

## ON THE CONCHOLOGICAL WORK OF F. M. REGENFUSS

by

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Franz Michael Regenfuss was born in Nuremberg, Germany, and baptized 28th February 1713. His father, Erhard Regenfuss, was a wig-maker. The son married Margaretha Helena Ludwig (born circa 1707) in Feucht on 3rd March 1755.

Franz Michael did not succeed to his father's business, but became a painter and engraver. From his youth he was fascinated by the manifold natural history objects, especially of foreign countries, and already by 1745 he was thinking of publishing a book with numerous illustrations in line-engraving and a scientific text on shells and crustaceans. For the text he had the collaboration of F. C. Lesser (1692-1754), at that time a clergyman in Nordhausen and a well known authority on conchology. In order to collect names and addresses of potential subscribers to his book Regenfuss, in the beginning of 1748, published a small circular in which he invited shell collectors and shell dealers to support his idea, fixing the price for a coloured plate at 2 fl., for a uncoloured one at 1 fl. <sup>1)</sup> Towards the end of that year he produced a large-sized "Avertissement" (dated 30 October 1748) to the "Lectori Benevolo Naturae Speculatori atque Ingenuarum Artium Studioso" <sup>1)</sup>. This item opens with an engraving representing an allegory of the sea and its organisms, to which is attached a net full of shells. It is followed by a text in Latin and German in parallel columns. Herein the study of conchology is greatly recommended, and again subscriptions are invited for the forthcoming book. In addition it gave an exposé of how Regenfuss and Lesser were going to effectuate their scheme. Here the above mentioned prices for the original subscribers are mentioned again, the later applicants having to pay 2 fl. 30 kr. for a coloured and 1 fl. 30 kr. for a black-and-white plate. Regenfuss recorded that most of the shells which served as models for his drawings were borrowed from the collection of A. M. Schadeloock <sup>2)</sup>.

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1) A copy forwarded by Regenfuss to Linnaeus is preserved in the library of the Linnean Society in London.

2) Several plates in the work of Knorr, *Verlustigung der Augen* etc. were also made from shells in the Schadeloock collection.

In the signature of the "Avertissement" Regenfuss called himself "Kupferstecher und Kunsthändler" (engraver and art-dealer), living in the Spital-Gass in Nuremberg.

In 1748 Regenfuss obtained from the Emperor Francis I the privilege of editing the book. In course of time the Lesser text, however, did not satisfy Regenfuss, and he stopped work on it temporarily<sup>3</sup>).

Shortly afterwards he decided to dedicate each plate to a royal person, and to add on each plate a vignette with emblematic details, taken from conchological subjects. Again this plan, being too expensive, was shelved.

Meanwhile these preliminary negotiations, and, doubtless, Regenfuss's obvious talents<sup>4</sup>), had attracted the attention of certain amateurs of conchology, the study of which was popular in many European countries at this time.

Through the mediation of Count Adam Gottlob von Moltke (1710-1792), Geheimer Rath und Oberhofmarschall (Conseiller privé et grand Maréchal de la Cour) of the King of Denmark and of Norway, Frederic V, Regenfuss came to Copenhagen in 1754.

Since many years Denmark had been a refuge for numerous scientists and artists from Central Europe, chiefly Germans. Especially during the eighteenth century when the Seven Years' War and the Austrian Succession War disorganized southern and central Germany, a high quantum of the intelligentsia of these regions emigrated to the more peaceful and economically more stable country of Denmark.

Here Regenfuss immediately found several marks of recognition for his enterprise. Count Moltke himself was a great admirer of natural history objects and possessed a famous cabinet of shells, many of his specimens having been purchased from shell sales in the Netherlands and elsewhere. He took an interest in the exquisite engravings of Regenfuss and introduced him to Court. Here Regenfuss obtained the title of engraver to the King, which position he retained until his death in 1780.

Once in Denmark Regenfuss set to work immediately and in a few years produced twelve plates with figures of shells for the anticipated book. They are all hand-coloured, some by Gabr. Müller and Joh. Maurits Leyh, but mostly by his wife Margaretha Helena Regenfuss. The text was for the greater part written by C. G. Kratzenstein (1723-1795) and printed in German and French. Just when the book was due to come from the press,

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3) A copy of the small part which had already been issued is present in the British Museum (Natural History) in London.

4) Regenfuss had already published various engravings and paintings for other sponsors.

the King suppressed the text, and took the few copies back which had already been distributed<sup>5</sup>).

Accordingly a new text had to be designed, but the collaboration of Kratzenstein was no longer desirable. In a letter to Linnaeus, dated October 1759, Kratzenstein gave an account of the further history of the work<sup>6</sup>). In order to replace Kratzenstein the protector of the work, Von Moltke, conferred with L. Spengler (1720-1807), and this man now took over the writing of the descriptions of the shells. Spengler was no scientist, but a Court cabinet maker, and possessed a large shell collection. Yet part of Kratzenstein's new generic names were kept, and new ones added. The chronological list of conchological works which in the suppressed text did not reach farther than 1733, was now supplied with the titles up till 1758. The court-chaplain J. A. Cramer was charged with the improvement of Spengler's style and, independently, wrote a chapter "Vorläufige Einleitung". P. Ascanius (1723-1803) compiled the lists of synonyms and coined the Danish popular names.

After approval by the King the book could now be published and appeared in royal folio with the title "Auserlesne Schnecken Muscheln und andre Schaalthiere" (Choix de Coquillages et de Crustacés) printed by Andreas Hartwig Godiche in Copenhagen, in 1758.

The text, always in German and French, includes the title, a dedication, followed by a "Vorbericht" (Avertissement) of two pages by Regenfuss, dated 31st March 1758 (the date of the King's birthday), a "Chronologische Anzeige der Schriftsteller" (Catalogue chronologique des auteurs) on pages I-V and the "Vornehmste Naturalienkammern in Dänemark" (Cabinets d'Histoire Naturelle en Danemarck) on pages VI-XIV, both started by Kratzenstein, but augmented by Spengler, a "Vorläufige Einleitung" (Discours préliminaire) on p. 1-22 by Cramer, and an "Erklärung der Kupfer tafeln" (Explication des Planches) with subtitle "Benennung der Conchylien" (Dénomination des Coquilles) on p. I-LXXXVII of which some entries were taken from Kratzenstein, and the others supplied by Spengler. Ascanius furnished the popular Danish names of the shells and compiled the lists of synonyms.

Dutch popular names are frequently used throughout the text: Prinsevlag,

5) Copies of the suppressed text of 1758 are preserved in the Royal Library at Copenhagen, the British Museum (Natural History) in London, the Bibliothèque Nationale at Paris and the Institut Royal des Sciences Naturelles de Belgique at Brussels. Its title is a little different from the later definite edition. It runs: 'Sammlung von Muscheln, Schnecken und andern Schaalthieren' etc., 'Recueil de Coquillages, de Limaçons et de Crustacés' etc.

6) For more details see C. C. A. Gosch, Udsigt over Danmarks Zoologiske Literatur, 3 vols, Kjøbenhavn, 1870-1878; especially vol. 2 part 1, p. 292 ff. and vol. 3, p. 151-153.

Schildpadstaart, Vliegenschietje, Zwitsersbroek, Beddetijk, Schout-bij-Nacht, Begijnedrol, Koningsmantel, Strikdoublet etc. Dutch collectors were so numerous and their cabinets so famous that they had international correspondents among all circles of society.

The name of the court-chaplain Johann Andreas Cramer is not mentioned anywhere in the book, but from some contemporary authors it is evident that he wrote the "Vorläufige Einleitung", a partly zoological, partly philosophical chapter. The many allusions to the Creator and His unsurpassed works strongly support such a postulate.

In some copies of the book there is an engraving representing an allegory of the various representatives of navigation, the sea gods and marine products arranged round a bust of King Frederic V, rendering him honour. This engraving which is usually bound in at the beginning, is coloured in red in those copies which are pretended to be a royal presentation. In other copies it is coloured blue.

The plates I-XII of the volume illustrate shells of gastropods and bivalves, continuously numbered 1-67 on plates I-VI; from plate VII onward a new series of numbers 1-78 sets in till plate XII.

The figures are distributed on each plate in no systematic order (in this respect Regenfuss was inferior to Rumphius), but were arranged, presumably, according to the colourful and elegant qualities of the shells. Sometimes the figures are placed side by side, sometimes they are arranged in star- or fan-shaped patterns (yet never in such burlesque fashion as for instance in Seba's Thesaurus), and always in harmony with each other.

Some species are represented in front and back view; here again this was not done from a scientific view point, but simply to show the beauty of the shell on both sides.

All shells are correctly figured, the dextral species as dextral, the sinistral ones as sinistral. There are no instances of reversal such as occur in several contemporary works, e.g. Rumphius' Amboinsche Rariteitkamer. In these works the shells (and other animals) are engraved directly in the copper plate, so that, after printing, they appear in mirror image on the paper. To avoid this mirror effect Regenfuss must have drawn the shells with crayon or ruddle in their normal attitude first. After this the paper is placed against a sooted copper plate, and both together moved in this state under the roller press. The object now comes out in mirror image on the copper plate, and is then engraved into it with a burin. Subsequently the copper plate is cleaned, and inked. Finally prints on paper are made under the press, this time yielding positive copies. The blind impression of the outline of the copper plate is clearly discernable on all the plates of the book.

Each shell is provided with a shadow on its right side, the flat species with a narrow edge of shadow, the more convex ones with a considerable amount of shadow. This makes the figures stand out three-dimensionally. The illustrations are so accurate that all figures are specifically recognizable. Several figures were made from shells in the collection of Spengler who also occupied the post of inspector of the Royal Danish Art and Natural History Cabinets. His collection later came to the Zoological Museum in Copenhagen; there the models for the Regenfuss volume can still be seen.

On page 2 of the "Vorbericht" Regenfuss explained why the different species are arranged so unsystematically. In the first place he maintains that the zoological system is not yet definitely established and, secondly, that during the preparation of the plates he had to accept his models as they were given to him.

None of the plates is signed. In the "Vorbericht" Regenfuss announced that he had in mind to prepare the plates for a second and a third volume „liegen bereits alle, und zum dritten schon einige Originalgemälde der auserlesensten und seltensten Conchylien fertig vor". We will see later what became of this intention.

Most of the shells represent oriental marine species, but there are also some from the West Indies, Cape of Good Hope and northern Europe. Even a land snail is found among them. Although in the title of the book Crustacea are mentioned, no crustacean is mentioned in the text or figured in the plates. Presumably Regenfuss had these in mind for a later volume 7).

When the book appeared it was an immediate success. At first only a few copies were printed, but soon it was found desirable to produce more. According to Martini, in the first volume of the Conchylien Cabinet (1769), it cost 40 Thaler in ready money, a fairly high sum for that time.

Apart from the expenses made for the plates Regenfuss received from the King 20.000 Thaler during 25 years residence in Denmark.

From an autograph letter by Regenfuss to Linnaeus, dated 16th of June 1749, now in the library of the Linnean Society in London, it is obvious that the two were in correspondence. The contents of this letter, which is published here with the permission of the Linnean Society of London, runs as follows:

HochEdel Gebohrn und Hochgelehrter insonders HochGehrtester Herr Professor!  
 Euer HochEdelGebohrn übersende ich hiermit durch Gelegenheit der hömänischen

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7) See Gosch, vol. 3, 1878, p. 153, where among the organisms figured for the plates of a third volume are mentioned shells, crustaceans and corals.

Erben und Adresse an S.T. Herrn Joseph Schirer Buchhändler in Stockholm, nach gegebener geneigter Erlaubnis von Euer HochEdelGebohrn des 1740sten Jahres den 4ten 8bris sechs kleine und ein gross gemahltes Avertissement, von meiner Herausgabe derer Muscheln und Schnecken, so ich dem Publicum als eine Probe der Mahlerey, gröss u. gütt des Werckes im Pappier, und der ferneren Einrichtung darlegte. Mit gehorsamster Bitte solcher durch dero hohes und gütiges Vorwort an die Herrn Liebhaber bestens zu recomendieren, und hoffe dass Euer HochEdelGebohrn aus der angefügten Probe von selbst erschen werden, dass sich meine Ausgabe der vornehmen Recommendation nicht unwürdig machen wird. Das Gemahlte Exemplar kan ohnmassgebl. von denen Tit. Herrn Liebhabern u. Käuffern nur in Augenschein genommen, die Schwarzen aber vertheilet werden. Die erste Ausgabe welche oben in das Reine gebracht wird ehestens an das Licht kommen, und gegen Einsendung der Gelder Porto u. andern hierbey zu Schulden komenten Back Costen<sup>8)</sup> nebst Nahmen u. Ort wegen der Scheine die ich ausstelle, nach verlangen Gemahlt oder Schwartz übersendet werden. Der ich übrigens zu fernerer Hilfe mich empfehlend, mit Hochachtung verharre  
Euer HochEdelGebohrn

Nürnberg den 16ten Juny  
A 1749

ergebenster Diener  
Franciscus Michael  
Regenfuss

Regenfuss begged Linnaeus to recommend his plan to persons who might be interested. Linnaeus who had also been in correspondence with Kratzenstein used the suppressed edition of Regenfuss for reference in the 10th edition of the *Systema Naturae*. He quoted it as: Kratzenst. Regenf. In the 12th and 13th (Gmelin) editions of the *Systema Naturae* the reference is modified to Regenf. Conch.

I have often wondered why the book is constantly attributed to Regenfuss who, in fact, is only the illustrator of the work, but not the author of the text. This is a most unusual procedure in scientific zoological literature.

The explanation is, presumably, that there were several contributors to the text, and that, since the quarrels round the different versions, it is not always clear which of them wrote a particular section. Therefore I take it that, to avoid further uncertainties the author of the "Vorbericht", which is duly undersigned: "Franz Michael Regenfuss, Königl. Kupferstecher" replaces the whole assemblage of authors. Hence the fame of the illustrator has eclipsed that of all the authors of the text.

For purposes of zoological nomenclature the work is not available, as the scientific names are not consistently binominal (Sherborn, 1902, *Index Animalium 1758-1800*, p. XLIV).

The entire work is dedicated to King Frederic V. His cabinet of shells is described at some length in the chapter "Vornehmste Naturalienkammern",

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8) Back Costen is an error for Pack Costen (= Verpackungskosten).

together with several other famous shell cabinets in Denmark like those of Spengler, Chemnitz, Pontoppidan, Moltke, etc. <sup>9)</sup>

For many erudite persons in high society, being by no means all naturalists or doctors, the collecting of natural history curiosities at that time was more an entertainment than a scientific study. Several well-to-do people spent enormous fortunes on the acquisition of rare and beautiful species. The same hobby prevailed in other European countries: in Germany, France, England, and last but not least, in the Netherlands.

The desire to compose and publish similar iconographies of shells was manifested simultaneously in various countries where the development of science in the 18th century had penetrated. To mention a few examples: In Germany the famous work of Knorr, "Verlustigung der Augen" etc., also translated into French and Dutch, had appeared; it was followed by the "Neues systematisches Conchylien Cabinet", started by Martini and continued by Chemnitz; in England Martyn edited the magnificent "Universal Conchologist"; France produced three editions of "La Conchyliologie", two by D'Argenville and another, augmented but unfinished, by Favanne; in Italy we have the "Index Testarum Conchyliorum" of Gualt(i)erus; in Austria there appeared two big volumes by Born, "Index Musei Caesarei Vindobonensis" and "Testacea Musei Caesarei Vindobonensis"; the Netherlands produced the "Amboinsche Rariteitkamer" by Rumphius, a book which had several Dutch editions, besides two in Latin and another in German. The work of Valentijn, "Verhandeling der Zeehorenkens", is a somewhat feeble imitation of Rumphius.

As far as I could ascertain the first volume of Regenfuss is present in the Netherlands only in the library of the University of Amsterdam, and in the library of the Teyler Foundation at Haarlem.

In other countries where I made inquiries I found it to be present in the British Museum (Bloomsbury) and the British Museum (Natural History) in London, the Radley library in London, the library of the University of Cambridge, the Tomlin library at Cardiff, the Muséum d'Histoire Naturelle and the Bibliothèque Nationale at Paris, the Zoological Museum at Berlin, the Senckenberg Institute at Frankfurt am Main, the Royal library, the Zoological Museum, the University library and an art library at Copenhagen,

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<sup>9)</sup> It is interesting to relate here that the Moltke collection contained one of the greatest treasures in conchology, *Comus gloriamaris*. The shell was mentioned on p. IX of the Regenfuss work, as a nomen nudum, but was not described until 1777 when Chemnitz gave a satisfactory Latin diagnosis accompanied by a figure prepared by Regenfuss. This shell is the holotype of the species. It was later presented to the Zoological Museum at Copenhagen with the entire Moltke collection.

the library of Malmö, the Institut Royal des Sciences Naturelles at Brussels, a private library at Basle, and in the U.S.A. in the libraries of the National Museum at Washington, the American Museum of Natural History in New York, the Museum of Comparative Zoölogy at Cambridge, the Academy of Natural Sciences at Philadelphia and the John Crerar library at Chicago.

This list is not exhaustive. The work appears but very seldom in book-sellers' catalogues.

During the 19th century the price of the Regenfuss volume varied between 61 and 270 French francs. In the 20th century I have noted prices of 4000-5000 Danish crowns, and one of 2500 Danish crowns.

No portrait of Regenfuss is known to be extant.

Having discussed the first volume of the Regenfuss work I now come to the principal point of my article, viz. a study of the unpublished second volume.

Regenfuss worked slowly, probably in consequence of his fragile health. As a result the preparation of the plates for the second volume was not finished before 1777. They were hand-coloured in the same style as those in the previous volume. All plates bear the inscription "2. Tom." in the left upper corners, and the numbers I-XII in the right corners. The figures on the plates are numbered 1-64 for the plates I-VI, and 1-62 for the plates VII-XII.

These plates were brought into circulation in advance of the relevant text. Various libraries possess these plates, sometimes as a coloured, sometimes as an uncoloured set, but always without the prospective text. Yet a preliminary text for these plates had been designed by O. F. Müller (1730-1784). It contains the full descriptions for the first 10 plates. For the plates XI and XII, however, only a list of authors and their publications was available. The original manuscript is preserved in the Royal Library at Copenhagen.

Now it happened that a well-to-do Dutch nobleman in Amsterdam, Joan Raye, Seigneur de Breukelerwaert (1737-1823), who was a fervent amateur of natural history and art (see Appendix for some biographical notes on Raye), and who acquired the first volume of the Regenfuss book and the loose 12 plates of the second volume, wanted the text belonging to these plates too. He contacted the Danish collector Spengler, and obtained a copy of the manuscript, in the German language, prepared for volume II by Müller. Although we do not know the exact date of this correspondence with Spengler it must have taken place after Müller's death in 1784.

Raye had the German text translated into French, and both texts written side by side in the same style and on the same sort of paper, in imitation of the

first volume. Raye then gave both volumes to the binder who bound them in identical boards in vellum, with gilt edges and gilt ornaments on the back and the flat sides<sup>10</sup>).

After the title and the engraving of King Frederic V surrounded by marine subjects (this time in blue) Raye provided the following "Avant propos du Second Tome de cet Ouvrage":

Entre tous les ouvrages sur l'histoire naturelle en général et en particulier ceux qui traitent de la conchyliologie le présent mérite un rang distingué, après celui de Mons. Martyn, imprimé à Londres et dont les planches sont d'un fini si admirable que la nature ne saurait être mieux imité; toute fois on ne peut disconvenir que cet présent ouvrage égale presque celui que nous venons de citer et un coup d'oeil jetté sur l'un et sur l'autre, justifiera pleinement cette assertion.

Il y a peu de livres qui ayent eu un sort plus variable que celui ci. L'auteur Mr François Michel Regenfuss, jadis peintre et graveur à Nuremberg, l'entreprit avec beaucoup de soin en 1748, après avoir obtenu un privilège de feu l'empereur François premier. Mr Lesser se chargea du texte, que, par bonheur, il ne continua pas. Le célèbre Trew, le Docteur Huth et l'apotecaire Beyer le poursuivirent, mais Mons<sup>r</sup> Regenfuss n'étant pas trop satisfait de leurs descriptions, ils discontinuèrent d'y travailler.

Notre artiste avait conçu le plan de dédier chaque planche à une tête couronnée ou à quelque prince; il voulait toujours y joindre une vignette emblématique avec des attributs tirés de la conchyliologie, mais il trouva qu'il était au dessus de ses forces d'inventer toujours un emblème pareil. S'apercevant enfin qu'en général l'exécution de cet ouvrage lui deviendrait trop dispendieux, il prit le parti d'implorer l'appui de Monsieur le Comte de Moltke, Grand Chambellan et Conseiller privé de Sa Majesté le Roi de Dannemarc. Ce Seigneur, ami déclaré des arts et des sciences et lui même possesseur d'un très beau cabinet d'histoire naturelle et en particulier d'une superbe collection de coquilles, honora de sa protection Mons<sup>r</sup> Regenfuss, qui fut appelé à la cour de Dannemarc, où il obtint le titre de peintre et graveur du Roi, ainsi qu'une pension honorable.

Ce fut là qu'il finit le premier tome de ce livre, qu'on imprima en deux colonnes, l'une en Français et l'autre en Allemand, letout orné d'un titre et de très belles vignettes bleues et rouges. Un savant de Copenhague exécuta la partie littéraire, mais à peine en eut on fini l'impression, que le Roi donna ordre de supprimer cet ouvrage et de n'en faire paraître aucun exemplaire. La raison de cette défense n'a jamais été bien connue. Par dépit Mons<sup>r</sup> Regenfuss brula et déchira par masses les feuilles de son ouvrage, et il ne resta de ce texte, qui n'était rien moins que médiocre que quelques débris dont on sut tirer parti dans la suite. Cette impression n'avait point de frontispice coloré, mais deux titres gravés contenant: «Recueil de coquillages, de limaçons et de crustacés, peints d'après nature, par ordre très haut de Sa Majesté le Roi de Dannemarc et de Norwège, gravés en taille douce et enluminés de couleurs naturelles par François Michel Regenfuss, Graveur de S. M. R. Danoise» avec le même titre en Allemand. Ces titres sont de la dernière rareté et encore moins communs que le texte. On composa après cela une autre description, ce fut M<sup>r</sup> Kramer qui fit l'introduction. M<sup>r</sup> le professeur Ascanius firent l'explication des coquilles, M<sup>r</sup> le professeur Kratzenstein soutenant ces savants par ses conseils; le premier tome parut & emporta les applaudissemens de toute l'Europe savante en général & des gens de goût en particulier. C'est ainsi que s'exprime M<sup>r</sup>

10) At that time it was usual to buy a precious book unbound, in loose sheets. The new owner could then have it bound to suit his own taste and financial means. This explains why all the copies of the Regenfuss work which I have seen are bound differently.

Linnaeus Syst. : XII, p: 1071 «Omniumque pulcherrimus Regenfusus vidi tantum XII Tabulas primas nec quidquam pulcrius». Voyez aussi Comment. : de rebus in re Medica & naturali Gestis Vol. II, Vol. VII, Vol. VIII.

C'est en 1777 que Mons<sup>r</sup> Regenfuss finit ce second tome de cet Ouvrage, dont le texte n'a pas été complété. Possesseur du premier volume & curieux d'en avoir la suite, je pris le parti d'écrire à Mr Spengler, Directeur du cabinet de curiosités à Copenhague. Ce savant, aussi recommandable par ses lumières que par son caractère et possédant lui même une belle collection de coquilles, me fit parvenir les douze planches du présent volume, peintes par la même main qui avait fait celles du premier tome. Mr Spengler eut la bonté d'y ajouter un manuscrit Allemand, contenant la description des dix premières planches & dont feu Mr Othon Frédéric Müller est l'auteur & m'assura très positivement que jamais ce second Tome n'avait été imprimé. J'ai fait traduire en Français ce texte Allemand & j'ai pris le plus grand soin de faire arranger le tout d'une manière parfaitement ressemblante à l'imprimé du premier volume. Quoique tout ceci m'ait occasionné de très grands frais & beaucoup de peine, & qu'il manque la description des planches XI & XII, je ne puis que me féliciter de posséder un Ouvrage aussi parfait.

From it the history of this copy of the second volume becomes clear. The arrangement took place between 1784 when Müller died, and 1807, the year of Spengler's death.

That the two volumes were once owned by Raye is proved by his book-plate, which is stuck in each volume, and, moreover by an entry in the sale catalogue (1825) of his library, now in the possession of the Society for the Promotion of the Book-Trade in Amsterdam, where under no. Folio 54 we find :

Choix de Coquillages et de Crustacés peints d'après nature, gravés en taille-douce et enluminés de leur vraies couleurs, avec des explications en franç. et allem. par M. Regenfus. Copenh. 1758. 2 vol. v. [élaïn] porphyre d. [oré] s. [ur] tr. [anche] et pl. [anches].

En tête du premier volume se trouve le portrait du Roi Frédéric V, tiré en rouge, ce qui désigne un exemplaire de présent, les douze autres planches qui décorent ce volume, sont peintes avec la plus grande perfection; quant au texte du second volume de ce magnifique ouvrage, . . . s'y trouve en manuscrit d'une belle écriture en françois et allemand, d'une manière parfaitement ressemblante à l'imprimé du premier volume sur le manuscrit allemand, qui forme un volume petit in folio séparé, contenant la description des dix premières planches peintes par la même main de celle du premier; en tête de ce second volume se trouve le portrait du Roi Frédéric V, tiré en bleu. — Cet exemplaire est vraiment unique et sans second.

In the margin of the catalogue is a notice in ink made during the sale that the two large volumes plus the Müller manuscript were sold for 365 guilders. Unfortunately there is no record of the purchaser. These three volumes are now in the library of the Amsterdam University, but it is not known by what route they came there.

It would be tempting to publish here the entire text of the second volume. That, however, would surpass by far the space allotted to me for this publication. I can just add a few words on the plates of this volume.

Some species, already figured in vol. I, re-appear in vol. II, e.g. *Haliotis asinina*, *Turbo petholatus*, *Bulla ampulla*, *Mitra papalis*. It is possible that Regenfuss found these shells so handsome or interesting that he thought them worthy of more than one illustration. It is also possible that he forgot which species he had already engraved.

It is my impression that the plates of vol. I are more perfect, both in engraving and in colour. The shells on some of the plates of vol. II are much too crowded and not so elegantly arranged as in the first volume.

#### Appendix

##### BIOGRAPHICAL NOTES ON JOAN RAYE <sup>11)</sup>

Joan Raye, Seigneur de Breukelerwaert, was born in Surinam on the 21st of November 1737. His father, a governor of this Dutch colony, died some months before the boy's birth. In 1747 young Joan was sent to Holland for further education, first in Haarlem, later on, in 1777, in Leiden where he studied Law.

During the years 1765-1769 he served as an attaché to the ambassador of the Dutch Republic with the Sublime Porte in Constantinople, Mr W. G. Dedel. From letters which Raye wrote during this period to relatives in the Netherlands it is certain he had a most interesting time in Turkey. Yet we look in vain for any trace of the inclination for natural history pursuit which he developed in later years.

After his years in Leiden Raye settled in Utrecht. Some years later we find him in Amsterdam, first residing Herengracht no. 452. Later on, in 1804, he moved to no. 575.

In these years he evidently built up an important natural history cabinet, for in several contemporary narratives of German and French travellers in the Netherlands his collections of birds, insects and shells are mentioned.

Raye, who did not marry, died on March 19th, 1823.

In the inventory made by order of the notary public Karsseboom we find the following notes of his natural history objects:

Een verzameling van Horens, Schulpen, Kreeften, Krabben, Zeeappelen en Zeesterren als anders, in twee kunstkassen . . . . .	f 13.500
Een verzameling van koraal en zeegewassen in een kas met deuren en glase Ruyten, benevens diverse stukken op onderscheidene kassen geplaatst . . . . .	„ 1.250
Een verzameling van Kapellen, Torren en al hetgeen verder tot de Insecten behoord in vier kunstkassen met Laden . . . . .	„ 16.900
Diverse losse vogelen onder glase Stolpen in de alkove . . . . .	„ 300
Een verzameling van viervoetige Dieren, vogelen en Amphibiën, in elf onder-	

<sup>11)</sup> For the preparation of this biography I am very much indebted to Dr I. H. van Eeghen, archivist of the Municipal Archives of Amsterdam for her help in putting various ancient documents at my disposal for study.

scheidene kunstkasten met glase ruiten en in onderscheidene kasjes geplaatst op gemelde kunstkasten . . . . .	„ 8.420
Een verzameling van opgezette vogelen in agt onderscheidene kunstkasten met glase ruiten, benevens diverse vogelen onder glase stolpen . . . . .	„ 10.800

Together with some cases containing minerals, casts of antique stones, and drugs this part of his inheritance was valued at 60.430 Dutch guilders.

The library, comprising various book cases and a great many books on natural history, geography and art, was estimated at 9776.50 Dutch guilders.

It took two years before the books were put on the market. In March 1825 they were sold by Messrs Van Cleef Bros & Scheurleer, in The Hague. Among the natural history works there were several rare and precious books, e.g. those of Lyonet, Merian, Rumphius, Lister, Gualtierus, Martyn, Knorr, Argenville, Adanson, Vincent, Martini-Chemnitz and the Regenfuss volumes.

The history of the latter work is dealt with in the present paper. The Rumphius volume was illuminated by the well-known artist Maria Sybilla Merian. The 11 volumes of Martini-Chemnitz are now in the library of the University of Amsterdam, but how they arrived there is not known. The whole set was sold for 239 guilders. The first volume contains the book-plate of Raye, and a short written notice: "Cet exemplaire a été pour la plupart repeint sur les originaux de mon Cabinet, Raye de Breukelerwaert".

This means that Raye bought the loose text sheets and the uncoloured plates of the work, and then had the plates coloured ("repeint") from shells in his collection, and finally gave text and plates to the binder.

In the first volume an engraving of L. Spengler serves as a frontispiece.

The portrait is signed 1776, whereas volume I of the book appeared as early as 1769. This means that Raye added the portrait (which was executed on thick paper quite different from that of the rest of the work) later. The binding of all the volumes is identical, hence Raye could not have had them bound prior to 1795, the date when the last volume was issued.

Two years after the library, in 1827, the natural history cabinet was sold. In 1823, some months after the death of Raye, the director of the Rijksmuseum van Natuurlijke Historie at Leiden, Temminck, estimated its value at f 52.000, but purchases were not made before 1827 when the collection was put up for public sale. The Leiden Museum bought several vertebrates, insects and molluscs totalling f 7.000 in price.

The catalogue, annotated with the names of the buyers and prices, mentions no. 197 *Conus gloriamaris*. This shell went to the Leiden Museum for f 250. The highest price was given for a *Carinaria vitrea*, which was originally bought by Raye on the Lyonet sale for f 300. This specimen now fetched f 575.