

INSTITUT ROYAL DES SCIENCES NATURELLES  
DE BELGIQUE

MÉMOIRES

DEUXIÈME SÉRIE, FASC. 45

KONINKLIJK BELGISCH INSTITUUT  
VOOR NATUURWETENSCHAPPEN

VERHANDELINGEN

TWEEDE REEKS, DEEL 45

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PH. DAUTZENBERG'S COLLECTION

OF

CYPRÆIDÆ

BY

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(WITH 4 PLATES)

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P 4086



BRUXELLES

INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE  
RUE VAUTIER, 31

1952

BRUSSEL

KONINKLIJK BELGISCH INSTITUUT VOOR NATUURWETENSCHAPPEN  
VAUTIERSTRAAT, 31

1952

Distribué le 31 octobre 1952.

Uitgedeeld de 31<sup>e</sup> October 1952.



## PREFACE

During my first visit in Paris, in November 1928, I had the opportunity to examine superficially DAUTZENBERG's collection of *Cypræacea* (Moll. Gastr). I just came from London, where I had studied the rich collection of the British Museum (Natural History), which contains many unique and extremely rare species of this superfamily, and I was quite astonished to find many rare species <sup>(1)</sup> preserved also in DAUTZENBERG's collection, which was a private one in these times, as well as fine large series of more common species mostly coming from the French colonies.

I studied his collection of *Amphiperatidæ* <sup>(2)</sup> during a second visit, in 1931. DAUTZENBERG bequeathed his whole collection of shells to the « Musée royal d'Histoire naturelle de Belgique » <sup>(3)</sup> in Brussels, his native place. After DAUTZENBERG's death in 1935, his collection was brought to Brussels.

When returning from London in 1938, I stayed in Brussels one day eager to see that DAUTZENBERG's collection had arrived well. Then I was kindly invited by Prof. V. VAN STRAELEN to examine thoroughly DAUTZENBERG's *Cypræacea*, the group of marine mollusca to which I have devoted special studies since 1920. Thus, in January 1939, I spent nearly four weeks in Brussels. My studies in Brussels have kindly been supported by Dr. E. LELOUP and by Dr. W. ADAM, whom both I sincerely thank for advice and help.

In these days, I examined carefully all specimens of recent *Cypræidæ* preserved in DAUTZENBERG's collection <sup>(4)</sup>. I counted the specimens of all populations, I measured most shells, I noted all characters in shape, dentition, colour, and pattern, which seem essential with regard to racial and local variation, and I drew most monstrosities, thus accumulating exact notes on almost fifteen thousand shells, written on about five hundred pages of copy books.

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<sup>(1)</sup> See the obituary published by J. R. LE BROCKTON TOMLIN in Proc. Malac. Soc. London, 23, p. 7 (1938).

<sup>(2)</sup> See SCHILDER, in Bull. Soc. Zool. France, 56, p. 364 (1931).

<sup>(3)</sup> By decree of the Regent under date of the 3rd of September 1948 the MUSÉE ROYAL D'HISTOIRE NATURELLE DE BELGIQUE becomes INSTITUT ROYAL DES SCIENCES NATURELLES DE BELGIQUE.

<sup>(4)</sup> The examination of the other families of *Cypræacea* (see SCHILDER, in Proc. Malac. Soc. London, 22, pp. 79-85, 1936) and of the fossil *Cypræidæ* has been postponed for later visits.

After my return to Germany, I tried to extract the most essential data from these notes for being published, while my wife, Dr. Maria SCHILDER, arranged the immense material both systematically and geographically. As the manuscript of the present paper was nearly finished in August 1939, we adopted the arrangement both of species and localities published in our monograph on living *Cypræidæ*, shortly quoted as « Prodrome » <sup>(5)</sup> in this paper; now we do not think it advisable to alter the paper according to the slightly different arrangement of species and zoogeographical regions proposed in two still more recent papers <sup>(6)</sup>.

I think such a rich collection of shells worth to be carefully examined, and I hope that the present paper on DAUTZENBERG's *Cypræidæ* will encourage malacologists to study other families in a similar way. The table of collectors (p. 49) showing the number of undoubtedly incorrect indications of habitat, may facilitate the criticism of similar indications in such future investigations.

We thank Dr. M. GLIBERT for the fine photographs illustrating this paper.

University of Halle (Germany), August 1952.  
Prof. Dr. F. A. SCHILDER.

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<sup>(5)</sup> See SCHILDER, F. A. and SCHILDER, M., in Proc. Malac. Soc. London, 23, pp. 119-231 (1938-1939).

<sup>(6)</sup> SCHILDER, in Archiv f. Molluskenkunde, 71, pp. 165-201 (1939); SCHILDER and SCHILDER, *ibid.*, 72, pp. 33-56 (1940). The last catalogue of recent and fossil species has been published by SCHILDER, *ibid.*, 73, pp. 57-120 (1941).

## INTRODUCTION

« Herr Ph. Dautzenberg besitzt m.E. das reichhaltigste Material an Cypræacea unter allen Sammlungen Europa's in privatem oder öffentlichem Besitz » (Zoolog. Anzeiger, 85, p. 133, 1929).

This estimation <sup>(1)</sup> published after our visit to DAUTZENBERG's collection in Paris (1928) may be illustrated by the following figures :

1. Number of species. — In our « Prodrome » (1938-1939) we have distinguished 165 living species of *Cypræidæ*; no public nor private collection contains all these species, but there are

- 155 species in the British Museum (Natural History) (1938),
- 155 species in the writers' collection (1940),
- 153 species in coll. DAUTZENBERG, now in the Institut royal des Sciences naturelles in Brussels (1939),
- 152 species in coll. LE BROCKTON TOMLIN at St. Leonards-on-Sea (1938),
- 143 species in the Zoologisches Museum in Hamburg (1937),
- 140 species in the Zoologisches Museum in Berlin (1938),
- 134 species in coll. HIDALGO, now probably in a public museum of Spain (following HIDALGO's monograph published in 1906-1907 in Mem. Ac. Cienc. Madrid, 25),
- 133 species in coll. SULLIOTI, now in the Museo Civico in Genoa (1934),
- 127 species in the Naturhistorisches Staatsmuseum in Vienna (1938),
- 123 species in the Rijks Museum van Natuurlijke Historie in Leiden (1933),
- 116 species in coll. J. E. GRAY, as complete about in 1828, now in the British Museum (Natural History) (1938),
- 49 species in the collection of the University of Marburg a.d. Lahn, Germany (1929), as an example of a small local museum, and
- 37 species in the collection of LINNÆUS, preserved in the Linnean Society of London (examined in 1936).

2. Number of specimens. — The total number of recent *Cypræidæ*, examined by us these twenty years, is about 75.000 <sup>(2)</sup>, of which about

- 14634 shells are preserved in coll. DAUTZENBERG (1939),
- 7722 shells in the Rijks Museum van Natuurlijke Historie in Leiden (1933),

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<sup>(1)</sup> In 1914, DAUTZENBERG's collection contained about 30800 species of mollusca (see TOMLIN, in Proc. Malac. Soc. London, 23, p. 7, 1938).

<sup>(2)</sup> See SCHILDER and SCHILDER, in Archiv f. Molluskenkunde, 72, p. 33 (1940).

7104 shells in the Zoologisches Museum in Berlin (1938),  
5436 shells in the writers' collection (April, 1940),  
4372 shells in the Zoologisches Museum in Hamburg (1937),  
2097 shells in the British Museum (Natural History), at least (1938), including,  
665 shells formerly belonging to J. E. GRAY's collection,  
205 shells in the collection of the University of Marburg a.d. Lahn, Germany (1929),  
while,  
130 shells only of recent *Cypræidæ* were preserved in *Linnæus*' collection at HANLEY's  
times (about in 1855), as we stated in 1936.

This review shows that DAUTZENBERG possessed almost as many species as the most complete public museum and as we possess as specialists, and that the number of specimens preserved in his collection far exceeds the other public or private collections, though he used to dedicate generously shells to other collectors.

In Paris, DAUTZENBERG's shells were preserved in large open drawers. The shells belonging to the same species, and coming from the same locality, were united in open boxes; unfortunately several series of common species, collected at the same place, but by different collectors, were often mixed in the same box.

DAUTZENBERG labelled his shells very carefully; if he did not know the habitat or the collector of any shell, he usually added « loc. ign. » or « coll. ign. » to the specific name. His indications of the date mostly refer to the time of acquisition for his collection, and not to the time of the collection of the shells at their habitat. The specimens of two large cowries, *Cypræa tigris* and *C. pantherina*, were arranged according to the varieties in colour and pattern described in HILDAGO's monograph (see below), so that shells coming from the same locality were separated: in this case, DAUTZENBERG wrote the habitat on the body whorl of the shells, but he mostly did not indicate the collector nor the date; these short indications had often been obliterated when the shells were examined in Brussels. Besides, in a few labels DAUTZENBERG's handwriting is hardly decipherable. In general, however, his labelling of shells was more exact than it is in many other collections examined by us before.

DAUTZENBERG's shells are very fine and clean, the last series sent to him by DE PRIESTER excepted, which are mostly beach shells from the Dutch East Indies. DAUTZENBERG determined his shells mostly accurately, and he carefully noted the names mentioned by us for dubious specimens during our visit in 1928. His last acquisitions (since 1933), however, were mostly nameless when we examined his collection in 1939.

The species of living *Cypræidæ* had been arranged according to the systema published by ROBERTS in 1885<sup>(\*)</sup>, and this arrangement was retained when the shells were brought to Brussels, by Dr. LELOUP, and placed in 36 new drawers, the glass lids of which will preserve the valuable collection in future

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(\*) In TRYON, Manual of Conch., 7, p. 153 (1885).

even better than the sheets of paper laid by DAUTZENBERG on his open drawers in Paris. The monstrosities, now preserved in two of these 36 drawers, have been left separated, while the supplementa (acquired since 1932), which filled four drawers in 1939, will be placed among the other shells of DAUTZENBERG'S collection. But the whole collection will never be united with the other shells preserved in the « Institut royal des Sciences naturelles » in Brussels.

DAUTZENBERG wrote the names of species and varieties on the labels placed in the boxes, as well as on pieces of wood intercalated between the boxes of different species. He also noted many names given by him to varieties in size, shape, and colour, but not yet published <sup>(4)</sup>; we did not mention these names in the present paper to avoid the establishing of superfluous names <sup>(5)</sup> in scientific literature.

There were two principal reasons for our subtile examination and publication of DAUTZENBERG'S rich collection :

1. We intended to control once more the indications published in our « Prodrôme », the second part of which was just in press then, both with regard to the racial characters and to the distribution of species and geographical races. Our research proved most indications to be correct; if it showed that any details had to be added or amended, such corrections have been taken in consideration in the tables showing the racial characters, or even treated in special notes.

2. We intended to show which indications of habitat have to be rejected, and which collectors and dealers, from whom DAUTZENBERG received shells, can be trusted with regard to the correctness of these indications; this research means to facilitate later investigations of malacologists on other families of DAUTZENBERG'S mollusca. The result has been shown in the list of localities (p. 27) and of collectors (p. 49), as well as by the frequent use, we are sorry to say, of the letter *f.* (= *false*) in the systematic part of this paper : it indicates shells, which undoubtedly cannot have been collected in the region from which they were said to come. Incorrect determinations of DAUTZENBERG'S specimens, however, have usually not been mentioned in the present paper, excepted if they were published in any paper before.

Therefore the present paper consists of the following parts :

a) Two tables indicating the species and races, to which DAUTZENBERG'S shells belong (p. 9), and the regions from which they came (p. 18);

b) A list of localities noted on DAUTZENBERG'S labels, with the number of specimens and with enumeration of the collected species (p. 27);

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<sup>(4)</sup> The type specimens of published varieties will be discussed in a later chapter (p. 228).

<sup>(5)</sup> See « Prodrôme », p. 121.

c) A list of collectors, with the number of specimens and species labelled correctly and incorrectly with regard to their habitat (p. 49);

d) A systematic part, which contains tables showing the differences of geographical races, and in which all shells of DAUTZENBERG's collections are enumerated and shortly described (p. 53);

e) A special chapter devoted to the type specimens (p. 228);

f) A review of DAUTZENBERG's papers on living *Cypræidæ* (p. 236).

A special study on monstrosities preserved in his collection will be published later on.

The following papers may be quoted as most important for the study of living *Cypræidæ* :

SOWERBY, G. B., *Cypræa* [in *Thesaurus Conchyliorum*, parts 26-28, 58 pp. and 37 plates (539 figures) (Triviinae included), 1870] : it contains short diagnoses of the species and very good pictures of species and varieties.

HIDALGO, J. G., *Monografía de las especies vivientes del género Cypræa* (in *Mem. Ac. Cienc. Madrid*, 25, 588 pp., 1906-1907) : it contains a rather complete bibliography of papers on living *Cypræidæ* (with short indications of their contents) and careful descriptions of species and varieties, many of which are indicated as preserved in DAUTZENBERG's collection; but HIDALGO's indications of habitat have proved too uncritical.

SCHILDER, F. A., *Cypræacea* (in *Fossilium Catalogus*, 1/55, 276 pp., 1932) : a list of the papers on living and fossil *Cypræacea* published till 1932, and a complete synonymy of specific and varietal names with the most important references and general remarks on distribution.

SCHILDER, F. A. and SCHILDER, M., *Prodrome of a monograph on living Cypræidæ* (in *Proc. Malac. Soc. London*, 23, 113 pp., 9 maps, 1938-1939) : it contains descriptions of the geographical races of living *Cypræidæ* and indications of the limits of their distribution, as well as lists of the species occurring in 113 regions of the seas inhabited by *Cypræidæ*.

It seems useful to add the following papers, though they were published after the present paper was concluded :

SCHILDER, F. A., *Verwandtschaft und Verbreitung der Cypræacea* (in : *Archiv f. Molluskenk.*, 73, 64 pp., 1941) : a complete catalogue of living and fossil *Cypræacea* (*Triviidæ* and *Amphiperatidæ* included), with indications of distribution.

SCHILDER, F. A., *Die Cypræacea im Lichte der Formenkreislehre* (ibid., 76, 21 pp., 1947) : a zoogeographical sketch trying to arrange the living species in natural superspecies.