NAPOLEON'S EGYPTIAN CAMPAIGN (1798–1801) AND THE SAVIGNY COLLECTION OF SHELLS

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ABSTRACT

During the Napoleonic campaign to Egypt a collection of Red Sea, Mediterranean and continental mollusks was brought together by Savigny who published upon them in 1817 as folio engravings. These served as type-figures for a number of species described by 19th century malacologists, including Audouin, Ehrenberg, Deshayes, Philippi, Hupé, Landrin, Jonas, Issel, Morlet, Vaillant, P. Fischer, Tapparone-Canefri, von Martens, Weinkauff, Monterosato, Jousseaume, H. Fischer and finally Pallary. A checklist and illustrations of 86 of these original types from the Savigny collection, now in the Paris Museum, are presented, supplemented by reproductions of the unpublished color vellums of opisthobranchs and cephalopods.

Jules César Savigny was born at Provins, France, on April 5, 1777. In 1793, in the middle of the Revolution, the Convention transformed the Royal Gardens into a "Museum d'Histoire naturelle". Savigny was then 16 years old and was sent to Paris to study at the "Ecole de santé" and the Museum. His professors were Lamarck, Cuvier, Daubenton; they noted the young student's assiduity and also took note that he was always wearing the same Nankin costume.

Lamarck was then writing the "Nouvelle Encyclopédie" and assigned Savigny his first work, the drafting of the part on the sorrel plant. This paper showed the wealth of his knowledge and soon he was named professor of botany at the "Ecole Centrale" in Rouen. Cuvier advised him to wear a wig to look older and more serious! But Savigny was never to go to Rouen. Napoleon Bonaparte was already preparing the Egyptian Campaign.

Bonaparte not only wanted to conquer the country but also make it a model of French culture. He added to the expedition troops a "Commission des sciences et des arts", consisting of scholars, painters, architects and others. Bonaparte asked his friend Cuvier to name the naturalists who would join the expedition. Savigny and Geoffroy Saint Hilaire were selected for the zoological part. Savigny was then 21 years old; he had been trained as a botanist, but Cuvier's opinion was that "he would become a zoologist when he would decide to".

The Expedition

After the Battle of Campoformio in 1797, Bonaparte realized that he could not invade England, so he decided to make war on Egypt. In 1798, 38,000 men gathered at Toulon on 335 ships; among them were the members of the "Commission des Sciences et des Arts". On Floreal 30th, year VI, (i.e. May 19th, 1798) Geoffroy Saint Hilaire and Savigny left Toulon. They were to reach Alexandria 41 days later. Savigny was placed in the 4th class of the Commission, with a very low salary, but thanks to Geoffroy Saint Hilaire, he was soon admitted to the first class.

The Nile was flooding and the expeditionary forces were directed to Cairo which they entered on July 23 after the Battle of the Pyramids. During this time the Commission settled in Rosetta for a month. Savigny and Geoffroy Saint Hilaire stayed for several weeks in the islands of Lake Menzale; in September they visited Salahied and Damiette. They worked all during the autumn in the delta and left Damiette for Cairo in December. Geoffroy Saint Hilaire was exhausted, but Savigny was in very good condition. A current joke of the time in Cairo was to call scholars, the donkeys, then used as "taxis", because the members of the Commission were always travelling on donkeys.

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Between August 1 and 2, Nelson defeated the French Navy in Aboukir and cut all contacts with France. In Cairo, Bonaparte organized the country under his rule and founded the "Institut d'Egypte". He then prepared the expedition to Syria 13,000 infantrymen and the cavalry left in the beginning of February, 1799. After several victorious battles, Bonaparte was finally stopped at Saint Jean d'Arce, where 4,000 were killed. On June 14 the army was back in Cairo, Savigny was the only naturalist to follow the troops.

In August, Bonaparte turned over the command to Kleber and returned to Paris, where the "Directoire" was weakened. The members of the "Commission" were sent to Suez at the end of 1799. Savigny was very excited by the wealth and beauty of the Red sea fauna. But Kleber had to face the Turks and the British and the scholars were sent back to Cairo. Kleber was murdered shortly after he won the Battle of Heliopolis; France was then finally defeated at

Canope in 1801.

The journey of the 45 members of the "Commission" back to France was rather unfortunate. On April 6, 1801, they left Cairo for Alexandria. On their arrival they were quarantined by the French general, Menou. They were transferred to a brig, and waited 21 days for permission to leave the bay. The British troops stopped them, took them to Abukir, then back to Alexandria. Menou had surrendered on terms stipulating that the collections gathered by the "Commission" in Egypt should be given to the British. The scholars rebelled and threatened to destroy the collections. Finally, on September 26, 1801, they were allowed to go back to France with their collections.

The Original Plates

Savigny returned to Paris in February, 1802. He did a great amount of work on the material he took back with him and published various papers and memoirs between 1801 and 1810. Among them were the study of 1,200 insects and his famous "Histoire naturelle et mythologique de l'Ibis" (1805). In 1817, he published 125 plates for the atlas of the "Expedition d'Egypte", in "grand-aigle" size (71.5 \times 52 cm); in 1826 they were reprinted by Panckoucke in reduced size (68.5 × 52 cm). These engraved plates were prepared from the original colored vellums now preserved in this Museum's library. They had been drawn very accurately, with a wealth of details, by the best artists of the time. Because the "Commission" judged that they were too difficult to reproduce in color, only black and white copies were printed.

Savigny suffered progressively failing eyesight, approaching blindness after 1815, for which reason he never published any text to accompany the plates. But Cuvier found that this iconography was unique and Audouin was chosen to write an explanatory part. Audouin was a professor of entomology at the Museum, and was not prepared for this work. But he was the son-in-law of Brongniart, a member of the "Institut", director of the Sévres manufacture, and a friend of the powerful Cuvier.

There is considerable difficulty in determining the exact dates of publication of the "Explication sommaire des planches", of which two edi-

tions were printed.

The first edition bears on the title page "publié par les ordres de sa majesté l'Empereur Napoléon Le Grand" and is dated 1809 on the cover page, but was evidently published much later (Laissus, 1973); the Mollusca are treated in tome 1, part 4, and begin with a copy of a letter dated Nov. 1, 1825! The register of the letters and declarations of the "Commission d'Egypte", kept in the Manuscript Department of the National Library, Paris, shows that the Natural History section belongs to the third issue of reports. On April 13, 1826 the last manuscript by Audouin concerning shells was sent to the "Imprimerie Royale", but we could not determine whether the first edition, third issue, was actually printed before the end of 1826. However it seems wise to assume that Sherborn (1897:287) was right and that this part "may be safely regarded as dated 1826."

Almost simultaneously a second edition, "dédiée au roi", was being printed by Panckouke. This bears 1827 on the title page but it appears also that this date is a fake. Pallary accepted this date (1827) in a bibliography, but mentioned 1829 in the text (Pallary 1926). In fact the earliest date we can ascertain is July 19, 1828 (Bibliographie de la France, 1828).

The text was published while Savigny was still alive. When he became aware of the contents, he became very irritated and sent a letter to the Academy of Sciences. Later on, L. Pfeiffer pronounced similarly severe judgement, and reproached Audouin with the fact that he had taken all the benefit of Savigny's work. P. Fischer and Pallary had the same opinion. In the checklist, we have given references to both editions of Audouin's text because the first one is apparently very rare in libraries.

Savigny's work, despite its unfinished condition, was to interest naturalists for a long time. The very short explanations by Audouin were later completed, first by Issel (1869), then by Pallary (1926). But many other authors referred to Savigny, among them, Jonas (1846), Pfeiffer (1846), Vaillant (1865), P. Fischer (1865, 1870, 1871), von Martens (1866), Tapparone-Carnefri (1875), Jousseaume (1888). Many of the specimens depicted by Savigny have therefore become the types of new species, which are enumerated below.

The Collection

From Egypt, Savigny brought back a rich collection of birds, fishes, mammals, insects and shells. Included were also mollusks in alcohol. given by Savigny to Cuvier in 1802; later on these were said to be deposited in the Gallery of Anatomy but we have been unable to trace

In 1853, the manuscripts, notes and collections of Savigny were offered to the town of Versailles. Curation was entrusted to the "Société des sciences naturelles et médicales de Seine et Oise". Deshayes once planned to publish a report on the Mollusca collection but never did (Landrin, 1865). In 1864, the Society realized its inability to curate the material properly and asked for help from the Museum. Valenciennes and Gratiolet were contacted, but the Society and the Museum lacked the sum of 2,500 francs to fund the naturalist who intended to work at Versailles. The collection then sank into oblivion. In 1919, the council of the "Société des Sciences naturelles" was disbanded because of World War I. The librarian of the Versailles library took this opportunity to transfer the collection in a very rough fashion to a cellar in order to gain some space.

In 1926, when Pallary wrote his "Explication des Planches", the vellums and collections of Savigny were considered to be lost. In April 1927, he visited his friend the bryozoologist, Canu, in Versailles and realized that some shells in the cellar of the municipal library matched exactly some depicted on Savigny's plates. Between August and September, he carefully studied the shells which were finally to join the national collections in 1930, together with the 5 volumes of vellums.

Pallary (1931, 1932, 1934) produced a very detailed history of the expedition and the collections together with a biography of Savigny. He evidently had planned to publish a report on the collection after he had rediscovered it, but only a small part was published (1932); this concerned only the shells not depicted in the plates.

We are therefore producing here the latest chapter of this two centuries-old story with the realization of the nomenclatorial importance of this material.

Acknowledgements

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Checklist of the names based partly or entirely on

Savigny's plates.

It has been our intention to simply list the material on which a name is based, when the original description refers to the 1817 plates. Lectotype designation is the affair of the malacologist actually engaged in a process of revision of a group and should not be done for the mere sake of it, as is too often the case in such checklists.

We are aware of the fact that, strictly, only the very specimen depicted on Savigny's plate should be considered the type of later authors. It is, indeed, possible to recognize the type when it is a large and distinct shell, but it is not so when dealing with the many microgastropods, of which Savigny appears to have been the earliest collector in the Indo-Pacific.

aegyptiaca Ehrenberg, 1831 (Succinea) Savigny 1817: pl. 2, fig. 24 Ehrenberg 1831: (no page number). Signature E. Fig. 61 Name based on an unknown number of animals from Damiette and Savigny's figure. One shell in coll. Savigny. Ehrenberg collection in the Berlin Museum may contain specimens.

aegyptiaca Chenu, 1845 (*Tridacna*) Savigny 1817: pl. 10, fig. 1–2 Chenu 1845: 2, pl. 7, fig. 1–2

Name based on Savigny's plate and a number of subfossil shells from the Suez area. Judging from the illustrations, however, Chenu's shells have nothing to do with Savigny's, and are typical Tridacna maxima (Röding).

affinis Issel, 1869 (Chiton) Savigny 1817: pl. 3, fig. 8 Issel 1869: 234

Fig. 51

Name based on Savigny's figure and seven specimens from the Gulf of Suez, now in MGD (Genoa, Italy). One specimen in coll. Savigny. See also savignyi Pilsbry 1892.

arsinoensis Issel, 1869 (Turbo) Savigny 1817: pl. 5, fig. 28

Fig. 25

Issel 1869: 220

Name based on Savigny's figure and a subfossil shell which could not be traced in MGD. Five shells in coll. Savigny.

audouini Jonas, 1846 (Fasciolaria) Savigny 1817: pl. 4, fig. 17 Jonas 1846a: 63

Fig. 42

Name based on Savigny's figure. A single specimen in coll. Savigny is considered to be the holotype.

audouini Jousseaume, in Lamy, 1918 (Pristis) Savigny 1817: pl. 8, fig. 11

Fig. 86

Lamy 1918: 30

Name based on Savigny's figure and two specimens from Suez, now in MNHN. No Savigny material left.

bacillum Issel, 1869 (Cerithium) Savigny 1817: pl. 4, fig. 28 Issel 1869: 340

Fig. 77

Name based on Savigny's figure. A single specimen in coll. Savigny is considered to be the holotype.

bertholleti Issel, 1869 (Rissoina) Savigny 1817: pl. 4, fig. 2 Issel 1869: 208

Fig. 38

Name based on Savigny's figure, named by Audouin 'Rissoa de Bertholett'. Two shells in coll. Savigny.

bourguignati Landrin, 1865 (Unio) Fig. 4
Savigny 1817: pl. 2, fig. 3
Landrin 1865: 5, fig. 1-3
Name based on Savigny's figure and specimens collected by Savigny in Damiette (Landrin actually saw the collection). Three syntypes in coll. Savigny.

brongnartii Audouin, 1826 (Tricolia) Savigny 1817: pl. 5, fig. 23 Audouin 1826: 41; 1828: 181

Fig. 26

Name based on Savigny's figure. A single specimen in coll. Savigny is considered to be the holotype.

caillaudi von Martens, 1866 (Spatha) Savigny 1817: pl. 7, fig. 1 von Martens 1866: 9

Fig. 1

Name based on Savigny's figure and specimens in the collections of Caillaud, Mousson, Leiden Museum and British Museum. Two bivalve specimens and one valve in coll. Savigny.

callosa P. Fischer, 1871 (Gena) Savigny 1817: pl. 5, fig. 10 Fischer 1871: 218

Fig. 32

Name based on Savigny's figure and specimens collected at Suez by Gaudry, which could not be traced. Two shells in coll. Savigny; the small one (3.2 mm) is here depicted. The larger one (5.8 mm) is chipped and smaller than the natural size shell depicted fig. 10.5 in Savigny.

carinata Pallary, 1926 (Risella isseli var.) Savigny 1817: pl. 5, fig. 34 Pallary 1926: 84

Name based on Savigny's figure and an unknown number of shells from Suez. See under isseli.

cingulata Issel, 1869 (Eulimella) Savigny 1817: pl. 3, fig. 25 Issel 1869: 182

Fig. 73

Name based on Savigny's figure and 3 specimens from Suez, two of which are in MGD (Genoa). One shell in coll. Savigny. The name was changed to *Turbonilla isseli* by Tryon (1886:339) because it is supposedly congeneric with Turbonilla cingulata Dunker 1860.

clysmatica Issel, 1869 (Odontostomia) Savigny 1817: pl. 3, fig. 36

Fig. 72

Issel 1869: 177

Name based on Savigny's figure and a specimen from Suez. There are two shells with this locality in the Issel coll. in MGD. One specimen in coll. Savigny.

clypeomorus Jousseaume, 1888 (Clypeomorus) Fig. 40–41 Savigny 1817: pl. 4, fig. 10 Jousseaume 1888: 171

Name based on Savigny's figure and an unknown number of specimens from the southern Red Sea. In the Jousseaume coll. (MNHN), there are 33 shells from Massawa and 12 shells from Obock. Two shells in coll. Savigny.

coenobita Vaillant, 1865 (Mytilus) Savigny 1817: pl. 11, fig. 3 Vaillant 1865: 115, 122

Fig. 12

Name based on Savigny's figure and several specimens from Suez, now in MNHN. One specimen in coll. Savigny.

Fig. 97

concentrica Audouin, 1826 (Doris) Savigny 1817: Gastéropodes pl. 1, fig. 5 Audouin 1826: 14; 1828: 128

Name based on Savigny's figure. No material left.

corbieri Jonas, 1846 (Chama)

Fig. 18

Fig. 75

Savigny 1817: pl. 14, fig. 8 Jonas 1846c: 126

Name based on Savigny's figure. Two complete specimens in coll. Savigny.

craticulata Issel, 1869 (Odontostomia) Savigny 1817: pl. 3, fig. 39 Issel 1869: 180

Name based on Savigny's figure and subfossil specimens, which could not be traced in MGD (Genoa). One shell in coll.

cuvieri Audouin, 1826 (Emarginula)

Fig. 89

Savigny 1817: pl. 1, fig. 9 Audouin 1826: 27; 1828: 152

Name based on Savigny's figure. No material left.

dautzenbergi Pallary, 1926 (Donovania) Savigny 1817: pl. 4, fig. 20 Pallary 1926: 71

Fig. 37

Name based on Savigny's figure. A single specimen in coll. Savigny is considered to be the holotype.

desgenettii "Risso" Audouin, 1826 (Bulla) Savigny 1817: pl. 5, fig. 6 Audouin 1826: 39; 1828: 178

Fig. 55

Name based on Savigny's figure. Five shells in coll. Savigny.

desmarestii Audouin, 1826 (Rissoa) Savigny 1817: pl. 3, fig. 21 Audouin 1826: 36; 1828: 171

Fig. 91

Name based on Savigny's figure. No material left.

doliiformis Pallary, 1926 (Pyrgulina) Savigny 1817: pl. 3, fig. 42–43

Fig. 74

Pallary 1926: 63

Name based on Savigny's figure and several specimens from Suez, which could not be traced. Five shells in coll. Savigny.

dorbignii Audouin, 1826 (Rissoa) Fig. 68 Savigny 1817: pl. 3, fig. 22 Audouin 1826: 36; 1828: 171 Name based on Savigny's figure. A single specimen in coll. Savigny is considered to be the holotype.

dorbignii Audouin, 1826 (Scissurella) Savigny 1817: pl. 5, fig. 30 Audouin 1826: 42; 1828: 183

Fig. 63

Name based on Savigny's figure. Five shells in coll. Savigny.

fourierii Audouin, 1826 (Bulla)

Savigny is considered to be the holotype.

Fig. 78

Fig. 22

Fig. 85

Fig. 93

Fig. 64

Fig. 65

Fig. 57

freminvillii Audouin, 1826 (Rissoa) Fig. 67 Savigny 1817: pl. 3, fig. 20 Audouin 1826: 36; 1828: 170 Name based on Savigny's figure. A single shell in coll. Savigny is considered to be the holotype. doriae Issel, 1869 (Stomatella) Savigny 1817: pl. 5, fig. 8 Issel 1869: 228 Fig. 48 Name based on Savigny's figure and 10 specimens from Suez, which could not be traced in MGD. Seven shells in coll. gennesi H. Fischer, 1901 (Clanculus) Fig. 49 Savigny 1817: pl. 3, fig. 3 Fischer 1901: 123, pl. 4, fig. 11-12 Name based on Savigny's figure and one specimen from Djibouti, now in MNHN. Five shells in coll. Savigny. draparnaudi Audouin, 1826 (Tricolia) Fig. 46 Savigny 1817: pl. 5, fig. 19 Audouin 1826: 41; 1828: 181 Name based on Savigny's figure. Two shells in coll. Savigny. gentiluomiana Issel, 1869 (Eulima) Savigny 1817: pl. 3, fig. 32 Issel 1869: 183 elata Semper, in Issel, 1869 (Scaliola) Savigny 1817: pl. 3, fig. 15 Fig. 84 Issel 1869: 330 Name based on Savigny's figure and four shells from Suez. There are 6 shells with this locality in MGD. Three speci-Name based on Savigny's figure. Fifteen shells in coll. Savigny. mens in coll. Savigny. elegans Audouin, 1826 (Tritonia) Fig. 94 guerini Audouin, 1826 (Tricolia) Savigny 1817: pl. 5, fig. 24 Audouin 1826: 41; 1828: 181 Savigny 1817: Gastéropodes pl. 2, fig. 1 Audouin 182?: 15; 1828: 130 Name based on Savigny's figure. No material left. Name based on Savigny's figure. Pallary argued that this is only a color form of *T. brongnarti*. No material left. eroopolitanus Issel, 1869 (Turbo) Savigny 1817: pl. 5, fig. 27 Fig. 24 girardi Audouin, 1826 (Bulla) Fig. 52 Savigny 1817: pl. 5, fig. 3 Audouin 1826: 39; 1828: 178 Name based on Savigny's figure. A single shell in coll. Issel 1869: 219 Name based on Savigny's figure and one specimen from Suez which could not be traced in MGD. Six shells in coll. Savigny. Savigny is considered to be the holotype. erythraea Hupé, 1854 (Blainvillia) Savigny 1817: pl. 8, fig. 6 Hupé 1854: 223 Fig. 94 hemprichi Ehrenberg, 1831 (Helix) Fig. 27 Savigny 1817: pl. 2, fig. 12 Ehrenberg 1831: Helix no. 4 (no page number) Name based on a number of snails collected near Alexandria and on Savigny's figure. 24 shells in coll. Savigny. The Name based on Savigny's figure. Two valves in coll. Savigny. erythraea Issel, 1869 (Nassa costulata var.) Savigny 1817: pl. 6, fig. 4 Ehrenberg coll. is supposedly in Berlin. Issel 1869: 126 Name based on Savigny's figure and specimens from Suez hemprichi Issel, 1869 (Trochus) which could not be traced in MGD. One shell in coll. Savigny. Savigny 1817: pl. 3, fig. 6 Issel 1869: 329 erythraea Issel, 1869 (Lucina) Fig. 20 Name based on Savigny's figure. Six shells in coll. Savigny. Savigny 1817: pl. 8, fig. 8
Issel 1869: 84, pl. 1, fig. 9
Name based on Savigny's figure and 3 specimens from Suez which could not be traced in MGD. One shell in coll. Savigny. horridus Orbigny, 1826 (Octopus) Savigny 1817: Céphalopodes pl. 1, fig. 2 Orbigny 1826: 144 Fig. 100 Name based on Savigny's figure. No material left. erythraea Issel, 1869 (Arca lactea var.) Savigny 1817: pl. 10, fig. 7 Issel 1869: 89 humboldti Audouin, 1826 (Anatola) Savigny 1817: pl. 5, fig. 1 Audouin 1826: 39; 1828: 177 Name based on Savigny's figure and 6 specimens from Suez. Six paired valves in coll. Savigny. Name based on Savigny's figure. No material left. favrei Landrin, 1865 (Helix) Fig. 21 Landrin 1865: 2, fig. 1–3 Name based on a shell from the Savigny coll., not depicted in immaculata Audouin, 1826 (Doris) Savigny 1817: Gasteropodes pl. 1, fig. 2 Audouin 182?: 13; 1828: 126 the atlas. Holotype in coll. Savigny. Name based on Savigny's figure. No material left. ferussacii Audouin, 1826 (Scalaria) Savigny 1817: pl. 3, fig. 13 Audouin 1826: 35; 1828: 169 Fig. 81 infracostata Issel, 1869 (Risella) Savigny 1817: pl. 5, fig. 40 Issel 1869: 195 Name based on Savigny's figure. One shell in coll. Savigny is Name based on Savigny's figure and three specimens from Suez, which could not be traced in MGD. Three shells in coll. considered to be the holotype. Savigny. feuilletii Audouin, 1826 (Neritina) Fig. 28
Savigny 1817: pl. 5, fig. 11
Audouin 1826: 40; 1828: 179
Name based on Savigny's figure. A single shell in coll.
Savigny is considered to be the holotype. isseli Semper, in Issel, 1869 (Risella) Savigny 1817: pl. 5, fig. 35 Issel 1869: 194

Name based on Savigny's figure and several specimens from Suez and Zanzibar. There are 2 shells from Zanzibar with a Fig. 54 label in Semper's handwriting in MGD. Five shells in coll. Savigny 1817: pl. 5, fig. 5 Audouin 1826: 39; 1828: 178 Name based on Savigny's figure. A single shell in coll.

isseli Nevill & Nevill, 1875 (Marginella) Nevill & Nevill 1875: 95

New name for Marginella pygmaea Issel 1869, non Sowerby 1846. See pyamaea.

isseli Tryon, 1886 (Turbonilla) Tryon 1886: 339

New name for Eulimella cingulata Issel 1869. See this

isthmicum Issel, 1869 (Cardium)

Fig. 16

Savigny 1817: pl. 9, fig. 11 Issel 1869: 74

Name based on Savigny's figure and several specimens from Attaka, near Suez, which could not be traced in MGD. One valve in coll. Savigny.

jomardi Audouin, 1826 (Scalaria) Fig. 36 Savigny 1817: pl. 3, fig. 4 Audouin 1826: 35; 1828: 169 Name based on Savigny's figure. A single shell in coll. Savigny is considered to be the holotype.

kunthii Audouin, 1826 (Cypraea) Fig. 33 Savigny 1817: pl. 6, fig. 27 Audouin 182?: 45; 1828: 190 Name based on Savigny's figure. A single shell in coll. Savigny is considered to be the holotype.

lamarckii Audouin, 1826 (Pupa) Savigny 1817: pl. 2, fig. 1 Audouin 1826: 31, 1828: 161

Fig. 83

Name based on Savigny's figure. A single shell in coll. Savigny is considered to be the holotype.

leroii Landrin, 1865 (Helix)

Fig. 23

Landrin 1865: 4, fig. 1-4
Name based on a shell collected by Savigny at the Pyramides, not depicted in the atlas. Holotype in coll. Savigny.

lessepsianus Vaillant, 1865 (Lithodomus) Savigny 1817: pl. 11, fig. 1 Vaillant 1865: 123

Fig. 11

Name based on Savigny's figure and several specimens from the gulf of Suez, two of which are in MNHN. One specimen in coll. Savigny.

mareoticum Pallary, 1926 (Cardium) Savigny 1817: pl. 9, fig. 10 Pallary 1926: 109

Fig. 17

Name based on Savigny's figure. One specimen in coll. Savigny is considered to be the holotype.

Fig. 95

marmorata Audouin, 1826 (Doris) Savigny 1817: Gastéropodes pl. 1, fig. 7 Audouin 1826: 14–15; 1828: 129

Name based on Savigny's figure. No material left.

marmorata Pallary, 1926 (Gena) Savigny 1817: pl. 5, fig. 9 Pallary 1926: 76

Fig. 31

Name based on Savigny's figure. Four shells in coll. Savigny.

martensi Issel, 1869 (Alaba)

Fig. 71

Savigny 1817: pl. 3, fig. 26 Issel 1869: 206

Name based on Savigny's figure and a subfossil specimen from the Red sea, which could not be traced in MGD. Four shells in coll. Savigny.

Fig. 58

mongii Audouin, 1826 (Bulla) Savigny 1817: pl. 5, fig. 7 Audouin 1826: 39; 1828: 178

Name based on Savigny's figure. A single specimen in coll. Savigny is considered to be the holotype.

oblongus Audouin, 1826 (Pleurobranchus) Savigny 1817: Gastéropodes pl. 3, fig. 1

Fig. 98

Audouin 1826: 20-21: 1828: 140 Name based on Savigny's figure. No material left.

olivaeformis Issel, 1869 (Tornatina)

Fig. 56

Savigny 1817: pl. 6, fig. 25 Issel 1869: 171

Name based on Savigny's figure and three specimens from Suez, one of which is in MGD. One shell in coll. Savigny.

perlatus Issel, 1869 (Triforis) Savigny 1817: pl. 4, fig. 4 Issel 1869: 152

Name based on Savigny's figure and subfossil specimens, of which one is in MGD with the data 'Red sea'. One shell in coll. Savigny. See also savignyanus.

pharaonis P. Fischer, 1871 (Arca) Savigny 1817: pl. 10, fig. 9 Fischer 1871: 213

Fig. 7

Name based on Savigny's figure and several specimens from Suez which could not be traced. One valve in coll. Savigny.

pharaonis P. Fischer, 1870 (Mytilus) Savigny 1817: pl. 11, fig. 5 Fischer 1870: 169

Name based on Savigny's figure and several specimens from Suez, of which six bivalve specimens and one valve are in MNHN. One specimen in coll. Savigny.

philippii Issel, 1869 (Cyclostrema) Savigny 1817: pl. 5, fig. 33 Issel 1869: 189

Fig. 66

Name based on Savigny's figure and 6 specimens from Suez which could not be traced in MGD. Two shells in coll. Savigny.

pulvis Issel, 1869 (Cerithium) Savigny 1817: pl. 4, fig. 5 Issel 1869: 150

Fig. 35

Name based on Savigny's figure and one or several specimens from Suez of which one is in MGD in Genoa. One shell in coll. Savigny.

pygmaea Issel, 1869 (Marginella) Savigny 1817: pl. 6, fig. 26 Issel 1869: 150

Fig. 57

Name based (with question mark) on Savigny's figure and one shell from Suez, now in MGD. Four shells in coll.

reticulata Philippi, 1853 (Scissurella) Fig. 62 Savigny 1817: pl. 5, fig. 29 Philippi 1853: 38, pl. 6, fig. 11 New name for "Scissurella decussata Orbigny, Audouin" (1826:42; 1828:183), not Orbigny, 1824. Therefore the name is based on Savigny's figure; Philippi also refers to specimens from the Red Sea collected by Hemprich and Ehrenberg. Four shells in coll. Savigny.

richardi Audouin, 1826 (Cardium)

Fig. 14

Savigny 1817: pl. 9, fig. 14
Audouin 1826: 51; 1828: 201
Name based on Savigny's figure. One specimen in coll.
Savigny is considered to be the holotype.

rissoi Audouin, 1826 (Tricolia) Savigny 1817: pl. 5, fig. 18 Audouin 1826: 41; 1828: 181

Fig. 47

Name based on Savigny's figure. Two shells in coll. Savigny.

rissoi Weinkauff, 1885 (Rissoina)

Fig. 76

Savigny 1817: pl. 4, fig. 1 Weinkauff 1885: 63, pl. 15d, fig. 13

Name based on the name 'Manzelia de Risso' Audouin (1828: 171) and a shell from Mauritius. Two shells in coll. Savigny. roemeriana Issel, 1869 (Venus) Savigny 1817: pl. 8, fig. 3 Issel 1869: 64

Fig. 62

Name based on Savigny's figure and 7 valves from Suez, now in MGD. Seven valves in coll. Savigny.

savigniana Audouin, 1826 (Bursatella) Savigny 1817: Gastéropodes pl. 2, fig. 2 Audouin 1826: 17–18; 1828: 134

Fig. 99

Name based on Savigny's figure. No material left.

savignyana Ehrenberg, 1831 (Helix)
Savigny 1817: pl. 2, fig. 20
Ehrenberg 1831: Helix no. 9 (no page number)
Name based on three specimens collected near Alexandria and Savigny's figure. Pallary however (1926: 47) argues that and savigny's figure. Pallary however (1926: 41) argues that Ehrenberg's species is different from the one on Savigny's figure, which indeed depicts Zonites algirus (Linné), represented by 4 shells in coll. Savigny. If Ehrenberg's types proved to be lost (they are supposedly in the Berlin Museum), the present material appears to be formally available for lectotype designation if it proves necessary for nomenclature stability.

savignyanus delle Chiaje, 1828 (Murex)

Savigny 1817: pl. 4, fig. 4 delle Chiaje 1828: 222, pl. 49, fig. 32–34

Name based on Savigny's figure and additional material from southern Italy, presumably lost. One shell in coll. Savigny. See also *perlatus*.

Fig. 101

sarignyi Blainville, 1827 (Sepia) Savigny 1817: Céphalopodes pl. 1, fig. 3 Blainville 1827: 285

Name based on Savigny's figure. No material left.

sarignyi Deshayes, 1844 (Planaxis) Fig. 45 Savigny 1817: pl. 4, fig. 29 Deshayes 1844b: pl. 109 (with two unnumbered pages of

Name based on Savigny's figure and an unknown number of specimens from Madagascar, which could not be traced. Three shells in coll. Savigny.

savignyi Deshayes, 1844 (Purpura) Savigny 1817: pl. 6, fig. 1 Deshayes 1844a: 112

Fig. 30

Name based on Savigny's figure. A single specimen in coll. Savigny is considered to be the holotype.

savignyi Jonas, 1846 (Cytherea) Fig. 15 Savigny 1817: pl. 8, fig. 17 Name based on Savigny's figure. Eight bivalve specimens and three valves in coll. Savigny.

Fig. 39

savignyi P. Fischer, 1865 (Cerithium) Savigny 1817: pl. 4, fig. 8 Fischer 1865: 244 Name based on Savigny's figure and several specimens from Suez which could not be traced. Two shells in coll. Savigny.

savignyi Vaillant, 1865 (Diplodonta) Savigny 1817: pl. 8, fig. 7 Vaillant 1865: 124

Fig. 9

Name based on Savigny's figure and several specimens from El Toueneb bank, Red sea, two of which are in MNHN. Two specimens in coll. Savigny.

savignyi Issel, 1869 (Litiopa) Savigny 1817: pl. 3, fig. 19 Issel 1869: 197

Fig. 70

Name based on Savigny's figure and ten shells from Suez, of which seven are in MGD. Ten shells in coll. Savigny.

savignyi Issel, 1869 (Marginella) Savigny 1817: pl. 6, fig. 18

Fig. 88

Issel 1869: 115

Name based on Savigny's figure and a number of specimens from Suez, of which two are in MGD. No Savigny material

savignyi P. Fischer, 1871 (Pectunculus) Savigny 1817: pl. 10, fig. 14 Fischer 1871: 219

Fig. 3

Name based on Savigny's figure and one specimen from Suez, which could not be traced. Two shells in coll. Savigny.

savignyi Tapparone-Canefri, 1875 (Fasciolaria) Savigny 1817: pl. 4, fig. 14 Tapparone-Canefri 1875: 612

Fig. 43

Name based on Savigny's figure. A single shell in coll. Savigny is considered to be the holotype.

savignyi Morlet, 1878 (Ringicula)

Fig. 59

Savigny 1817: pl. 6, fig. 7
Morlet 1878: 117, pl. 5, fig. 1
Name based on Savigny's figure and one shell from the gulf of Suez, now in MNHN. Two shells in coll. Savigny.

savignyi Jousseaume, 1888 (Mesodesma)

Fig. 5

Savigny 1817: pl. 8, fig. 5 Jousseaume 1888: 206

Name based on Savigny's figure and two left valves from Cameron island, Red sea, apparently lost. One specimen in coll. Savigny.

savignyi Pilsbry, 1892 (Callistochiton heterodon var.) Savigny 1817: pl. 3, fig. 8 Pilsbry 1892: 277, pl. 60, fig. 16 (copied from Savigny) Name based on Savigny's figure. It is therefore an objective synonym of Chiton affinis Issel 1869, which is based on the same figure.

savignyi Monterosato, 1899 (Meleagrina) Savigny 1817: pl. 11, fig. 8–9 Monterosato 1899: 392

Fig. 2

Name based on Savigny's figure and many specimens from Cyprus and Alexandria, probably in the Museo Comunale, Roma. Two specimens in coll. Savigny.

savignyi Pallary, 1926 (Fissurella) Fig. 50 Savigny 1817: pl. 1, fig. 5; Pallary 1926: 34 Name based on Savigny's figure and several specimens from Suez, which could not be traced. Two shells in coll. Savigny.

savignyi Pallary, 1926 (Gastrochaena) Fig. 13 Savigny 1817: pl. 1, fig. 15; Pallary 1926: 39 Name based on Savigny's figure and one specimen from Suez, which could not be traced. One bivalve specimen and 5 valves, some being fragmentary, in coll. Savigny.

Fig. 92

sarignyi Pallary, 1926 (*Lioconcha*) Fig. 6 Savigny 1817: pl. 9, fig. 5; Pallary 1926: 107 Name based on Savigny's figure. One shell in coll. Savigny is considered to be the holotype.

savignyi Pallary, 1926 (Nassa) Savigny 1817: pl. 6, fig. 3; Pallary 1926: 87 Name based on Savigny's figure. No material left. Fig. 90

savignyi Pallary, 1926 (Scutus) Savigny 1817: pl. 1, fig. 10; Pallary 1926: 35 Name based on Savigny's figure. No material left.

sarignyi "Philippi" Krauss, 1848 (Siphonaria) Savigny, 1817: pl. 1, fig. 1; Pallary 1926:28 Krauss, 1848:61; Reeve, vol. 9, pl. 5, sp. 20. 3 syntypes in MNHN.

seguenziana Issel, 1869 (Rissoina) Savigny 1817: pl. 4, fig. 3

Fig. 82

Issel 1869: 209

Name based on Savigny's figure. A single shell in coll. Savigny is considered to be the holotype.

semperiana Issel, 1869 (Lucina) Savigny 1817: pl. 8, fig. 12 Issel 1869: 82

Fig. 19

Name based on Savigny's figure and one specimen from Suez, which could not be traced in MGD. A single shell in coll. Savigny.

sismondiana Issel, 1869 (Rissoa) Savigny 1817: pl. 3, fig. 33 Issel 1869: 205

Fig. 87

Name based on Savigny's figure and three shells from Suez, two of which are now in MGD. No Savigny material left.

sueziensis Issel, 1869 (Marginella) Savigny 1817: pl. 6, fig. 17 Issel 1869: 115

Name based on Savigny's figure and several shells from Suez, six of which are in MGD. Six shells in coll. Savigny.

sugillata Jonas, 1846 (Cytherea) Savigny 1817: pl. 9, fig. 3 Jonas 1846a: 64

Fig. 8

Name based on Savigny's figure and two additional shells which could not be traced. Two bivalve specimens and one valve in coll. Savigny.

tiberiana Issel, 1869 (Cingula)

Fig. 69

Savigny 1817: pl. 3, fig. 16 Issel 1869: 199

Name based on Savigny's figure and several specimens from Suez, of which six are in MGD. About three dozen shells in coll. Savigny.

Fig. 96

tigrina Audouin, 1826 (Doris) Savigny 1817: Gastéropodes pl. 1, fig. 3

Audouin 1826: 13; 1828: 127

Name based on Savigny's figure. No material left.

truncata (Férussac ms) Audouin, 1826 (Physa)

Fig. 29

Savigny 1817: pl. 2, fig. 27 Audouin 1826: 34; 1828: 166

Name based on Savigny's figure. Two shells in coll. Savigny. There are also several shells from Syria, collected by Bruguière and Olivier, in the Férussac coll. (MNHN).

undata Pallary, 1926 (Risella isseli var.) Savigny 1817: pl. 5, fig. 35.3 Pallary 1926: 84

Name based on Savigny's figure and a number of shells from Suez, which could not be traced. See under isseli.

unicolor Dautzenberg, in Pallary, 1926 (Cassis turgida var.)

Savigny 1817: pl. 6, fig. 6

Pallary 1926: 88

Name based on Savigny's figure and an additional shell in Dautzenberg's private collection, which could not be traced by Abbott (1968: 199). One shell in coll. Savigny.

venusta Issel, 1869 (Turbonilla) Savigny 1817: pl. 3, fig. 34 Issel 1869: 175

Fig. 34

Fig. 80

Name based on Savigny's figure and three shells from Suez, now in MGD. Nine specimens in coll. Savigny.

villae Issel, 1869 (Cingula) Savigny 1817: pl. 3, fig. 17 Issel 1869: 198

Name based on Savigny's figure and six shells from Suez, four of which are in MGD. Seven shells in coll. Savigny.

villersii Audouin, 1826 (Bulla)

Fig. 53

Savigny 1817: pl. 5, fig. 4 Audouin 1826: 39; 1828: 178

Name based on Savigny's figure. Two shells in coll. Savigny.

FIGS. 1-84. Specimens from the Savigny Egyptian collection now in the Museum National d'Histoire Naturelle in Paris, France.

- 1, Spatha caillaudi von Martens, 68 mm.
- Meleagrina savignyi Monterosato, 58 mm. Pectunculus savignyi P. Fischer, 18 mm. Unio bourguignati Landrin, 28 mm.
- Mesodesma savignyi Jousseaume, 20 mm. Lioconcha savignyi Pallary, 33 mm. Arca pharaonis P. Fischer, 48 mm.

- 9, Diplodonta savignyi Vaillant, 28 mm.
 10, Mytilus pharaonis P. Fischer, 32 mm.
 11, Lithodomus lessepsianus Vaillant, 10 mm.
- 12, Mytilus coenobita Vaillant, 7 mm.
- 13, Gastrochaena savignyi Pallary, 11 mm. 14, Cardium richardi Audouin, 10 mm.

- 15, Cytherea savignyi Jonas, 35 mm.
 16, Cardium isthmicum Issel, 34 mm.
 17, Cardium mareoticum Pallary, 24 mm.
- 18,
- Chama corbierei Jonas, 37 mm.
- 19, Lucina semperiana Issel, 4 mm. 20, Lucina erythraea Issel, 16 mm.
- 21, Helix favrei Landrin, 12 mm. 22, Trochus hemprichi Issel, 2 mm.

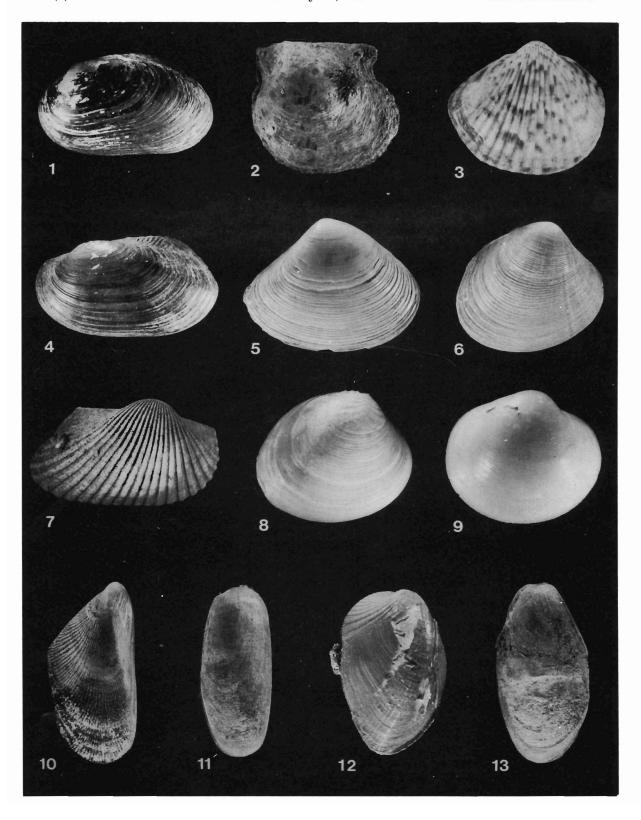
- 23, Helix leroii Landrin, 7 mm.
- 24,
- Turbo eroopolitanus Issel, 3 mm. Turbo arsinoensis Issel, 4 mm.
- 25, Turbo arsinoensis Issel, 4 mm. 26, Tricolia brongnartii Audouin, 4 mm.
- Helix hemprichi Ehrenberg, 14 mm. Neritina feuilletii Audouin, 4 mm.

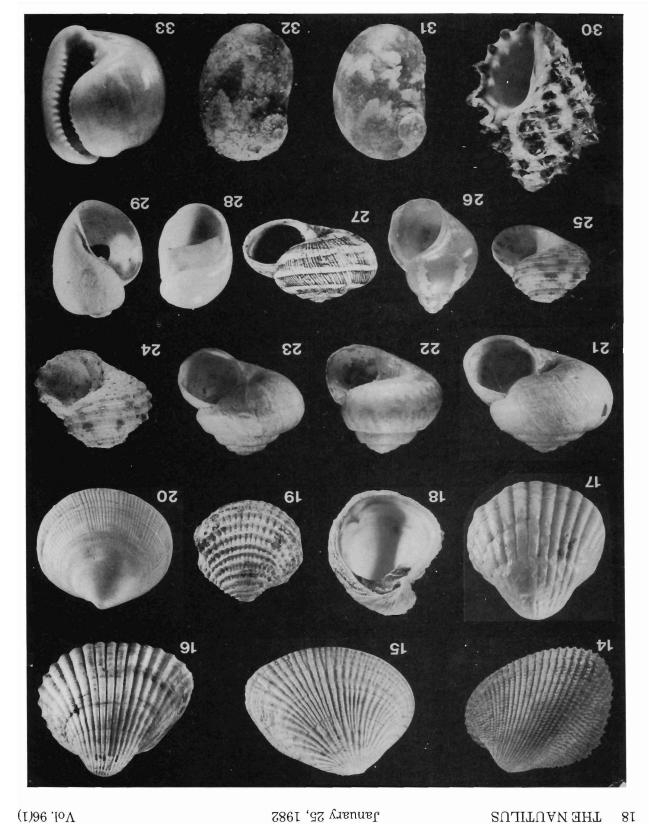
- Physa truncata Audouin, 5 mm.
 Purpura savignyi Deshayes, 40 mm.
 Gena marmorata Pallary, 4.7 mm.
 Gena callosa P. Fischer, 3.2 mm.
- Cypraea kunthii Audouin, 22 mm. Turbonilla venusta Issel, 6 mm.
- 35, Cerithium pulvis Issel, 3 mm.

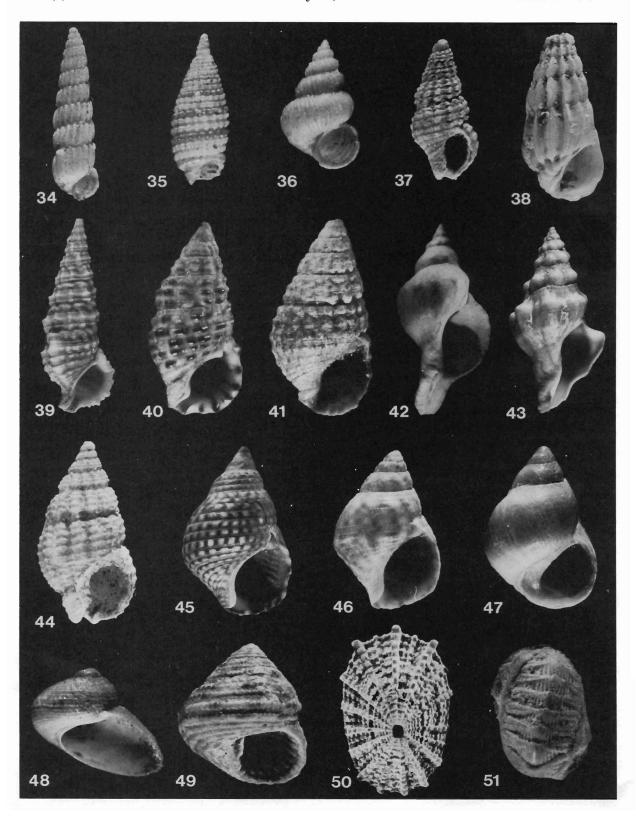
- 36, Scalaria jomardi Audouin, 3 mm.
 37, Donovania dautzenbergi Pallary, 5 mm.
 38, Rissoina bertholleti Issel, 6 mm.
 39, Cerithium savignyi P. Fischer, 40 mm.
 40, Clypeomorus clypeomorus Jousseaume, 18 mm.
 41, Clypeomorus clypeomorus Jousseaume, 9 mm.
 42, Essiclaria audouini Longe, 125 mm.
- 42, Fasciolaria audouini Jonas, 135 mm.
- 43, Fasciolaria savignyi Tapparone-Canefri, 30 mm.
 44, Nassa erythraea Issel, 9 mm.
 45, Planaxis savignyi Deshayes, 17 mm.
- Tricolia draparnaudii Audouin, 6 mm.
- Tricolia rissoi Audouin, 7 mm. Stomatella doriae Issel, 4 mm.
- 49, Clanculus gennesi H. Fischer, 8 mm.

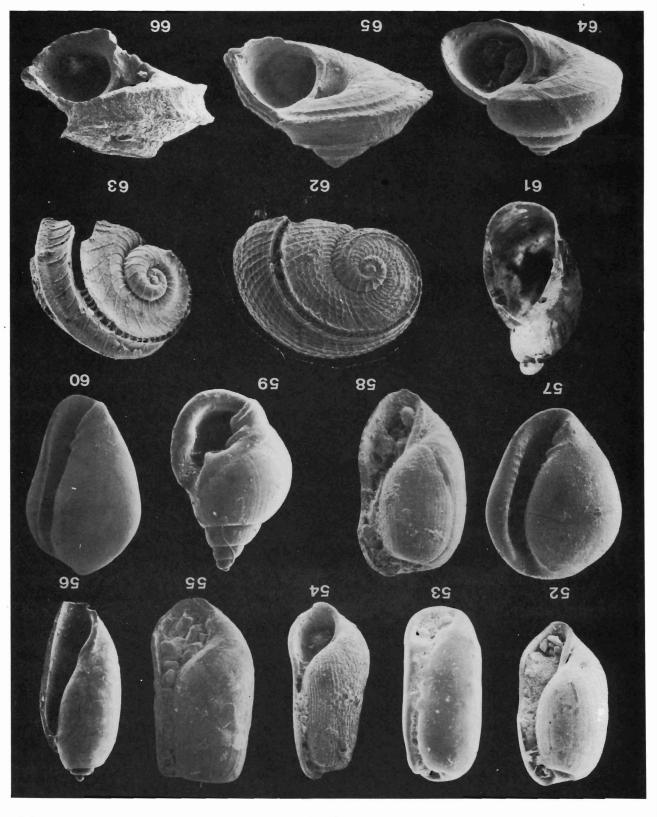
- 50, Fissurella savignyi Pallary, 13 mm.
 51, Chiton affinis Issel, 9 mm.
 52, Bulla girardi Audouin, 2.5 mm.
 53, Bulla villersii Audouin, 1.25 mm.
 54, Bulla fourieri Audouin, 2.6 mm.
- 55, Bulla desgenettii Audouin, 1.8 mm.
 56, Tornatina olivaeformis Issel, 3.4 mm.
 57, Marginella isseli Nevill & Nevill, 1.4 mm.
- Bulla mongii Audouin, 1.6 mm.
- 59, Ringicula savignyi Morlet, 2.8 mm.



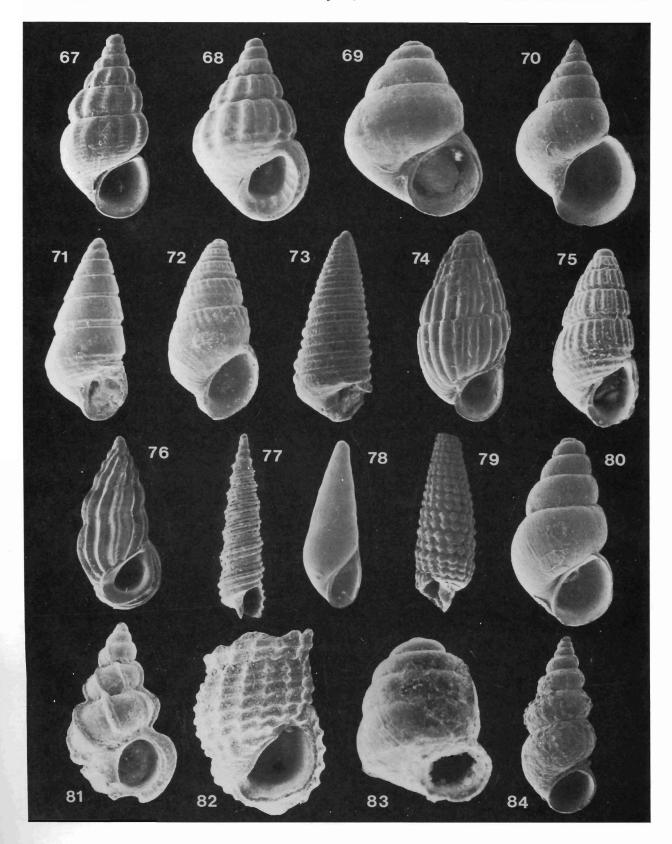












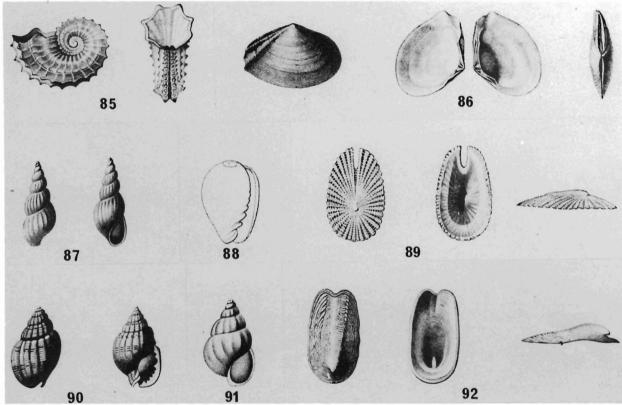
- 60, Marginella sueziensis Issel, 2.95 mm.
- Succinea aegyptiaca Ehrenberg, 6.5 mm. Scissurella reticulata Philippi, 1.75 mm. Scissurella dorbignii Audouin, 1.75 mm.
- 63, Scissurella dorbignii Audouin, 1.75 mm
 64, Risella infracostata Issel, 1.15 mm.
 65, Risella isseli Semper in Issel, 1.15 mm.
 66, Cyclostrema philipii Issel, 1.6 mm.
 67, Rissoa freminvillii Audouin, 3.0 mm.
 68, Rissoa dorbignii Audouin, 2.5 mm.
 69, Cingula tiberiana Issel, 1.25 mm.
 70, Litiopa savignyi Issel, 2.55 mm.
 71, Alaba martensi Issel, 2.8 mm.
 72, Odontostomia disemptica Issel, 2.7 mm.

- 72, Odontostomia clysmatica Issel, 2.7 mm.

- 73, Eulimella cingulata Issel, 2.6 mm.
 74, Pyrgulina doliiformis Pallary, 2.1 mm.
 75, Odontostomia craticulata Issel, 2.05 mm.
 76, Rissoina rissoi Weinkauff, 3.4 mm.
 77, Cerithium bacillum Issel, 3.75 mm.

- 78, Eulima gentiluomiana Issel, 2.6 mm.

- 79, Triforis perlatus Issel, 4.7 mm. 80, Cingula villae Issel, 2.0 mm. 81, Scalaria ferussacii Audouin, 1.95 mm.
- 82, Rissoina seguenziana Issel, 2.8 mm. 83, Pupa lamarckii Audouin, 2.2. mm.
- 84, Scaliola elata Semper in Issel, 2.05 mm.



FIGS. 85-92. Types figures copied from Savigny (no type material found in Savigny collection).

- 85, Anatola humboldti Audouin, 35 mm (?).
- 86, Pristis audouini Jousseaume, 31 mm.
- 87, Rissoa sismondiana Issel, 2.5 mm.



FIG. 93. Venus roemeriana Issel, 3.9 mm.

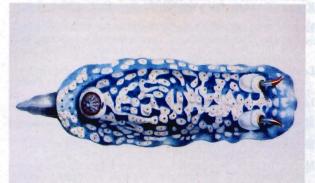
88, Marginella savignyi Issel, 4 mm. 89, Emarginula cuvieri Audovin, 9.5 mm. 90, Nassa savignyi Pallary, 9 mm. 91, Rissoa desmarestii Audovin, 3 mm.

Scutus savignyi Pallary, 7 mm.

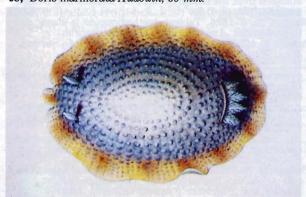
FIGS. 96-103. Savigny's unpublished color vellums of opisthobranchs and cephalopods in Bibliothèque Centrale, MNHN. Only black and white prints were previously published.



96, Doris immaculata Audouin, 46 mm.



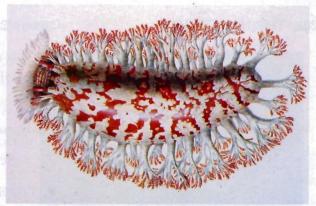
98, Doris marmorata Audouin, 30 mm.



100, Doris concentrica Audouin, 21 mm.



102, Bursatella savignyana Audouin, 130 mm.



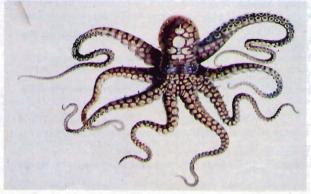
97, Tritonia elegans Audouin, 50 mm.



99, Doris tigrina Audouin, 22 mm.



101, Pleurobranchus oblongus Audouin, 30 mm.



103, Octopus horridus Orbigny, mantle length 30 mm.



FIG. 94. Blainvillia erythraea Hupé, 58 mm.

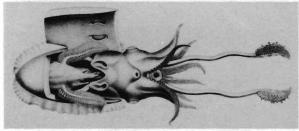


FIG. 95. Sepia savignyi Blainville, mantle length 85 mm. From an unpublished color vellum in the Bibliothèque Centrale, MNHN.

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