unofficial worker, was appointed a curator.

In one of these years the Society also acquired the greater part of the J. C. BRANDT Collection, once among the most famous cabinets of the 18-th century.

JOAN COENRAAD BRANDT (OR BRAND) was born in Neukirchen, in Waldeck (Westfalia, Germany) December 22-nd 1704 (or 1703?) and died in Amsterdam April 26-th 1791. He was a druggist and lived in the street called *Zeedijk* (Lesser, *Testaceotheologie*, ed. II, 1756, p. 62; *Naamregister*

1) J. C. H. DE MEIJERE, *Het Zoölogisch Museum, Gedenk. Athen. en Univ. van Amsterdam 1632—1932, 1932, p. 509—517.*

van alle de voornaamste Winkeliers der Stad Amsterdam; met aanwijzing van derzelve woonplaatsen... voor 't Jaar 1767, uitg. Eleveld & Selleger, 1767). He must have been a well-to-do man, for he possessed not only a large cabinet of shells and other marine products, precious stones, curiosities, coins and medals, statues, &c., but he could afford to purchase in 1784 the Lutheran Church in Beverwijk which was sold under execution, after



Fig. 1
JOAN COENRAAD BRANDT 1704—1791
after an engraving by Reinier Vinkeles
in 1776.

having spent large sums of money for the restoration of this building some six years before.

The shell collection contained several fine and rare lots in *Cypraea*, *Conus*, *Rostellaria*, *Murex*, *Voluta*, a *Scala pretiosa*, a sacred chank, *Pecten*, *Malleus*, *Spondylus*, *Placuna* *Ostrea crista galli*, *Venus*. Some of these served for illustrating three plates in KNORR, *Vergnügen der Augen*, &c., 1757—1772. BRANDT gathered his collection from various sources, e.g. he visited the most important sales in the second moiety of the 18-th century: BAART, 1762, LEERS, 1767. His cabinet was famous among contemporary naturalists and travellers. They visited BRANDT and tried to get admission to his collection, but in many cases were gruffly refused.

His collection was sold October 23-rd 1792 and following days (*Catalogue exquis de Nature & de*

l'Art, contenant une Collection très étendue de Coquillages, etc., assemblée en beaucoup d'ans, à grande peine & frais par feu Monsieur JOAN COENRAAD BRANDT... lequel en tout sera vendu, mardi le 23 octobre 1792, etc.). In the Introduction of the Catalogue it is announced that the shells will be sold in five instalments: the first portion was sold „en-bloc”, the second lot for lot separately, the third drawer for drawer, and the fourth and fifth, which were small cases only, were sold each by itself. In this way the consignments 2—5 became scattered and from an interleaved copy of the sale catalogue with annotations of the prices and the names of the purchasers, now in the Library of Artis, it can be gathered where these specimens shifted to. Many valuable pieces went to RAYE VAN BREUKELERWAERT. The first instalment, fetching f. 3300, was bought by Mr. VAN WINTER. It was probably this portion which was bestowed on Artis more than half a century later.

There are two portraits of BRANDT. The first, an engraving in copper by REINIER VINKELES, 1776 (fig. 1). Copies in the Library of Artis and in the Zeeuwsch Genootschap der Wetenschappen (Zealand Society of Sciences) at Middelburg. The other portrait is an oil painting (date?, painter?) in the possession of the Lutheran Church at Beverwijk.

In 1863 MAITLAND referred already to this most valuable acquisition¹⁾. And in 1869 OLTMANS in the preface to his catalogue of Cones²⁾ remarked: „Quant à la collection BRANDT nous devons observer qu'elle fut formée dans la dernière moitié du 18^e siècle et resta soixante ans ensevelie dans la possession d'une ancienne famille d'Amsterdam, dont elle passa intacte dans nos mains; dans son temps elle jouissait d'une juste réputation, et plusieurs coquilles qui s'y trouvèrent ont été figurées dans l'ouvrage de KNORR”.

From his words it can be concluded that the BRANDT Collection entered Artis about 1851, and it is a very great misfortune that the Society's registers of accessions, so accurately kept for a century, are missing for the years 1849 till 1852! Therefore we are unable to fix the date of the arrival of the BRANDT Collection. It is uncertain either who bestowed the donation, whether it was the above mentioned Mr. VAN WINTER or another.

The BRANDT shells may be looked upon as our oldest authentic specimens, though chronologically other collections were obtained in previous years.

In the following years the shell collection increased rapidly: J. H. CLAUS, 1853; J. C. DUMONT, 1853; R. J. VAN LENNEP, 1855; G. P. VAN HOLST, 1856; H. TH. C. HELLINGS, 1856; P. ESING, 1857; H. J. TULLINGH, 1858; TH. HALBERSTADT, 1858; L. HEUKENSFELDT SLAGHEK, 1859; D. KOERS, 1859; H. TH. C. HELLINGS, 1860; A. M. VAN ELBURG HELDER, 1861; J. E. WEYERMAN, 1862; H. P. CRUYS, 1862; D. S. HOEDT, 1862. A few important collections were purchased: J. COCK BLOMHOFF, no date; BERNARDI, 1852; G. J. L. VAN DER HUUCHT, 1858; TH. G. VAN LIDTH DE JEUDE, 1858; A. SALLÉ, 1862; H. CUMING, 1862. Nearly all of them are still present and in good condition.

Some of these were specially mentioned by MAITLAND³⁾. The most important lots were the collections HOEDT, COCK BLOMHOFF, VAN DER HUUCHT and VAN LIDTH DE JEUDE.

For biographical data of D. S. HOEDT vide H. J. VETH, *Overzicht van hetgeen, in het bijzonder door Nederland gedaan is voor de kennis der Fauna van Nederlandsch Indië*, 1879, p. 149 and p. 157—158.

JAN COCK BLOMHOFF (or KOCK BLOMHOF) was born in 1779 and died in 1853. He was Opperhoofd van den Nederlandschen Handel (Head of the Dutch Commerce) in Japan from 1816—1823 and during this time he seized the opportunity of collecting shells. The date of purchasing could not be traced, at any rate it was previous to 1863, the year when MAITLAND made mention of it in a survey of the Museum collections at the 25-th anniversary of Artis.

A short biography of VAN LIDTH DE JEUDE appeared in Molhuysen & Blok, *Biogr. Wbk.* Vol. I, Kol. 1274, 1911.

Of Mr. G. L. J. VAN DER HUUCHT no biographical data are available.

1) R. T. MAITLAND, 1863, l. c. p. LVIII.

2) A. OLTMANS, *Catalogue des Coquilles de la Famille des Conidés qui se trouvent au Musée de la Société Zoologique d'Amsterdam*, *Bijdr. t. d. Dierk. Afl.* 9, 1869, p. 13—22.

3) R. T. MAITLAND, 1863, l. c. p. LVIII.

In these years **OLTMANS** must have worked immensely. His enthusiasm and energy and his clear comprehension of conchological science rendered the shell gallery of the Museum a prominent place among contemporary public collections. He labelled all the samples accurately and kept a good catalogue, assisted herein by his son and, from August 1856 until March 1864, by Mr. **R. T. MAITLAND**. On Sunday afternoons he used to have friendly meetings in the Zoo with private collectors like **ROETERS VAN LENNEP**, **F. VAN HEUKELOM** a.o., showing each other new acquisitions, each boasting of his own collection, sometimes exchanging, sometimes purchasing in shares.

In course of time the Groote Museum began to suffer again from lack of space. Various reorganizations took place, in consequence of which the Insect collection and the osteological collection were removed to other buildings in the Garden. In 1868 a special Museum for the segregation of the Dutch Fauna (Museum van Nederlandsche Dieren), molluscs included, was inaugurated which is still in use ¹). Later, after the founding of the Aquarium (built between 1879 and 1882) the Lower Vertebrates and the Evertebrates (including the Mollusca in liquor, not the dry shells) were put on exhibition in some Museum-halls in this building. Thus the Groote Museum retained only stuffed Mammals and Birds and the Shell gallery ²). All these reorganizations made the appointment of another curator not only desirable but very urgent. Therefore in 1880 Mr. **MAITLAND** who had been away to The Hague for 16 years entered the Artis service again.

In the meantime the Society received many notable donations: **N. VAN AMERINGEN**, 1863; **R. T. MAITLAND**, 1863; **D. ERBRINK**, 1864; **M. VAN GEFFEN**, 1864; **A. HOFSTEE**, 1864; **H. P. CRUYS**, 1864; **J. E. KRAMER**, 1864; **J. SNOEK**, 1866; **D. DE ROEVER**, 1866; **H. P. SCHALEKAMP**, 1866; **J. C. S. RENTE LINSE**, 1867; **W. HEKKING Jr.**, 1867; **R. THOMPSON**, 1867; **G. PRATTY**, 1867; **F. HOLLANDERS**, 1868; **J. G. MOLTZER**, 1868; **B. H. BOER**, 1869; **H. MULLER**, 1870; **J. KRUISINGA**, 1870; **G. J. C. CAVALJÉ**, 1870; **P. W. HOLST**, 1870; **D. S. HOEDT**, 1870; **C. SCHEEPMAKER Gzn.**, 1870; **P. A. VAN REES**, 1870; **N. C. FRANZ**, 1871; **A. BRUINIER**, 1872; **J. F. VAN LEEUWEN**, 1872; **J. SCHEVEERS**, 1873; **C. SCHEEPMAKER Gzn.**, 1873; **J. E. TEYSMANN**, **P. VAN DER CRAB**, **F. P. L. POLLEN**, no date.

Several series of shells were purchased, and—judging from the bills and other notes, still preserved in the Department of Mollusca—no small sums of money were spent over them: **LANDAUER**, 1863, 1869, 1872, **G. B. SOWERBY**, 1866, 1870, 1872 (and 1890); **B. WRIGHT**, 1866, 1871; **R. DAMON**, 1869, 1872, 1873; **G. A. FRANK**, 1871, 1872, 1873; auction of **J. VOORHOEVE**, 1872; **C. JAMRACH**, **J. DENNISON**, **L. PARREYS** and others.

In the year 1873 the Society received the very important bequest of the late

1) Bijdr. t. d. Dierkunde, Feestno. 1888, p. 21.

2) l. c. p. 28—29.

Mr. F. VAN HEUKELOM, who left to Artis his entire shell collection and his library (fig. 2).

FRANS VAN HEUKELOM was born in Amsterdam in 1811 and died here on April 16-th 1872. From 1857—1870 he was President of the Amsterdamsche Kamer van Koophandel (Amsterdam Chamber of Commerce) and in this office he had full opportunity to promote Amsterdam Commerce in various ways. Thus he co-operated to found the Algemeene Maatschappij voor Handel en Nijverheid (General Society for Commerce and Industry) which, however, was cancelled afterwards, and the Nederlandsch-Indische Handelsbank (Netherlands Indian Bank of Commerce) and was a participant in many other important commercial societies. He was Ridder in de Orde van den Nederlandschen Leeuw (Knight in the Dutch Order: De Nederlandsche Leeuw), and President of the Roy. Zool. Soc. Natura Artis Magistra during a few years.

He had married his cousin, Miss JENNY STADNITSKY. They had no children. Mr. VAN HEUKELOM was a very keen collector and with unparalleled energy and clear comprehension succeeded in bringing together a magnificent cabinet which is now one of the glories of the Amsterdam Museum. It not only contains fine series of immaculate shells of the popular genera like *Conus*, *Voluta*, *Cypraea*, *Murex*, *Mitra*, *Harpa*, etc., but also representatives of small and less showy genera. Most of the lots bear reliable localities and

there are many rare specimens among them. As we have seen before, he entertained exchange relations with fellow conchologists and participated in purchasing collections in the country and abroad. He published a paper: Note sur l'identité des *Lucina voorhoevei*, Deshayes, et *L. mirabilis*, Dunker (Journ. de Conch. Vol. 14, 1866, p. 39—40).

Shortly after this OLTMANS' health began to fail, and he died December 10-th 1873. As his successor the Society appointed, Jonkheer W. N. M. VAN DE BLOQUERY from January 1-st 1874 onwards.

Like his predecessor Mr. VAN DE BLOQUERY was devoted to conchology and continued the friendly relations with collectors and dealers. He obtained by purchase quite satisfactory numbers of shells at the sales of Mr. H. C. ROETERS VAN LENNEP, 1876; Douairière F. J. M. RETHAAN MACARÉ née



Fig. 2.
FRANS VAN HEUKELOM 1811—1872
after a portrait in the Nederlandsch Indi-
sche Handelsbank, Amsterdam.

ONTIJD, 1888; and made exchanges with the Vice-Admiral P. A. VAN REES, 1884; Dr. J. SEMMELINK, in several years; The State Normal School in California, no date; and F. P. JOUSSEAUME, no date.

FLORENTINE JACOBINE MARTINA ONTIJD (born 1812, died Sept. 30-th 1887 at Utrecht) was the widow of Jonkheer CORNELIS ANTHONIE RETHAAN MACARÉ (born at Middelburg Aug. 27-th 1792, died at Utrecht March 17-th 1862) whom she married in 1839. During the years they were living at Middelburg both were working with great zeal in the collections of the Zeeuwsch Genootschap der Wetenschappen (Zealand Society of Sciences), Mrs RETHAAN MACARÉ being in charge of the shell collection (NAGTGLAS, *Levensber. v. Zeeuwen*, Part III, 1891, p. 109). Mrs. MACARÉ also kept an extensive private shell collection which was sold after her death at Utrecht. In the Preface to the sale catalogue, prepared by the son (Catalogue de la précieuse et superbe collection de coquilles ... le tout délaissé par Madame la Douairière F. J. M. RETHAAN MACARÉ née ONTIJD dont la vente publique aura lieu le lundi 6 août 1888 et jours suivants ... par devant le notaire Mr. E. C. U. DE BALBIAN VAN DOORN, Utrecht 1888) it is stated that his mother was a collector for almost 63 years and besides "Cette collection augmentait d'année en année, grâce surtout aux envois que de bons amis aux Indes et plusieurs officiers de la Marine Royale Néerlandaise lui firent parvenir de temps en temps et qui non seulement enrichirent la collection de quantité de coquilles rares et précieuses et de très beaux exemplaires, mais qui permirent aussi d'échanger souvent les doubles contre d'autres coquillages." Several well known collectors of the time purchased shells at this sale. SCHEPMAN, VAN REES, DE VOS TOT NEDERVEEN CAPPEL, WARNSINCK, the Rijksmuseum van Natuurlijke Historie at Leiden, and the Amsterdam Museum. There were a few rare and unique specimens in the collection: *Conus gloria maris*, *Cyclostoma macaræa* Petit de la Saussaye and *Conus macaræa* Bernardi. These were purchased by a certain Mr. VAN DOORN. When treating the history of the specimens of *Conus gloria maris* in Holland (*Basteria*, Vol. 3, 1938, p. 11—15) I have already remarked that it is unknown whether this refers to a private collector VAN DOORN, or if it can stand for the name of the notary. Therefore it remains in the dark where these shells have gone to.

PHIL. ARNOLDUS VAN REES (born at Zutphen, Dec. 23-rd 1817, died at Putten Dec. 19-th 1902). In 1838 he entered the Royal Navy, went through the successive ranks and retired in 1879 as a Vice Admiral. He was a very keen collector and during his various voyages to the East and West Indies he had ample opportunity to bring together a most valuable conchological cabinet. The greater part of it was sold in 1900 by Mr. G. B. SOWERBY (Catalogue de la Collection de coquilles, livres conchyliologiques, armoires renfermant la collection... délaissée par le Vice Admiral P. A. VAN REES, La Haye, 1900; cfr. *Journ. of Conch.* Vol. 16, 1921, p. 214). He had several rare specimens and i.a. a *Conus gloria maris* to which I have already referred in my account of the specimens in Dutch cabinets (*Basteria*, Vol. 3, 1938, p. 11—15). Three other minor consignments went to Mr. P. DE BRUYNE at Middelburg and two other gentlemen. As we have seen already His Excellency exchanged on different occasions with Artis and besides with Dr. J.

SEMMELINK, the Rijksmuseum van Natuurlijke Historie at Leiden, and purchased some lots at the MACARÉ sale in 1888.

JAN SEMMELINK was born on June 8-th 1837 and died at The Hague on August 8-th 1912. He entered the Indian service as a military surgeon and lived in various islands of the East Indian Archipelago between 1859 and 1882. In this year he retired as a major, and settled in The Hague as a civil doctor. During his colonial service he devoted all his leisure time to natural history, and presented valuable collections to many private people and to Museums in Holland and abroad, especially to the University of Groningen, to the Rijksmuseum van Natuurlijke Historie at Leiden, and to Artis. This Society appointed him as a "Lid van Verdienste" (Member of Merit) on May 14-th 1912. SEMMELINK also kept a collection of his own and entertained exchange relations with SCHEPMAN, VAN REES, LAMPERT in Stuttgart, a.o.

Furthermore I found the following accessions in the registers of the Society and though not by any means so valuable as the donations and acquisitions just mentioned they are worth enumerating all the same; J. J. KORNDORFFER, 1878; J. A. WEBER, 1882; J. LOOYMANS, 1883; J. J. BOEYE, 1883; J. A. PORTENGEN, 1890; I. MORPURGO, 1892; M. J. B. NOORDHOEK HEGT, J. NOORDHOEK HEGT and J. B. J. VAN ROSENDAEL, no date.

MARINUS JOHANNES BENJAMIN NOORDHOEK HEGT was born at Delden in 1821 and died at Yokohama (Japan) in 1894. He was a captain in the mercantile marine and used to collect shells and other marine products for Artis during his voyages. Some very fine Buddha statues were also presented by him. In his later years he settled in Yokohama starting a merchant firm. He is famous for having introduced the first fire-engine in Japan.

JOHANNES NOORDHOEK HEGT, brother of the preceding bearer of the name, was born June 28-th 1835 at Oldenzaal and died November 19-th 1919 at The Hague. He visited the School of Navigation at Amsterdam and entered the mercantile marine too. In 1862 he left this service and settled in Amsterdam, where he became sub-director of the Society Natura Artis Magistra, and married MARGARETHA CATHARINE WESTERMAN, daughter of the Director. With his brother WILLEM NOORDHOEK HEGT he became participating Director of the trading firm HEGT & Cy at Rangoon, afterwards transformed to Trading Cy late HEGT & Cy Inc.

In 1881 he left the Artis Service and removed to Apeldoorn where he founded the fish-cultural station "De Zwanespreng" for fresh water fish. About 1892 he gave up this work and went to live at The Hague for the rest of his life. He did not keep a private collection, but collected many shells and other marine animals for the Artis Museum.

He was "Lid van Verdienste" (Member of Merit) of the Roy. Zool. Bot. Society in The Hague and of the Rotterdamsche Diergaarde (Rotterdam Zoological Garden). Furthermore "Membre-correspondant de la Société Impériale d'Acclimatation de Russie" at Moscow, and Officer in the Order of the Oak-Leaf Coronet of Luxemburg.

The enormous increase of Museum material made a separation in show collection and study collection necessary. The custom to expose all the specimens—

common in all the museums of that epoch—was herewith abandoned. And though some donors made great fuss if their collections were not all exhibited it had become an absolute necessity to give up the old principle. Henceforth the show collection was meant for the public, the study collection for the use of scientific workers only. Experience has taught that in this way nothing but benefit for both parties is produced.

The new performance entailed an enormous reorganization in management and in arrangement of the exhibition halls and study rooms. It was the more urgent since the Municipality of Amsterdam and the Royal Zoological Society *Natura Artis Magistra* contracted an agreement for the zoological education at the University, after its promotion from *Athenaeum Illustre* to University in 1877 (first agreement 1877, revised 1892, revised 1926).

This contract included i.a. that the exhibition collection is divided over three buildings:

- a. The Groote Museum: stuffed Mammals and Birds, dry Shells
- b. Fauna Museum: Dutch Fauna
- c. Aquarium Museum: Dry and Spirit Collection: Lower Vertebrates and Evertebrates

and that the study collection henceforward should be housed in two buildings:

- b. Fauna Museum: dry Shells only (general collection)
- c. Aquarium Museum: the remaining zoological collections

In this agreement of 1877 especially the uniform arrangement of the collections was fostered. In the management there were still two directorates:

- I. The Director of the Royal Zoological Society *Natura Artis Magistra* and the Curators of this Institute
- II. The Professor of Zoology of the University

The revision of the contract in 1892 placed the entire management into the hands of the Professor of Zoology. The curators were no longer officials of the Zoological Society, but were appointed by the Municipality in future. Only the Curator of Insects remained in the *Artis Service* till 1926.

A card catalogue was started in which each lot is represented by a fish, bearing the name of the animal, the number of specimens, the locality and the collectors name. The zoological objects of the Garden were checked by A (for *Artis*), those of the University by G (for *Gemeente* = Municipality). This way of cataloguing is still in current use.

The bonds with the University secured the Museum a more scientific standing than in previous years. Specialists in different groups visited the Museum, studying the objects of their branch of science and raising the value of the material by their discoveries, their critical judgment or progressive suggestions.

Yet the contact with amateurs—of which there have always been plenty in conchology—was never neglected. It speaks certainly in favour for the Direction of the joined *Musea* that during more than 40 years of the new

management, the amateur-conchologists are counted among the best-appreciated collaborators of the Museum.

Mr. VAN DE BLOQUERY who retired May 1-st 1892, remained a honorary collaborator for many years. And Mr. MAITLAND would certainly have done the same had not failing health forced him to resign May 1-st 1893¹⁾.

The first Municipal curator (named assistant till 1898) was Dr. J. TH. OUDEMANS ...for the entire zoological collection! It is no wonder that for him and for his successors it was an impossibility to administer such a large field all alone. And though in later years generally two curators were in charge of the collection yet voluntary collaboration of unofficial workers was always most gratefully accepted and appreciated. Special mention should be made of the Museum's deep obligation unto Mr. W. REINKINGH, Fellow of Artis (born January 5-th 1821, died May 1-st 1905), Dr. J. SEMMELINK (born June 8-th 1837, died August 8-th 1912), Miss J. SCHOLTEN (born February 27-th 1874, Librarian of Artis from February 15-th 1912 till July 31-st 1920), Dr. W. G. N. VAN DER SLEEN (born October 4-th 1886), Mr. L. DE PRIESTER (born 1880).

A list of all the curators on the Staff of the Museum is appended to this paper in table III.

In 1926 another revision of the agreement between Artis and the University took place. At the same time a thorough restoration and modernization of the division in the Aquarium building was carried out, rendering the arrangement of the show collection more attractive to the general public and the study collection more convenient to the student. At this occasion the entomological collection which so far had been subject to a special regulation entered the direct administration, in the same way as for the other zoological objects.

Repeated enterprises by the Town Council of founding a new, modern zoological Museum, both for study and for exhibition purposes (an urgent necessity for a metropolis like Amsterdam) induced people to present or bequeath various important collections to the Museum. The malacological and the entomological departments are the two subdivisions in which this increase of material has assumed such proportions that the studies and stores are crowded and packed up beyond all imagination. Although the circumstances have obstructed the execution of the building of a new Museum so far, the Direction is in deep obligation to the liberal donors. They may perhaps find some comfort in the assurance that the care and devotion of the Director and the Staff are none the less for it!

In the following list of accessions to the shell gallery I had to select the principal and most extensive ones, fearing that an exhaustive record would surpass the limits of this Jubilee volume. I deeply regret this ungracious treatment of the smaller donations; their liberal donors may keep in mind that their agency also contributed to guarantee the Amsterdam Zoological Museum

1) Cfr. Jubilee Volume on the occasion of the 60-th anniversary of the Society, p. 21 seq.

a first-rate place among contemporary scientific institutes.

The accessions may be divided into 3 sections:

1. Cabinets and donations of odd specimens;
2. Individual Travellers and Regional Collectors;
3. Expeditions

Cabinets and donations of odd specimens

JACOB VIS, no date; J. VAN SON (1904); W. REINKINGH (1905); H. VAN OORDT VAN LAUWENDRECHT (1906); F. P. VERMEULEN (1906 and several later occasions); MAXWELL SMITH (1908); J. SEMMELINK (1908 and several later (and earlier!) occasions); P. BUITENDIJK (1909 and several later occasions); L. DE PRIESTER (1916 and several later occasions); M. M. SCHEPMAN (purchased in 1920); Jonkheer A. W. G. VAN RIEMSDIJK (1921); A. G. BOES (1922); A. C. WERTHEIM (1923); J. R. LE B. TOMLIN (1923 and several later occasions); C. O. VAN REGTEREN ALTENA (1924 and several later occasions); I. A. J. DE WILDE (1924 and several later occasions); Miss VAN DER HEGGE SPIES (1927); L. MULLER (1927 and several later occasions); J. W. VAN DIEREN (1927 and several later occasions); Ladies KAAKEBEEN (1927); A. J. DUYMAER VAN TWIST (1930); P. A. OUWENS (by intermediance of the Buitenzorg Museum 1932).

F. P. VERMEULEN (born July 29-th 1870), Secretary of the IJmuiden Steam-trawler Owner's Association, participated in an exploring trip for fishery research to the West coast of Africa in 1906. The zoological collections were presented to the Amsterdam Museum. Since that time Mr. VERMEULEN has become a staunch friend of the Museum. This institute has profited immensely by the never waning keenness with which he stimulated the owners and the boat-men of the numerous steam trawlers of the IJmuiden fleet to collect and preserve the by-products of the trawl fishery: various interesting Coelenterates, Echinoderms, Molluscs, Tunicates, Worms, &c. The majority of the IJmuiden fleet sails the North Sea. Occasionally however, some trawlers visit the West coast of Ireland, the South West coast of England, or the Atlantic Ocean between the Shetlands and Iceland. Mr. VERMEULEN also keeps a private collections of shells from different parts of the world.

LEUNIS DE PRIESTER (born 1880) used to be a schoolmaster, lastly of the Municipal U.L.O. school at Voorburg. He is now living at Apeldoorn. He keeps a general collection of shells, in which the Dutch East Indies are especially well represented thanks to the collections made by his sister, the late Miss G. J. DE PRIESTER, teacher in Java, and by the frequent lots sent by his brother, Dr. W. F. DE PRIESTER, landing-surgeon of the Koninklijke Paketvaart Maatschappij (Roy. Steam Navigation Company) at Batavia, who receives most valuable material from various islands in the Indian Archipelago, brought by the Captains of the said Company.

Mr. DE PRIESTER is a specialist in *Cypraea* and *Conus*. He used to be a friend of the late Mr. PH. DAUTZENBERG at Paris with whom he stayed at various occasions and with whom he made frequent exchanges.

The Amsterdam Museum is greatly obliged to him for many duplicate shells presented to our collection and for generous aid in identifying Cones.

MATTHEUS MARINUS SCHEPMAN (fig. 3) (born 1847, died at Bosch-en-Duin November 19-th 1919) passed many years of his life at Rhoon, near Rotterdam where he was manager of the estate of Rhoon and Pendrecht, Albrandswaard and Piershil from 1872 till 1909. Here he started his shell collection, at first by collecting in the vicinity of Rhoon, but by and by he extended his activities in all possible directions. Soon he acquired a world fame and entertained relations with almost all malacologists of his time. He purchased single lots at various auctions (VOORHOEVE, 1872; ROETERS VAN LENNEP, 1876; RETHAAN MACARÉ, 1888) and from dealers (SOWERBY, ROLLE, HIRASE, PRESTON, CUMING).

He not only collected the shells for the simple purpose of possessing them, but he also was a serious student in this class of animals and published some 65 papers between 1874 and 1919. Among these publications are the results of several large and small expeditions: Sumatra-Expedition, 1888; Dutch Scientific Borneo Expedition, 1895; Siboga Expedition, 1908, 1909, 1911, 1913; New Guinea Expeditions, 1918, 1919. He was allowed to keep duplicates (among which there were many paratypes) for his collection and in this way it became more and more valuable.

Besides he revised the shell collections of the Museum of the Rotterdamsche Diergaarde (Rotterdam Zoological Garden) and of the Rijksmuseum van Natuurlijke Historie at Leiden. In honour of his merits unto the latter Institute the Government bestowed on him the golden medal of merit, a very rare distinction indeed.

With Dr. A. A. VAN BEMMELEN, late Director of the Rotterdam Zoo, and a few other enthusiastic zoologists SCHEPMAN was one of the founders of the Nederlandsche Dierkundige Vereeniging (Netherlands Zoological Society) in 1872 and acted at its first Hon. Treasurer.

After his death the shell collection and the library were offered for sale (Catalogus eener fraaie verzameling boeken..., prachtverzameling schelpen, afkomstig van wijlen... M. M. SCHEPMAN, Utrecht, A. J. VAN HUFFEL, 1920). The fine and historical collection was purchased by the University of Amsterdam, with the financial aid of the Universiteitsvereening and a few private persons.

Jonkheer ADRIAAN WILLEM GERRIT VAN RIEMSDIJK (born in 1803 at



Fig. 3.
MATTHEUS MARINUS SCHEPMAN
1847—1919
after a portrait, taken when he was circa 50 years of age. Schepman is wearing here the golden medal of merit, bestowed on him by the Government in honour of his merits unto the Rijksmuseum van Natuurlijke Historie at Leiden.

the Castle of Helmond, died 1871 at Utrecht). He was "Lid van het Munt-college, belast met de functie van Inspecteur Essayeur-generaal (= Member of the Mint-council, in charge as Inspector essayer general). He was a collector as early as 1850, and perhaps before that date. After his death the collection came to his son, Jonkheer BARTHOLD W. F. VAN RIEMSDIJK (born 1850) who first took it to The Hague, afterwards to Amsterdam. He added several samples of Dutch mollusks and obtained a *Scala pretiosa* by exchange from Mrs. RETHAAN MACARÉ.

After his resignation in 1921 as a Director General of the Rijksmuseum (the Artmuseum) at Amsterdam Jhr. B. W. F. VAN RIEMSDIJK presented the collection and a few books on conchology to the Zoological Museum.

A picture in oil of Jhr. A. W. G. VAN RIEMSDIJK, made by the son, is hanging in the Rijksmunt at Utrecht. There is another portrait in crayon by Freule SCHÖNSTELT, now in the possession of Jhr. B. W. F. VAN RIEMSDIJK at Amsterdam.

A. G. BOES (born March 9-th 1864) started his career as a schoolmaster and occupied the post of Inspector for the Native Elementary Education at Amboina from March 1909 till April 1911. Together with his wife, Mrs. B. BOES-SCHARFF he succeeded in bringing together a fairly representative collection of shells of the district. During his inspection voyages to several islands in the Moluccas the local officials, teachers and pupils considered it an honour to offer various fine specimens for Mr. BOES' collection. At present Mr. BOES is living at Haarlem where he is Alderman for Education. The shell collection was presented to Artis in October 1922.

ABRAHAM C. WERTHEIM was born September 22-nd 1889 and died in December 1932. He was a general collector, especially of very fine specimens, on which he often spent large sums of money. The collection of shells and other marine products and some beautiful pieces of ores and minerals was presented to Artis in February 1923.

CAREL OCTAVIUS VAN REGTEREN ALTENA (born December 19-th 1907 at Amsterdam) studied biology at the Amsterdam University where he obtained his degree of Doctor of Science March 18-th 1937. Since his schooldays at the Amsterdam Lyceum he has been a keen collector and a critical observer, and the Museum profited by both qualities in the way of additions to the collection and of unofficial aid in revising doubtful or unidentified material. Besides his doctor thesis he published 18 papers in various periodicals.

IZAÄK ANTHONIE JACOBUS DE WILDE, born in 1877 at Poortvliet, started his career as a schoolmaster at Rotterdam and retired in 1937 as a Head-schoolmaster of an Amsterdam Public school.

Between 1921—1925 he studied geography at the Amsterdam University and passed the "Middelbaar Onderwijs examen" (Teachers Examination). He keeps a general collection of his own, from which he now and then presents duplicates to the Museum. The shell department is under deep obligation for much valuable honorary help in administration and identification. Together with his colleague L. DORSMAN CZN. he published "De Land-en Zoetwatermollusken van Nederland" (Groningen, 1929).

LEO MULLER, born in 1898, is a secondary school teacher of English at

Bussum. He has a general collection, but specialises in beautiful specimens and long variation series of some species, on which he sometimes spent large sums of money. One of the glories of his collection is an exceedingly well preserved specimen of *Conus gloria maris*. In my account of the specimens of this treasure in Dutch collections I have referred already to Mr. MULLER's shell (*Basteria*, Vol. 3, 1938, p. 11—15).

On various occasions Mr. MULLER presented specimens to the Museum and now and then he made a few exchanges.

JACOBUS WOUTERUS VAN DIEREN was born in Amsterdam July 10-th 1902 and died at Overveen November 14-th 1935. He was a student of biology of the Amsterdam University where he graduated in 1934, a passionate lover of nature, a lucky collector, a critical observer and a wonderful stylist. His various papers, mostly on botanical and ornithological matters and on folklore, the popular as well as the purely scientific ones are marked by an enthusiasm and an artistic taste to which, however, the scientific value is never sacrificed.

For further particulars about the life and the work of this amiable and clever naturalist I may refer the reader to two obituary notices by his friend and collaborator Dr. A. SCHEYGROND in *Vakblad voor Biologen*, Vol. 17, 1935, p. 62 and in a special memorial pamphlet: *Ter herinnering aan Dr. J. W. VAN DIEREN*, 1936.

The Zoological Museum is specially indebted to Dr. VAN DIEREN for shells of the Island of Terschelling (on which he published a paper: *Bijdrage tot de kennis der Terschellinger Molluskenfauna. De Levende Natuur*, Vol. 30, 1925, p. 106—114), and for several lots of shells from various parts of Europe, collected during his holidays.

Mr. ALBERTUS JACOBUS DUUMAER VAN TWIST was born at Deventer February 20-th 1809 and died December 1-st 1887 at his country house Nieuw Rande near Deventer. He studied Law and obtained the degree of Doctor of Law at Leiden October 20-th 1832. He settled as a lawyer in Deventer and became an attorney to the Court of Justice in this town in 1835. From 1843 to 1851 he was a deputy to the House of Commons. In this last year he was appointed Governor General of the Dutch East Indies, till 1856. During his government he made a journey in the Moluccas in 1855 (*Aanteekeningen betreffende eene reis door de Molukken van Zijne Excellentie den Gouverneur Generaal Mr. A. J. DUUMAER VAN TWIST in de maanden September—October 1855. — 's-Gravenhage, 1856, 157 pp.*). Dr. PIETER BLEEKER, the well-known ichthyologist, was conjoint to this expedition as a surgeon. He succeeded in collecting an important collection of animals, on which he reported in his *Reis door de Minahassa en den Molukschen Archipel in de maanden September—October 1855 in het gevolg van den G. G. DUUMAER VAN TWIST*, 2 vols. 1856. The Governor General seems to have taken a fancy for conchology and took the shells with him after his retirement. Afterwards it came to his foster daughter who married Ing. C. LEEMANS, at Hilversum. In 1930 Mr. LEEMANS most graciously presented this collection to the Amsterdam Museum.

Major P. A. OUWENS was born in 1850 and died at Buitenzorg (Java) March 5-th 1922. Shortly after the foundation of the Zoological Museum in Buitenzorg in 1901 he was appointed a curator (1905) till his resignation in 1921. He had been collecting all the time during his military career

and deposited the spoils in the Museum when he was put in charge of it. He possessed a very good shell collection and entertained exchange relations with many fellow-conchologists all over the world. In this way he obtained a lot of material from outside the Indo-Australian region: Africa, America, Europe. The present Director of the Buitenzorg Museum, Dr. K. W. DAMMERMAN, seeing that all this foreign material unnecessarily filled the cases of what is meant as a regional Museum, most graciously presented the non-Indian shells to the Amsterdam Museum, to be exchanged against such duplicates as we can spare from the Archipelago.

At OUWENS' resignation from the Buitenzorg Museum Dr. K. W. DAMMERMAN wrote a farewell-word (*Teysmannia*, 1921, 6 pp.). An obituary notice appeared in *De Tropische Natuur*, Vol. II, 1922, p. 49—50 by Messrs BACKER and LEEFMANS. Two short notices by S. KALFF, allusive to his cabinet, can be found in *De Natuur*, 1921, p. 262 and *ibid.* 1928, p. 206.

Individual Travellers and Regional Collectors¹⁾

Prof. Dr. M. WEBER and 1883, 1884, 1885 Norway
Mrs. A. A. WEBER-VAN BOSSE

MAX WILHELM CARL WEBER was born at Bonn (Germany) December 5-th 1852. Here and at Berlin he studied zoology and medicine. In 1879 he was prosector of anatomy at Amsterdam and from 1880—1883 lecturer of anatomy at Utrecht. In 1883 he was appointed professor-extraordinarius of zoology and comparative anatomy at Amsterdam, in 1884 ordinary professor. From 1888—1889 he and Mrs. WEBER travelled in the East Indies. In the year 1894 they undertook a journey to South Africa, and in 1899—1900 they sallied out for an expedition on board of H.M.S. Siboga in the Eastern part of the East Indian Archipelago. In 1898 WEBER was transferred from ordinary professor to professor-extraordinarius, being in charge of the Zoological Museum, and lecturing on special zoological chapters. In 1922 he retired as a professor, but continued scientific work in his country house at Eerbeek, where he died February 7-th 1937. It is impossible to give an adequate outline of WEBER's personality, his capacities and his achievements in such a narrow space. An honest and warm picture was drawn by Sir D'ARCY WENTWORTH THOMPSON in the Obituary Notices of the Royal Society p. 347—355, 1938; a survey of his scientific work was made up by L. F. DE BEAUFORT, *Het wetenschappelijke werk van Max Weber*, *Vakblad v. Biologen*, Vol. 18, 1937, p. 125—135.

Prof. Dr. M. WEBER and 1888—1889 Dutch East Indies
Mrs. A. A. WEBER-VAN BOSSE

Malacological publications: E. VON MARTENS, *Landconchylien des Indischen Archipels*, in: M. WEBER, *Zool. Ergebn. Reise Niederl. Ost Indien*, Vol. II, 1892, p. 209—263, pl. XII—XIV; F. WIEGMANN, *Beiträge zur*

1) I found some difficulty in distinguishing between "Individual Travellers" and "Expeditions". If any uncertainty might crop up the reader is kindly invited to consult both paragraphs. For several details I profited a great deal by the *Catalogus van de Natuurwetenschappelijke Tentoonstelling, gehouden bij gelegenheid van het 15e Nederlandsch Natuur- en Geneeskundig Congres*, in 1915. This catalogue was prepared by Prof. MAX WEBER.

Anatomie d. Landschnecken des Indischen Archipels, in: *Ibid.* Vol. III, 1894, p. 112—259, pl. IX—XVI; E. VON MARTENS, Süß- und Brackwassermollusken des Indischen Archipels, in: *Ibid.* Vol. IV, 1897, p. 1—331, pl. I—XII; H. SIMROTH, Über einige Parmarion Arten, in: *Ibid.* Vol. III, 1894, p. 100—110, pl. VII—VIII; M. WEBER, Bemerkung zu Tafel VII, in: *Ibid.* Vol. III, 1894, p. III.

Dr. C. PH. SLUITER 1878—1891 Java Sea, Krakatao
and other localities

CAREL PHILIP SLUITER was born at Amsterdam November 16-th 1854 and died at Eerbeek August 7-th 1933. He studied zoology at Leiden and at Heidelberg (Germany). He graduated at Leiden in 1878, made a trip to the Polar Region on board of the Willem Barents and in the same year left for Java as a teacher of natural history in the gymnasium at Batavia. In his leisure hours he devoted his time and energy to the study of the marine fauna of the Bay of Batavia and vicinity. In 1891 he was appointed lecturer of zoology at the Amsterdam University and in 1898 he became Professor here, till his retirement in 1925.

Further particulars about his life and his scientific activity can be found in a necrology by M. WEBER in *Vakblad v. Biologen*, Vol. 15, 1933, p. 1—4.

Malacological publications on his tropical investigations: Über die Bildung der Kalkröhren von *Gastrochaena*, *Natuurk. Tijdschr. Ned. Indië*, Vol. 50, 1890, p. 45—60, 1 pl. and Über die Bewegung einiger tropischen Mollusken und Ophiuren, *Tijdschr. Ned. Dierk. Ver. (2)* Vol. 3, 1892, p. 170—183, pl. VIII.

Prof. Dr. M. WEBER and 1894 South Africa
Mrs. A. A. WEBER-VAN BOSSE

Malacological publication: M. WEBER, Beiträge zur Kenntnis der Fauna von Süd-Afrika, *Zool. Jahrb. (Syst.)* Vol. 10, 1897, p. 180—194.

G. HERMAN 1900 and later occasions Sabang, Sumatra

G. HERMAN was born in Amsterdam in 1867. He started his career as an employé at Messrs. DE LANGE & Co at Olehleh (Atcheen) in June 1890. This Company was in charge of the victuals supply to the Navy and the Army. In 1897 when the contracts with the two Forces were going to be abolished, HERMAN was transferred to the N.V. Zeehaven and Kolenstation Sabang (Seaport and Coaling-port Sabang Ltd.) where he remained till his retirement as a proxy in 1922. In this same year he was appointed a Knight in the Order of Oranje-Nassau. He is now living at Heemstede.

During his residence in Sabang HERMAN collected shells and other marine products for Artis at various occasions. Many rare and fine specimens were obtained by him personally or through his agency. Therefore the Society nominated him as Lid van Verdienste (Member of Merit) at the 75-th anniversary of Artis, in 1913.

Dr. J. BOEKE 1905 West Indies

JAN BOEKE Med. Doct. was a lecturer at the University of Leiden (now professor of histology and embryology at the University of Utrecht) when he was charged, by resolution of November 22-nd 1904, to investigate the Fisheries and the Industry of Sea-products in the Colony of Curaçao, which

Waigeu, Ceram, Pulu Weh and Java, appeared in *Bijdr. t. d. Dierk. Afl.* 20, 1915, p. 17—33.

DE BEAUFORT was a curator of the Zoological Museum for four years (see table III appended to this paper). In 1922 he succeeded his master, Prof. M. WEBER, as the Director of the Museum. In 1929 he was appointed professor-extraordinarius of Zoogeography at the Amsterdam University.

Dr. J. P. KLEIWEG DE ZWAAN 1910—1911 Nias Id.

JOHANNES PIETER KLEIWEG DE ZWAAN M.D., was born at The Hague, July 4-th 1875. He is now professor of Anthropology at the Amsterdam University and visited the Indian Archipelago several times. His main subject has always been anthropological investigation, but he never failed to make zoological collections as well, which he presented to the Amsterdam Museum. The mollusca of his journey to Nias were treated (together with other material from the same island) by T. VAN BENTHEM JUTTING, Non-marine mollusca from Nias Island, *Misc. Zool. Sum.* No. 84—85, 1934, 17 pp., and *Id.* Additional data on the non-marine Mollusca from Nias Island, *Misc. Zool. Sum.* No. 89, 1935, 4 pp.

E. C. ABENDANON 1910—1911 Central Celebes

EDUARD CORNELIUS ABENDANON, mining engineer, (born at Pati, 1878 Dec. 2-nd) undertook a geological exploration of the Central part of Celebes and at the request of Prof. M. WEBER he collected fishes and shells in the great lakes in this island. Of both duties he acquitted himself in an admirable way and the Museum is under great obligation for a rich collection of mollusca. A report on these has been published by J. H. KRUIJVELD, *Verzeichnis der von Herrn E. C. ABENDANON in Celebes gesammelten Süßwasser-Mollusken*, *Bijdr. t. d. Dierk. Afl.* 19, p. 215—236, 1913. (vide also E. C. ABENDANON, *Geologische en geographische doorkruisingen van Midden-Celebes*, Vol. IV, 1918, p. 1626—1650). From 1921 to 1926 he was professor at the University of Amsterdam, specially in charge of teaching economic significance of ores and minerals of the Dutch colonies.

Dr. E. VAN DER VELDE 1912—1913 Banda

E. VAN DER VELDE was a doctor of the Crediet- and Handelsvereniging "Banda" in Banda Island for many years. At the request of Prof. M. WEBER he collected a large amount of marine animals, all well chosen and well preserved. The collection also embraces a number of marine mollusca.

Jonkheer W. C. VAN HEURN 1915 and later occasions Holland, Java

Jonkheer WILLEM CORNELIS VAN HEURN was born at The Hague February 20-th 1887. He studied biology at Leiden and made large collections of mollusca and other zoological objects for the Rijksmuseum van Natuurlijke Historie at Leiden. Occasionally the Amsterdam Museum received some material, e.g. during the Great European War, when VAN HEURN was in military service in some out of the way places, taking the opportunity of being allowed to move where civil people could not enter. In 1911 he made a zoological exploring trip to Surinam. In 1912—1914 he joined Mr. EDW. JACOBSON on a zoological expedition to Simaloer Id (off Sumatra's West Coast).

In 1919 he arrived at Java as a zoologist at the Institute of Plant Diseases at Buitenzorg. In 1932 he removed to the Department of Education and was

a teacher, first at Batavia, since 1933 at Soerabaja at the N.I.A.S., a secondary professional school for doctors.

In 1920 he joined the North New Guinea Expedition, the so-called Mamberamo Expedition, as a zoologist (see under Expeditions). Wherever he came VAN HEURN always proved to be a fortunate and intelligent collector. He not only succeeded in bringing together the largest imaginable collection in the shortest imaginable time, but also spent the utmost care in preserving the objects and in labelling them with various valuable remarks from field observations. He published a few papers on Dutch and tropical molluscs among which special mention must be made of A new record of *Atopos* from Java, Journ. of Conch. Vol. 19, 1931, p. 150—151.

His remarkable find of a *Cyclohelix* in Java was recorded by T. VAN BENTHEM JUTTING, On the occurrence of a *Cyclohelix* on Java, Zool. Meded. Rijks Mus. Nat. Hist. Leiden, Vol. 11, 1928, p. 1—3.

J. E. A. DEN DOOP

1917

Deli, Sumatra

JOHANNES ÉLIZIUS ALPHONSUS DEN DOOP was born at 's-Hertogenbosch in 1889. He commenced studying biology at the Amsterdam University but did not finish it. In 1916 he went to Medan, Deli (Sumatra's East Coast) as an entomologist at the Deli Experiment Station for Tobacco, under Dr. L. P. DE BUSSY, and, following his Director's example, he amassed large collections of shells, chiefly aquatic, in the district. They were sent to the Calcutta Museum for identification: B. PRASHAD, Report on a collection of Sumatran Molluscs from fresh and brackish Water, Rec. Ind. Mus. Vol. 22, 1921, p. 461—507, 1 pl. Finally the collection landed at the Amsterdam Museum.

In later years DEN DOOP went to Buitenzorg as an entomologist of the Institute of Plant Diseases. In this quality he made a trip to Uganda (Africa) in 1924. Here the old collecting-ardour overtook him again and he despatched several huge cases, bulging with molluscs, to the Amsterdam Museum.

At present DEN DOOP is living in Java. He is an advisor of the Anglo-Dutch Plantation of Java Ltd. Between 1913 and 1916 he published three papers on Dutch Mollusca.

Dr. C. J. VAN DER HORST

1920

Curaçao

CORNELIS JOHANNES VAN DER HORST was born May 11-th 1889 at Nieuwer Amstel. He studied biology at the Amsterdam University and graduated in 1916. He was a curator of the Zoological Museum for two years (see table III appended to this paper) and a lecturer of zoology at the Zoological Laboratory. In 1920 he undertook a journey to the island of Curaçao, collecting marine and non-marine organisms in great abundance. All of them were presented to the Amsterdam Museum. Two of the papers treating the malacological results were mentioned already in the paragraph of Dr. J. BOEKE. Two others, on Nudibranchs, were published by Dr. H. ENGEL, Westindische opisthobranchiate Mollusken, Bijdr. t. d. Dierk. Afl. 24, 1925, p. 33—80 and Id. Westindische opisthobranchiate Mollusken, II, Ibid. Afl. 25, 1927, p. 83—112. In 1928 VAN DER HORST emigrated to South Africa where he was appointed a senior lecturer of Zoology at the University of Witwatersrand, Johannesburg. Since 1933 he has occupied the chair of Zoology in this University. His old fame of a field naturalist has not abandoned him here, and now and then the Amsterdam Museum receives zoological objects from his new country.

Dr. W. G. N. VAN DER SLEEN 1920 Riviera and French coast
of the Channel, Dauphiné (Hautes Alpes), Isle of Man

WICHER GOZEN NICOLAAS VAN DER SLEEN was born at Haarlem, October 4-th 1886. He studied chemistry at the Amsterdam University, graduating in 1912. Since his early schooldays he has been a keen field naturalist, an indefatigable traveller and collector. He used to have a general collection of shells, but as his interest deflected in other directions in later years he made a loan of it to the Enschedé Natural History Museum in 1937.

Four collecting trips, in which the author of these lines participated, proved to be rather succesful in shell collecting: in March—April 1920 to the Mediterranean coast along the Riviera, in August of the same year to the Boulonnais and Normandy on the French side of the Channel, in 1921 the region between Grenoble and la Grave (France) was visited and in 1922 the Isle of Man.

On many later occasions VAN DER SLEEN made profitable pursuits in shell collecting and most of the results were presented to the Amsterdam Musum.

He is the author of about a dozen papers on Dutch Mollusca between 1912 and 1922.

Dr. J. METZELAAR and H. ENGEL 1920 North Sea, Atlantic Ocean between
the Far Oer and Iceland

JAN METZELAAR was born at Vlissingen (= Flushing) in 1891. He studied biology at the Amsterdam University, graduating in 1919. He was a teacher of biology at the Fisheries School in IJmuiden, the large fishery port. In the summer of 1920 he sallied out for a collecting trip with an IJmuiden trawler, taking H. ENGEL, then a young student of biology, as a companion. Among the molluscs which resulted from this expedition there is a large series of unusually fine varieties of the common Whelk, *Buccinum undatum*.

METZELAAR went to the U.S. in later years, working as a fishery expert at Ann Arbor, Mich. By a sad combination of circumstances he lost his life when being on outdoor business, October 4-th 1929.

HENDRIK ENGEL was born February 2-nd 1898 at Koog-aan-de-Zaan. He studied biology at the Amsterdam University, graduating in 1925. Since 1922 he is a curator of the Amsterdam Museum, especially in charge of Echinoderms and Nudibranchs. In the latter group, which is of special interest here, he has published about a score of papers.

Dr. G. J. VAN OORDT 1921 Norway and Spitzbergen

GREGORIUS JOHANNES VAN OORDT was born at Arnhem, March 19-th 1892. He studied biology at the University of Utrecht where he graduated in 1921. In the summer of this same year he undertook a trip to Spitzbergen and on the way to and fro he called at a few harbours of Norway. He chiefly collected birds and shells, all of which were presented to the Amsterdam Museum. Dr. VAN OORDT is now lecturer of Zoology at the University of Utrecht, department of experimental morphology.

C. BRAKMAN 1922 and later occasions Province of Zeeland

CORNELIS BRAKMAN was born at Cadzand, May 15-th 1879. He received an education for school master and is at present Head schoolmaster of the

Public School at Nieuwland. He started collecting shells for the Amsterdam Museum in 1922 and since that time he remained a faithful correspondent and an incessant source of material and information on the malacofauna of the province of Zeeland. In later years his interest inclined to the fossil shells and in this branch he proved an equally successful collector. In 1932 the bulk of his private collection was offered on loan to the Museum of het Zeeuwsch Genootschap der Wetenschappen (Zealand Society of Sciences) at Middelburg. In 1934 he was appointed a curator of the shell department of the Society. Many of the rare and interesting species of his collection served as a base for the doctor thesis of C. O. VAN REGTEREN ALTENA, *Bijdrage tot de kennis der fossiele, subfossiele en recente mollusken, die op de Nederlandsche stranden aanspoelen, en hunner verspreiding*, Nieuwe Verh. Bat. Gen. Proefond. Wijsbeg. Rotterdam, (2) Vol. 10, Part 3, 1937, 184 pp. 5 maps, 12 pl.

BRAKMAN published a few papers on Dutch mollusca, recent and fossil.

L. J. TOXOPEUS 1922 Boeroe

LAMBERTUS JOHANNES TOXOPEUS was born at Toeban (Java) in 1894. He studied biology at the Amsterdam University, graduating in 1930. In this year he went to Java as a teacher in a secondary school, a post which he had occupied also in Holland for a few years. In 1922 he set out on an expedition to the Island of Boeroe, traversing the country in all possible directions and exploring a large part of the coastal region. He succeeded in collecting a satisfactory lot of mollusca, mostly non-marine. A report on this collection was published by T. VAN BENTHEM JUTTING, *Fauna Buruana. Treubia*, Vol. 7, Suppl. 1927, p. 1—35, 2 pl.

Jonkheer Ir. F. C. VAN HEURN 1919—1922 Deli, Gajo Territory, Atcheen (Sumatra)

FRANS CORNELIS VAN HEURN, younger brother of Jonkheer W. C. VAN HEURN, mentioned before, was born at The Hague in 1888. He studied technology at the Delft Technical Highschool, graduating in 1922. He went to the Dutch East Indies on several occasions. Especially in the period when he acted as a temporary Director of the Experimental Station for Rubber of the A.V.R.O.S. at Medan, Sumatra, he made elaborate collections of shells which he most generously presented to the Amsterdam Museum. Like his brother he possesses a gift for outdoor biology which is hardly to be matched, not in shells only, but in Vertebrates, birds and general natural history as well. He is the author of a few publications on fossil shells from the Dutch coast, and on shells from the Gajo Territory in Sumatra, the latter published in collaboration with Dr. E. PARAVICINI.

Ir. G. J. H. MOLENGRAAFF 1923 Curaçao

GERARD JOHAN HENDRIK MOLENGRAAFF, mining engineer, visited the island of Curaçao in the years 1921 and 1922. During that time he succeeded in amassing an important collection of shells which he presented to the Zoological Museum in the following year. They were included in the reports on molluscs from the same region as collected by Dr. J. BOEKE and Dr. C. J. VAN DER HORST (see under BOEKE).

Mr. MOLENGRAAFF graduated as a doctor of technology at the Delft Technical Highschool in 1929,

Dr. C. J. VAN DER HORST 1924 Brittany

In April 1924 Dr. VAN DER HORST (biographical notes, see ante) made an excursion to the marine biological station of Concarneau (Director: Dr. R. LEGENDRE) with a party of biological students of the Amsterdam University in which the author of these lines participated.

About a week's ransacking of the coast in the vicinity of Concarneau under very favourable circumstances yielded a multifarious collection of marine animals among which the mollusca played an important role.

J. E. A. DEN DOOP 1924 Uganda

Allusion to this expedition was made already in a previous paragraph (see DEN DOOP, 1917). The molluscs were put into the hands of Messrs. W. J. CLENCH and J. BEQUAERT (Cambridge, U.S.A.) for identification.

L. J. SPANJAERDT SPECKMAN 1924 and later occasions Dutch Mollusca

L. J. SPANJAERDT SPECKMAN was born at Utrecht, Sept. 9-th 1898. As a boy he lived at Maastricht and here he took up a great love for nature and for the study of shells, recent and fossil. From 1915—1918 he studied at the Royal Military Academy at Breda, division of engineering. At present Mr. SPANJAERDT SPECKMAN is Captain of the Engineers, Royal Dutch Army. The greater part of his collection of Dutch mollusca was presented to Artis on several occasions. A small number is still in his own possession.

E. R. JACOBSON 1925 and later occasions Sumatra, Java

EDWARD R. JACOBSON was born in 1870 at Frankfort on the Main (Germany) from Dutch parents. Since his earliest youth he showed a marked love for nature study and was originally destined to follow the medical profession, but, to his great reluctance, had to embrace the commercial career. This brought him to Java in 1892 where he was able, to his intense gratification, to devote his leisure hours to biological observations. He also made extensive zoological collections, some of which went to Artis, some to the Rijksmuseum van Natuurlijke Historie at Leiden, and some to other museums all over the world where specialists of certain groups of animals were keen on receiving his discoveries in rare and choice genera, brought together during arduous personal explorations and with no mean financial sacrifices.

In 1908 he joined an expedition for the topographic survey of Krakatoa Island and was the first zoologist to study the new fauna since the Island had been devastated by the eruption of 1883.

At the end of 1910 JACOBSON retired from business to devote himself entirely to zoological, botanical and ethnological research. For this purpose he visited first the Island of Simaloer off the West coast of Sumatra in 1913, where, in cooperation with Jonkheer W. C. VAN HEURN, large zoological and ethnological collections were made. All of them went to the Leiden Museums.

Subsequently he made, for some 7 years, numerous expeditions into the interior of Central Sumatra. The materials brought together on these occasions were mainly sent to the Museums at Leiden and at Amsterdam.

After having settled down at Fort de Kock in the Padang Highlands (Sumatra) he continued collecting zoological, botanical and ethnographical materials, all of which were distributed among different museums. The Amsterdam museum received several shipments of molluscs in these years.

JACOBSON is now living at Bandoeng (Java). In 1916 he was appointed

a corresponding fellow of the Koninklijke Akademie van Wetenschappen te Amsterdam; in 1925 a honorary member of the Nederlandsche Dierkundige Vereeniging. In 1932 the University of Amsterdam bestowed on him the degree of Honorary Doctor of Science.

J. C. VAN DER MEER MOHR 1925, 1926, 1927 Berhala Island

JAN CORNELIS VAN DER MEER MOHR was born in 1892. He studied biology at the Amsterdam University, and soon went to the Netherlands Indies, first to Java, afterwards to Deli, Sumatra, where he became entomologist, later Director of the Deli Experiment Station for Tobacco at Medan.

VAN DER MEER MOHR is an excellent observer and a successful collector. By both qualities the Amsterdam Museum has greatly profited. Notes on the molluscs of Poeloe Berhala (a small island in Malacca Strait) appeared by J. C. VAN DER MEER MOHR, Molluscs from Pulau Berhala, Misc. Zool. Sum. No. VIII, 1926, 2 pp. and C. H. OOSTINGH, A list of Marine Mollusca from Pulau Berhala, Ibid. No. XLIX, 1930, 11 pp.

VAN DER MEER MOHR is the author of a few papers on malacology of Java and Sumatra.

Dr. K. W. DAMMERMAN 1925 Soemba

KAREL WILLEM DAMMERMAN was born at Arnhem July 4-th 1885. He studied biology at the University of Utrecht and obtained his doctor degree in 1910. From September 1907 till May 1-st 1908 he was assistant at the zoological laboratory of Utrecht. From May 1-st 1908 till id. 1910 he was on the Staff of the Rijksmuseum van Natuurlijke Historie at Leiden as an assistant. In 1910 he went to the Netherlands Indies as an entomologist at the Institute of Plant Diseases at Buitenzorg. In 1919 he succeeded Dr. J. C. KONINGSBERGER as the Director of the Zoological Museum of the Botanic Gardens at Buitenzorg and in 1932 he became the Director of the Botanic Gardens.

The exploration of Soemba took place in 1925. An account of the travel by DAMMERMAN himself appeared in 1926, *Een tocht naar Soemba*, Nat. Tijdschr. Ned. Ind. Vol. 86, p. 27--122. A report on the Mollusca was published by T. VAN BENTHEM JUTTING, *Non-marine Mollusca of Sumba*, *Treubia*, Vol. 10, 1928, p. 153--162.

DAMMERMAN is the author of various papers of zoogeography of the soil fauna, and, besides of a book (in two Dutch and one English editions) on agricultural Zoology of the Malay Archipelago. In all these publications malacology comes up for discussion now and then.

Miss Dr. E. M. J. KOKER 1925 South Africa

ELISE MARIA JOHANNA KOKER was born at Schildwolde in 1892. She studied biology at the Amsterdam University, graduating in 1923. Before she obtained her doctor degree and shortly after it she was an assistant of palaeontology at the Technical Highschool at Delft. After this she emigrated to South Africa. There she collected shells for the Amsterdam Museum.

Some years since Miss KOKER married Mr. VAN DEN BERG and is living in South Africa.

Prof. Dr. G. L. SMIT SIBINGA 1926 and North Sumatra and later occasions Borneo

G. L. SMIT SIBINGA was born at Soerabaja (Java) October 30-th, 1895. He studied geology at Zurich (Switzerland) between 1916 and 1921, graduat-

ing in 1921. From 1921 to 1923 he was head-assistant of Prof. G. A. F. MOLENGRAAFF at the Technical Highschool of Delft. In 1923 he was appointed professor-extraordinarius of geology and palaeontology at the University of Kowno (Lithuania) where he staid till 1925. In this year the Bataafsche Petroleum Maatschappij (Batavian Oil Co) charged him with a geological exploration of the North of Sumatra (Atcheen and Gajo Territories) and a part of Borneo. This lasted till 1928. In these years he collected many fine lots of land and freshwater shells for the Amsterdam Museum. In 1929 SMIT SIBINGA became geological advisor of this same Company at Batavia (Java). Since 1931 he is living in Holland. In 1936 he became a private lecturer of geomorphology and physical geology at the Amsterdam University.

Dr. W. G. N. VAN DER SLEEN 1926 Himalaya, Travancore

Some biographical dates of VAN DER SLEEN have appeared already in a previous paragraph. In 1926 he undertook a journey to the Himalaya and to Travancore, making collections for the Amsterdam Museum.

Dr. H. J. LAM 1926 Talaud Islands and Morotai

HERMAN JOHANNES LAM was born at Veendam January 3-rd 1892. He studied biology in Utrecht and graduated there in 1919. Shortly after that he went to the Netherlands Indies as a botanist of the Herbarium at Buitenzorg, Java, till 1933. At the same time he acted as a professor-extraordinarius of botany at the Medical Highschool in Batavia from 1932 till 1933. Since 1933 he is Director of the Rijksherbarium at Leiden and professor-extraordinarius at the Leiden University.

In 1920 LAM participated in the North New Guinea Expedition (Mamberamo Expedition) as a botanist (see under Expeditions).

In 1926 he undertook an exploring trip to the Talaud Islands and Morotai. Under his supervision a mantri of the Buitenzorg Zoological Museum collected mollusca, a report on which is to be anticipated soon by the present author.

J. C. VAN DER MEER MOHR 1928 North Habinsaran, Sumatra

On one of his frequent collecting trips VAN DER MEER MOHR (biographical data see under previous entry) visited a rather out of the way part of the interior territory of the Residency of Tapanoeli, bringing home an interesting collection of molluscs. A small note on them was published by T. VAN BENTHEM JUTTING, On a collection of Non-marine Mollusca from North Habinsaran, Sumatra, Misc. Zool. Sum. No. XLII, 1929, 3 pp.

P. WAGENAAR HUMMELINCK 1930 Curaçao, Aruba, Bonaire

PIETER WAGENAAR HUMMELINCK was born at Vlaardingen, January 13-th, 1907. He studied biology at the University of Utrecht, and participated in a collecting trip under the leadership of Prof. Dr. L. G. M. RUTTEN to the West Indies in 1930. He proved to be a very plucky and thorough collector, bringing home a huge collection of mollusca. A report on the Opisthobranchia has appeared already by Dr. H. ENGEL (with collaboration of P. WAGENAAR HUMMELINCK), Über Westindische Aplysiidae und verwandten anderer Gebiete, Capita Zoologica, Vol. 8, 1936, p. 1—76.

J. C. VAN DER MEER MOHR 1930 and 1931 Poeloe Weh, Sumatra

On his way to Europe in 1930 VAN DER MEER MOHR spent some hours of collecting at Poeloe Weh, the largest of a couple of small islands at the extreme

NW point of Sumatra, and on returning to Medan in 1931 he added a few other samples the same island. Together with previous spoils from Poeloe Weh, presented to the Amsterdam Museum by other collectors, a small report was published on the Mollusca: T. VAN BENTHEM JUTTING, Land and Freshwater Mollusca from Poeloe Weh, Misc. Zool. Sum. No. XCV, 1935, 9 pp.

L. COOMANS DE RUITER and J. P. SCHUITEMAKER 1931 Karimata Islands

In March 1931 Messrs. L. COOMANS DE RUITER and J. P. SCHUITEMAKER undertook a few days' cruise to the Karimata Islands, a group of small islands between Borneo and Sumatra in Karimata Strait. They collected a large amount of marine shells, presented to the Buitenzorg Zoological Museum and a few non-marine mollusca. On the latter a short note appeared: T. VAN BENTHEM JUTTING, Mollusca from the Karimata Islands, Basteria, Vol. 2, 1937, p. 33—35.

F. H. VAN OUDHEUSDEN 1931 Corsica
[No biographical data available]

J. C. VAN DER MEER MOHR 1931 Nias

When the zoological pursuits of Mr. VAN DER MEER MOHR (biographical data see ante) led his track to Nias Island he did not fail to bring together a satisfactory amount of mollusca, among which there could be discovered two new species. Together with the collections made by Prof. J. P. KLEIWEГ DE ZWAAN in the same island these new samples were treated by T. VAN BENTHEM JUTTING (see entry of KLEIWEГ DE ZWAAN, 1910—1911).

Miss A. PANNEKOEK 1935 Eastern United States

ANNEKE PANNEKOEK was born February 17-th 1909 at Zehlendorf (near Berlin, Germany). She studied biology at the Amsterdam University and specialized in mollusca at a very early date. In 1936 she obtained her doctor degree and soon after this she married Mr. J. G. TEN HOUTEN, a botanist of the Utrecht University. In the summer of 1935 she made a trip to the U.S. together with her parents and her future husband. Miss PANNEKOEK did a good deal of collecting on the Atlantic coast of the Eastern States, while Mr. TEN HOUTEN visited Canada for botanical purposes collecting shells all the while. Both their collections were incorporated in the Amsterdam Museum.

Besides her doctor thesis Miss PANNEKOEK published a couple of papers on fossil shells.

Dr. J. K. DE JONG 1936 Enggano

JAN KORNELIS DE JONG was born at Goedereede, April 6-th 1895. He studied biology at the Amsterdam University, graduating in 1925. He was an assistant at the Zoological Laboratory for some years, but soon after his promotion he went to Sumatra, as an entomologist at the Deli Experiment Station for Tobacco at Medan. After some years he was transferred to Java obtaining a similar post at the Experiment Station for Tea at Buitenzorg. For a few years he has been living privately in this last town, working for himself and now and then joining some expedition sallying out to far off islands. In this way he visited the Island of Enggano, together with a party of Dutch botanists. DE JONG was in charge of the zoological collecting and

succeeded in bringing together a rather satisfactory lot of mollusca. A report on these animals was published by T. VAN BENTHEM JUTTING, *Non-marine Mollusca of Enggano Island, Treubia*, Vol. 16, 1937, p. 47—50. A narrative of the voyage appeared by Dr. J. K. DE JONG, *Een en ander over Enggano* (*Natuurk. Tijdschr. Ned. Ind.* Vol. 98, 1938, p. 2—46).

Expeditions

Third¹⁾ Willem Barents Expedition, 1880, Zoologist: Dr. W. HAMAKER

Fourth Willem Barents Expedition, 1881, Zoologist: Dr. M. WEBER

Fifth Willem Barents Expedition, 1882, Zoologist: J. J. SCHELTEMA

Sixth Willem Barents Expedition, 1883, Zoologist: Dr. G. WAELCHLI

Seventh Willem Barents Expedition, 1884, Zoologist: C. BAKKER

A narrative of each voyage is published in the *Rapport aan de Commissie voor Poolonderzoek* (Report to the Committee for Polar Research), *Verslagen omtrent den 3-den tocht van de Willem Barents naar de IJszee 1880 (1881)*, id. *4-den tocht 1881 (1882)*, id. *5-den tocht 1882 (1883)*, id. *6-den tocht 1883 (1884)*, id. *7-den tocht 1884 (1885)*.

Malacological results appeared by J. TH. CATTIE, *Les Lamellibranches*, *Bijdr. t. d. Dierk. Afl.* 13, 1886, 46 pp. 4 pl.; R. BERGH, *Nudibranchiaten der Willem Barents Expedition*, *Bijdr. t. d. Dierk. Afl.* 13, 1886, 37 pp. 3 pl.

Zoologists:

Siboga Expedition	1899—1900	Prof. Dr. M. WEBER, H. F. NIERSTRASZ and J. VERSLUYS
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An account of the voyage is found in Vol. I of the *Siboga Reports*: M. WEBER, *Introduction et description de l'expédition*, 1902, 159 pp. with 1 map and a List of Stations and on a more popular scale in: A. WEBER-VAN BOSSE, *Een jaar aan boord H. M. Siboga*, Leiden, E. J. Brill, 1904, 337 pp. The mollusca were treated in the following monographs:

H. F. NIERSTRASZ, *The Solenogastres of the Siboga-Expedition*, Vol. XLVII, 1902, 46 pp. 6 pl.

H. F. NIERSTRASZ, *Die Chitonen der Siboga-Expedition*, Vol. XLVIII, 1905, 114 pp. 8 pl.

M. M. SCHEPMAN, *The Prosobranchia of the Siboga Expedition*, Vol. XLIX¹, published in 6 instalments the last part also containing Pulmonata and Opisthobranchia Tectibranchiata tribe Bullomorpha, Part I, 1908, 107 pp. 9 pl.; Part II, 1909, 123 pp. 7 pl.; Part III, 1909, 13 pp. 1 pl.; Part IV, 1911, 117 pp. 7 pl.; Part V, 1912, 88 pp. 6 pl.; Part VI, 1913, 42 pp. 2 pl.

H. F. NIERSTRASZ und M. M. SCHEPMAN, *Parasitische Prosobranchier der Siboga-Expedition*, Vol. XLIX², 1909, 26 pp. 2 pl.

1) The results of the 1-st and 2-nd Willem Barents Expeditions are not in Amsterdam, but in the Rijksmuseum van Natuurlijke Historie at Leiden.

R. BERGH, Die Opisthobranchiata der Siboga-Expedition, Vol. L., 1905, 248 pp. 20 pl.

J. J. TESCH, Die Heteropoden der Siboga-Expedition, Vol. LI, 1906, 112 pp. 14 pl.

J. J. TESCH, The Thecosomata and Gymnosomata of the Siboga-Expedition, Vol. LII, 1904, 92 pp. 6 pl.

P. PELSENEER, Les Lamellibranches de l'Expédition du Siboga, Partie Anatomique, Vol. LIIIa, 1911, 125 pp. 26 pl.

PH. DAUTZENBERG et A. BAVAY, Les Lamellibranches de l'Expédition du Siboga, Partie Systématique, Pectinidés, Vol. LIIIb, 1912, 38 pp., 2 pl.

B. PRASHAD, The Lamellibranchia of the Siboga Expedition, Vol. LIIIc, 1932, 353 pp., 9 pl., 1 map.

M. BOISSEVAIN, The Scaphopoda of the Siboga Expedition, Vol. LIV, 1906, 76 pp., 6 pl.

The Cephalopoda by Dr. W. ADAM are to be anticipated in due time.

Nederlandsche Expeditie	1903	Zoologists:
naar Noord-Nieuw-Guinea		L. F. DE BEAUFORT and
		H. A. LORENTZ

A general account in popular style on the expedition was published by H. A. LORENTZ, *Eenige maanden onder de Papoea's*, Leiden, E. J. Brill, 1905, 310 pp.

A report on the mollusca appeared by A. BAVAY, *Mollusques terrestres et fluviatiles*, *Nova Guinea*, Vol. 5, *Zool.* 1908, p. 269—292 and partly by F. HAAS, *Unsere bisherige Kenntnisse der Najadenfauna Neu Guineas*, *Nova Guinea*, Vol. 15, *Zool.* 1924, p. 65—76.

Zuidwest Nieuw-Guinea-Expeditie 1904—1905 Zoologist J. W. R. KOCH

The general results of this expedition were published in *De Zuidwest Nieuw-Guinea-Expeditie van het Kon. Ned. Aardrijkskundig Genootschap*, Leiden, E. J. Brill, 1908, 677 pp., 11 plates, 11 maps. Part of the molluscs were treated by M. M. SCHEPMAN together with other material of the same region (see under *New Guinea Expedition 1909*).

Zuid-Nieuw-Guinea Expeditie 1907 Leader-Zoologist H. A. LORENTZ,
assisted by the medical officer G. M. VERSTEEG

As far as I know there is no general report. The mollusca were treated by M. M. SCHEPMAN (see under *New Guinea Expedition 1909*).

Zuid-Nieuw-Guinea Expeditie 1909 Leader-Zoologist H. A. LORENTZ,
assisted by the medical officer
L. S. A. M. VON RÖMER

A popular account of this expedition and its dramatic events appeared by H. A. LORENTZ, *Zwarte Menschen, Witte Bergen*, Leiden, E. J. Brill, 1913, 262 pp.

The mollusca were published with other material from the same region by M. M. SCHEPMAN, On a collection of land- and freshwater and a few marine mollusca, *Nova Guinea*, Vol. 13, *Zool.* 1919, p. 155—196.

Exploratie-Detachement 1910 Zoologist:
naar Noord-Nieuw-Guinea Dr. P. N. VAN KAMPEN,
afterwards Dr. K. GJELLERUP

There is no account of the expedition other than military reports. The mollusks which are partly in Leiden, partly in the Amsterdam Museum, were treated by M. M. SCHEPMAN, On a collection of land-, freshwater and marine mollusca from Northern New Guinea (*Zool. Meded. Rijks Mus. Nat. Hist. Leiden*, Vol. 4, 1918, p. 1—21).

Derde Zuid-Nieuw-Guinea Expeditie 1912—1913 Zoologist G. M.
VERSTEEG, military surgeon

A popular account of the expedition was published by the botanist of the expedition Dr. A. A. PULLE (now professor of systematic botany at the University of Utrecht): *Naar het Sneeuwgebergte van Nieuw Guinea*, Maatsch. Goede en Goedk. Lector, Amsterdam, no date, 205 pp. The mollusca were treated together with the collections from other South New Guinea expeditions by SCHEPMAN (see under New Guinea Expedition 1909).

Nederlandsche Wetenschappelijke Centraal Nieuw Guinea Expeditie 1920
Zoologist Jonkheer W. C. VAN HEURN

A general itinerary of the expedition was published by Dr. H. J. T. BIJLMER, medical officer, *Met de Centraal Nieuw Guinee-Expeditie A^o 1920; naar een onbekenden Volksstam in het Hooggebergte (De Aarde en haar Volken, 1923, parts 5—9)*. For a botanical account we are indebted to Dr. H. J. LAM, botanist of the expedition, for his vegetation descriptions entitled *Fragmenta Papuana* (*Natuurk. Tijdschr. Ned. Ind.* Vol. 87, 1927, p. 110—180; Vol. 88, 1928, p. 187—227 and 252—324; Vol. 89, 1929, p. 67—140 and 291—388). The extensive malacological spoils were treated by T. VAN BENTHEM JUTTING, *Non marine Mollusca from Dutch North New Guinea, including an annotated list of the species of Papuina, Nova Guinea*, Vol. 17, *Zool.* 1933, p. 71—150. In this report a few species of the American expedition of 1926 were included.

Midden Oost Borneo Expeditie 1925 Zoologist H. C. SIEBERS

There is an extensive general report of this expedition, entitled: *Midden Oost Borneo Expeditie*, *Uitg. Ind. Comité Wetensch. Onderz. Weltevreden*, 1927, 433 pp., 4 maps.

The mollusca have been put into the hands of the present author for identification and publication.

Nederlandsch-Amerikaansche Noord-Nieuw-Guinea Expeditie (so-called Stirling Expedition) 1926 A little zoological collecting was done by the botanist of the expedition, Prof. Dr. W. M. DOCTERS VAN LEEUWEN

The Mollusca were reported together with the results of the Central New Guinea Expedition of 1920 in a paper by T. VAN BENTHEM JUTTING (see before). Some observations on the vegetation of the region visited were published by W. M. DOCTERS VAN LEEUWEN in *De Tropische Natuur*, Vol. 15, 1926, p. 177—186.

The friendly relations of the Museum with similar institutions in the country and abroad, relations which started in the 19-th century, have developed infinitely in the 20-th century. Exchanges of shells have been made with the following Institutions and advice and information is mutually rendered with the zoologists in charge of the Mollusca: Museum Buitenzorg, Java (M. A. LIEFTINCK), Laboratory for Marine Investigations, Batavia, Java (Dr. J. VERWEY, later Dr. J. D. F. HARDENBERG and Dr. J. WESTENBERG), the Geological Institute, Bandoeng, Java (Dr. C. H. OOSTINGH), Brussels (Dr. W. ADAM), Paris (Dr. E. LAMY), Francfort on the Main (Dr. F. HAAS, later Dr. A. ZILCH), Berlin (Dr. B. RENSCH, later Dr. TH. HALTENORTH), Hamburg (Dr. E. DEGNER), Kopenhagen (Dr. R. SPÄRCK, Dr. G. THORSON), Stockholm (Dr. N. H. OHDNER), Budapest (Dr. L. SÓOS), London (the late E. A. SMITH, later G. C. ROBSON, later G. I. CRAWFORD), Leningrad (the late Dr. W. A. LINDHÖLM), Calcutta (Dr. B. PRASHAD), Singapore (M. W. F. TWEEDIE), Cambridge, Mass. (W. J. CLENCH), Ann Arbor, Mich. (H. VAN DER SCHALIE).

In Holland some intercourse in the shell business is entertained with the Rijksmuseum van Natuurlijke Historie, Leiden (Dr. J. H. VERNHOUT, later Dr. H. C. BLÖTE, later Dr. A. L. J. SUNIER, later Dr. CH. BAYER), and with most of the local Musea: Texel (H. J. A. KRAAI), Den Helder (J. A. NIJKAMP), Alkmaar (W. P. DE VRIES), Rotterdam, Museum of the Zoological Garden (Dr. K. KUIPER) and Natural History Museum "Wethouder Hoffmann" (H. LANDSMAN, L. P. POUDEROYEN), Middelburg (P. J. VAN DER FEEN JR., C. BRAKMAN), Denekamp (J. B. BERNINK), Enschede (M. J. VAN SAMBEEK), Maastricht (Rector JOS. CREMERS), Delft Municipal Museum (J. M. VAN GILS), Amsterdam, Museum De Pinksterblom (HENK VAN LAAR). Besides with the Zoologisch Station, Den Helder (Dr. H. C. REDEKE, later Dr. J. VERWEY), the Rijksinstituut voor Biologisch Visscherij Onderzoek (Dr. H. C. REDEKE, later Dr. B. HAVINGA, P. KORRINGA), the Geologische Stichting, Haarlem (Dr. P. TESCH) and the Economic Museum of the Colonial Institute at Amsterdam (Ir. W. L. UTERMARK, Miss E. S. IJZERDRAAT).

Equally good relations are encountered with private people, collectors and other persons interested. Of the foreign correspondents I have to mention: C. ALZONA (before Milan, now Genova), the late W. POLINSKI (Warszawa), J. URBANSKI (Polsca), A. SITSCH (Nowoyrodek), F. A. SCHILDER

(Naumburg), J. L. STAUD (Rheims), ST. C. FIELD (Los Angeles), W. H. WEEKS (Brooklyn), F. F. LAIDLAW (Uffculme), J. R. LE B. TOMLIN (St. Leonards), the late PH. DAUTZENBERG (Paris), J. FAVRE (Geneva), F. ROCH (Rovigno), the late B. B. WOODWARD (London), the late P. HESSE (Unterwössen), the late A. C. JOHANSEN (Kopenhagen), G. S. COEN (Venice), A. SEIDLER (Hanau on the Main), the late D. GEYER (Stuttgart), H. HOFFMANN (Jena), W. E. ANKEL (Giessen), Rev. C. TH. CRIBB (Batavia, later Birmingham), H. LOHMANDER (Lund), the late O. GASCHOTT (Munich), U. STEUSLOFF (Gelsenkirchen), H. C. FULTON (London), R. WINCKWORTH (London), Sir D'ARCY W. THOMPSON (St. Andrews), C. P. CHACE (San Pedro), SH. HIRASE (Tokyo), CHAS. BARRETT (Elsternwick, Victoria), C. R. BOETTGER (Berlin), A. W. STELFOX (Dublin), W. ROSZKOWSKI (Warszawa), M. ROTARIDES (Tihany), G. C. SPENCE (Brooklands), the late R. F. SCHARFF (Bray), H. BURRINGTON BAKER (Philadelphia), H. HOLGERSON (Oslo), W. WÄCHTLER (Erfurt), the late G. K. GUDE (London), the late G. GRIMPE (Leipzig), K. BÜTTNER (Zwickau).

I have refrained from giving the names of all the correspondents in this country with whom the Museum is keeping up relations in the shell branch. Such a list would surpass the scope of this paper. For many and many-sided are the questions and problems sent to the malacological department by different institutions and persons of all classes and of all ages in this country. Sometimes the work is purely scientific, sometimes economic, sometimes educational. It is a matter of satisfaction that only in very rare cases the Museum could not make an answer. Whether the Museum will retain this high and favourable position in the scientific world, depends to a great extent on the liberality of contributors and the collaboration of scientists and amateurs. The Dutch occupied a prominent place in 18-th century malacology. May the 20-th century collectors match them in number and importance of the collections and surpass them in scientific conscience and wisdom.

Prices given for shells

The general rise of interest in rare and handsome shells in the 17-th and 18-th century made them a welcome object for the trade. Their rate went up according to the increase of the number of cabinets and though not nearly so extravagant as e.g. in the Dutch tulip trade, the prices for favoured shells yet attained an almost ridiculous level.

Furthermore it is interesting to observe which species were so specially idolized. A *Scala pretiosa*, sold at Paris to the Abbé GRUELLE¹⁾, fetched 1611 "livres" (circa 1611 French francs) at the sale of the Marquis DE BONNAC in 1757. Another specimen, of smaller weight, fetched 34 Dutch guilders,

1) According to ms-notes in the catalogue of the BONNAC-sale, in the DAUTZENBERG Library, now in the Brussels Museum. HUBLARD (Le Naturaliste hollandais PIERRE LYONET & c 1910, p. 89) however, pretended that this specimen was purchased by Mme DE BANDEVILLE.

and was sold by W. VALKENIER¹⁾. Once 500 guilders was refused for a specimen²⁾.

Two *Conus omaicus*, bought by VALENTIJN from Mr. TEROEDE in 1719 fetched 92 guilders³⁾. The collector NIEUWHOF purchased a lefthanded *Turbinella pyrum* (sacred chank) for 170 "rijksdaalders"⁴⁾, although this species, according to VALENTIJN, usually makes 700 to 800 "rijksdaalders". Several scores of years earlier this species was already famous among amateurs and in the account of the travels of KNORR VON ROSENROTH⁵⁾, it is related that sinistral *Turbinella* were brought to Holland, sold here at high prices and subsequently sent to India to serve at certain offering-ceremonies.

In the book of J. S. SCHRÖTER⁶⁾ prices given for shells are mentioned at several pages. It is significant for the period that most of these statements were from Dutch sales or Dutch collectors. Thus I find for *Conus amadis* 22 guilders or more (p. 68), for *Conus textile* up to 30 guilders (p. 69), for *Conus monachus* (?) 17 guilders (p. 91). A pair of *Voluta musica* fetched 20 guilders (p. 233), a *Voluta hebraea* 32 guilders (p. 236). The branched morning star, *Voluta ceramica* (nowadays *Vasum ceramicum*), was not so expensive and fetched only 5 to 6 guilders (p. 239), *Voluta lapponica* on the contrary went for 39 guilders (p. 242). Good specimens of *Voluta aethiopica* (nowadays *Cymbium aethiopicum*) made 30 guilders and more (p. 243), *Voluta scapha* even 64 guilders (p. 305). The so-called flight-of-steps *Cancelaria trigonostoma* once made 20 ducats at a Dutch auction, other specimens fetched 23 ducats and 80 guilders respectively (p. 553). *Strombus latissimus* cost as much as 20 guilders (p. 438), *Murex cornutus* 44 guilders (p. 478), *Fusus colus* 10 guilders or more for a pair (p. 515).

A specially favoured species was *Conus cedo nulli*. The specimen of P. LYONET had gone from hand to hand before it reached this collection. Mr. DE LA FAILLE, a famous 18-th century collector at The Hague, who possessed two specimens, refused to sell one for 6000 French pounds⁷⁾. After his death this very same shell was bought by VAN SEGVELDT for 1600 French pounds. Some years later it went from this gentleman to ANDERSON for 100 ducats. After ANDERSON'S death LYONET, purchasing the entire ANDERSON collection,

1) F. VALENTIJN, *Verhandeling der Zee-Horenkens en Zee-Gewassen in en omtrent Amboina &c 1754*.

2) G. E. RUMPHIUS, *D'Amboinsche Rariteitkamer*, 1705, p. 161.

3) VALENTIJN, loc. cit., p. 12.

4) *Ibid.*, p. 9.

5) KNORR VON ROSENROTH, *Itinerarium*, 1663; after the treatise by FUCHS, Aus dem "Itinerarium" des CHR. KNORR VON ROSENROTH, *Jaarb. Amstelodamum*, Vol. 14, 1916.

6) J. S. SCHRÖTER, *Einleitung in die Conchylienkenntniss nach Linné*, Vol. 1, 1783.

7) HUBLARD, loc. cit., p. 83 and 89. According to the advertisement of the LYONET sale, p. 3, footnote **, for 3600 Dutch guilders.

thus also obtained this *Conus cedo nulli*¹⁾. As for itself this shell had been valued at 800 French pounds²⁾.

This specimen of *Conus cedo nulli* was figured by ARGENVILLE³⁾. I am unable to say what became of it after the LYONET sale, in 1796.

Another specimen of *Conus cedo nulli* was dealt with at the DE LA FAILLE sale for 1020 "livres". This specimen ended in the collection of the King of Portugal⁴⁾.

GERSAINT⁵⁾ is honestly wondering why people pay such exorbitant sums for shells (p. 15) ... "Les Holandois ont pour cette Coquille (= *Conus cedo nulli*) une fureur dont je ne puis découvrir les raisons..."

Some years later, at the sale of the Marquis DE BONNAC in 1757 an Amirale grenue (perhaps *Conus ammiralis*?) was sold for 552 "livres". According to HUBLARD⁶⁾ the Marquess had obtained (bought or presented?) his specimen from LYONET.

Another famous shell of the BONNAC sale, a "Radis à feuillages noirs" (*Murex radix*) was purchased by Mme DE BANDEVILLE for 1700 french pounds⁷⁾. This specimen was figured by ARGENVILLE⁸⁾. Of BONNAC's *Scala pretiosa* mention has already been made. The entire sale fetched 22 500 "livres"⁹⁾.

This profitable price made LYONET exclaim—who had an equally good, if not better, collection—in a letter to Madame DE PRASLIN, August 2-nd, 1757: "Je vois ce que j'en pourrais espérer s'il me prenait envie d'en faire une vente à Paris"¹⁰⁾. On a certain day when he really intended to part with his shells, he asked not less than 15 000 guilders for his collection¹¹⁾. When 7 years after LYONET's death his nephew CROISET brought the collection on the market the general value of shells had sunken so enormously that the heirs obtained only 6726 guilders for it.

LYONET himself paid 220 "livres" for a *Malleus* in 1757; for the spinous oyster (probably *Ostrea hyotis*) 60, 80, 100 and 500 "livres" according to their state of conservation. The cedo nulli of Bivalves (*Pitar (Callista) erycina*)

1) HUBLARD, cit. ant. p. 83 and 89.

2) In the catalogue of the LYONET sale (p. 45—46, footnote) only one intermediate stage between DE LA FAILLE and LYONET was mentioned. Though no name is given, this was obviously ANDERSON. VAN SEGVELDT was omitted here.

3) M.*** (DESALLIER D'ARGENVILLE) *La Conchyliologie*, Ed. II, 1757, appendix, pl. 1, fig. H.

4) GERSAINT, *Catalogue raisonné de coquilles, etc.* 1736, p. 18; quoted by FAVANNE, *La Conchyliologie*, Ed. III, 1780, p. 320 and by LAMY, *Les Cabinets d'Histoire Naturelle en France au XVIII-e siècle et le Cabinet du Roi (1635—1793)*, 1930, p. 28, footnote.

5) GERSAINT, loc. cit. p. 15.

6) HUBLARD, loc. cit. 89.

7) HUBLARD, loc. cit. p. 89.

8) ARGENVILLE, loc. cit. 1757, appendix, pl. 2, fig. K.

9) HUBLARD, loc. cit. p. 89.

10) HUBLARD, loc. cit. p. 89.

11) HUBLARD, loc. cit. p. 86.

costed him 600 "livres" ¹⁾). We will see later at what miserable prices these conchological valuables were sold at the LYONET sale.

One of the highest offers for an entire cabinet was at one time proposed to Mr. PIETER ROOSELAAR in Ternate Id. (Moluccas) by a boatman who offered 10 000 guilders for his collection. This, however, was refused ²⁾).

The Amsterdam collector SIMON SCHIJNVOET purchased two "paarlemoer horens" (perhaps polished *Nautilus pompilius*) from the SWAMMERDAM cabinet for 100 guilders ³⁾).

In the collection of JOHAN SWAMMERDAM (father of the famous JAN SWAMMERDAM) there occurred a "Argus seu Turbo" (perhaps *Cypraea argus?*) which he had purchased for 100 guilders ⁴⁾).

Lamellibranchs never fetched such high prices. Single specimens of *Spondylus*, *Malleus*, *Cardium* and the cedo nulli of Bivalves belonged to the most estimated ones.

Towards the end of the 18-th century a new fancy popped up: *Conus gloria maris*, the Glory of the Sea. In distinction from most of the species mentioned before this *Conus gloria maris* has retained its high value till our days. No shell collector of the present day will ever pay 500 guilders or more for a *Scala pretiosa*, or 1600 francs for a *Conus cedo nulli*, but the Glory of the Sea is still in vogue and good specimens which fetched between 47 and 120 guilders in the 18-th century ⁵⁾) nowadays vary between 150 and 300 guilders. Some months ago I gave an account of the 8 specimens known in Holland ⁶⁾), five of which are actually present, and three recorded only in literature. To the latter, a more or less fictitious category, I can now add three others which had escaped my notice before.

One belonged to ARNOUD LEERS, "Heer van Ameyde en Herlaar, Oud Schepen der Stad Rotterdam, mitsgaders Directeur van den Levantschen Handel" whose cabinet was sold in 1767 ⁷⁾). At p. 75, no. 736 of the catalogue was mentioned: "Une Gloria Maris très belle & bien figurée, très rare". It was purchased by F. C. MEUSCHEN for 70 guilders. This case is interesting because it refers to a shell having already acquired the name *gloria maris* in popular parlance previous to the original scientific description by CHEMNITZ in 1777. From manuscript annotations by the brokers at the back of the LEERS catalogue in the copy of the Library of Artis it appears that MEUSCHEN bought this gloria maris on commission for ABRAHAM GEVERS, burgomaster of Rotterdam. Twenty years later we meet the very same shell again at the sale of the

1) HUBLARD, loc. cit. p. 89.

2) VALENTIJN, 1754, loc. cit. p. 44.

3) VALENTIJN, Oud & Nieuw Oost Indien, Vol. III, 1726, p. 565.

4) KNORR VON ROSENROTH, loc. cit.

5) SCHRÖTER, loc. cit. p. 63.

6) VAN BENTHEM JUTTING, Basteria, Vol. 3, 1938, p. 11—15.

7) Catalogue systématique d'un magnifique Cabinet de très belles coquilles etc. ARNOUD LEERS 1767.

GEVERS cabinet 1). In this catalogue it is mentioned at p. 360, No. 1087, "Gloire de Mer, à coquille fort élongée, blanche, à lignes jaunes, se croissantes, & anastomisantes en forme de réseau, au millieu plus obscures." Height of the specimen $3\frac{3}{4}$ "pouce" (= 10.15 cm) 2). It is unknown at what price it was sold this time. It is equally unknown what became of this shell.

The other belonged to CHRISTIAN PAUL MEYER, merchant in Amsterdam, afterwards in Utrecht, whose cabinet was sold in 1802 3). In his catalogue *Conus gloria maris* is mentioned at p. 82, No. 121, "C. Gloire de Mer, à coquille blanche, reticulée de lignes brunes très fines, à 3 bandes plus foncées, 1 p. très rare, $3\frac{3}{4}$ pouce, dans une boîte de Caret". It is not known what became of this shell. As the MEYER shell is exactly as high as the GEVERS specimen one might be wondering whether we have to do with one and same specimen, changing from the GEVERS cabinet to the MEYER collection after the death of the Rotterdam burgomaster. This, however, is nothing but a mere supposition, the truth lies completely in the dark.

Another *Conus gloria maris* from a Dutch cabinet is quoted by J. H. CHEMNITZ 4). He copies a page of a sale catalogue and adds the prices which the shells fetched. There we read:

No. 6 1 Spedelwerck (error for speldewerck) Toot, of gloria muris (sic!) fl. 43 (one lacework Cone, or Gloria Maris, 43 guilders). I have not been able to find out which cabinet can be meant.

In the following lines there follow some examples of prices given for shells, taken from sale catalogues, interleaved and checked with the names of the purchasers. I only pick out some remarkable cases and my account does not in the least claim to be an exhaustive one.

1762 WILLEM BAART sale 5)

No.	1	An exquisite Scala pretiosa	545	guilders
"	2	Same species	210	"
"	3	Orange Admiral (<i>Conus aurisiacus</i>)	50	"
"	4	Same species	47	"
"	13	Dark Admiral (<i>Conus sp.</i>)	28	"
"	37	An unknown <i>Conus</i>	23	"
"	65	id. id.	39.10	"
"	74	Two yellow Cones, very rare	25.10	"
"	99	An unknown, handsome Cone	30	"
"	112	A very fine <i>Conus omaicus</i>	94	"
"	131	Two large <i>Conus textile</i>	60	"
"	143	Two fine <i>Conus amadis</i>	35	"
"	308	Two fine <i>Cymbium (aethiopicum?)</i>	23.10	"

1) Museum Geversianum sive Index Rerum Naturalium, etc. 1787.

2) Also quoted by AZPEITIA MOROS, Rev. Real Acad. Cienc. Madrid, Vol. 23, 1927, p. 517.

3) Museum Meyerianum sive Catalogus Rerum Naturalium, etc. 1802.

4) J. H. CHEMNITZ, Kleine Beytr. zur Testaceotheol. 1760, p. 103.

5) Catalogus van een extra Uytmuntend Kabinet... Hoorens en Doubletschelpen... WILLEM BAART, 1762.

No.	331	A very fine, unknown Cymhium	33.10	guilders
"	371	A very fine <i>Voluta lapponica</i>	31.10	"
"	387	A capital Orange flag (<i>Voluta vexillum</i>)	119	"
"	483	A branched Delphin (<i>Angaria delphinus</i> or imperialis?)	66.10	"
"	634	A very fine, branched beguine's dropping, very rare (<i>Trochus niloticus</i>)	28	"
"	671	A perspective <i>Nautilus crassus</i> , not found in any cabinet	40.10	"
"	701	An extra fine double spider (<i>Murex tenuispina</i>)	39	"
"	915	Two yellow "Klipkleevers", with wide aperture (<i>Cypraea</i>).	105	"
"	1119	A fine <i>Argus</i> , uncommon and rare (<i>Cypraea argus</i>)	57	"
"	1387	A very fine polish hammer (<i>Malleus albus</i>)	69	"
"	1403	An unequalled, capital cock's comb (<i>Ostrea crista galli</i>)	40	"
"	1477	An uncommon Old Lady's bivalve (<i>Venus paphia</i>) very rare	57.10	"

1767 ARNOUD LEERS sale 1)

No.	1, 2, 3 and 4	<i>Aspergillum</i>	58, 30, 30 and 46	guilders
"	52 and 53	<i>Argonauta argo</i>	43 and 34	"
"	76	<i>Scala pretiosa</i>	100	"
"	77	Two id. id.	180	"
"	350	A very fine double spider (<i>Murex tenuispina</i>)	33	"
"	399	A very rare, double-branched, white-banded curled shell (<i>Murex ramosus</i> ?)	66	"
"	464 and 465	<i>Cymbium</i>	61 and 64	"
"	466	Orange flag (<i>Voluta vexillum</i>)	97	"
"	577	Orange Admiral (<i>Conus aurisiacus</i>)	67	"
"	578	Upper Admiral (<i>Conus ammiralis</i>)	36	"
"	736	<i>Conus gloria maris</i> 2)	70	"
"	912 and 913	A very fine, long-spindled weaver-spool (<i>Radius volva</i>)	83 and 60	"
"	1024	A very fine, uncommon knobbed Coral shell (<i>Pecten nodosus</i>)	48	"
"	1061	Two fine red Scallops (<i>Pecten senatorius</i> ?)	22	"
"	1065	A superb polish saddle (<i>Placuna sella</i>)	30	"
"	1086	A very fine, branched cock's comb (<i>Ostrea crista galli</i>)	40	"
"	1090	A cluster of 4 very fine violet cock's combs (<i>Ostrea crista galli</i>)	63	"
"	1095	A very large and beautifully folded black polish hammer (<i>Malleus malleus</i>)	77	"
"	1096	A very large square shell (<i>Pedalion isognomum</i>)	42	"
"	1106	A fine and quick reel shell (<i>Arca tortuosa</i>)	62	"
"	1133	A very fine, ramified, orange Lazarus shell (<i>Spondylus</i> sp.)	28	"

1) Catalogue systématique etc. ARNOUD LEERS, loc. cit. 1767.

2) Vide p. 202 of the present paper.

No. 1158	Same species?	26 guilders
„ 1204	A superb vivid, perfectly preserved Venus shell (<i>Cardium costatum</i>)	100 „
„ 1205 and 1206	Same species	54 and 59 „

The total amount of the Gastropods was f. 6108.10, of the Bivalves f. 2596. J. S. SCHRÖTER 1) referred to the LEERS sale on several occasions. His information was very accurate for the prices agree exactly with those in an interleaved and annotated catalogue in the Library of Artis.

1792 JOAN COENRAAD BRANDT sale 2)

The catalogue is divided in two parts. The first part was sold “en bloc” for f. 3300. Purchaser was Mr. VAN WINTER. This is almost certainly the portion which came to Artis about half a century later (cfr. p. 173). The second part was sold item for item. Here I found the following prices noted:

No. 1	A very fine perspective Nautilus (<i>Nautilus umbilicatus</i>)	121 guilders
„ 57	A very fine and bright Amboina Wentletrap (<i>Scala pretiosa</i>)	50 „
„ 58 and 59	Same species	42 and 30 „
„ 248	A beautiful double spider (<i>Murex tenuispina</i>)	10 „
„ 249	Two do., not less beautiful	28 „
„ 316	Two East Indian “Laphoorens” (<i>Strombus?</i>)	16.10 „
„ 320	A Lapland or West Indian “Laphooren” (<i>Voluta lapponica</i>)	22 „
„ 321	Two do., not less beautiful	52 „
„ 322	A very fine, large, double banded Orange flag (<i>Voluta vexillum</i>)	41 „
„ 323	A smaller one, not less beautiful	21 „
„ 361	A very fine and bright Orange Admiral (<i>Conus aurisiacus</i>)	52 „
„ 362	Same species, a little smaller but equally beautiful	53 „
„ 502	A large, thick, winged Cymbium, white with brown zig-zag markings, about 7 inches high	43 „
„ 503	A smaller, but equally beautiful specimen	49 „
„ 562	A very fine, pink weaver-spool, 3 inches long (<i>Radius volva</i>)	105 „
„ 563	Same species, a little smaller	43 „
„ 603	A very fine Neptunus quill (<i>Aspergillum</i> sp.)	19.10 „
„ 626	An extremely fine polish saddle, with a row of 8 pearls in it (<i>Placuna sella</i>)	85 „
„ 638	A large black polish hammer, the handle 6, the cross 8 inches long (<i>Malleus malleus</i>)	32 „
„ 639	Same species, bluish, smaller	33 „
„ 653	Two bright orange Lazarus shells (<i>Spondylus</i> sp.)	27.10 „
„ 719	A reel shell, complete and fine (<i>Arca tortuosa</i>)	28 „
„ 720	Two do.	40 „

1) J. S. SCHRÖTER, loc. cit.

2) Uitmuntende Catalogus... Hoorens en Doubletschulpen... J. C. BRANDT, 1792.

No. 740 An uncommon large and fine Venus shell (*Cardium costatum*) 52.10 guilders

This last shell (No. 740) is probably the very same species which BRANDT bought at the LEERS sale for f. 100 (No. 1204)

1796 PIERRE LYONET sale ¹⁾)

Though unfortunately I have not been able to get access to the quotation of prices and buyers edited shortly after the LYONET sale ²⁾), yet some information from contemporary fellow collectors and from the very useful book by HUBLARD ³⁾), can be given here.

On a previous occasion ⁴⁾) I referred to LYONET's *Conus gloria maris* which he purchased for f. 120 at a Dutch sale. But what price it fetched at the LYONET sale and to whom it went on that occasion I am unable to say.

As we saw above LYONET bought his *Conus cedo nulli* for 800 French pounds (= about 800 goldfrancs, = about 400 guilders), and it is incomprehensible why SANDER ⁵⁾) pretends that LYONET paid 1500 guilders for it.

Another *Conus cedo nulli* was sold (?) or presented (?) to Madame DE BANDEVILLE ⁶⁾). This transaction must have taken place during LYONET's life, therefore previous to 1789. Madame DE BANDEVILLE's collection was sold in 1792 and the LYONET cabinet in 1796. Hence it is clear that she cannot have bought it at the LYONET sale.

VOSMAER bought an "Amiral des Brocards" (*Conus peplum?*) at the LYONET sale (No. 604, price unknown). This was duly referred to in the catalogue of the VOSMAER sale ⁷⁾), under No. 470.

A few examples of the lowered value of shells at the time when the LYONET collection was thrown on the market were given by HUBLARD ⁸⁾). Thus the *Cedo nulli* of Bivalves (*Pitar (Callista) erycina*) bought for 600 French pounds, was sold for 6 guilders. A spinous oyster (*Ostrea hyotis*) bought for 500 French pounds, valued only 30 guilders. A *Murex radix*, certainly equal in value to the specimen of the BONNAC sale (which—as we saw already—was purchased by Madame DE BANDEVILLE for 1700 "livres") made only 106

1) Mémoire par lequel on offre de vendre en masse le Cabinet de feu M. PIERRE LYONET... Notice of 4 pages, no date; Catalogue raisonné du célèbre Cabinet de Coquilles de feu PIERRE LYONET, 1796.

2) Notitie der Prijzen van het Cabinet hoorns en schulpen, nagelaaten door wijlen den Heere P. LYONET, zooals het zelve verkogt is geworden den 21 april 1796, 14 pp. (quoted after HUBLARD, 1910, loc. cit., p. 90).

3) HUBLARD, 1910, loc. cit.

4) VAN BENTHEM JUTTING, 1938, loc. cit.

5) H. SANDER, Beschreibung seiner Reise durch Frankreich, die Niederlande, &c. Vol. I, 1783, p. 493 and 501.

6) E. LAMY, Les Cabinets d'Histoire Naturelle en France au XVIII-e siècle et le Cabinet du Roi (1635—1793), 1930, p. 22 footnote 1 and p. 28 footnote 1.

7) See footnote 2, next page.

8) HUBLARD, 1910, loc. cit. p. 90.

guilders. Three unique species only: a "Buccin à étages aplatis" (= *Latiaxis*), the famous *Conus cedo nulli* and a "Nautile vitré" (= *Carinaria vitrea*) fetched rather satisfactory prices, viz. 77, 273 and 300 guilders respectively. The *Latiaxis* is one of the four nos. 419—422 of the LYONET catalogue. No. 421 is figured by ARGENVILLE, Ed. II, 1757, pl. I, fig. F and mentioned here at p. 384. *Conus cedo nulli* is No. 473 of the LYONET catalogue, occurring in ARGENVILLE p. 384, pl. I fig. H. *Carinaria vitrea* is No. 62 of the LYONET catalogue, mentioned in ARGENVILLE p. 383, pl. I fig. B. This is undoubtedly the very individual example which RAYE VAN BREUKELERWAERT purchased for 299 guilders (see later under RAYE VAN BREUKELERWAERT).

1799 CORNELIS VAN BEVOORDT sale

The sale of the cabinet of CORNELIS VAN BEVOORDT¹⁾ did not bring in remarkable prices. Special mention must be made of two *Trochus solaris* (*Xenophora solaris*) purchased by RAYE VAN BREUKELERWAERT for 15 and 10 guilders respectively.

1800 ARNOUT VOSMAER sale

Early in the new century a very important sale took place²⁾. Before the Revolution VOSMAER used to be Advisor of H. R. H. Prince WILLIAM V of ORANGE, "Stadhouder" of the Netherlands, and to administer H. R. H.'s cabinets of natural history and art. At the Revolution the main part of the Cabinet of the Stadhouder was confiscated and removed to Paris (1794—1795) where it was incorporated in the National Museum of Natural History.

VOSMAER was a very keen collector and kept a private collection also. There were many valuable and unique things in it. Several objects fetched satisfactory prices at the sale. Among the shells the following numbers are worth mentioning:

No. 164	An uncommon narrowly plicated Harp, with its real colour (<i>Harpa imperialis</i>)	41 guilders
„ 258	An uncommon shell, called Apollo by Vosmaer, on account of its radiating rays. He had bought this specimen and another at the Seba sale, leaving one to Lyonet (<i>Angaria arion</i>)	31 „
„ 276	A very fine, large Solar snail (<i>Zonnehoorn</i>) much larger and higher than the one figured by Rumphius pl. 20 No. K. This species comes from the Pacific Ocean, from islands newly discovered by the British. Was sold before for 80 and 100 guilders (<i>Xenophora solaris</i>)	26.50 „

1) Naamlijst en korte beschrijving van een alleruitmuntendst Kabinet der Natuurlijke Historie... CORNELIS VAN BEVOORDT, 1799.

2) Catalogue de Livres... de Portraits... d'Instruments de Physique..., de Pierres taillées..., de Curiosités... de Coquillages et de Minéraux délaissés par feu M. ARNOUT VOSMAER... 1800.

In the VOSMAER catalogue the reference at No. 470 to Valentijn, Zeehorenkens, 1754, pl. 10, fig. 91 is right. In the LYONET catalogue fig. 89 is mentioned erroneously.

No. 283	A so-called Louse-market (= Caledonian-market) topshell covered entirely with broken shells (een zoon- genaamde Luyzemarke tolslak) (<i>Xenophora</i> sp.) . . .	1.40 guilders
„ 286	A Chinese Mandarin hat. According to Vosmaer this was only present in the Russian Cabinet by acquisition of the collection of Mrs. Grovestins, and another, passed by Vosmaer to Mr. C. P. Meyer, formerly at Amsterdam, now at Utrecht (perhaps <i>Crucibulum extincitorium</i> var. <i>morbidum</i>).	21 „
„ 470	A finely banded Cone (<i>Conus peplum?</i>) from the Cabinet of Lyonet (see under Lyonet)	27 „

1809 JOHAN MELCHIOR DENTZEL sale¹⁾

On the whole the prices did not rise very high at this sale. Here and there, however, a few fine objects fetched unusually high prices.

No. 9	<i>Nautilus umbilicatus</i>	80 guilders
„ 11	<i>Nautilus pompilius</i> , carved by C. Bellekin ²⁾ . . .	62 „
„ 59	<i>Conus nobilis</i>	10.15 „
„ 60	Same species	72 „
„ 94	<i>Conus aurisiacus</i>	87 „
„ 145	<i>Radius volva</i>	59.15 „
„ 196	<i>Voluta vespertilio</i> (a very rare Mongolian crown) . .	30 „
„ 211	<i>Voluta aplustre</i>	32 „
„ 213	<i>Voluta lapponica</i>	26.40 „
„ 289	<i>Strombus Fusus</i>	15 „
„ 330	<i>Murex tribulus</i>	10 „
„ 431	<i>Trochus Solaris Imperialis</i> (= <i>Xenophora solaris</i>) .	40 „
„ 452	<i>Turbo scalaris</i> (= <i>Scala pretiosa</i>)	21 „
„ 652	<i>Spondylus plicatus</i> from the Mediterranean Sea . .	9 „
„ 672	<i>Chama gryphoides</i>	15 „
„ 677	<i>Arca tortuosa</i>	12 „
„ 719	<i>Ostrea Malleus</i> (= <i>Malleus malleus</i>)	11 „
„ 720	Same species	11.10 „
„ 721	Same species	9.10 „
„ 750	<i>Ostrea ephippium</i> (= <i>Placuna sella?</i>)	29.15 „
„ 757	<i>Mytilus margaritiferus</i> (= <i>Pteria margaritifera?</i>) .	10.10 „

In the paragraph of the VOSMAER sale we saw already that the Cabinet of H. R. H. the Prince of ORANGE partly went to Paris during the French invasion. Some of the objects were returned after the restoration of the Kingdom in 1813. Together with other collections they formed the base of the Rijksmuseum van Natuurlijke Historie at Leiden, founded in 1820.

One of the earliest and most succesful purchases of this young Institute was a large share of the famous shell collection of :

1) *Catalogus van een bij uitzondering compleet... Exquis Kabinet ongemeen schoone Hoorns en Doublet Schulpen...* J. M. DENTZEL, 1809.

2) CORNELIS BELLEKIN (OR BELKIN) was a famous sculptor of shells in Amsterdam (see H. SANDER, *Beschr. s. Reisen*, Vol. I, 1783, p. 565; Z. C. UFFENBACH, *Merkw. Reisen durch Niedersachsen, Holland etc.* Vol. III, 1754, p. 543, 544, 595, 649. see also p. 219 of this paper).

1827 JOAN RAYE VAN BREUKELERWAERT sale ¹⁾

The owner was a well known collector of birds, insects and shells and was a regular attendant at auctions of natural history in the 18-th century. After his death his Cabinet was sold and, as far as the shells are concerned, it did not make bad prices.

Bivalves

No. 70	<i>Cardium costatum</i> .	36 guilders
" 85	<i>Cardium aeolicum</i> .	20 "
" 141	<i>Spondylus croceus</i> .	22 "
" 152 and 153	<i>Spondylus gadaeropus</i> , white, 2 specimens.	30 and 21 "
" 167	<i>Spondylus spatagus</i> , 3 specimens.	17.10 "
" 215	<i>Arca cucullus</i> .	48 "
" 264	<i>Ostrea Malleus albus</i> , 2 specimens.	66 "

Univalves

No. 13	<i>Argonauta vitreus</i> (= <i>Carinaria vitrea</i>) ²⁾	575 guilders
" 20	<i>Nautilus pompilius</i> (sculptured by Belkin)	33.10 "
" 104	<i>Conus</i> sp. (Rariss.?)	50 "
" 110	<i>Conus papilio</i>	60 "
" 142	<i>Conus geographus</i> , 3 specimens	48.10 "
" 180	<i>Conus arausiacus</i>	64 "
" 197	<i>Conus gloria maris</i> ³⁾	250 "
" 241	<i>Bulia volva</i> (= <i>Radius volva</i>)	37 "
" 368	<i>Voluta pyrum</i> , 2 specimens	40 "
" 374	<i>Voluta vexillum</i>	40 "
" 403 and 404	<i>Voluta scapha</i>	33 and 44 "
" 407 and 408	<i>Voluta magnifica</i>	40 and 70.5 "
" 465	<i>Buccinum scalara</i> (<i>Cancellaria</i> , probably bicolor)	330 "

This catalogue of the RAYE sale is far more modern in nomenclature and arrangement than the 18-th century catalogues used to be. In reliance upon the "Avertissement" it contains binary Latin names, according to the 13-th edition of LINNÉ's *Systema Naturae* by GMELIN.

The prices fetched are comparatively high. f 330.— for a "*Buccinum scalare*", or f 575.— for an "*Argonauta vitreus*" are something of a fancy price.

In the 19-th century sales the standard prices of established dealers: SOWERBY, PRESTON, LANDAUER, VERREAUX, PARREYS, FRANK e.a. became more generally accepted, though for very rare or unique specimens the price is varying and more or less what one can obtain for it.

1) Catalogue du Cabinet célèbre et très renommé d'objets d'histoire naturelle... délaissé par feu le très noble Sieur JOAN RAYE Seigneur de BREUKELERWAERT... 1827.

2) This is the specimen to which I referred at the LYONET sale. It was bought by RAYE for 299 guilders. At the RAYE sale it was purchased by a certain Mr DE VRIES, one of the brokers (fide ms-notes in catalogue, now in Library of Artis). It is almost certain that it was bought on commission for Mr (G. A.?) SIX, as may be concluded from ms-notes in the 3rd Volume of J. F. BLUMENBACH. *Handboek der Nat. Historie*, 1802, p. 631 (now in Library of Artis).

3) VAN BENTHEM JUTTING, 1938, loc. cit.

1852 J. C. MEDER sale 1)

Mr MEDER died in 1845, but his collection was sold "en bloc" only 7 years later for 12 000 guilders 2). Part of the collection (or the entire affair?) landed in the National Museum of Natural History at Paris. In the preface of the sale catalogue it is stated that a Committee of Naturalists, appointed by the Direction of the National Museum of Natural History of Paris had classified the collection in 1845.

1853 Dr. CORNELIS DALEN sale 3)

According to annotations in a copy of the catalogue (now in the Library of Artis) in Mr. OLTMANS' handwriting the following species fetched the highest prices:

Bivalves

No. 248	Venus sp.	9 guilders
„ 260	Venus gnidia	10 „

Univalves

No. 348	Helix unguicula	5.25 „
„ 547	Achatina regina, 2 specimens	6.50 „
„ 667	Ampullaria rugosa	6 „
„ 1129	Trochus imperialis	9.25 „
„ 1164 and 1165	Trochus (= Guilfordia) triumphans 8 and	7.50 „
„ 1398	Murex tenuispina, 2 specimens	14.25 „
„ 1483	Rostellaria rectirostris	20 „
„ 1827	Voluta polyzonalis	6 „
„ 1837	Voluta vexillum	6.75 „
„ 1841	Voluta miltoni	6 „
„ 1844 and 1845	Voluta rutila	5.25 and 6 „
„ 1847	Voluta fulgetrum, 2 specimens	28 „
„ 1851	Voluta dufresni	6.75 „
„ 1912	Cypraea aurora	23.25 „
„ 2060	Conus zonatus, 2 specimens	34 „
„ 2063	Conus regius.	18.50 „
„ 2065	Conus cedo nulli surinamensis, 2 specimens	23.25 „
„ 2066	Conus cedo nulli granadensis.	12 „
„ 2140	Conus ammiralis granulata	25 „
„ 2141	Conus genuanus	13 „
„ 2197	Conus nobilis	34 „
„ 2199 and 2200	Conus aurisiacus and var.	26 and 10 „
„ 2207	Conus granulatus	40.25 „
„ 2200	Conus dux	14 „

1) Catalogue d'une Collection de coquilles composé de 9500 pièces provenant de la masse de feu Monsieur J. C. MEDER... 1852 (Catalogue in DAUTZENBERG Library, Brussels Museum).

2) S. KALFF, Indische Conchyliën, De Natuur, 1928, p. 205—206.

3) Catalogue d'une Collection de Livres... Mollusques... qui ont formé le célèbre Cabinet de feu Mr. C. DALEN, 1853.

Mr. OLTMANS bought a specimen of *Unio heros* (= *Amblema heros*) for the Roy. Zoological Society Natura Artis Magistra and paid 3 guilders for it. This specimen is still present and in good condition.

The total amount of the collection was f 2817.05. Many numbers were purchased by the Rijksmuseum van Natuurlijke Historie at Leiden¹⁾.

1858 G. L. J. VAN DER HUUCHT sale

In this year Artis purchased a large part of the zoological collections (mostly shells) of Mr. G. L. J. VAN DER HUUCHT²⁾. Other participants in the sale were F. VAN HEUKELOM, H. C. ROETERS VAN LENNEP and a few minor collaborators. From various notes and letters in the Mollusc Department of the Zoological Museum I find that Artis spent the sum of f 1027.40, VAN HEUKELOM f 893.95, ROETERS VAN LENNEP f 461.75 and the others together f 181.80. The total amount of the negotiation was f 2564.90. The prices were anything but profitable. Among the highest prices I find:

Conus dux	20 guilders
Conus aurisiacus	20 "
Aspergillum contractum	5 "

but on the whole they were much lower. The share which VAN HEUKELOM acquired was merged into the Artis collection after the latter's death.

1858 THEODOOR GERARD VAN LIDTH DE JEUDE sale³⁾

The collection of Dr. TH. G. VAN LIDTH DE JEUDE, Professor of Zoology and Comparative Anatomy at Utrecht from 1819 to 1858 was replete with important objects⁴⁾. Among these there were various animals from the famous SEBA collection, and besides VAN LIDTH DE JEUDE had bought the cabinets of SALOMON MÜLLER, REINDERT DRAAK (see p. 168 of this paper), Baron G. A. G. PH. VAN DER CAPELLEN, G. J. VAN KLINKENBERG, etc. and in this way he had succeeded in accumulating a large number of type specimens and specimens which had served for the publication of many scientific papers and classic treatises.

After his retirement the collection was brought on the market and dispersed by auction. To the intense disappointment of the owner the Dutch Government did not move a finger to retain the entire collection or even part of it

1) R. HORST & M. M. SCHEPMAN, Catalogue systématique des Mollusques, Muséum d'Histoire Naturelle des Pays Bas, Introduction, 1908, p. VIII.

2) R. T. MAITLAND, De Musea van het Koninklijk Zoologisch Genootschap Natura Artis Magistra, op 1 Mei 1863, Ned. Tijdschr. v. d. Dierk. Vol. 1, 1863, p. XLIX—LX.

3) Catalogue du Musée Zoologique de M. le Dr. TH. G. VAN LIDTH DE JEUDE... 1858.

4) OLDFIELD THOMAS, On the probable identity of certain specimens formerly in the LIDTH DE JEUDE collection and now in the British Museum, with those figured by ALBERT SEBA in his "Thesaurus" of 1734, Proc. Zool. Soc. London, 1892, p. 309.

OLDFIELD THOMAS, Mammals, in: The History of the Collections contained in the Natural History Departments of the British Museum, Vol. 2, 1906, p. 5, 10 and 43.

H. ENGEL, The Life of ALBERT SEBA, Svenska Linné-Sällsk. Årsskr. Vol. 20, 1937, p. 75—100.

for this country. Indeed, it must have been grievous for him to see his fine and historical collection, brought together with clever and critical judgment and great personal financial sacrifices, scattered to various Museums and a few private collectors.

His shell cabinet was not so important. Artis purchased some scores of species. It is not known what was paid for it.

1872 J. VOORHOEVE sale¹⁾

Of this important private collection a detailed sale catalogue, with annotations of the prices and of the names of the purchasers, belongs to the Vereeniging ter Bevordering van de Belangen des Boekhandels (Dutch Publishers and Booksellers Society) in Amsterdam.

In the Preface to the Catalogue it is stated that Mr. VOORHOEVE had obtained a good many objects from the collection of the late Mr. SCHEEPMAN in Amsterdam.

Among the names of the purchasers I find: OLTMANS (for Artis), ROETERS VAN LENNEP, SCHEPMAN, ROSENDAEL and a few of minor importance. Besides there were some names of collectors from abroad. The contingent bought by SCHEPMAN came to the Zoological Museum in later years. ROETERS VAN LENNEP acquired more than 600 numbers of the catalogue and spent no small sums of money on them, as may be illustrated by the following examples:

Bivalves

No. 12	<i>Septaria arenaria</i> .	13.25 guilders
„ 180	<i>Mactra elegans</i> ²⁾	25 „
„ 439	<i>Lucina voorhoevei</i> Desh. type ³⁾	40.50 „
„ 1117	<i>Avicula macroptera</i> , large, 2 specimens	8.50 „
„ 1238	<i>Spondylus digitatus</i> .	16.50 „

Univalves

No. 811	<i>Helix pellis serpentis</i> , 4 specimens.	12 „
„ 814	<i>Helix concisa</i>	6 „
„ 833	<i>Helix gruneri</i>	7.50 „
„ 1238	<i>Cyclostomum eximium</i>	9 „
„ 1701	<i>Fusus corona</i>	6.50 „
„ 1794	<i>Murex clavus</i>	19 „
„ 2017	<i>Voluta polyzonalis</i>	11.50 „
„ 2200	<i>Conus moluccensis</i>	66 „
„ 2292	<i>Conus ammiralis</i> , 2 specimens	11 „
„ 2295	<i>Conus ammiralis</i> var.	15 „
„ 2352	<i>Conus carinatus</i>	15 „

1) Catalogue de la précieuse et superbe collection de coquilles... de Mr. J. VOORHOEVE H.Cz.,..... 1872.

2) This specimen is No. 1305 of the ROETERS VAN LENNEP sale (1876). Here it was bought for Artis for 14 guilders.

3) This specimen is No. 1166 of the ROETERS VAN LENNEP sale (1876). I do not know where it has gone to.

Among the species which OLTMANS purchased for Artis I find the following satisfactory prices:

Bivalves

No. 90	<i>Panopaea aldrovandi</i> , 2 specimens	5	guilders
„ 550	<i>Cytherea hindsii</i> , 2 specimens	5.25	„
„ 567	<i>Cytherea nobilis</i>	12.50	„
„ 785—786	<i>Cardium unedo</i> (2 sp.) and <i>Cardium</i> <i>pectinatum</i>	11.50	„
„ 1193	<i>Pecten solaris</i>	10	„
„ 1224	<i>Spondylus regius</i>	36	„
„ 1227	<i>Spondylus crassasquamosa</i>	9	„
„ 1252	<i>Spondylus nudus</i>	6.50	„

Univalves

No. 732	<i>Helix papilla</i>	4.75	„
„ 857	<i>Helix scheepmakeri</i>	12.50	„
„ 865	<i>Helix orcas</i>	8	„
„ 1227	<i>Auricula scheepmakeri</i>	10	„
„ 1481	<i>Delphinula tyria</i>	5.25	„
„ 1908	<i>Harpa imperialis</i>	15	„
„ 2034	<i>Voluta punctata</i>	12	„

1876 HERMAN CHRISTIAAN ROETERS VAN LENNEP sale ¹⁾

In the Preface to the Catalogue the collection is commended highly: "This magnificent Collection of shells... is one of the largest and richest in Europe. For many years the proprietor has spared neither pains nor expense to obtain the finest specimens of every species..." No doubt it was an exceedingly fine collection, whereas the clever advertising did the rest to make this sale one of the most important in the 19-th century. Never again the sale trade saw little fortunes spent most lavishly in the purchase of costly shells.

In an interleaved copy of the sale catalogue, now in the Library of Artis, the curator of Mollusca Jonkheer W. N. M. VAN DE BLOCCQUERY made a few annotations and from these I may quote:

No. 287—290	<i>Conus cedo nulli</i> , 4 specimens.	132, 78, 38, 24	guilders
„ 292	<i>Conus cedo nulli</i>	12	„
„ 308	<i>Conus pyriforme</i>	20	„
„ 309	<i>Conus Thomae</i> (= <i>omaicus</i>)	80	„
„ 310	<i>Conus crocatus</i>	36	„
„ 311	<i>Conus nobilis</i>	22	„
„ 314	<i>Conus aurisiacus</i> , a splendid shell	20	„
„ 315	<i>Conus aurisiacus</i> , a fine dark variety	25	„
„ 318	<i>Conus coelinae</i> and <i>connectens</i>	25	„
„ 321	<i>Conus delessertianus</i> , very rare	29	„
„ 322	<i>Conus archithalassus</i> , a beautiful specimen	30	„

1) The celebrated Collection of Shells formed by Mr. H. C. ROETERS VAN LENNEP. A Catalogue of this valuable and extensive Collection of Shells ... which will be sold by auction by Mr. J. N. EVERTS, at 75, Park(e)ler House, Twello, near Deventer, Holland, 1876.

No. 323	<i>Conus archithalassus</i> , variety <i>granosus</i> , very rare . . .	22	guilders
„ 324	<i>Conus ammiralis</i> , large and fine	9	„
„ 355	<i>Conus genuanus</i> , a beauty	15	„
„ 357	<i>Conus cervus</i> , a splendid specimen of this very rare shell	240	„
„ 361	<i>Conus malaccanus</i> , a well coloured shell	36	„
„ 362	<i>Conus gradatus</i> , fine and rare	40	„
„ 364	<i>Conus granulatus</i> , a magnificent specimen	30	„
„ 369	<i>Conus magdalenae</i> and <i>granulatus</i>	16	„
„ 375	<i>Conus mitratus</i> , very large and fine	15	„
„ 392	<i>Conus colubrinus</i> , very rare and fine	14	„
„ 393	<i>Conus cuneatus</i> , there is supposed to be only one other known	11	„
„ 395	<i>Conus Julii</i> , <i>pauperculus</i> and <i>Crotchii</i>	18	„
„ 397	<i>Conus timorensis</i> , a superb specimen	24	„
„ 406	<i>Conus complanatus</i> , remarkably fine	23	„
„ 407	<i>Conus rhododendron</i> , a beautiful shell	38	„
„ 408	<i>Conus tenellus</i> , very rare	28	„
„ 410	<i>Conus circumciscus</i> , very fine	24	„
„ 413	<i>Conus rhododendron</i> , a charming shell	34	„
„ 415	<i>Conus circumciscus</i> , very fine	22	„
„ 433	<i>Strombus thersites</i> , very fine	16	„
„ 450	<i>Rostellaria rectirostris</i> , very fine	28	„
„ 451	<i>Rostellaria curta</i> , very fine, and young	26	„
„ 452	<i>Rostellaria powisii</i> , very rare and fine	100	„
„ 453	<i>Rostellaria melanostoma</i>	10	„
„ 454	<i>Rostellaria rectirostris</i> , very fine	28	„
„ 456	<i>Cypraea aurora</i> , in finest possible condition	40	„
„ 465	<i>Cypraea listeri</i> and <i>xanthodon</i> , rare	46	„
„ 953	<i>Helix Norrisii</i> and <i>chrysocheila</i>	16	„
„ 954	<i>Helix Harfordii</i> , very fine	14	„
„ 1117	<i>Euptychia metableta</i> , Crosse, <i>Journal de Conch.</i> 1874 .	10	„
„ 1245	<i>Spondylus americanus</i> , a fine variety with long spines	7	„
„ 1305	<i>Mactra elegans</i> , a fine and rare shell 1)	14	„
„ 1373	<i>Meroe roetersiana</i> , Crosse, type specimen, described and figured in <i>Journ. de Conch.</i> 1874, pl. 3	14	„
„ 1653	<i>Fusus couei</i> , Petit, type specimen, figured <i>Journal de Conch.</i> 1853, pl. 8	10	„
„ 1668	<i>Murex lienardi</i> , Crosse, type specimen, <i>Journal de Conch.</i> 1874, pl. 3	5	„

Of the above named list the nos. 318, 321, 322, 393, 395, 453, 953, 954, 1117, 1245, 1305, 1373, 1653 and 1668, together with many other, less expensive ones, were purchased by Artis.

M. M. SCHEPMAN and Dr. IJ. KEYZER also bought at this sale. It is not known which species they acquired, nor at which prices. The shells which SCHEPMAN obtained came to the Amsterdam Zoological Museum in 1920 with

1) This specimen was No. 180 (Bivalves) of the VOORHOEVE sale. At that occasion it was left for 25 guilders.

the entire SCHEPMAN collection. The share of Dr. KEYZER was sold, together with the bulk of the KEYZER collection, to the Enschedé Museum of Natural History in 1936.

1888 Mrs. F. J. M. RETHAAN MACARÉ sale ¹⁾).

Did the ROETERS VAN LENNEP sale pay more or less for the trouble and expense which the owner had spent on his malacological jewels, this was no longer the case at the auction of the MACARÉ collection. Several objects went very low, some even for a few pennies. In the Library of Artis there is a copy of the catalogue with annotations by the curator of Mollusca, Jonkheer W. N. M. VAN DE BLOQUERY. From these references I quote the following information on the more valuable species.

No. 26	<i>Magilus antiquus</i> , très bel ex.	3.75 guilders
„ 51	<i>Pholas costata</i> , bel ex.	3.25 „
„ 275	<i>Corbis sowerbyi</i> , très rare	10 „
„ 346	<i>Galathea bernardii</i> , rare	2 „
„ 541	<i>Cardium hians</i> , rare.	5 „
„ 566	<i>Cardium reeveanum</i> , rare.	4 „
„ 758	<i>Chama pellucida</i> , rare	3 „
„ 969	<i>Pecten pes-felis</i>	4 „
„ 978	<i>Pecten reevei</i>	6.25 „
„ 1044	<i>Spondylus regius</i> , ex. magnifique	52 „
„ 2019	<i>Cyclostoma cuvierianum</i> , rare	2.50 „
„ 2048	<i>Conus macareae</i> , rare	2 „
„ 2561	<i>Scalaria pretiosa</i> , ex. très bien conservé	6.50 „
„ 2658	<i>Trochus imperialis</i>	5.50 „
„ 2814	<i>Turbo spenglerianus</i>	3.25 „
„ 3130	<i>Fusus longissimus</i>	4.75 „
„ 3214	<i>Ranella perca</i> , très rare, ex. très bien conservé	7 „
„ 3225	<i>Murex aculeatus</i>	5.75 „
„ 3232	<i>Murex axicornis</i>	5 „
„ 3248	<i>Murex cervi-cornis</i> , rare	15 „
„ 3251	<i>Murex clavus</i> , très rare	10 „
„ 3306	<i>Murex pinnatus</i>	4.75 „
„ 3316	<i>Murex radix</i> , très bel ex.	1 „
„ 3971	<i>Mitra regina</i> , rare	3 „
„ 3985	<i>Mitra taeniata</i> , rare	9.50 „
„ 4145	<i>Cypraea aurora</i> , très bel ex. fort rare	5 „
„ 4147	<i>Cypraea bicallosa</i> , rare	12 „
„ 4182	<i>Cypraea eglantina</i> , rare	9 „
„ 4457	<i>Conus amabilis</i>	4 „
„ 4461	<i>Conus ammiralis</i>	6 „
„ 4462	Same species, var. a	5 „
„ 4513	<i>Conus cedonulli</i>	7 „
„ 4524	<i>Conus circumcisis</i>	5 „
„ 4542	<i>Conus dispar</i>	5.50 „

¹⁾ Catalogue de la précieuse et superbe Collection de Coquilles ... le tout délaissé par Madame la Douairière F. J. M. RETHAAN MACARÉ, née ONTIJD ... 1888.

No. 4548	<i>Conus gloria maris</i> , très rare, très bel exemplaire 1)	230	guilders
„ 4626	<i>Conus macaræ</i> , var. très rare	22	„
„ 4628	<i>Conus magnificus</i>	10.50	„
„ 4651	<i>Conus mitratus</i>	8	„
„ 4652	<i>Conus moluccensis</i>	70	„
„ 4656	<i>Conus mucronatus</i> , rare	6	„
„ 4670	<i>Conus nimbosus</i> , rare	6	„
„ 4681	<i>Conus omaicus</i> , très rare	31	„
„ 4787	<i>Conus zonatus</i>	14.50	„
„ 4832 and 4833	<i>Carinaria vitrea</i> , très bel ex.	42 and 17	„

The total amount of money which Artis spent at this sale was f 227.46½, including a large mahogany case.

Other important Dutch purchasers were M. M. SCHEPMAN, the Vice Admiral P. A. VAN REES, L. H. D. DE VOS TOT NEDERVEEN CAPPEL. The contingent which SCHEPMAN bought was merged into the collections of the Amsterdam Zoological Museum when this institution acquired the entire SCHEPMAN collection in 1920. The share of DE VOS TOT NEDERVEEN CAPPEL came to Mr. H. G. J. SCHELLING, civ. eng. at Utrecht in 1937, when he bought the DE VOS collection.

Attention must be directed to the prices of *Scala pretiosa*, f 6.50, and *Murex radix*, f 1.—. How large a difference with the sums which people used to pay for these species about a century earlier!

1920 MATTHEUS MARINUS SCHEPMAN sale 2)

Some months after SCHEPMAN's death his collection was brought on the market. There were many intending purchasers as it was a famous collection containing many types and paratypic specimens from the Siboga Expedition, several New Guinea Expeditions, and other scientific travels. It was bought by the University of Amsterdam with the financial assistance of the "Universiteitsvereniging" (University Society) and some private persons for f 6205.

1936 PIETER KEYZER sale 3)

The collection of Mr. P. KEYZER was in the main the cabinet which his father, Dr. IJ. KEYZER, had brought together in the second part of the 19-th century. Some six months before his death Mr. KEYZER decided to part with it. It was sold by private arrangement. Single specimens were purchased by the Amsterdam Zoological Museum, for f 46.20, the Rijksmuseum van Natuurlijke Historie at Leiden, for f 19, Mr. L. MULLER of Bussum for circa f 200 and Mr. C. H. PRINS of Overveen (sum unknown). The remainder was sold to the

1) The history of this shell was treated in my account of the specimens of *Conus gloria maris* in Dutch collections, *Basteria*, Vol. 3, 1938, p. 11 seq.

2) *Catalogus eener fraaie verzameling boeken... prachtverzameling schelpen... van wijlen den Heer M. M. SCHEPMAN... Utrecht, 1920.*

3) There was only a ms catalogue of the collection. This is kept in the Enschedé Natural History Museum at present.

Enschedé Museum of Natural History for f 800, including the cases and a few conchological books.

Among the shells which the Amsterdam Museum acquired was a very fine specimen of *Cardium bechei*.

Absolute scarceness of shells.

It is evident that the high sums which were paid for individual examples were no measure for the absolute scarceness of the shells. The price was—and is still—fixed in the first place by vogue and by its fluctuations. What is rare in collections need not by any means be rare in Nature. Sales apply another standard again: "On acquiert plus de connoissance sur la rareté & le prix des Coquilles dans une Vente, que par la vue des Cabinets" ¹⁾.

Parallel between the evolution of malacology in Science and in the Individual Man.

There is a remarkable parallel between the origin and evolution of the interest in malacology in the individual collector, compared with that in the science of the class of Mollusca.

Nearly every collector starts as a lover of sea-shells. It is a primitive unconscious expression for a mental and sensorial satisfaction caused by the sight and touch of the infinite wealth of form and beauty of colour. During the progress of the collecting-development other factors enter also, but at the root the matter is a desire for ornamental enjoyment. Many collectors persist in this stage for life, bringing the plain recognition of fine sea side shells to the higher niveau of studying and possessing a marine conchological collection. Others have taken up the study of land- and freshwater shells in later years as the result of intellectual achievement.

Conchology itself too started as a marine science. In all the earlier zoological handbooks, the ancient, the mediaeval and the more "modern" ones of the 17-th and 18-th century the marine species play the leading part. In the oldest systematic works on conchology (LISTER, RUMPHIUS, SEBA, CHEMNITZ, BONANNI, MARTINI, ARGENVILLE, etc.) by far the largest part is taken by marine shells. Undoubtedly this is partly or entirely the consequence of the predilection of the collectors for the marine representatives and involved in the greater diversity of form and colour in the sea shells. Only since about one century the interest for non-marine mollusca has developed to a level comparable with the standard of marine conchology.

Arrangement of collections.

In the old days, the 17-th and 18-th century, the arranging of cabinets of

1) HELLE & RÉMY, Avertissement, in: Catalogue raisonné d'une collection considérable de Coquilles du Cabinet de M. le ***[Marquis DE BONNAC] 1757. p. VII.

shells differed in a large measure from the way in which people keep their collections since the 19-th century. It was the custom to exhibit them in elegant festoons, geometrical figures, grotesque imitations of human or animal figures, but not according to any scientific direction. Pictures of such 17-th and 18-th century curiosity cabinets are given in e.g. A. SEBA (*Locupletissimi rerum naturalium thesauri accurata descriptio* etc. Vol. III, 1758¹⁾, L. VINCENT (*Wondertooneel der Nature*, etc. 1706), G. W. KNORR (*Vergnügen der Augen und des Gemüths*, Part. 6, 1772, pl. 30), ARGENVILLE (*La Conchyliologie*, 3-d edition arr. by FAVANNE, 1780) and various others. In later centuries this way of arranging cabinets was generally abandoned, although even in recent years I have seen collections prinked up in fantastic mosaics and colour patterns, setting at defiance all scientific design.

It was the custom to cover the bottom of the drawers with white or blue tissue, cotton or silk. Thus the collection of Mr. ABRAHAM GEVERS, Burgo-master of Rotterdam, a man possessed of ample means, was contained in "Schubladen auf blauem Tuch"²⁾.

In England the cabinet of JOHN DENNISON³⁾ was famous for its luxury. He was "a country amateur of humble origin, but who having succeeded to the possession of a large fortune spent it most lavishly in the purchase of costly shells. His cabinet was of rose-wood, elaborately carved. The drawers were lined with velvet, in which the shells were placed "like a mass of porridge".

Other information on the natural history cabinets of the 17-th and 18-th century is embodied in the travelling accounts of the numerous contemporary travellers visiting our country and circulating from one private museum to another. The reading of these verbose reports is rather cumbersome in the end, but it provides an interesting portrait of the time, of the smug and self satisfied, or shrewd or careless or refined or truculent or suspicious proprietors. Only very few had a real scientific interest. Especially when they collected everything: shells, insects, birds, plants and curiosities other than natural history the disorder in their rooms beggared all description.

When C. H. TITIUS⁴⁾ tried to visit J. C. BRANDT it happened that he was put off with fair words. In a similar way H. SANDER was met with⁵⁾ "liess M. H. BRAND mir sagen, ich könnte sein Kabinet nicht sehen weil alles in grosser Unordnung wäre. Das sah nun einer Ausflucht ziemlich ähnlich".

When SANDER visited old Dr. HOUTTUYN, August 1-th 1777, he found „ein alter Mann, der mit vielen Kenntnissen bereichert, dem Grabe zueilt. Er konnte

1) One plate is reproduced in H. ENGEL. *The Life of ALBERT SEBA*, Svenska Linné-Selsk. Årsskr. Vol. 20, 1937, p. 85.

2) H. SANDER, *Beschr. seiner Reisen*, Vol. I, 1783, p. 475.

3) J. DAVY DEAN, *Conchological Cabinets of the last Century*, Journ. of Conch. Vol. 20, 1936, p. 245.

4) C. H. TITIUS, *Auszug aus dem Reise-Journal... 1777*.

5) H. SANDER, loc. cit. 1783.

weder deutsch noch französisch, und ich nicht holländisch. So sprachen wir lateinisch mit einander”.

On the person of PIERRE LYONET and on the arrangement of his famous cabinet we are most excellently informed by the biography of HUBLARD ¹⁾. From authentic manuscript letters and from other documents HUBLARD succeeded in creating a fascinating life history of this versatile man. At p. 87—88 a letter to ARGENVILLE is quoted in which LYONET gives a description of his cabinet: ... „Le dehors (of the case) est de bois oriental orné de moulures et de sculptures de bois de noyer. Les tiroirs, au nombre de 80, sont couverts de bois occidental violet, bordés d'une moulure blanche et incrustés de chiffres de même couleur pour marquer leur numéro. Tous ces tiroirs sont pleins et la plupart le sont beaucoup trop”.

A charming and somewhat mocking portrait was painted by SANDER ²⁾ of the Amsterdam merchant CHRISTIAN PAUL MEYER and of his cabinet: “Ich fand 1777, 12. Aug. einen Sachsen, dessen Charakter halb holländisch, halb deutsch ist. Er sammelt lauter Konchylien, auch etwas Mineralien, hat auch Kure, kauft ganze Kabinette, und dies noch immer weil er den Ruhm haben will, das grösste weitläufigste Kabinet zu besitzen. Das hat er auch aber in einer schlechten Ordnung. Aus seinem übrigen Vorrath konnte man wenigstens noch 6 Kabinette zusammenbringen. Kenntnisse hat er wenig, er weis blos die Handlungs-Namen; nebst dem sind sehr viele Stücke gekünstelt, geschmiert, gefärbt, verstellt. Man hat in Holland sogar den weissen Hammer ³⁾ nachgemacht, und VOSMAER glaubt dass alle davon vorhandene Exemplare falsch seyn. Man macht besonders eine grosse Seltenheit aus den Nautilus, die BELLEKIN ⁴⁾ geschnitten hat. Er schnitt Köpfe, Wappen, Blumen, &c. daran, so ein Stück kostet 100 Gulden. Sieht man solche Dinge in einem Kabinet, so wird man mistrauisch gegen alles andere. Tadelt man's, da macht man dem Besitzer kein Kompliment. Tadelt man's nicht, so muss man befürchten für einen Dummkopf, für ein Kind, dem man was weis machen kan, gehalten zu werden. Die Beträchtlichsten Stücke waren — ausser denen, die ich schon oft gesehen — Harfe, Noachsarche, Bastard-Noachsarche, Seenadeln, ein weisser, runder 2 Spannen langer spitziger brechlicher Körper, 3 Cornua Ammonis...”

Of another rich merchant in Amsterdam, VAN DER MOELEN (probably VAN DER MEULEN?) SANDER has not a word of praise either ⁵⁾: „Der Besitzer ist ein sehr reicher Kaufmann, der viel sammelt, seit 35 Jahren schon, mit dem Herzog von Braunschweig in Briefwechsel steht, aber selbst nur die

1) E. HUBLARD, *Le Naturaliste Hollandais Pierre Lyonet*, 1910.

2) H. SANDER, *Beschreibung seiner Reisen*, Vol. I, p. 565.

3) *Malleus albus*.

4) See p. 208 footnote 2. In the catalogue of the sale of DIDERICK SMITH, Amsterdam, 1761, there are mentioned several shells cut by BELLEKIN, among which „Een groote Coquilje met een Boeregeselschap, na Molenaar” (a large shell with a party of peasants, after Molenaar) fetched 60 Dutch pounds.

5) H. SANDER, *loc. cit.* p. 568.

seichteste Kenntniss hat. Die Anordnung ist, weil er den Platz spart, schlecht. Mr. LACOUDRÉ hatte mir die Gelegenheit zu diesem Kabinet verschafft. Man muss bei dem reichen Unwissenden hintreten, das Gemeinste, das Schlechteste bewundern, loben, von anderen Kabinetten nichts erwähnen &c. VAN DER MOELEN hat, wie alle Holländer, den Grundsatz, von jedem Stück müssen 2 Exemplare im Kabinet seyn, das vervielfältigt die Scene schon gar sehr." Among the many curiosities which were shown to him, there were: "Muscheln, einen nachgemachten gekünstelten Cedonulli, bandierte Kiebitzeier, Oranienflaggen" (= *Voluta vexillum*).

Another visit of SANDER was to Dr. PIETER BODDAERT, living in Utrecht at that time ¹). "Er ist ein Arzt, der aber nicht praktisirt, und sich bloss dem Studium der Naturgeschichte ohne grade einen bestimmten Theil zu wählen, widmet. Er ist schon bei Jahren, liest zwar deutsche Schriften, bat mich aber wegen des Redens französisch zu sprechen, zeigte sich aber gleich mit offener Seele. Seine kleine Konchylien-, Fisch- und Schmetterlings-Sammlung steht in einem engen Raum zusammengepropft."

Not very appreciative was his account of a visit to REGNARD, Konsul in Maastricht ²). "Der Besitzer ist der närrischste, lächerlichste Mann, den man sehen kann. Allen Leuten schlägt ers ab es (= the cabinet) zu sehen, sogar dem Kurfürsten von Kölln hat ers so gemacht. MONACHON ist sein alter Freund, wir versuchten also, und bekamen doch einen Theil zu sehen. Eine Menge Versteinerungen vom Petersberge, Petrefakten, Incrustationen aus dem Meere bei Kadix, woraus man dort Häuser bauet."

In the itinerary of DE MONCONYS ³) we find the following passage on the cabinet of Mr. ERNST ROETERS, "conseiller" at Amsterdam: "Après diné je fus trouver M. chez M. RENTZE HEENT (sic!), Echevin d'Amsterdam, pour voir son cabinet, où entre plusieurs belles curiositez, je remarquay la beauté de ses coquilles, où il y avoit un grand Nautil, un limaçon blanc, fait comme un baston tortillé spiralement, si bien qu'on voyoit le jour d'un bout à l'autre comme dans un gré à vis....."

Already RUMPHIUS ⁴) gave instructions for preparing shells in order to preserve their vivid lustre and to render them as fine as possible for the tasty proprietors: "Om hunnen levenden glans te onderhouden", he recommended, "moet men ze zomtjids, immers alle twee jaaren, eens in zout water eenige uren laten leggen, 't welk men noemt: de Hoorentjes te drinken geven; daar na moet men ze met versch water afspoelen, in de zonne droogen, en met een wolle lap zagjes en lang wrijven, tot ze warm worden, waar door ze zoo glimmend worden als een spiegel" (In order to keep their vivid lustre one must put them into salt water now and then, say every two years. This is called:

1) H. SANDER, loc. cit. p. 593.

2) Id., loc. cit., p. 608.

3) DE MONCONYS, Journ. d. Voy., Vol. II, 1666, p. 169.

4) G. E. RUMPHIUS, D'Amboinsche Rariteitkamer, 1705, p. 94.

drenching the shells. After this they must be rinsed in fresh water, dried in the sun, rubbing them long and gently with a woollen cloth, till they get warm and will shine like a mirror). This treatment was quoted afterwards by Dr. M. HOUTTUYN in his famous *Natuurlijke Historie*, etc. Vol. 1, Part 16, 1771, p. 83. I wonder whether it was much put into practice by the shell fanciers?

Other methods of embellishing shells, however, found much application among the Dutch. Thus GERSAINT¹⁾ reported that they were masters in the art of cleaning shells, in order to render them more beautiful for exhibition in their cabinets: "Les Hollandois entendent parfaitement l'art de les nettoier & y excellent, sans doute par la grande quantité qui leur passe par les mains; cela est chez eux une espèce de commerce, & une occupation de laquelle plusieurs trouvent à subsister."

In later years this "cleaning" of the shells extended to a business of completely touching up the shells, polishing corroded spots on the surface, filing off delapidated apertures, carefully filling up scars and cracks so as to hide them ingeniously, and even painting the shells in all sorts of unnatural colours.

This led ARGENVILLE²⁾ to produce a note of warning against such deceitful performances: "Les Hollandois habiles à travailler les coquilles, ne s'arrêtent jamais aux moyens simples; ils y employent les plus violens, & souvent altèrent les coquilles à un point qu'elles sont entièrement perdues; ils les liment de tous côtés, les usent toutes à la roue pour les mieux polir, & de plus y ajoutent au pinceau des couleurs brillantes sur lesquelles ils passent un vernis imperceptible. Les Scorpions et les Dauphins sont souvent peints en rouge, ainsi que les Brûlées en noir. On prétend que ces couleurs sont mises à la lampe, ou que c'est un noir composé au fourneau, lequel étant mouillé sauroit s'effacer. Combien de curieux sont trompés tous les jours de cette manière!

Ceux qui font graver & ciseler des sujets d'histoire sur les Nautiles & sur les Burgaus, en diminuent beaucoup le mérite. Ils y forment des bandes, des cercles, des étoiles en relief, & mille autres figures que la nature n'avoit point jugé à propos de leur donner; ils appauvrissent, pour ainsi dire, le sujet pour vouloir le singulariser: c'est ainsi qu'on défigure les coquilles appelées Veuves, les Sabots, les Boutons de la Chine & les Nérîtes...

After having described the methods used for palliating the disfiguration of the shells, he continues: "L'habitude de peindre les coquilles, dont les Hollandois sont accusés, n'est nullement à suivre; c'est une supercherie qu'un naturaliste doit ignorer: plus il s'approche de la nature, plus l'art doit s'éloigner de lui."

The way of collecting and arranging shell collections underwent thorough modifications in the 19-th century. Instead of the table cases and drawers with

1) E. F. GERSAINT, *Catalogue raisonné de Coquilles...* 1736, p. 17.

2) A. J. D'ARGENVILLE, (arranged by FAVANNE) *La Conchyliologie*, Vol. 1, 1780, p. 179 seq.

shell bouquets, mosaics, festoons, a more scientific fashion gained ground. According to contemporary classificatory treatises (MARTINI, LAMARCK, DESHAYES, CHENU, SOWERBY) the shells were arranged systematically and put into trays and boxes, or gummed on cards. Besides the importance of detailed and reliable localities of origin began to penetrate. Only few collections could boast of satisfactory series of the different species. As a rule 3 or 5 specimens were considered sufficient; the rest was discarded, put in the duplicate store or exchanged.

The 17-th and 18-th century collectors were so fortunate as to have quite a number of excellent handbooks at their disposition. Among the Dutch authors RUMPHIUS ¹⁾, VALENTIJN ²⁾ and ³⁾, SEBA ⁴⁾, GRONOVIVS ⁵⁾, were generally consulted. Of the foreign treatises especially LISTER ⁶⁾, BONANNI ⁷⁾, GUALTIERUS ⁸⁾, ARGENVILLE ⁹⁾, KLEIN ¹⁰⁾, LESSER ¹¹⁾, KNORR ¹²⁾, BORN ¹³⁾, MARTINI ¹⁴⁾, SCHRÖTER ¹⁵⁾, were in vogue.

Many sale catalogues of the various auctions in those days referred to one or more of the above mentioned works. Especially the extremely well compiled catalogues by F. C. MEUSCHEN for the sales of CHAIS (1766), VAN DER MIEDEN (1766) OUDAAN (1766), LEERS (1767), DISHOEK (1767), KOENING (1770), VAN ZUYLEN VAN NIJEVELT (s.n. NIVRELT) (1773), GRONOVIVS (1778), GEVERS (1787), are thus carefully annotated.

In France some encyclopedias, a sort of alphabetical dictionaries on natural history, were published ¹⁶⁾ in the 2-nd half of the 18-th century.

- 1) G. E. RUMPHIUS, D'Amboinsche Rariteitkamer... 1-st edition 1705, 3-rd edition 1741.
- 2) F. VALENTIJN, Oud en Nieuw Oost Indien, 5 vols, Mollusca in Vol. 3, 1726.
- 3) Id. Verhandelng der Zee-Horenkens en Zee-Gewassen in en omtrent Amboina 1754.
- 4) A. SEBA, Locupletissimi rerum naturalium thesauri..... 4 vols. Mollusca in Vol. III, 1758.
- 5) L. TH. GRONOVIVS, Zoophylacium Gronovianum... 1781.
- 6) M. LISTER, Historiae... Conchyliorum... 1685—1697.
- 7) PH. BONANNI, Tractatus de Animalibus Testaceis... Musaei Kirchneriani, 1709.
- 8) N. GUALTIERUS, Index testarum conchyliorum... 1742.
- 9) A. J. D'ARGENVILLE, L'Histoire Naturelle éclaircie dans deux de ses parties principales: la Lithologie et la Conchyliologie, 1742.
Id., L'Histoire Naturelle éclaircie dans une de ses parties principales: la Conchyliologie, 1757.
Id. arranged by FAVANNE, La Conchyliologie ou Histoire Naturelle des Coquilles, 1780, 3 vols.
- 10) J. TH. KLEIN, Tentamen methodi ostracologicae... 1753.
- 11) F. C. LESSER, Testaceotheologia... 1-st edition 1744, 2-nd edition 1756.
- 12) G. W. KNORR, Vergnügen der Augen und des Gemüths... 1757—1772 (There are also French and Dutch editions of this much sought work).
- 13) I. BORN, Testacea Musaei Caesarei Vindobonensis, 1780.
- 14) H. W. MARTINI, continued by J. H. CHEMNITZ, Neues systematisches Conchylien-Cabinet, 1768—1795.
- 15) J. S. SCHRÖTER, Einleitung in die Conchylienkenntniss nach Linné, 1783.
- 16) VALMONT DE BOMARE, Dictionnaire raisonné universel d'Histoire Naturelle, 1764. Anon., Conchyliologie nouvelle et portative, 1767.
FAVART D'HERBIGNY, Dictionnaire d'Histoire Naturelle, 3 vols., 1775.

They contained elaborate information on shells, alternated by various particulars on cabinets and their proprietors. Most of them were not illuminated.

They were the precursors of the later *Encyclopédie Méthodique*, the large series of scientific volumes edited between 1782 and 1832.

Germany produced a few very good discursive treatises, all illustrated, of which the works by LESSER¹⁾, KLEIN²⁾, and SCHRÖTER³⁾, have international fame.

Another way of providing information on shells to amateur collectors was the starting of Journals. France and Germany took the lead in this and several periodicals were issued. To none of them a long life was reserved⁴⁾.

Nomenclature.

The names of the shells employed in the books and journals were sometimes scientific, sometimes vernacular, or both occurred side by side. The scientific names were in latin, in the older works often binary or ternary, sometimes even entire phrases were used.

In the later works, after 1758, the Linnean nomenclature became more and more accepted.

For the vernacular names the designations of the early Dutch authors RUMPHIUS and VALENTIJN were in current use. So great even was the influence exercised by these pioneers that their nomenclature figured in many contemporary French and German treatises, either literally translated or freely adopted.

FAVART D'HERBIGNY⁵⁾ who employed translated Dutch names, recorded that "cette interprétation hollandoise est confirmée par le sieur DUMEZ, marchand naturaliste, auquel cette langue nationale est familière. Il est renommé à Paris pour connoître la valeur intrinseque de coquilles".

The German authors freely translated the Dutch names (J. S. SCHRÖTER, G. W. KNORR e.a.) and made no bones about interpreting the unconventional

1) F. C. LESSER, loc. cit., 2 editions.

2) J. TH. KLEIN, loc. cit.

3) J. S. SCHRÖTER, loc. cit.

4) In France: *Observations sur la Physique, l'Histoire Naturelle et les Arts*, 1752—1767, and *Journal ou Lettres sur les Trois Règnes de la Nature*, 1771—1783, both quoted after LAMY, *Les Cabinets d'Histoire Naturelle en France*, etc. 1930, p. 33.

In Germany: *Hamburgisches Magazin*, and *Neues Hamburgisches Magazin*, 27 vols. resp. 114 parts, 1747—1767 and 1767—1778.

Berlinisches Magazin, 4 vols, 1765—1769.

Berlinische Sammlungen, 10 vols., 1769—1779.

Berliner Mannigfaltigkeiten, and *Neue Mannigfaltigkeiten*, and *Neueste Mannigfaltigkeiten*, 4 vols. 1770—1773, 4 vols. 1774—1777, 4 vols. 1778—1780.

Journal für die Liebhaber des Steinreichs und der Conchyliologie, 6 vols. 1774—1780, All these quoted after J. P. COBRES, *Deliciae Cobresianae*, Vol. 1, 1781, p. 23 seq.

5) FAVART D'HERBIGNY, loc. cit., p. XXVI.

and scandalous fisherman's names and seafarer terms which were often far from decent 1).

Although the vernacular names were in common use, there was nothing fixed as to which species were indicated by them. A certain current propagating the use of uniform nomenclature gained a footing: "annoncent une certaine convention dans les noms" 2), but the international rules of nomenclature which were devised to eliminate the confusion in scientific terms never involved uniformity of use for popular names.

Manifold were the complaints of various authors as to the name trouble. Sometimes it is as if we hear the taxonomists of our days lamenting on the maze of nomenclature 3).

After the Revolution modern books and modern nomenclature took the place of the 18-th century handbooks. In the beginning of the new century works like LAMARCK, SOWERBY, MARTINI were mostly favoured. Later SOWERBY's Thesaurus, REEVE's Conchologia Iconica, MARTINI & CHEMNITZ, Neues Systematisches Conchylien Cabinet, KIENER's Iconographie des Coquilles vivantes were the general handbooks and it speaks highly in their favour that so many excellent collections resulted from them 4).

In our days most of these are still in vogue, not least on account of their excellent figures. The Conchyliencabinet is still in progress. In 1879 there was started the Manual of Conchology by G. W. TRYON, continued by H. A. PILSBRY. This series is being continued also.

Mutual relations between collectors. First Malacological Society.

The great number of collectors in the 17-th and 18-th century led to various modes of mutual intercourse. To the public sales and private arrangements we referred already in the paragraph on prices. The people probably also did a good deal of exchanging. Furthermore we may feel sure that there must also have existed a tremendous jealousy and rivalry to obtain the most beautiful specimens. VALENTIJN, the parson-historian, frequently alluded to these strained relations. But he also related a spirit of good fellowship among the collectors living at Dordrecht at that time. Together with B. VAN SEGWAARD, K. B. VOET, W. DE KONING, A. VERVEL and PH. CRENA he founded the first

1) It must be emphasized that the more scientific authors: LINNÉ and contemporary and successive systematists were not very delicate either in the choosing of names for their objects. The fact that these names were in latin does not alter the obscene fundamental idea.

2) FAVART D'HERBIGNY, loc. cit., p. XXVII.

3) J. HENDERSON, Our unstable biological Classification and Nomenclature, Presid. Addr. 4-th Ann. Meeting Americ. Malac. Union, June 25—28, 1934.

4) An attempt to a bibliography of British conchological literature for the period 1662 to 1858 was made by J. C. MELVILL, British Pioneers in recent conchological science, Journ. of Conch. Vol. 6, 1890, p. 190—223.

malacological society in 1720 under the name: Liefhebbers van Neptunus Kabinet (Amateurs of Neptunus' Cabinet) ¹⁾.

All these human virtues and foibles, the procedure of exchanging and purchasing have persisted throughout the ages till in our days.

In the second part of the 19-th century malacological and conchological societies were founded in the neighbouring countries: France, Belgium, Germany, England. Since 1934 Holland has a Malacological Society of its own, editing a quarterly journal, called *Basteria*.

Remarks at Table I

In Table I is appended an account of the cabinets in the 17-th to 20-th centuries, arranged according to the cities where they were located. By far the largest number of all centuries combined was housed in Amsterdam, the 18-th century rising far beyond the other three.

Anonymous cabinets are omitted. If a cabinet is covering two centuries it is placed in the one with the principal activity of the proprietor, a → or ← indicating the supplementary era.

Collectors and travellers, not possessing a cabinet of their own, have not been included.

Remarks at Table II

In Table II is appended an account of the cabinets in the 17-th to 20-th centuries arranged according to the social position of their owners. Though the survey does not give an explanation for certain facts and their changes in course of years, yet one can gain an idea as to the interest of certain professions for conchology.

A few noteworthy statements may be specially brought into evidence.

Among burgomasters, judges and lawyers, chemists and druggists the vogue for this branch of natural history, with a few rare exceptions, flourished in the 18-th century only. The clergy, at least two parsons in the East Indies, started already in the 17-th century, but none of them came across the 19-th century.

Officers of both arms of service and university professors kept up cabinets in the 17-th, 18-th and 19-th century only. One single case is known of a major continuing to collect into the 20-th century and one of a captain keeping a collection of Dutch molluscs in the 20-th century. The university professors abandoned the habit of building private collections since the Government or local authorities inaugurated University Museums for the purpose of teaching zoology.

Mercantile people have always formed a class of fervent amateurs, starting early and continuing till in our days.

1) F. VALENTIJN, *Oud & Nieuw Oost Indien*, Vol. III, 1726, p. 563; Id. *Zeehorenkens*, 1754, p. 47. Compare also H. ENGEL, *Basteria*, Vol. 2, 1937, p. 64.

I tried to make a comparison between the collecting industry in Holland and that in the three neighbouring countries: France, Germany and England.

The only country with which the 18-th century, the golden age for shell fancying in Holland, can be compared is France. From the elaborate account of LAMY ¹⁾ we get an interesting picture of the nature of French collectors in the 18-th century and of the cabinets they brought together. As the author reported *all* natural history cabinets in France during that epoch, not distinguishing between conchological ones and those containing other branches of science (entomology, ornithology, mineralogy, etc.) a conclusive comparison with my survey is not possible.

Neither in Germany nor in England is a similar modern account of the vogue of natural history in the 18-th century available. Only in the third edition of ARGENVILLE, arranged by FAVANNE (1780) we find an enumeration of the contemporary cabinets in Germany and England, a survey which, however, is far from exhaustive. Other information is scattered in various books and periodicals the principal of which have been mentioned at p. 222—223 of this paper.

In the early days of the 19-th century the position of zoology in England was far from favourable and certainly inferior to the circumstances in France. Soon in this new epoch, however, a new and successful spirit began to penetrate, giving rise to many scientific expeditions and to innumerable explorations of individual scientific travellers. These efforts were directly instrumental to the shell business and soon a flourishing conchological science manifested itself. Surveys of the British conchological cabinets in this century were published by E. A. SMITH and J. DAVY DEAN ²⁾. For a comparison with my table II, treating the 18-th century cabinets in Holland, they are of no direct importance as they treat a different century and because the social state of the proprietors is only rarely indicated, so that I cannot tabulate them in the same way as I did the Dutch collectors.

Summarizing my comparative reflections on conchology and the social circles in which it was practised in the three great powers surrounding the Netherlands it can be said that in France and Germany the Court played a far more important part than both in Holland and England. The clergy had the lead in France, the medical faculty was about equally well represented in all four countries. Holland was dominating in middle class officials, merchants and well-to-do private persons. The possession of extensive colonies in four continents gave rise to a vivid commerce and resulted in bringing the people

1) E. LAMY, *Les Cabinets d'Histoire Naturelle en France au XVIII-e siècle et le Cabinet du Roi (1635—1793)*, 1930.

2) E. A. SMITH, *Mollusca*, in: *The History of the Collections contained in the Natural History Departments of the British Museum*, Vol. 2, 1906, p. 701—730.

J. DAVY DEAN, *Conchological Cabinets of the Last Century*, *Journ. of Conch.* Vol. 20, 1936, p. 225—252.

real mines of wealth and—what is more—a genuine taste for exotic products and their intrinsic scientific value.

It is incomprehensible how many of the 17-th and 18-th century cabinets could radically disappear from the earth without leaving any traces. This is not a question of a few scores of fragile specimens falling into decay easily, but of hundreds and hundreds of solid marine shells, not attacked by mould or vermin or soot. It was not a lack of appreciation for we have seen with what energy people started collecting and liberally spent large sums for increasing their collection. This is not exactly the same phenomenon which occurred to some contemporary authors, e.g. MEUSCHEN in the Preface of the LEERS sale (French version) ¹): “Il est effligeant qu’une aussi superbe Collection, dont les lots montent à 2150, et qui renferme tant de milliers de pièces, va être dispersée dans peu de jours par une vente publique, collection qui a couté tant d’années de travail, à laquelle les deux Indes ont contribué, et qui a été enrichie des dépouilles des Cabinets de SEBA, de HOMOET, de SLUITER, de WESTERVEEN, de BAART, et d’autres; comme j’en ai été presque partout témoin. Collection qui à son tour va disparaître, et ne servira plus qu’à remplir les vuides d’autres Cabinets, destinés à subir le même sort”. A similar complaint was ushered by ARGENVILLE in the third edition arranged by FAVANNE 1780 (p. 359): “Combien de temps, de soins, de recherches et de dépenses n’en coûte-t-il pas pour former un cabinet d’histoire naturelle, que huit jours de vente publique font souvent passer.”

Undoubtedly the intention to levy a tax on natural history cabinets—a project which, by the way, was never carried out—checked the people’s ambitions for founding new cabinets ²).

At the present day objects of art or science are not coming under the property tax. The house tax considers dutiable only such objects which are standing freely in the rooms, or which are stored in glass cases with the apparent purpose to put them on exhibition. It remains to be seen whether a collection of choice and showy shells, kept in a glass case, would be in for it.

In the 19-th century there is a great improvement in the responsibility of cabinet-owners unto their galleries. The question of appointing a final destination for their collections was made much easier after the founding of two large natural history museums in Holland: the Rijksmuseum van Natuurlijke Historie at Leiden in 1820 and the Museum of the Royal Zoological Society *Natura Artis Magistra* shortly after 1838. Both institutions acquired many fine and historical collections. Some were purchased, others were presented.

1) Catalogue systématique... ARNOUD LEERS, 1767.

2) K. A. RUDOLPHI, Bemerkungen aus dem Gebiet der Naturgeschichte... etc. I. Theil, 1804, p. III: “Findet die Einrichtung wirklich statt, von der man mir in Amsterdam erzählte, dass nämlich die Besitzer der Naturalienkabinette von diesen *steuern* und sie dazu noch zu einem solchen Preise angeben müssen als wofür sie sich gefallen lassen wollen, dass man sie ihrer abkaufe, so dürften die Sammlungen dieser Art wohl in Holland seltener werden, als vormalis”.

In these Museums the cabinets finally reach a corner of permanent security, whence there is no alienation. The Amsterdam Museum has the great advantage of having a large exhibition gallery from the very beginning. In this way it has stimulated scientific workers and amateurs alike, thus acting for the benefit of the people in promoting love of nature, education and science.

Before concluding I have to express my sincere thanks towards the many friends and correspondents to whom I had to apply for help or information. It is impossible to mention them all, but a few exceptions may perhaps be allowed. In the first place my thanks are due to my colleague, Dr. H. ENGEL, who is so much more experienced in historical investigation than I am. Furthermore to the Librarians of the Royal Zoological Society *Natura Artis Magistra*, of the Royal Association Colonial Institute, of the Dutch Publishers and Booksellers Society, all at Amsterdam, and to the Archivist of Haarlem, Dr. GERDA KURTZ. Finally to all the correspondents in this country and abroad who, in a most liberal way, procured all the necessary biographical information about their own persons or their ancestors.

TABLE I
SHELL CABINETS IN HOLLAND DURING 17-TH—20-TH CENTURIES ARRANGED ACCORDING TO THE TOWNS
WHERE THEY ARE KEPT

AMSTERDAM			
17-th century	18-th century	19-th century	20-th century
C. van Blyenburg; J. Brayne; V. Jansz; I. J. Nijs; G. Reynst; F. Ruysch →; A. Seba →; J. Swammerdam; J. Uyttenbo- gaert.	A. Ameshoff; W. Backer Cor- nelisz; Chr. Beudiker; C. van Bevoordt; Blaauw; J. C. Brandt; Bruyn 1); H. van der Burg; N. L. Burman; A. Buurt; Ten Cate; Cattenburg; G. Clifford; J. Cramer 2); F. Cramer; B. Cronenburgh; J. M. Dentzel →; C. E. Engelbronner; J. Goll Baron van Frankenstein; W. Groen; S. van Groenewegen; J. Guillot; J. Gutsche; De Haan; I. de Heeze; P. van den Heu- vel; Homoet; J. Hoos; M. Houttuyn; Joh. de Jong; H. ten Kate; L. ten Kate Hzn; Koenig; Jac. Kok; M. Laars; J. Luder; Luther; W. van der Meulen; C. P. Meyer; J. G. Meyer; Van der Mieden; De Neuville; Nieuwhof; Nopf; J. Odon; H. Oortmans; Ovens; G. Pancras; Ph. van der Poorte; J. D. V. Portz; V. Posthumus; J. Raye van Breukelerwaert; Renner; [A. or J. J.] van Rense- laer, E. Roeters; B. Ruloffs →; J. Rutger; B. Schaid; J. A. Schlosser; J. E. Schot; S. Schijn- voet; T. Sluiter; D. Smith;	F. van Heukelom; G. L. J. van der Hucht; A. Oltmans; H. C. Roeters van Lennep; G. Scheep- maker Wzn; J. van Son →; ← J. H. van Swinden; D. Tobias; ← ← J. G. Voigt; D. Vrijdag.	W. H. Gravestein; A. J. Jansen; J. Prins; C. O. van Regteren Altena; ← W. Reinkingh; ← B. W. F. van Riemsdijk 3); J. Vis; I. A. J. de Wilde.

1) It is doubtful whether this Mr Bruyn is the same as Cornelis de Bruyn, famous traveller and collector in the 18-th century. 2) Probably there have been two bearers of the name, one in the end of the 17-th century and one in the beginning of the 19-th century. 3) Jhr. B. W. F. van Riemsdijk inherited the collection from his father Jhr. A. W. G. van Riemsdijk who lived at Utrecht in the 19-th century. See below under Utrecht.

17-th century	18-th century	19-th century	20-th century
Kamerling; J. van Kretschmar.	Ph. Grena; W. de Koning; B. van Segwaard; A. Vervel; K. B. Voet; J. E. Voet ¹⁾ .	J. B. J. van Rosendael.	
	DORDRECHT		
	DELFT		
	← H. d'Acquet; W. van Berckel; C. de la Faille; 's Gravezande; J. van der Lely.		
	MAASTRICHT		
	Calmette; Hoffmann; Regnard; Ruvynes.	C. Ubaghs.	
	VLISSINGEN		
del Corne.	A. van Dishoek; A. P. van Dishoek; S. M. Snouck Hurgronje.		
	APELDOORN		
	's HERTOGENBOSCH		
	A. A. Martini; J. C. Palier.		← P. Keyzer ²⁾ ; L. de Priester.
	HOORN		
	Bronkhorst; van Suchtelen.		
	ZWOLLE		
	H. Voet; D. Voet.		
	BILTHOVEN		
	BOSCH & DUIN		A. C. Wertheim.
	BREDA		← M. M. Schepman ³⁾ .
			C. H. de Loches Rambonnet.

¹⁾ Lived at The Hague afterwards.
the 19-th century (see under Middelburg).

²⁾ Mr P. Keyzer inherited the collection from his father Dr Ij. Keyzer, who lived in Middelburg in
³⁾ Before at Rhoon.

17-th century	18-th century	19-th century	20-th century
	BUSSUM		L. Muller.
	DOMBURG		← J. Frater ¹⁾
	GORINCHEM		L. J. Spanjaerdt Speckman.
	GRONINGEN		A. H. Schelling.
	H. Wolthers.		F. E. Loosjes.
	HARDERWIJK		C. Brakman.
	NIEUW & ST. JOOSLAND		L. H. D. de Vost of Nederveen Cappel ²⁾ .
	VELP		F. P. Vermeulen.
	IJMUIDEN		
	ZAANDAM		
	N. Calf.		
	ZIERIKZEE		
	J. Baster.		
	ZUTFEN		
	J. F. Martinet		
	UNKNOWN LOCALITIES		
M. de Boer.	Douglas.; P. Valkenier	J. C. Dumont; Hoogeveen.	← F. W. Zürcher.

1) Collection inherited from his grandfather Carp, see Middelburg 19-th century.

2) Collection purchased by Mr H. G. J. Schelling of Utrecht.

17-th century

18-th century

19-th century

20-th century

Joh. Camphuis; Joan van Hoorn →; M. Molkman; P. Rooselaar →; G. E. Rumphius; J. Ph. Sipman; C. van der Sluis; F. Valentijn →.

Z. Brouwerius-Croesen; A. de Dekker; Helmolt; D. van Loenen; J. A. Meentzen; J. F. Meyer; P. Oortmans-de la Court; C. Padbrugge-van Hoogeveen; Z. A. Schagen-van Genege; A. van der Stel; P. Wijbers.

NETHERLANDS INDIES

A. G. Boes.

JAPAN

J. Cock Blomhoff.

CAPE OF GOOD HOPE

Elzevier.

1) Afterwards at Antwerp.

2) Collection purchased by Mr L. Muller of Bussum.

TABLE II
SHELL CABINETS IN HOLLAND DURING 17-TH—20-TH CENTURIES ARRANGED ACCORDING TO SOCIAL POSITION OF THEIR PROPRIETORS

17-th century	18-th century	19-th century	20-th century
J. van Kretschmar.	<p style="text-align: center;">COURT</p> <p>H. R. H. the Prince of Orange; A. Vosmaer; Desmarets.</p> <p>OFFICERS OF THE ARMY AND THE NAVY</p> <p>D. I. Baron van Cronstrom; J. P. A. Ouwens →; P. A. van L. J. Spanjaerd Speckman. B. de la Faille; De Lassara; W. Rees →. van der Meulen; J. D. V. Portz; Baron de Rengers; Ruvynnes; J. van Segveldt; Witsen.</p>		
	BURGOMASTERS		
	<p>← H. d'Acquet; W. van Berckel; Abr. Gevers; J. van der Lely; G. Pancras; D. S. Schorer; C. van Schuylenburch; Van Such- telen; P. Vermeulen →; N. Witsen.</p>		
	JUDGES AND LAWYERS		
	<p>W. Baart; J. van der Burg; C. van Bynckershoek; C. van Cit- ters; W. van Citters; G. Clifford; E. B. ten Dall →; A. P. van Dis- hoek; B. Fagel; P. Lyonet; Van der Mieden; S. Schijnvoet; A. Westerveen.</p>		
C. Heidanus; G. Reynst; J. Uyttenbogaert.		OTHER OFFICIAL PROFESSIONS	<p>J. Th. Henrard; C. H. Prins; ← B. W. F. van Riemsdijk; A. H. Schelling; H. G. J. Schel- ling; A. Slabber; L. H. D. de Vos tot Nederveen Cappel.</p>
		<p>A. W. G. van Riemsdijk →.</p>	

17-th century 18-th century 19-th century 20-th century

D. Luycx Massis; F. C. Meuschen; C. Meyer; G. F. de Milan Visconti; Regnard; E. Roeters; B. van Segwaard; S. M. Snouck Hurgronje; J. Spex; C. Steen-gracht; G. Stol; Treuer; P. Valkenier; K. B. Voet; H. Voet; D. Voet; E. de Wilde; J. Witsen; H. Wolthers.

CLERGY

C. van der Sluis →; F. Valen-tijn →.
A. Buurt; C. Chais; W. de Koning; J. F. Martinet; ← W. d'Orville; J. C. Paliet; A. I. Snouck Hurgronje.

TEACHERS OF PRIMARY AND SECONDARY SCHOOLS

G. Scheepmaker Wzn.

A. G. Boes; C. Brakman; ← P. Keyzer; L. Muller; L. de Pries-ter; ← W. Reinkingh; I. A. J. de Wilde.

UNIVERSITY PROFESSORS AND LECTURERS

F. Ruysch →.
J. N. S. Allamand; N. L. Burman; W. van Doeveren; J. le Francq van Berkhey; H. D. Gaubius; L. Th. Gronovius; J. D. Hahn; D. van de Wijn-persse →.

← S. J. Brugmans; Th. G. van Lidth de Jeude; T. D. Schu-baert; ← J. H. van Swinden.

DOCTORS

M. Molkman; J. Ph. Sipman; J. Swammerdam.
J. Baster; P. Boddlaert; A. van Dishoek; C. van Hoey; Hoff-mann; M. Houtuyn; H. Lufneu; A. A. Martini; Pichart; J. A. Schlosser; Scholts; J. G. Schutte; M. W. Schwenken; H. Verheyk; E. P. van Visvliet; J. E. Voet; K. B. Voet jun.; A. Westerhoff; P. de Wind.

C. Dalen; IJ. Keyzer →; J. Semmelink →; P. Wijga ↓).

17-th century 18-th century 19-th century 20-th century

MANAGER OF AN ESTATE

← M. M. Schepman.

Bronckhorst; Goske; Luther;
Ovens; B. Ruloffs →

← J. Frater; H. G. de Smit.

ARTISTS

LADIES

Z. Brouwerius-Croesen; Grovesins; P. Oortmans-de la Court; C. Padbrugge-Van Hooegeven; M. Ponderus; J. S. van der Poort d'Oostcapelle-van der Mandere; Z. A. Schagen-van Genege; De Willem.

Hooegeven; F. J. M. Rethaan Macaré-Ontijd.

NO PROFESSION¹⁾

A. Beverland; C. van Blyenburgh; M. de Boer; del Corne; Kamerling; I. J. Nijs.

Van Aarssen van Hoogerheide; A. Ameshoff; Anderson; W. van Assendelft; W. Backer Cornelisz; J. Bart; C. Beudiker; C. van Bevoordt; W. S. Boers; Bruyn; N. Calf; Calmette; Baron van der Capellen; ten Cate; Cattenburg; Coq; B. Cronenburgh; J. M. Dentzel →; M. J. van Doorne; Douglas; C. Elout; Elzevier; Feytema and brother; Arn. Gevers; J. Goll Baron van Frankenstein; 's Gravezande; W. Groen; S. van Groenewegen; J. Gutsche; De Haan; I. de Heeze; P. van den Heuvel; P. van den Heuvel; P. de Hollander; Homoet; J. Hoos; L. ten Kate Hzn; Jac. Kok; Kuyk van

C. O. van Regteren Altena; J. Vis; A. C. Wertheim; ← F. W. Zürcher.

D. G. van der Burgh van Kronenburg; J. C. Dumont; G. L. J. van der Hucht; R. T. Maitland; J. C. Martens; A. Oltmans; J. van Son →; D. Tobias; C. Ubaghs; J. Voorhoeve; De Vriese; D. Vrijdag.

¹⁾ It is possible that the group of persons indicated as having No Profession is somewhat too large. I classified as such every collector of whom no profession is known.

17-th century	18-th century	19-th century	20-th century
	<p>Mierop; M. Laars; C. van Lennep; J. de Loovers; J. Luder; Nopf; J. Odon; H. Oortmans; J. J. Pieterse; Ph. van der Poorte; V. Posthumus; J. Raye van Breukelerwaert; Renner; [A. or J. J.] van Renselaar; Resnerus; J. Rutger; J. E. Schot; Schravenwaard; D. de Smit; J. Snellen; Th. J. Stoutenburg; Teroede; M. Twent; Vereyle; J. Volkert; J. H. van Wassenaar; Van Zuylen van Nijevelt.</p>		

TABLE III

CURATORS OF THE ZOOLOGICAL MUSEUM, IN CHARGE OF THE
MALACOLOGICAL COLLECTIONS

- ABRAHAM OLTMANS born 16 April 1811, † 10 December 1873
unofficial worker: 1844
appointed curator; November 1854, till his death.
- R. T. MAITLAND born ?, † 8 December 1904
appointed curator August 1856, till March 1864 and again
1880 till 1 May 1893.
- Jhr. W. N. M. VAN DE BLOQUERY born ?, † ?
appointed curator 1 January 1874, till 1 May 1892
honorary collaborator till ?
- W. REINKINGH born 5 January 1821, † 1 May 1905
unofficial collaborator during some years.
- Dr. JAN SEMMELINK born 8 June 1837, † 8 August 1912
honorary collaborator during some years.
- JOHANNA SCHOLTEN born 27 February 1874
librarian of Artis from 15 February 1912, till 31 July 1920
honorary collaborator for shells at the same time.
- LEUNIS DE PRIESTER born 1880
honorary collaborator at repeated intervals.
- Dr. JOHANNES THEODORUS OUDEMANS born 22 November 1862, † 22 February 1934.
appointed curator from 1892 till 1900.
- Dr. MIA BOISSEVAIN born 1878
appointed curator from 1898 till 1902.
- Dr. PIETER NICOLAAS VAN KAMPEN born 30 June 1878, † 3 July 1937
appointed curator from 1900 till 1905.
- Dr. DANIEL DE LANGE born 1878
appointed curator from 1905 till 1907.
- Dr. LIEVEN FERDINAND DE BEAUFORT born 23 March 1879
appointed curator from 1905 till 1909.
- Dr. NELLY DE ROOY born 1883
appointed curator from 1907 till 1922.
- Dr. NEELTJE LOUWRINA ISEBREE MOENS born 4 May 1884
appointed curator from 1909 till 1910.
- Dr. JAN HENDRIK KRUIJEL born 1885, † 20 November 1916
appointed curator from 1910 till 1914.
- Dr. CORNELIS JOHANNES VAN DER HORST born 11 May 1889
appointed curator from 1914 till 1916.
- Dr. MEYER PINKHOF born 26 January 1892
appointed curator from 1916 till 1920.
- WOUTERA SOPHIE SUZANNA VAN BENTHEM JUTTING born 6 February 1899
appointed curator 1920 till onwards.
- Dr. HENDRIK ENGEL born 2 February 1898
appointed curator 1922 till onwards
- JOHANNA MARRIGJE ADA TEN BROEKE born 13 December 1898
appointed temporary curator from 1930 till 1932.
- MARGARETHA SANDERS born 20 February 1905
appointed temporary curator from 1930 till 1932.
- CAREL OCTAVIUS VAN REGTEREN ALTENA born 19 December 1907
honorary collaborator since 1926.
- IZAÄK ANTHONIE JACOBUS DE WILDE born 1877
honorary collaborator since 1 January 1938.

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