

MARYLAND  
GEOLOGICAL SURVEY



In Memory of  
Remington Kellogg



1892

1969

M.H.Kellogg

Mammalogist  
Paleontologist











# MARYLAND GEOLOGICAL SURVEY

MIOCENE

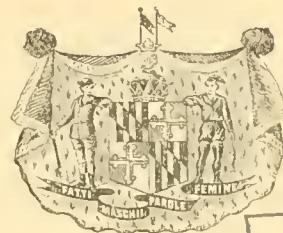
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# MARYLAND

## GEOLOGICAL SURVEY



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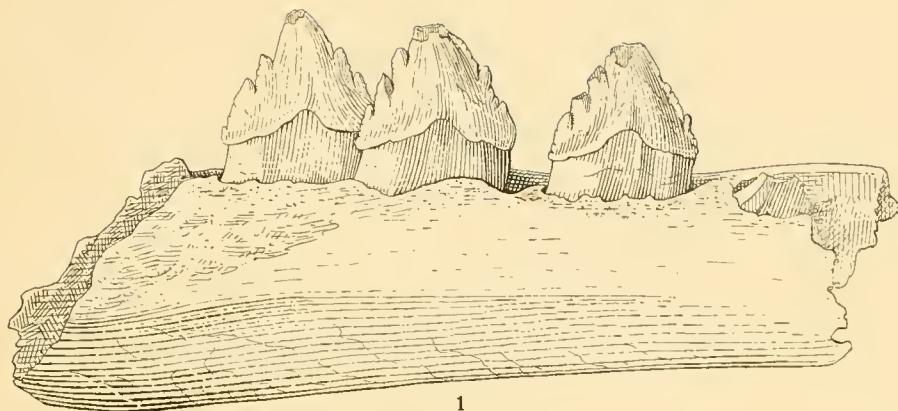
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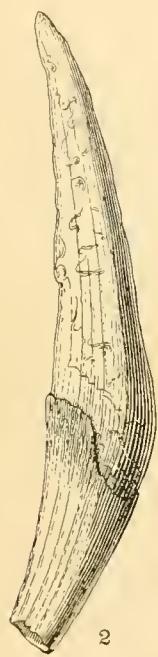
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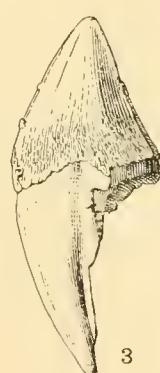
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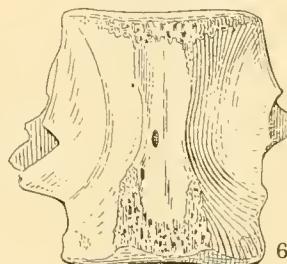
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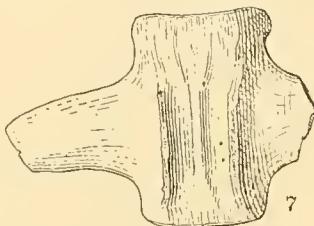
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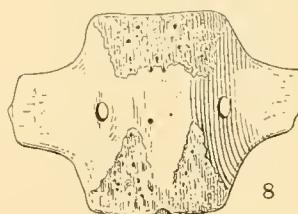
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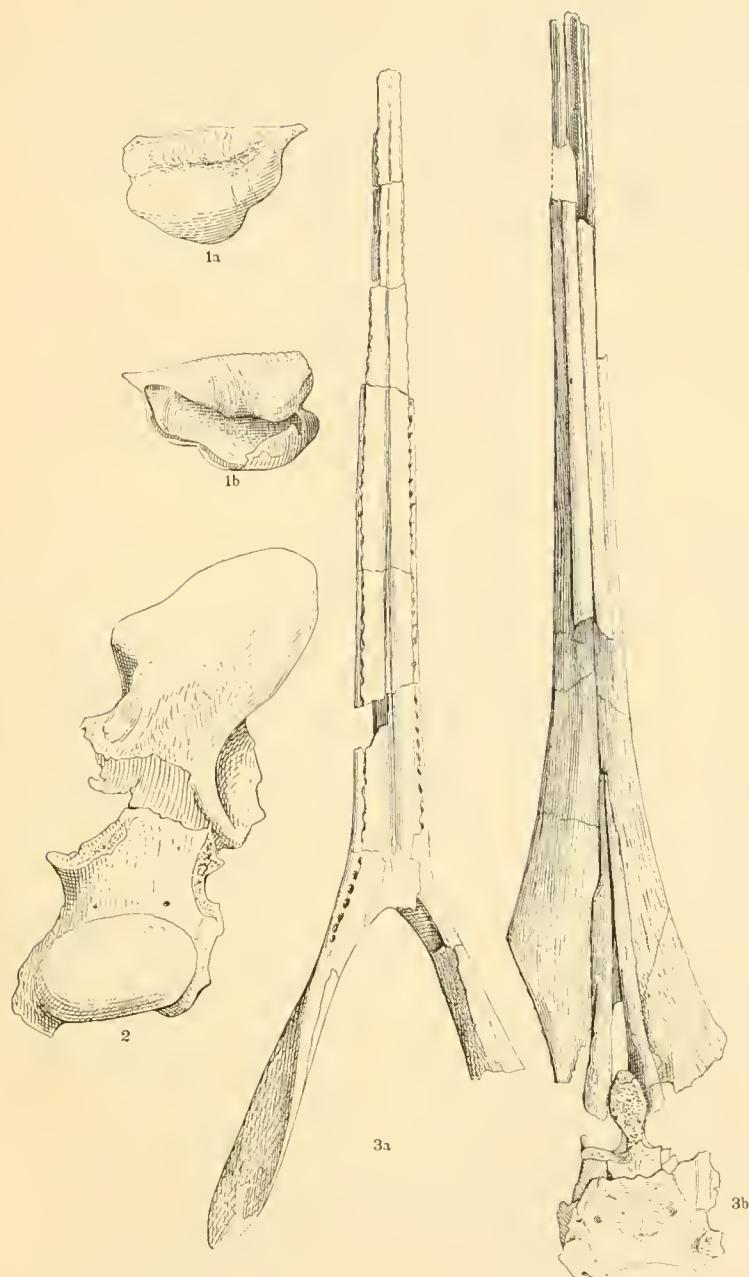
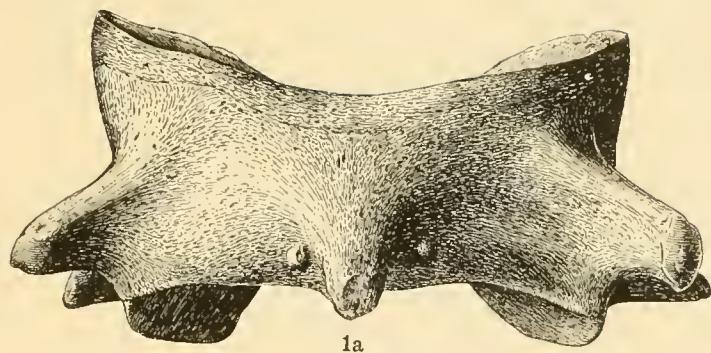
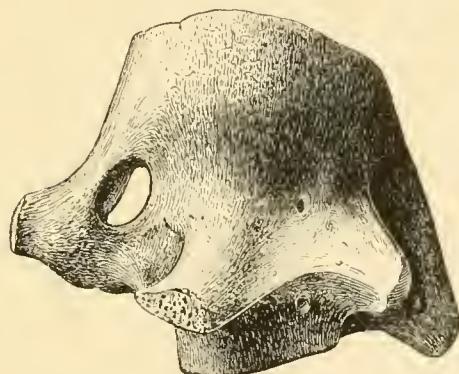


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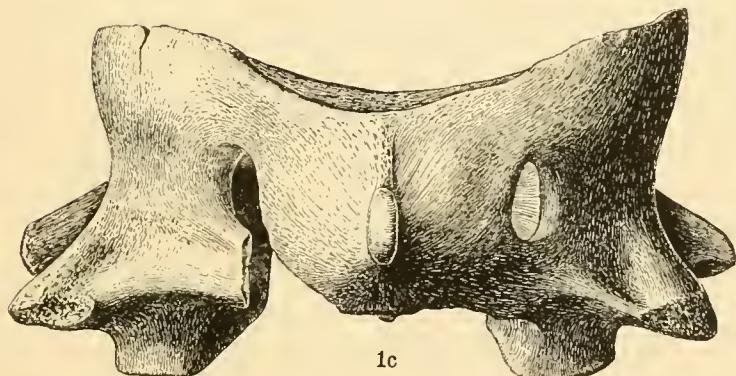
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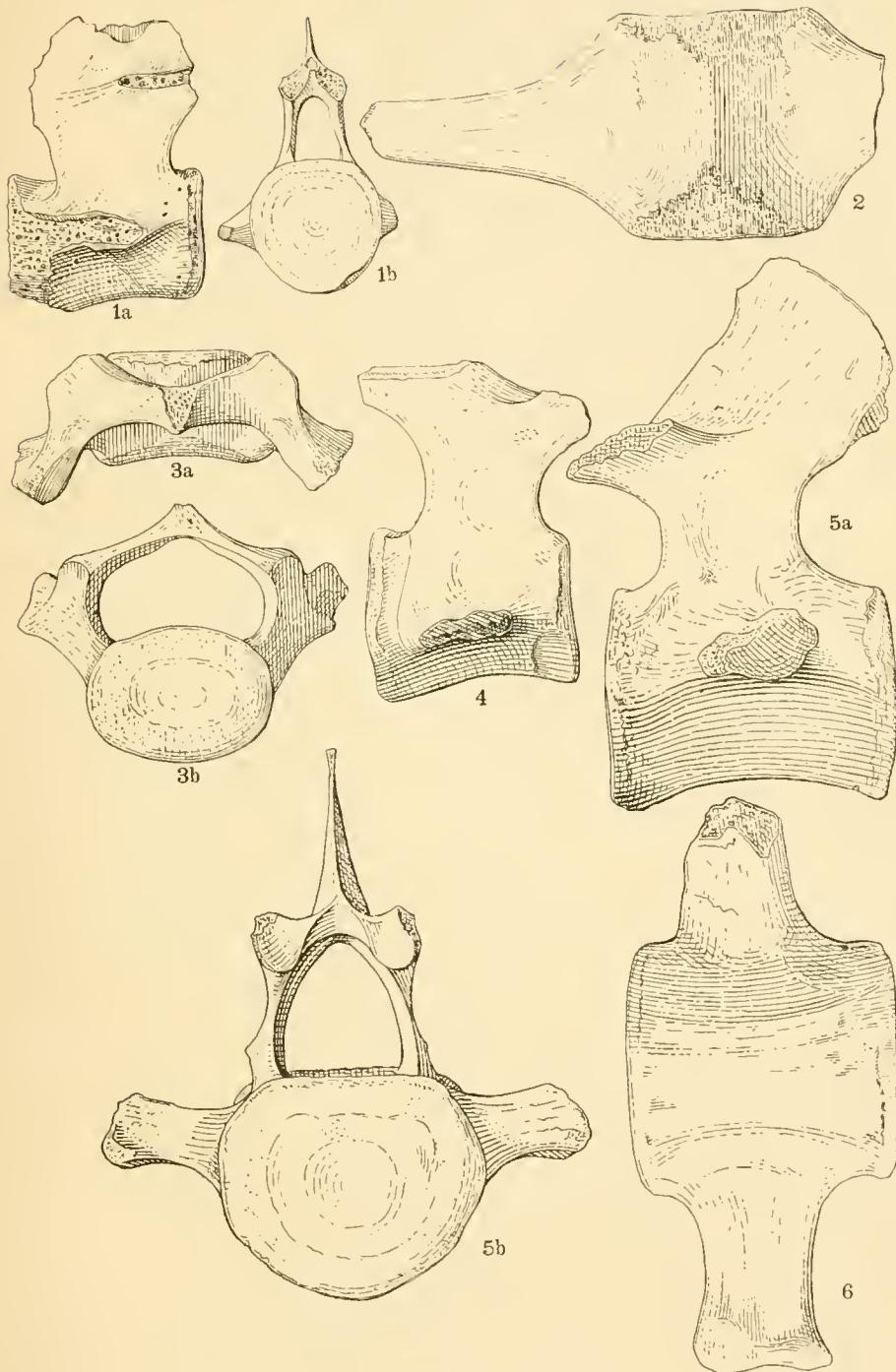
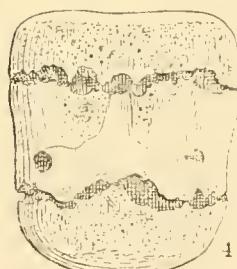
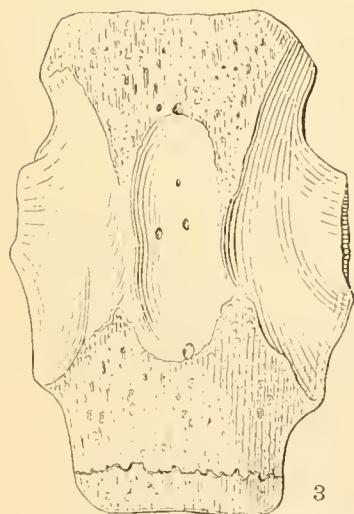
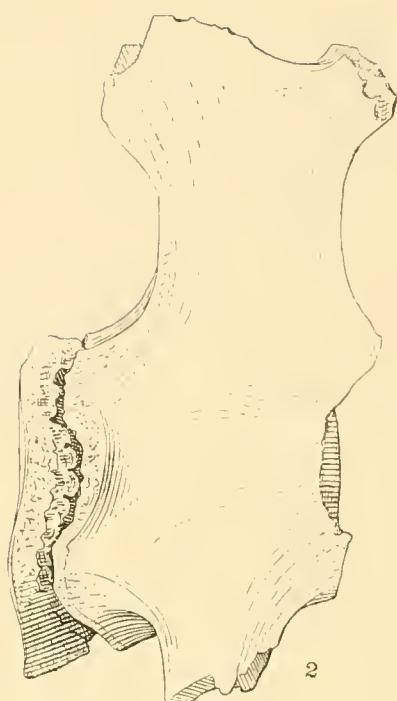
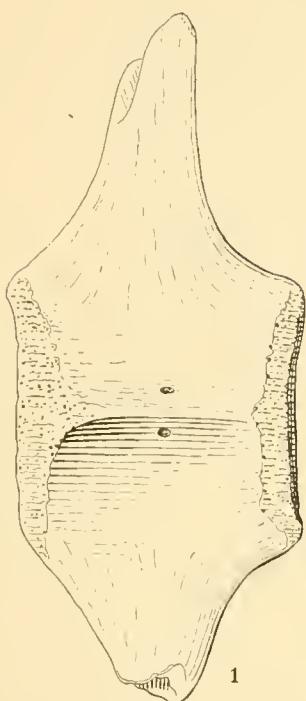


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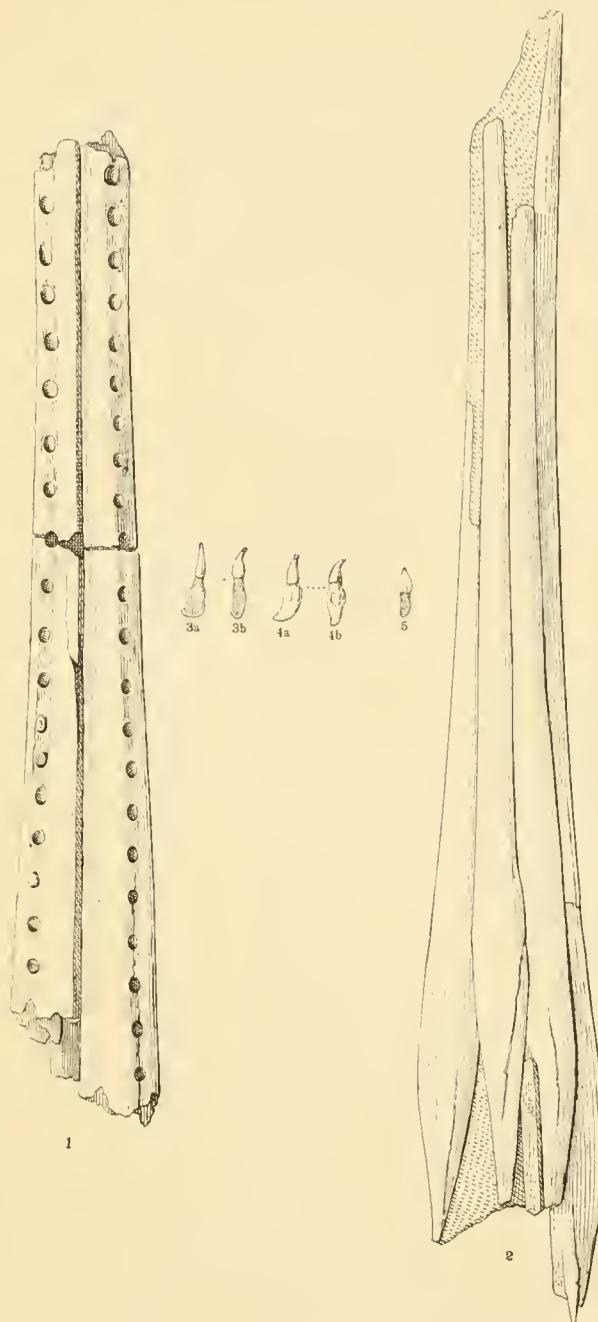
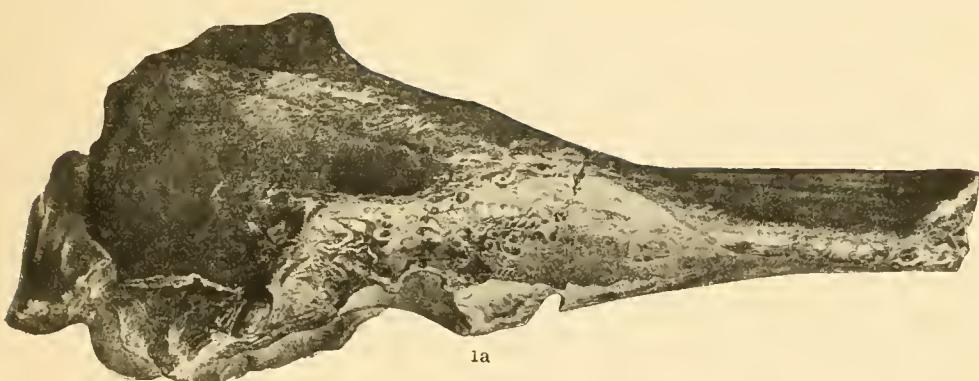
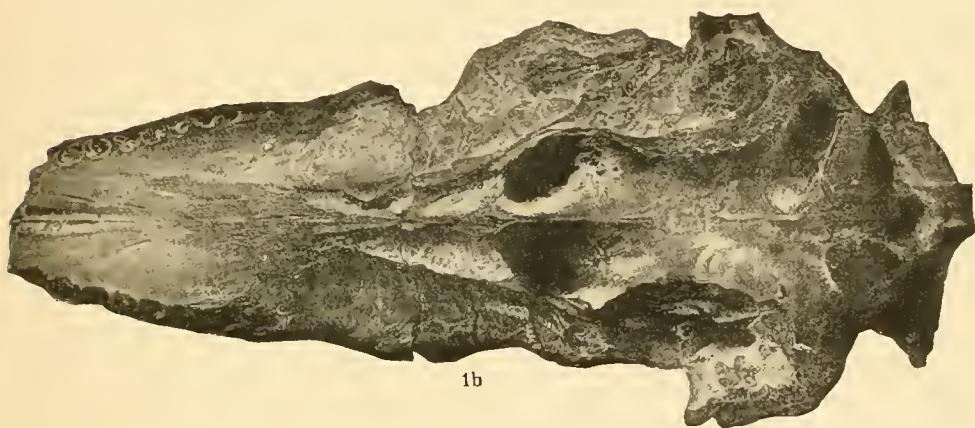


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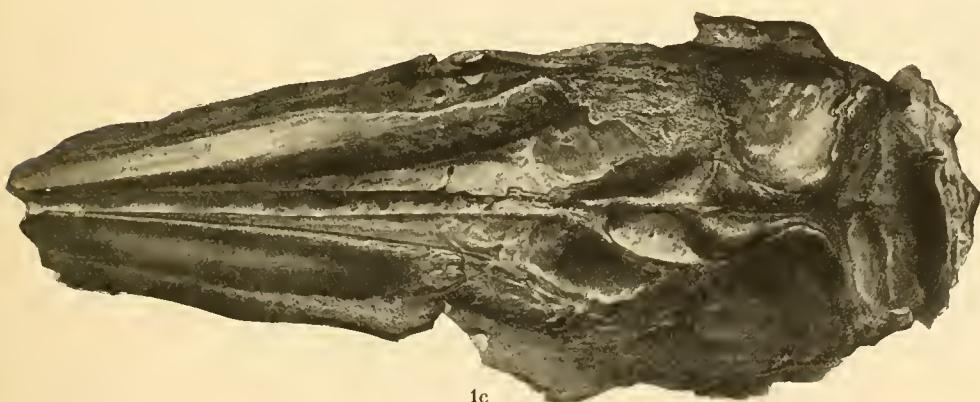
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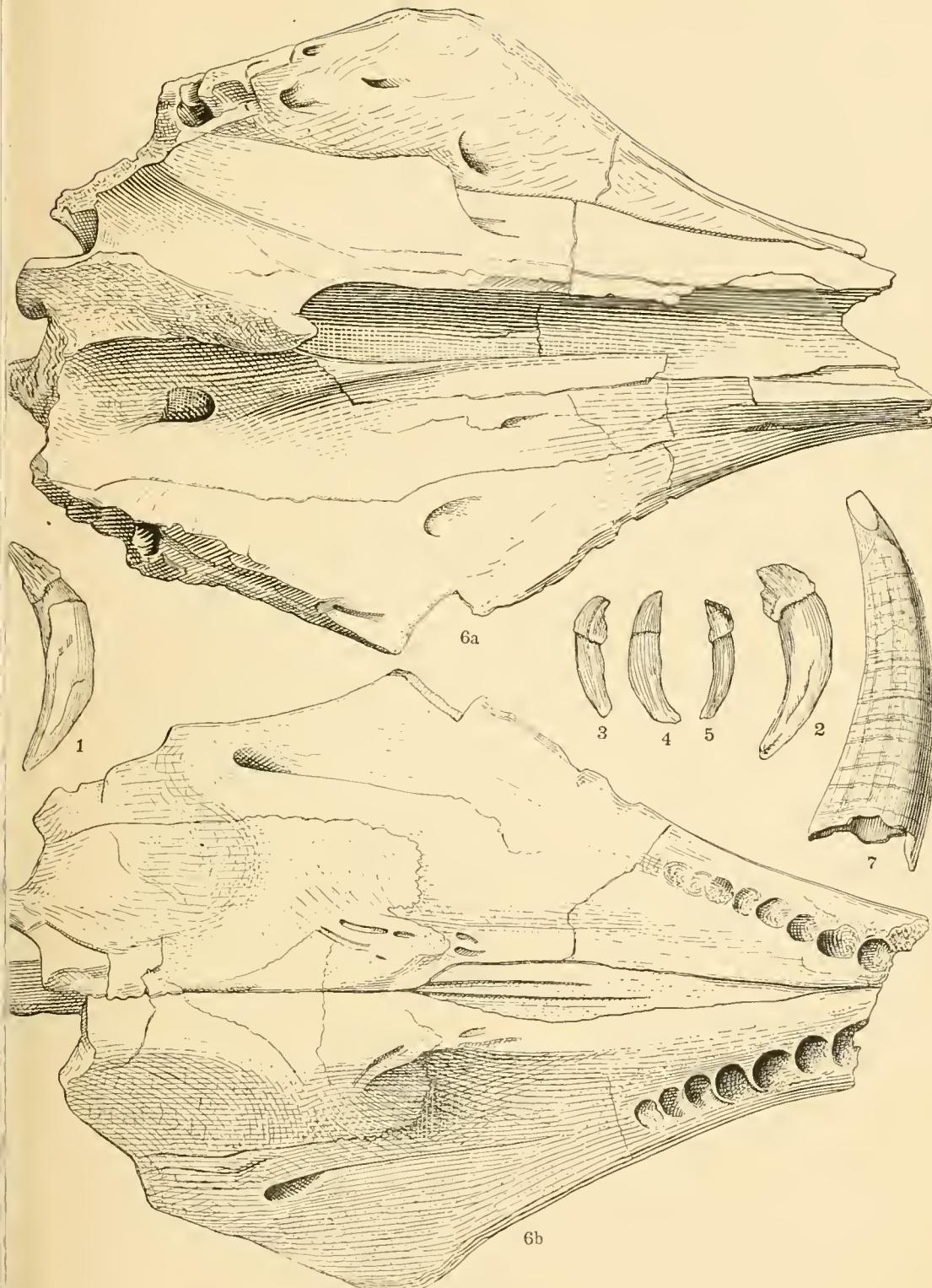


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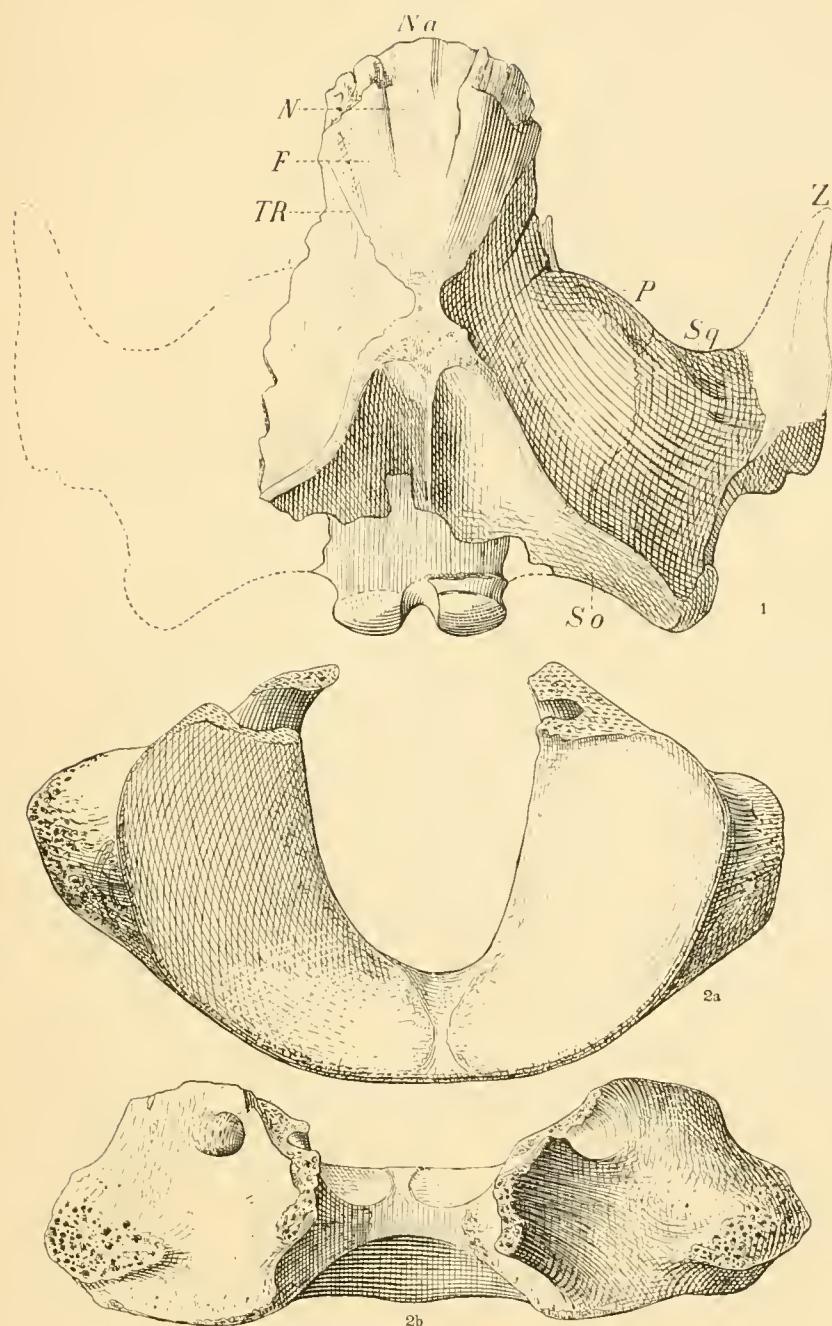
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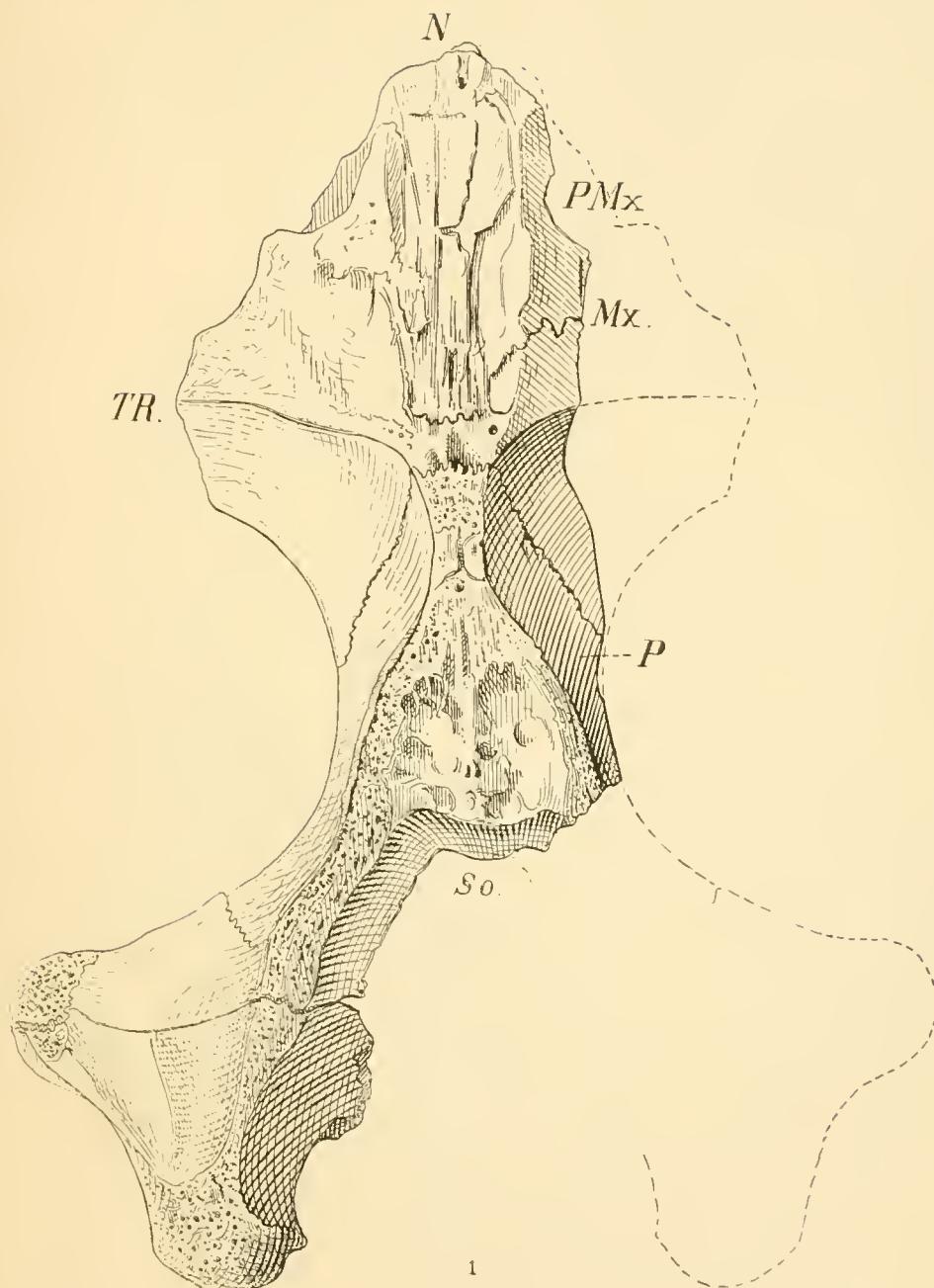
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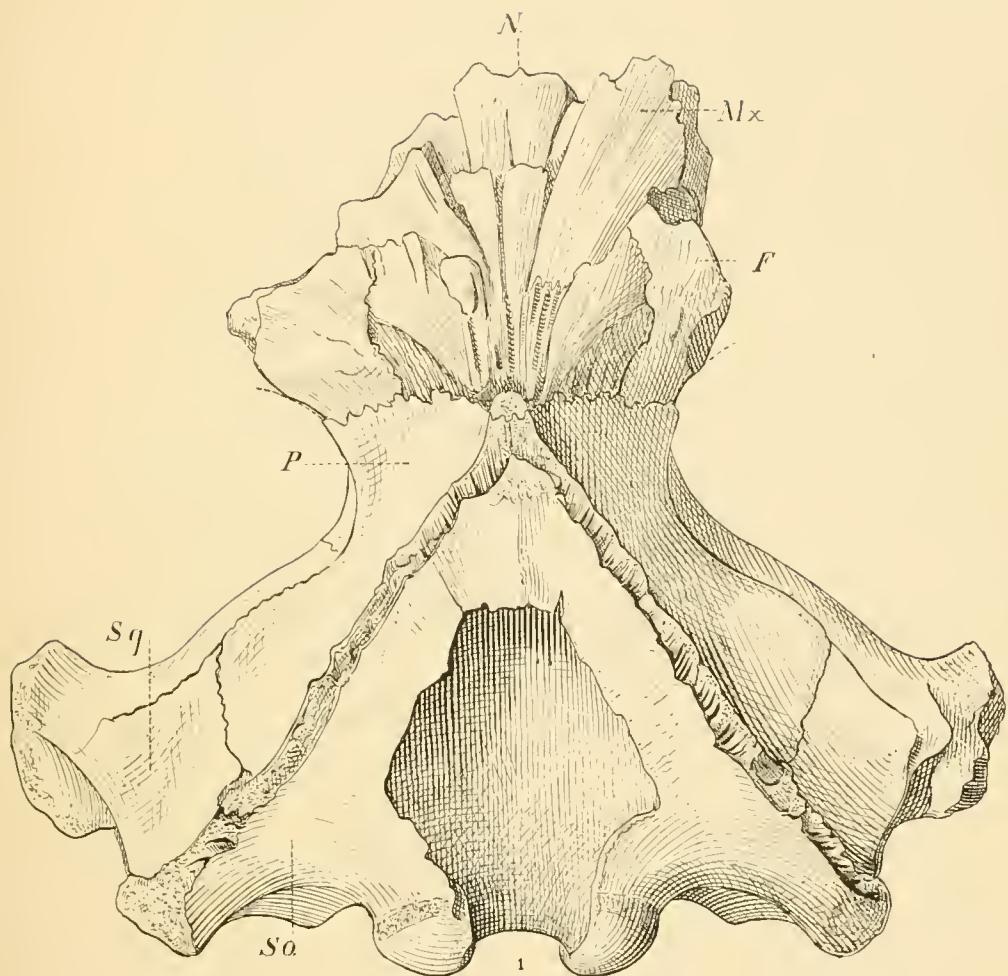


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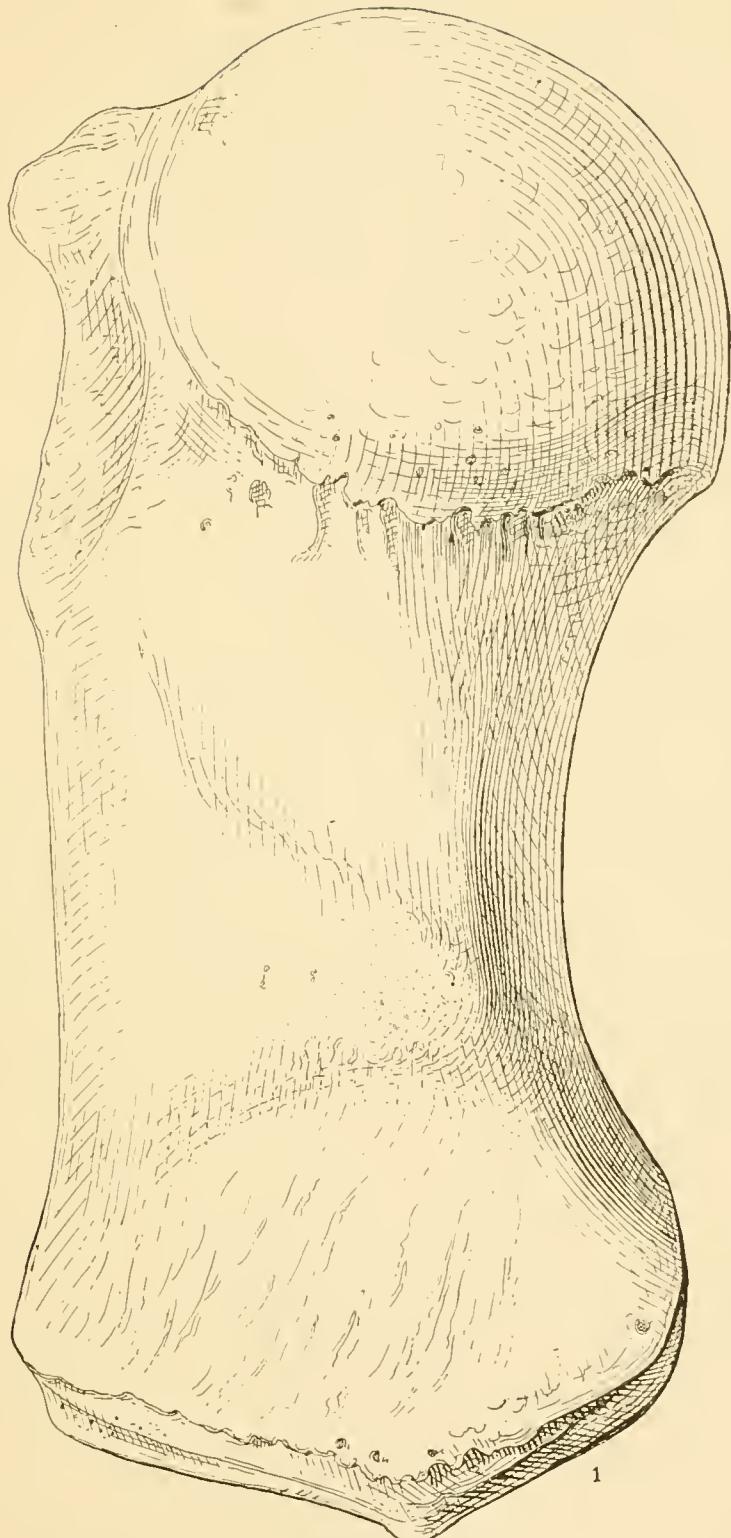
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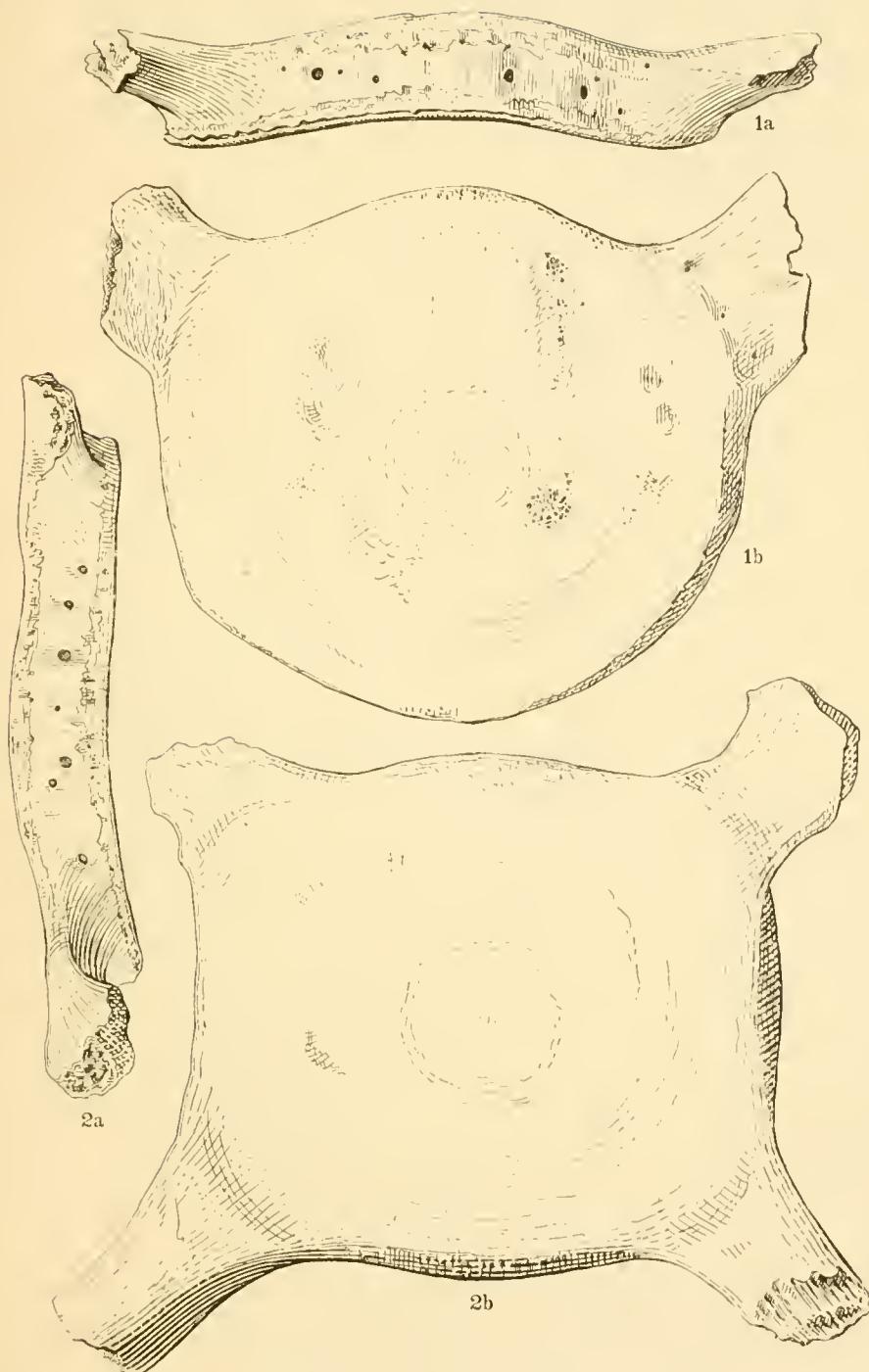


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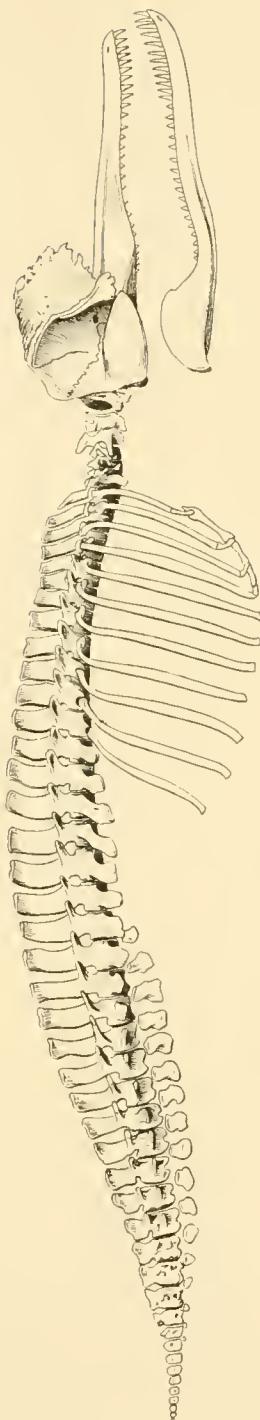
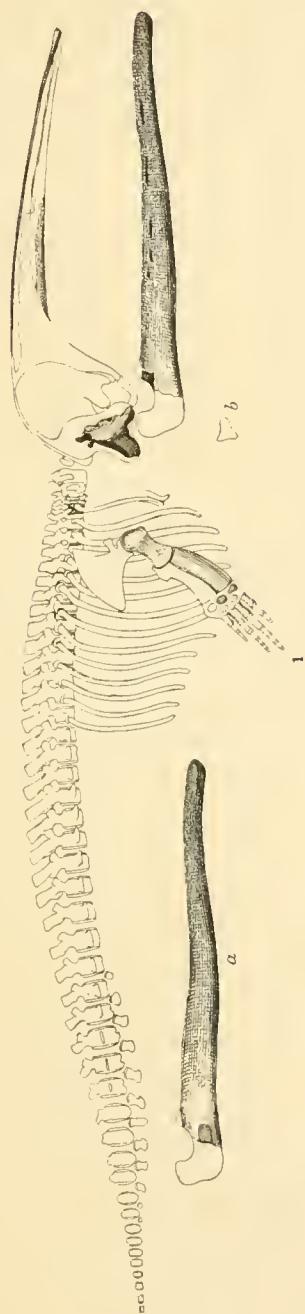
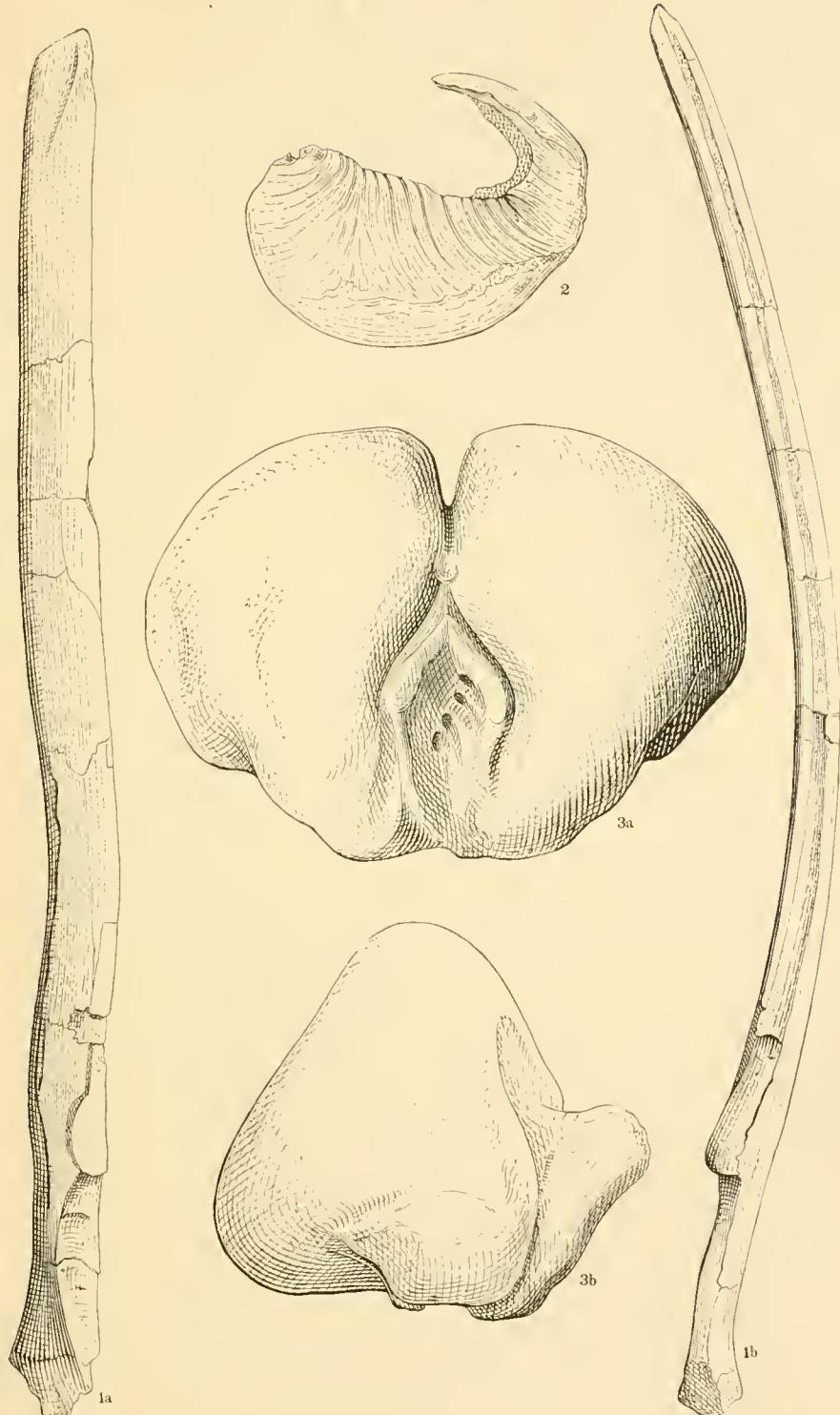


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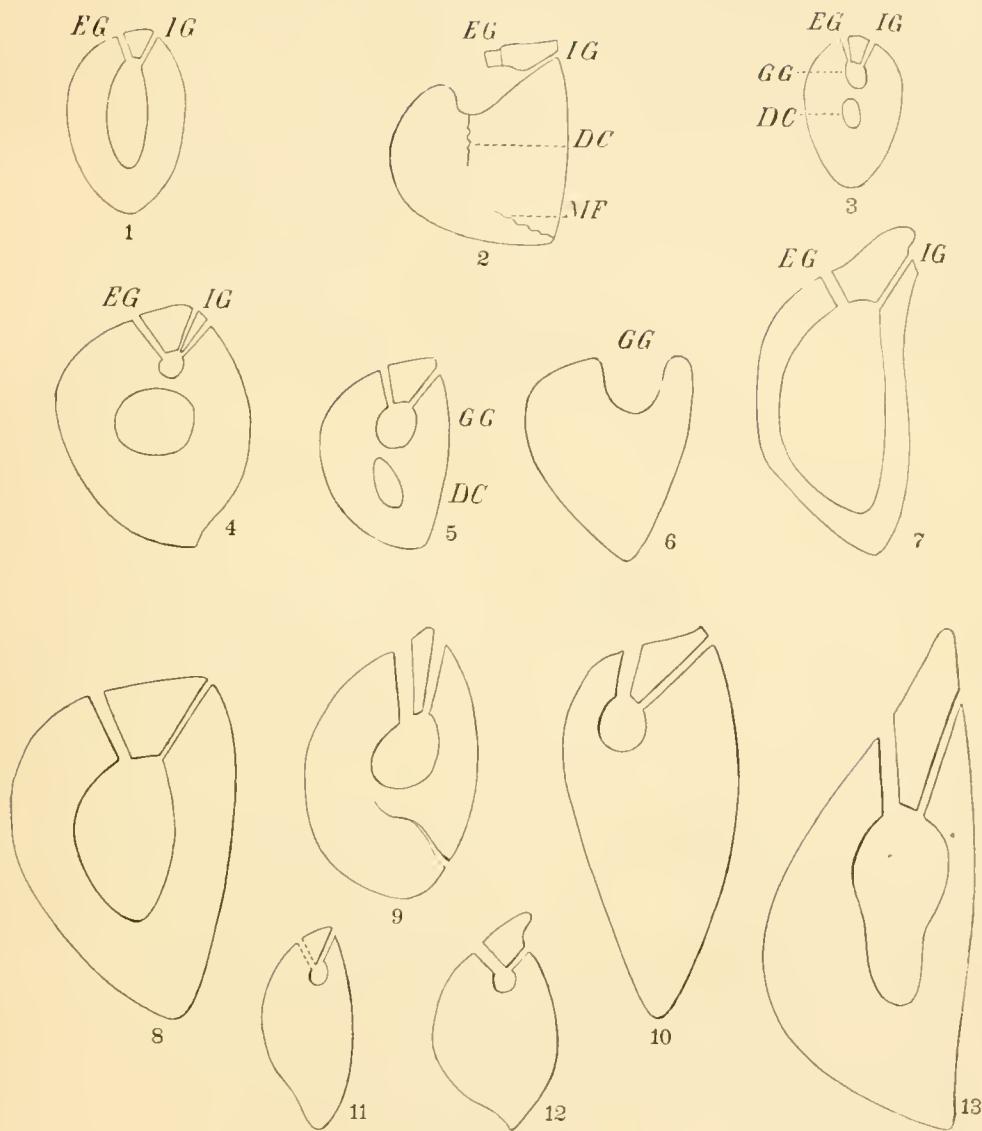
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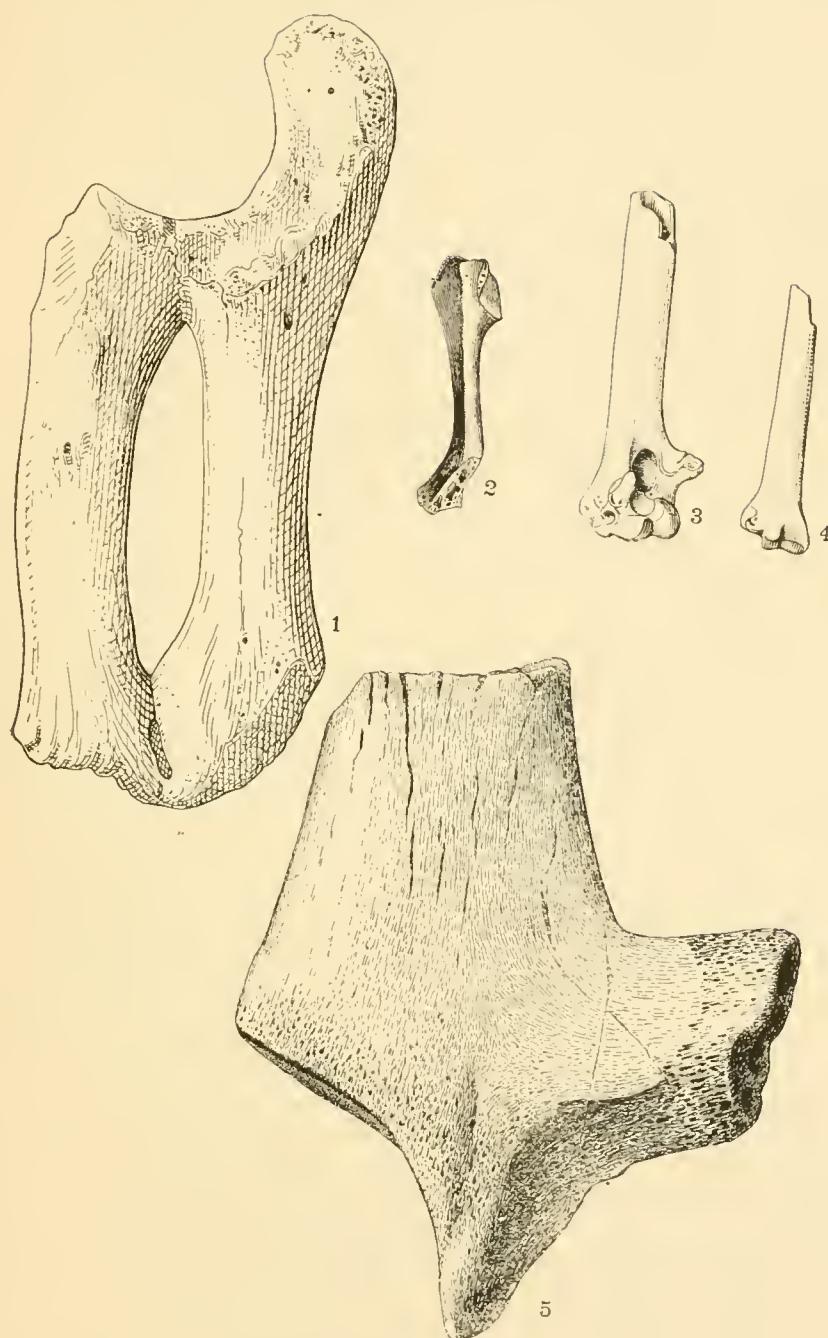
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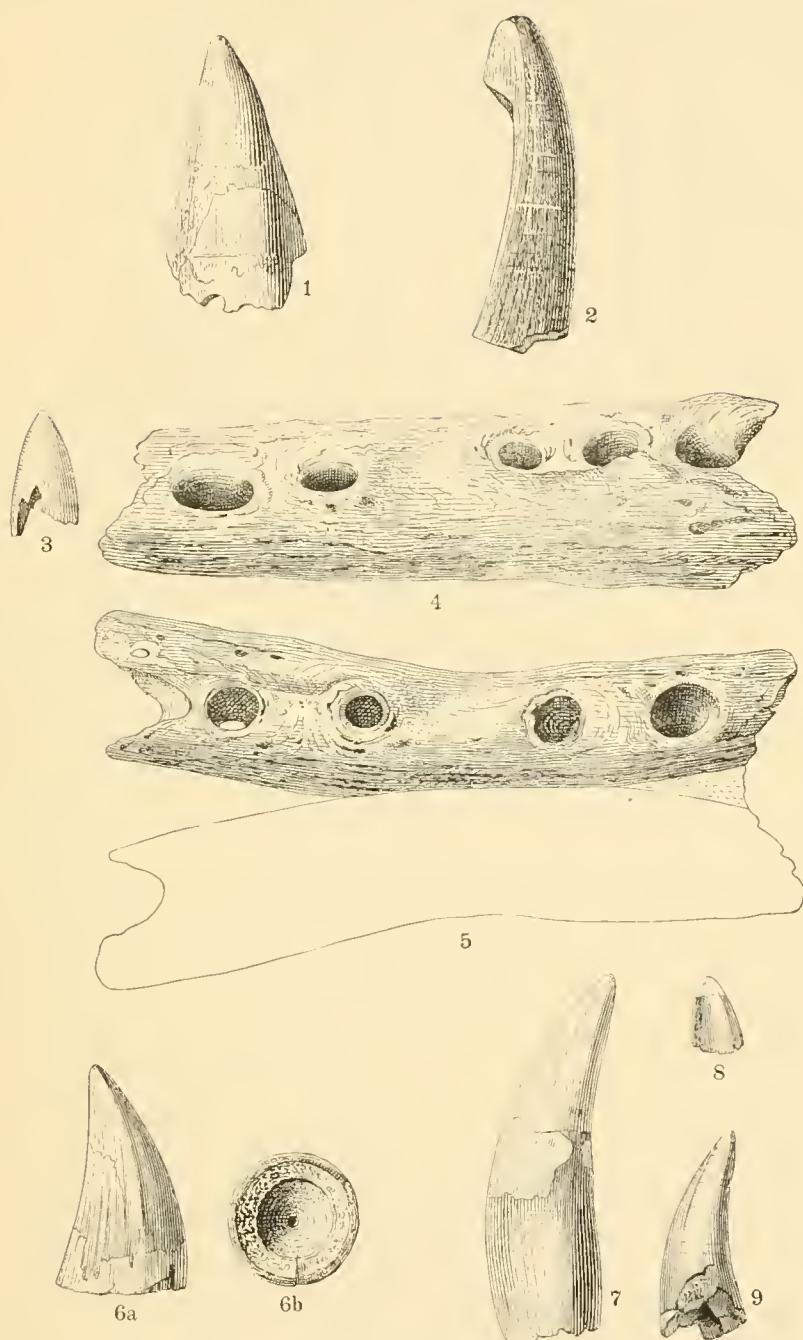
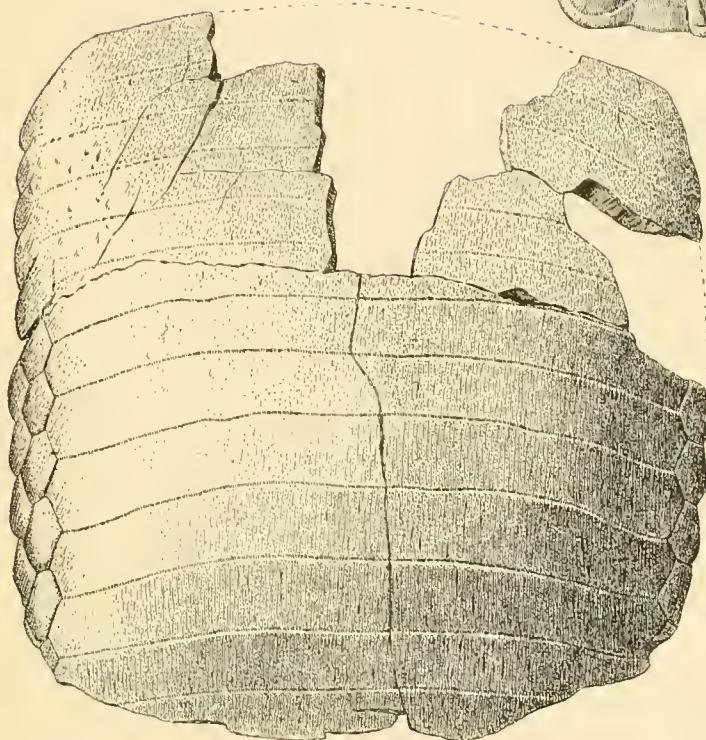
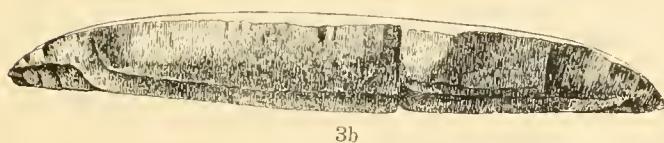


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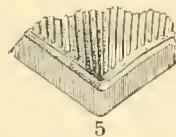
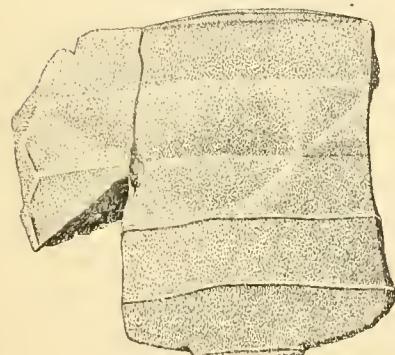
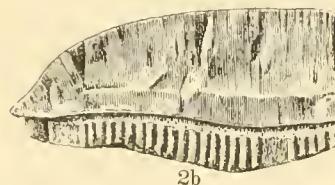
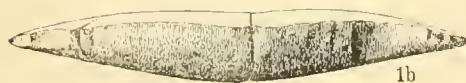
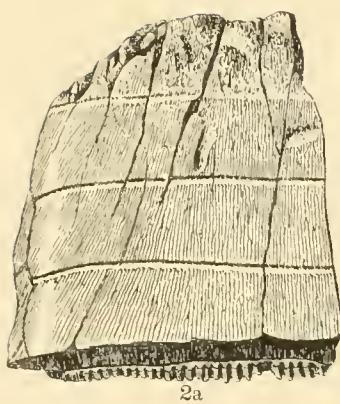
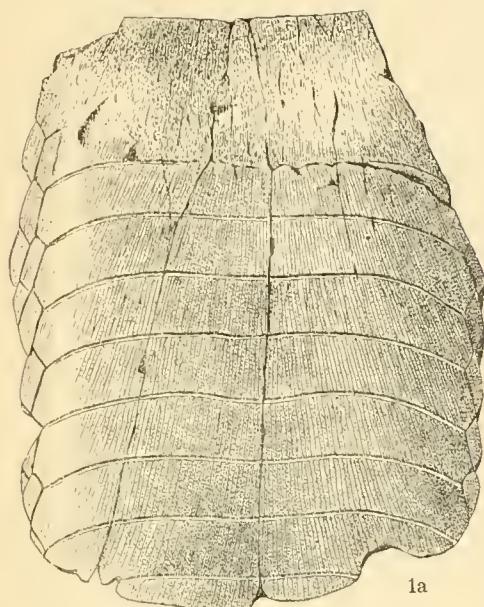


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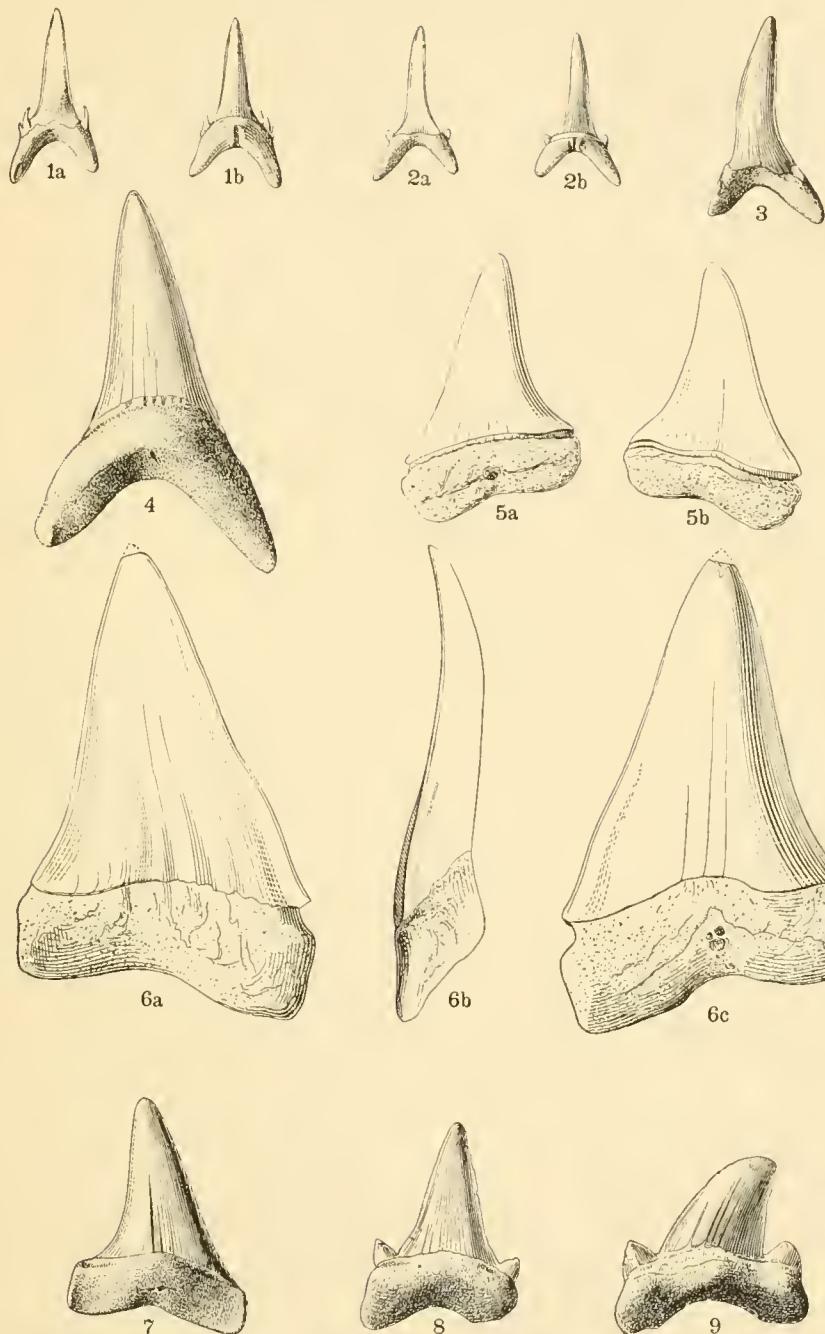
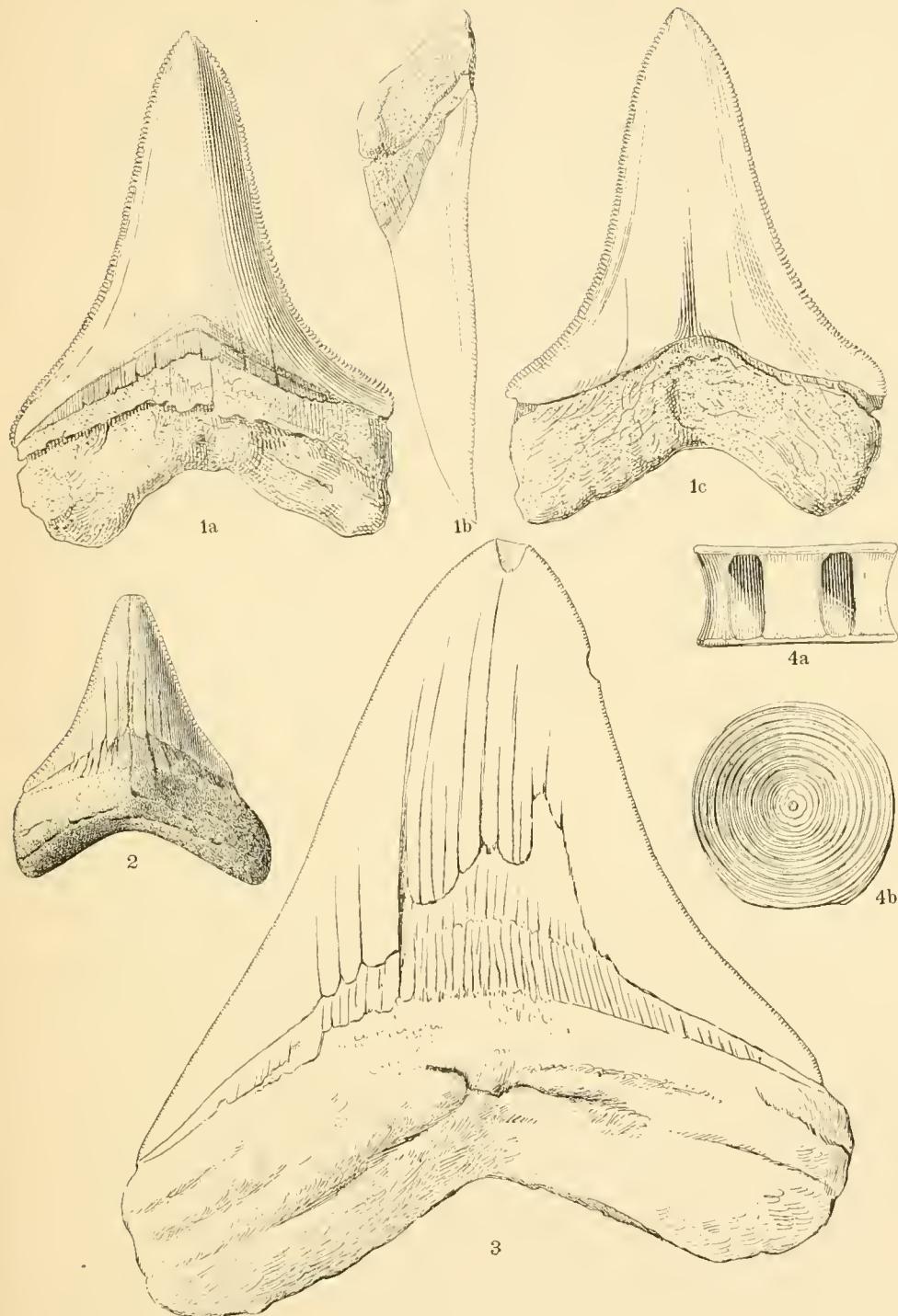


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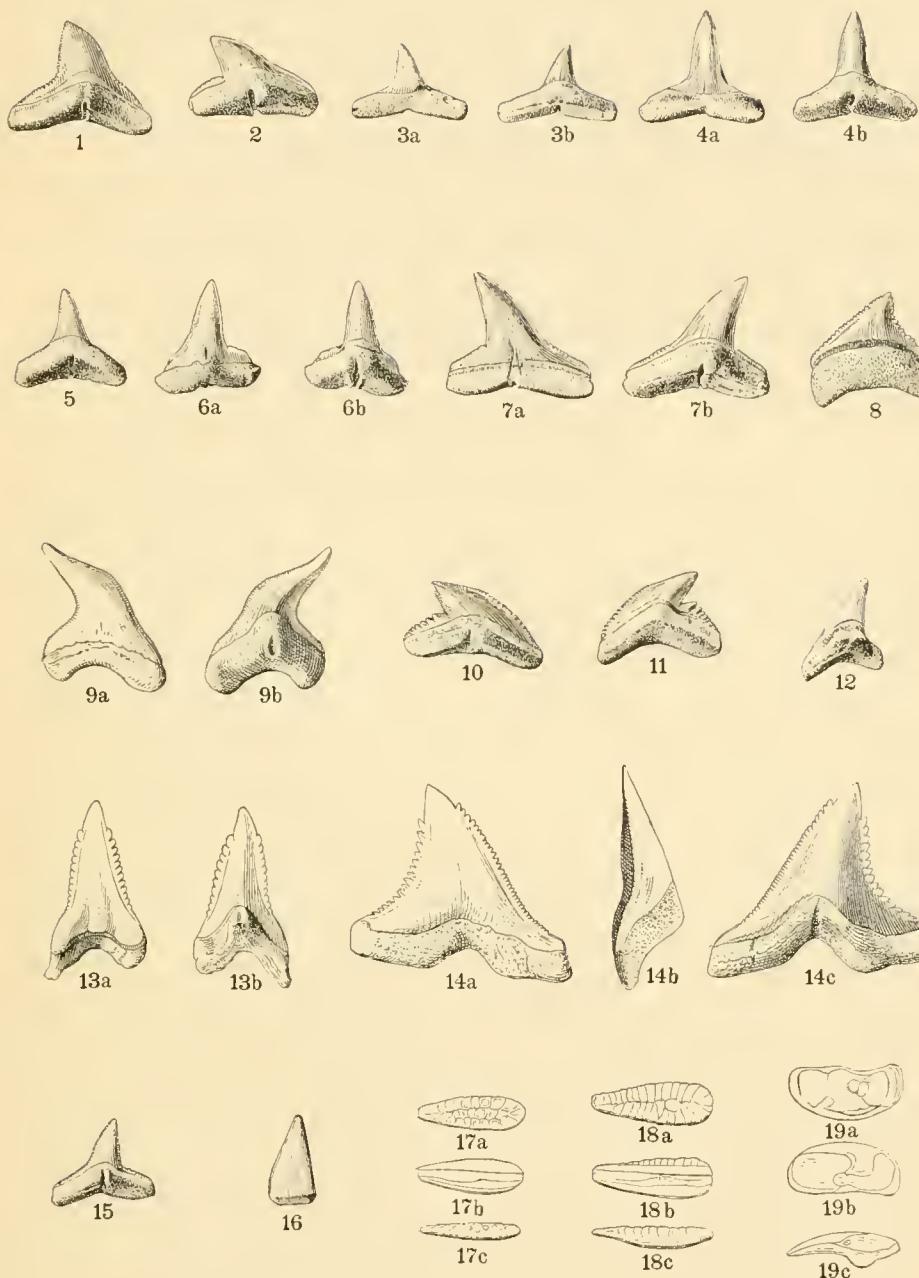
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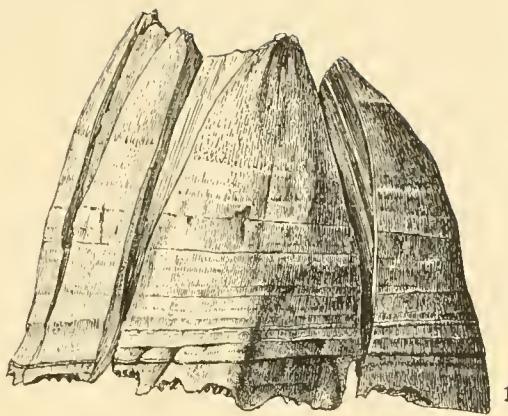
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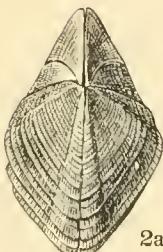
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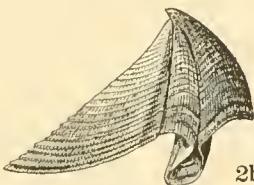
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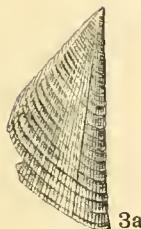
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2a



2b



3a



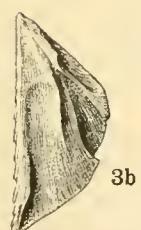
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5a



6a



3b



4b



5b

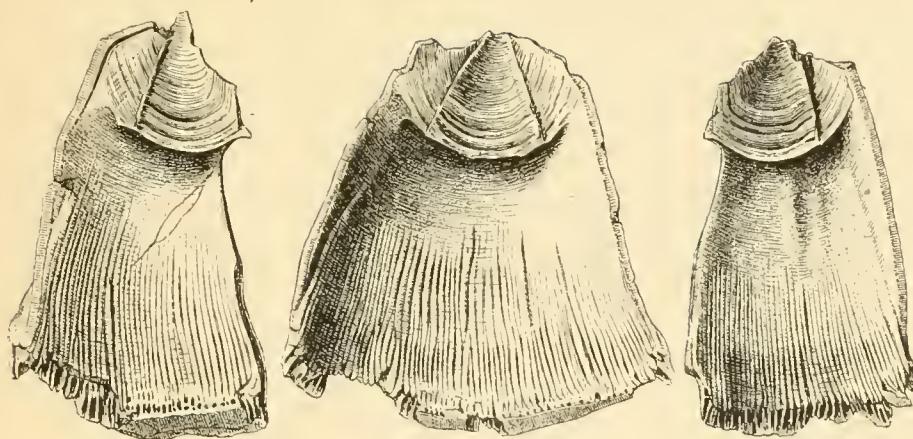


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ARTHOPODA—CIRRIPEDIA.

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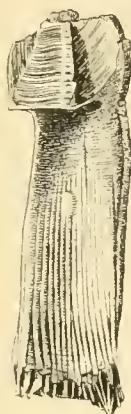
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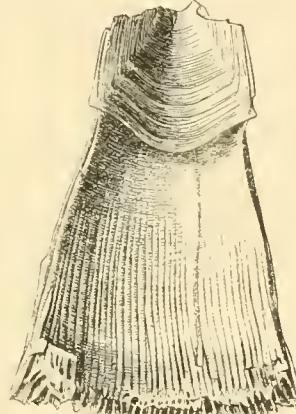
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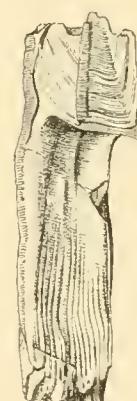
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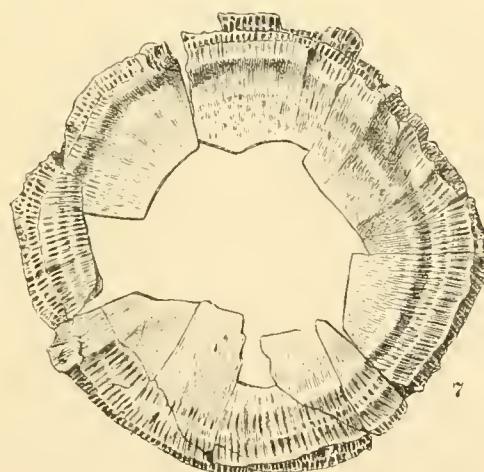
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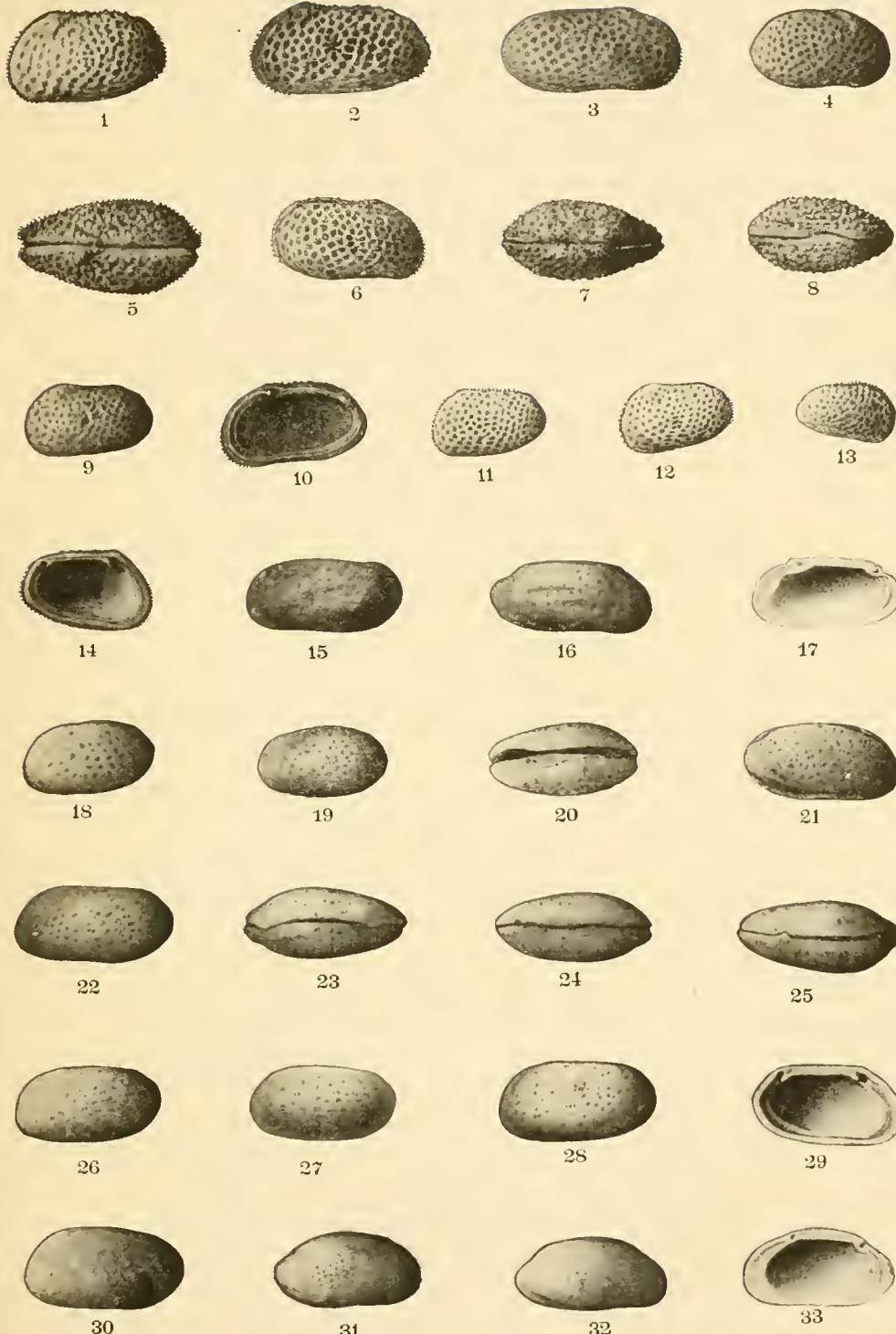
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The figures on this plate are all magnified 20 diameters and the specimens are all from the Calvert formation at Plum Point, Md.

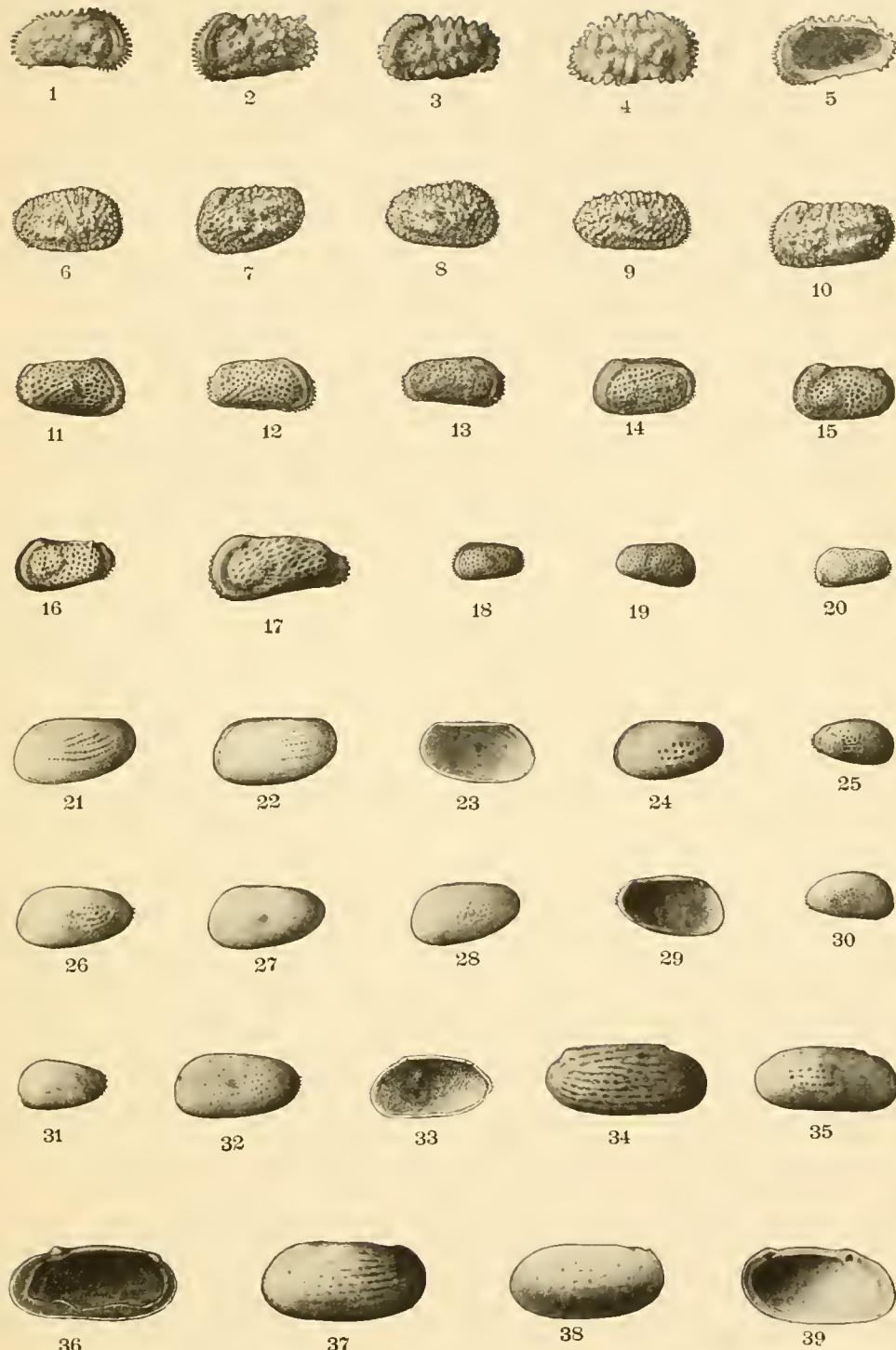


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The figures on this plate are all magnified 20 diameters and the specimens are all from the Calvert formation at Plum Point, Md.

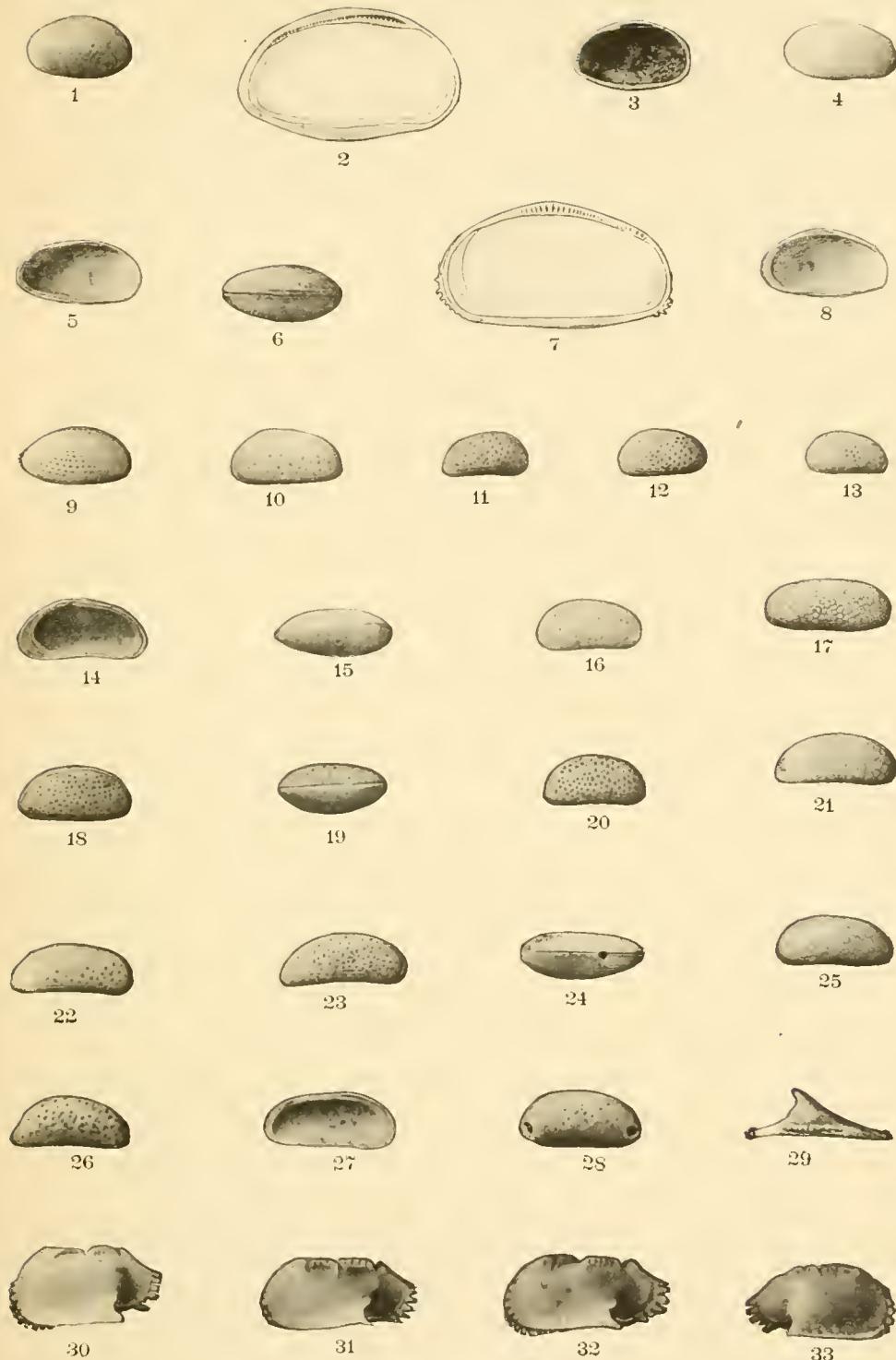


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Excepting Figs. 2 and 7, all the figures on this plate are magnified 20 diameters. The specimens are all from the Calvert formation at Plum Point, Md.

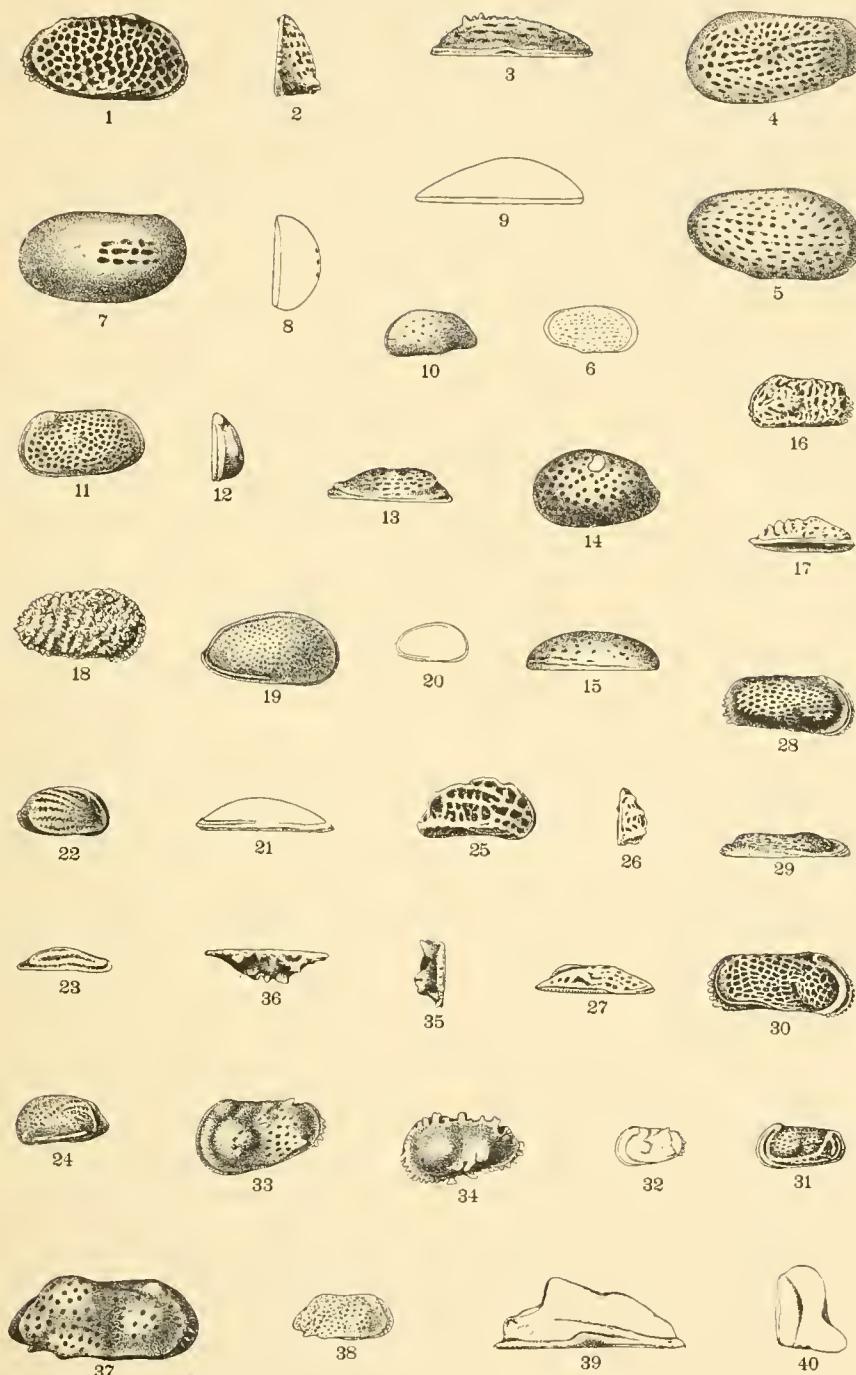


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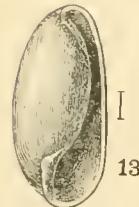
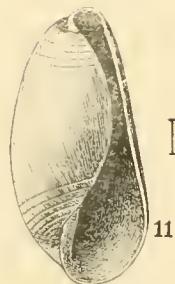
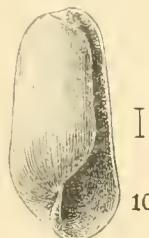
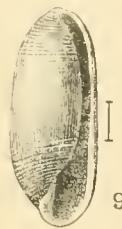
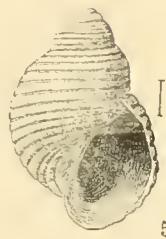
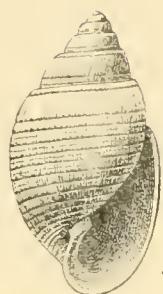
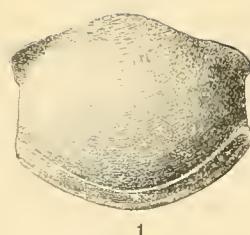
Unless stated otherwise all the figures on this plate are magnified  $13\frac{1}{3}$  times.



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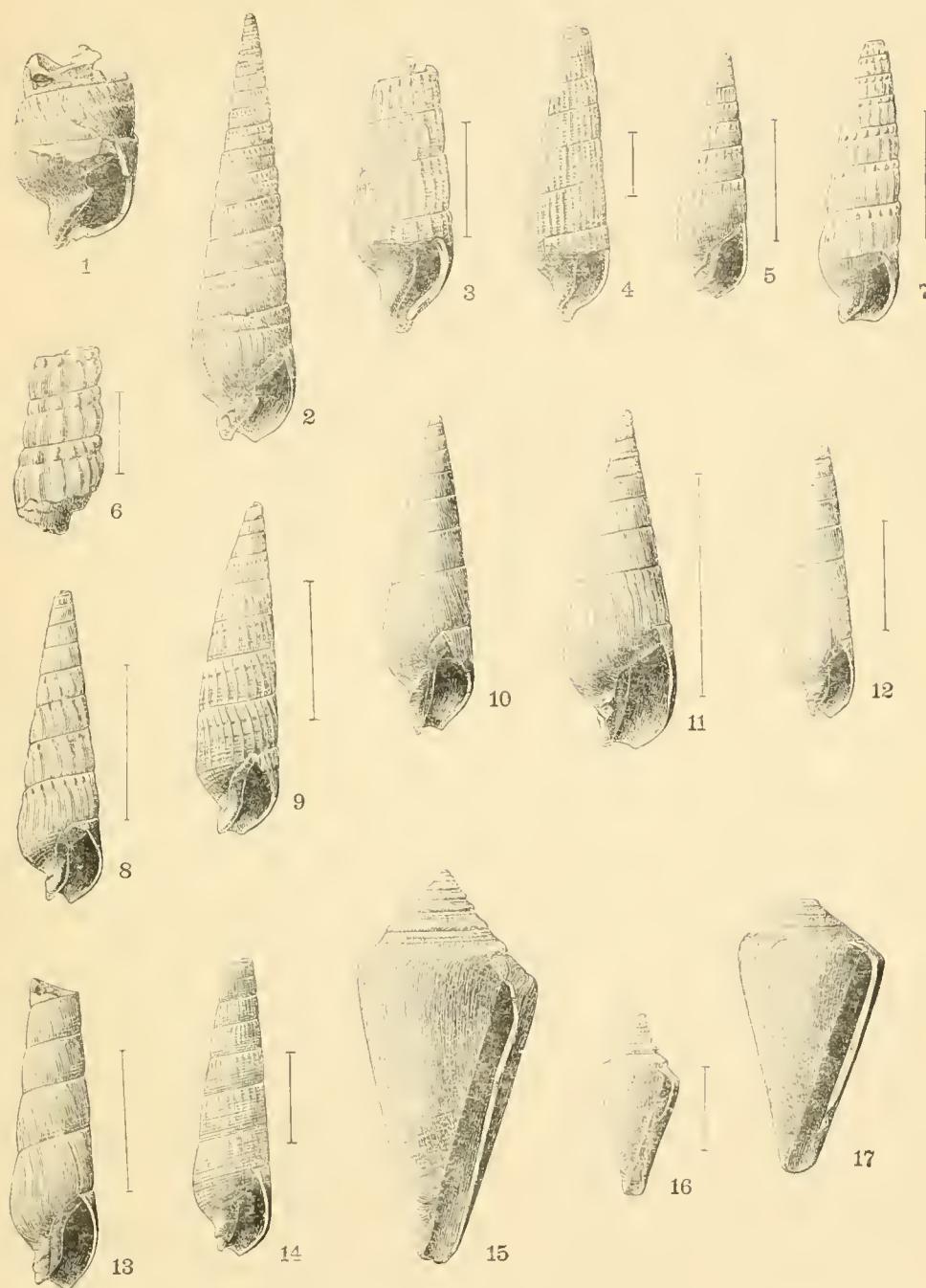
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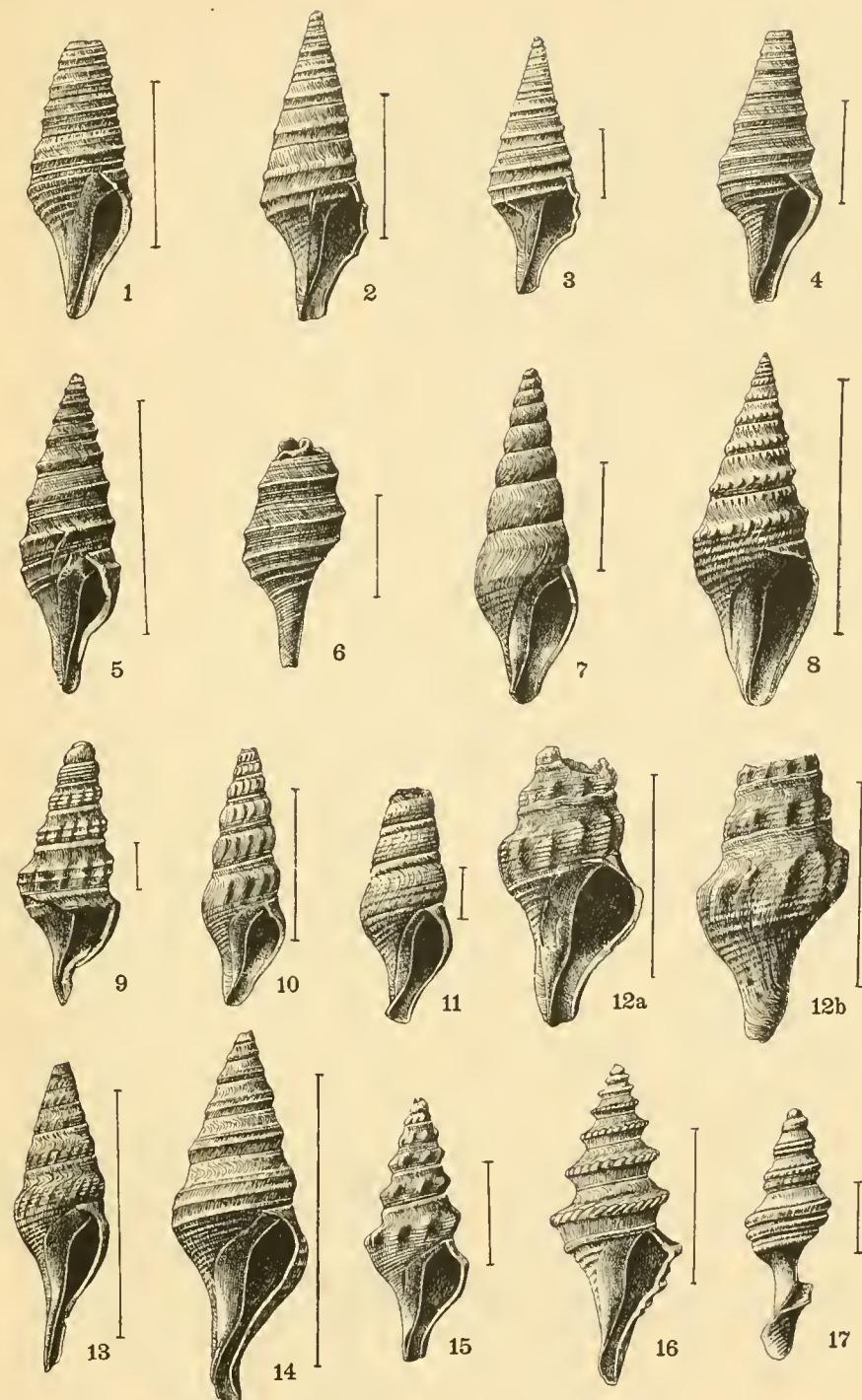
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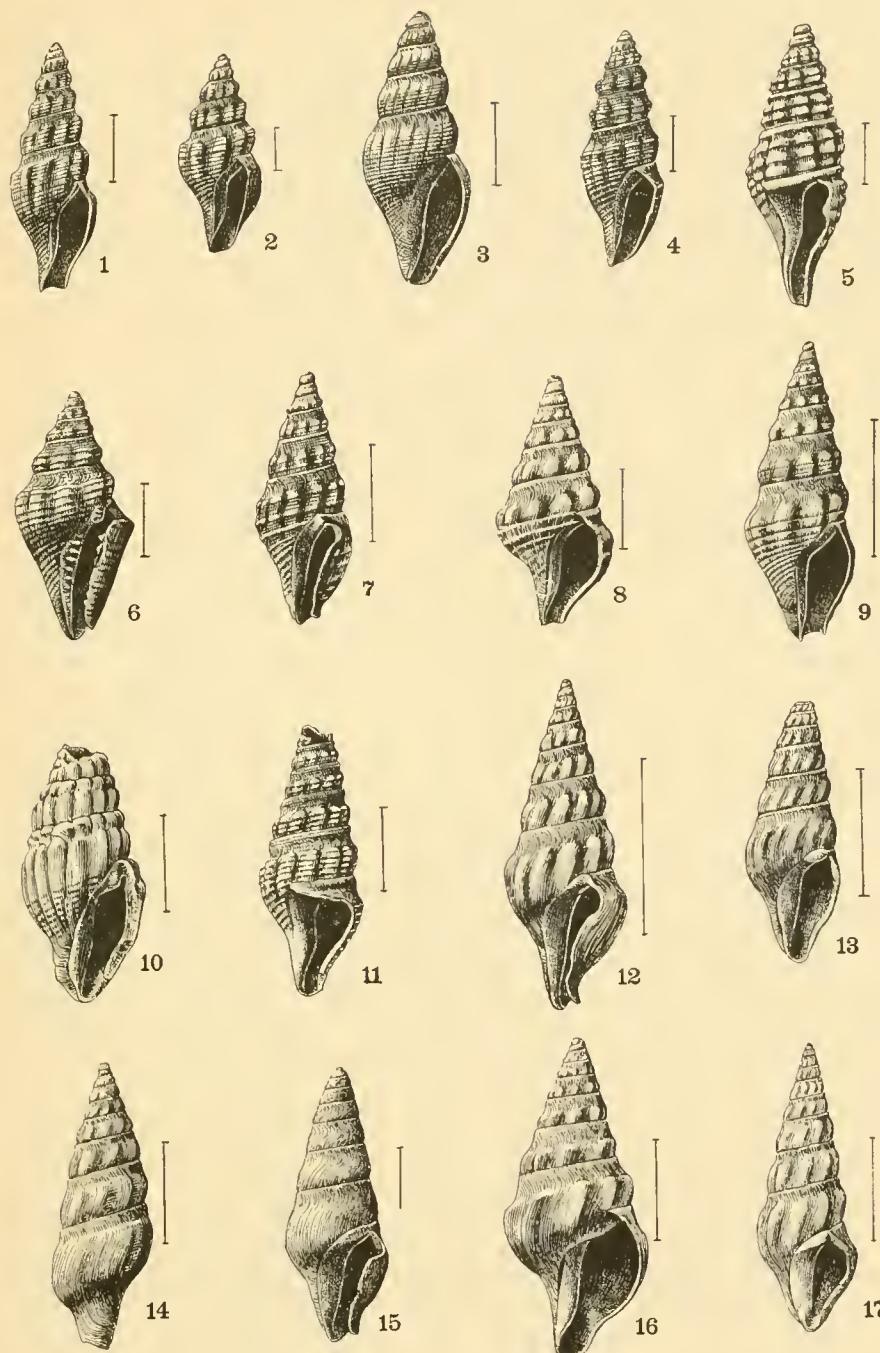
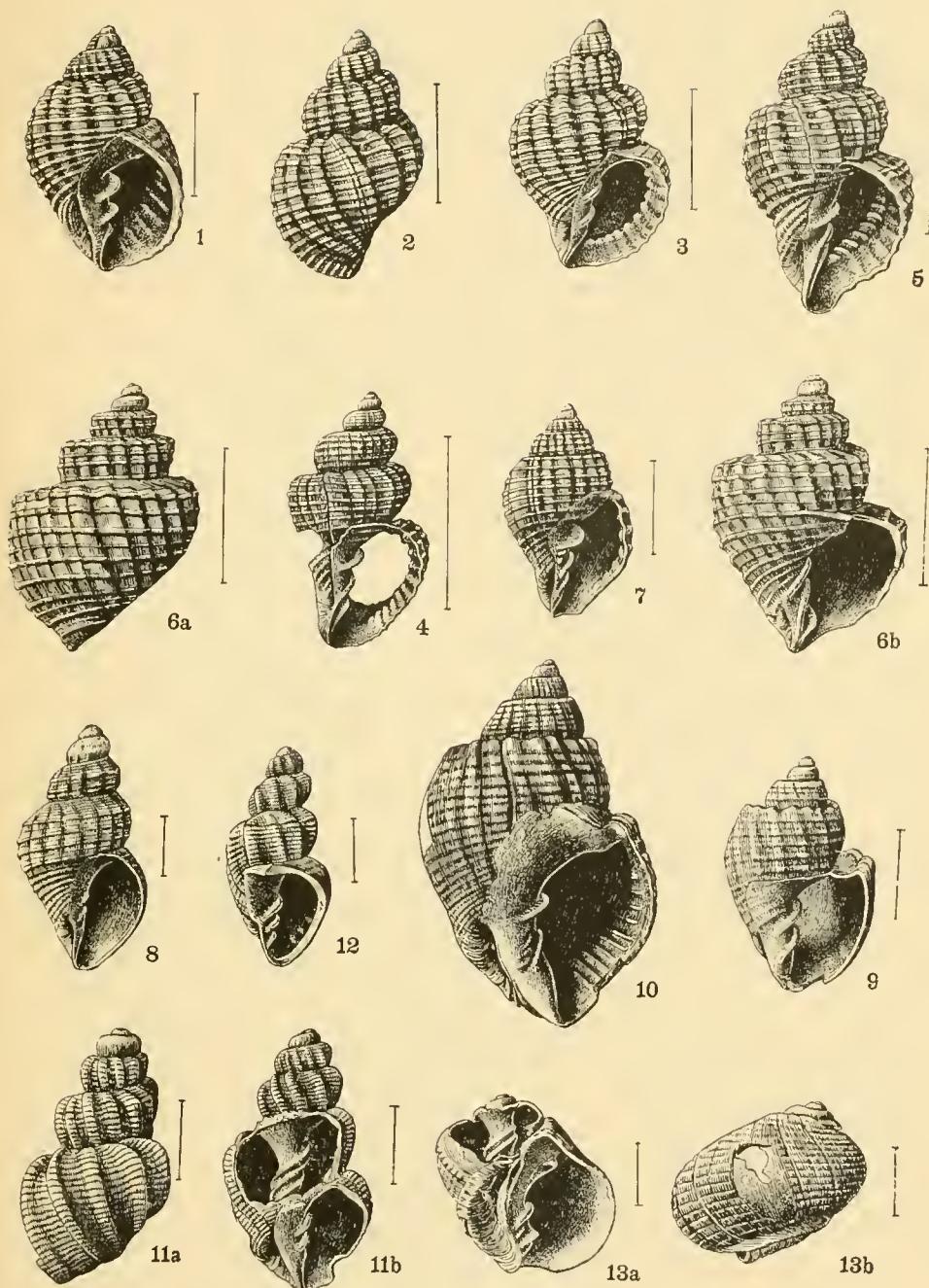


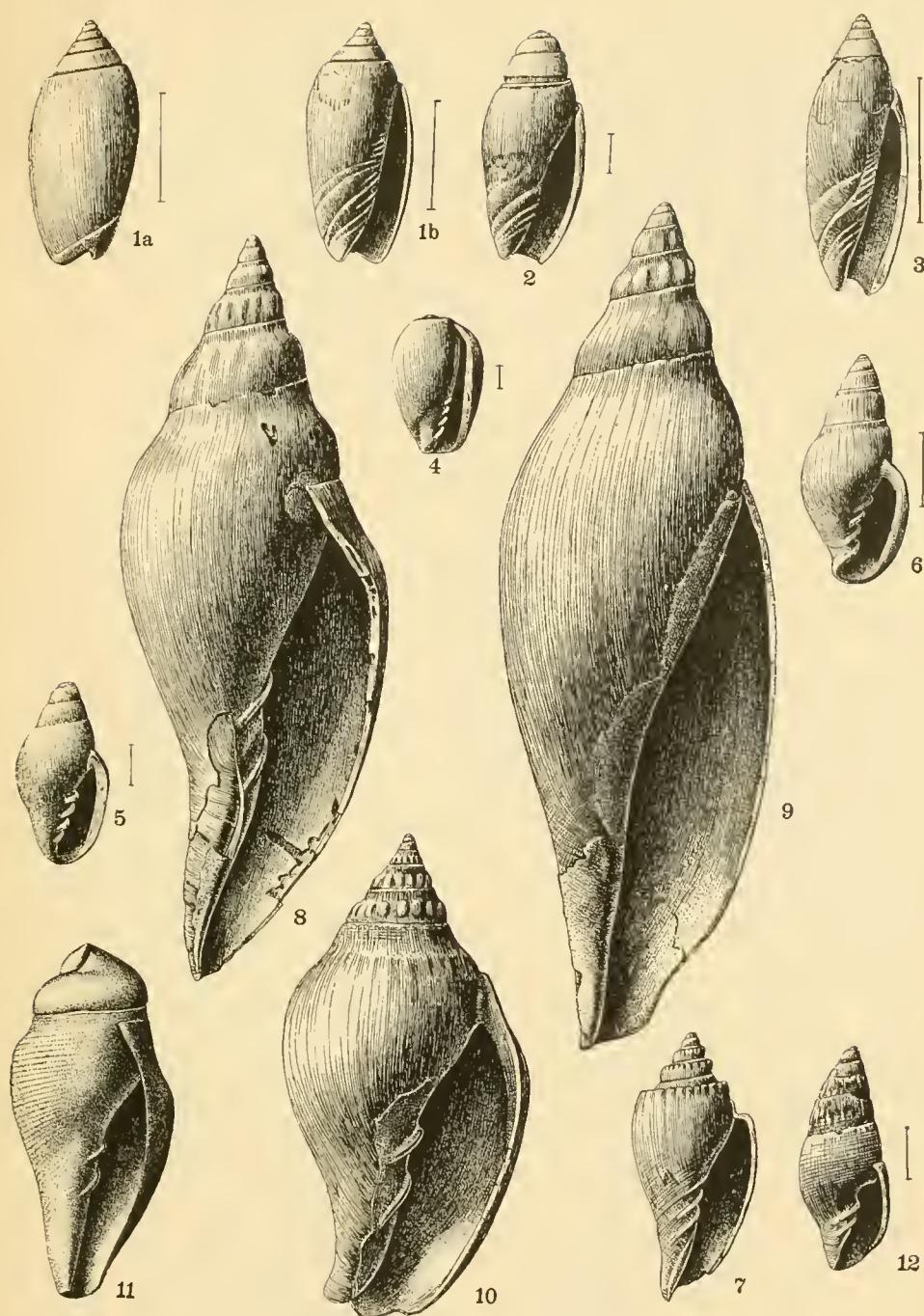
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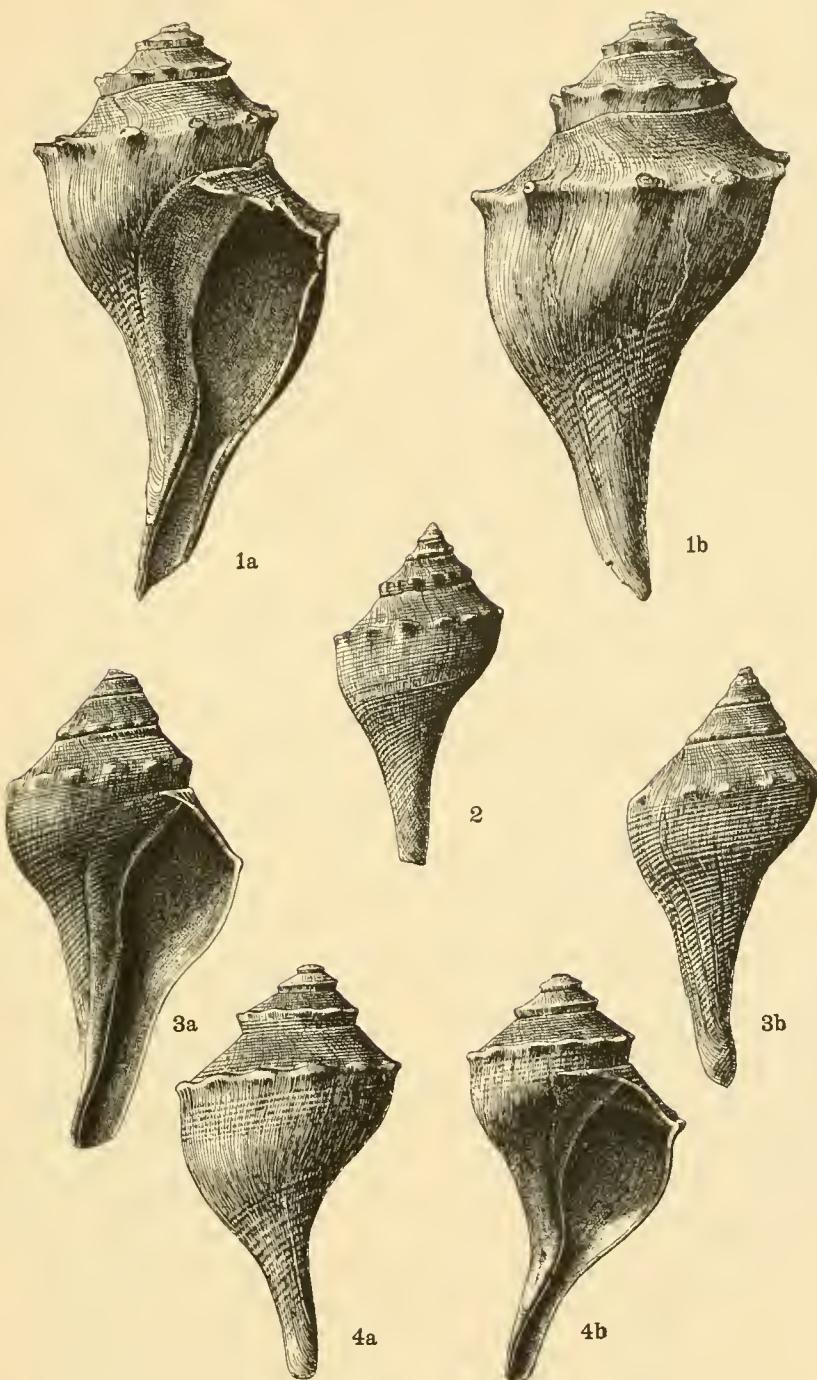
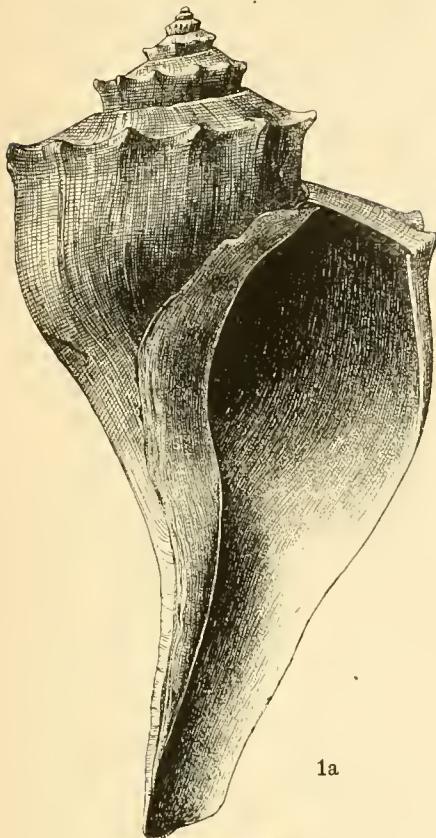
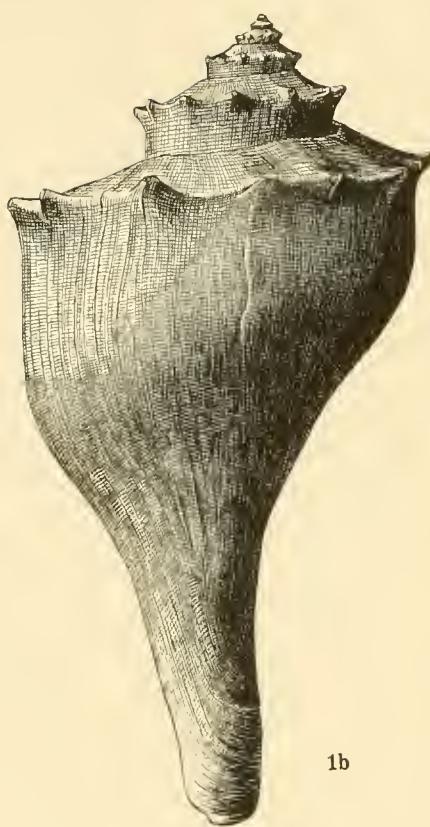


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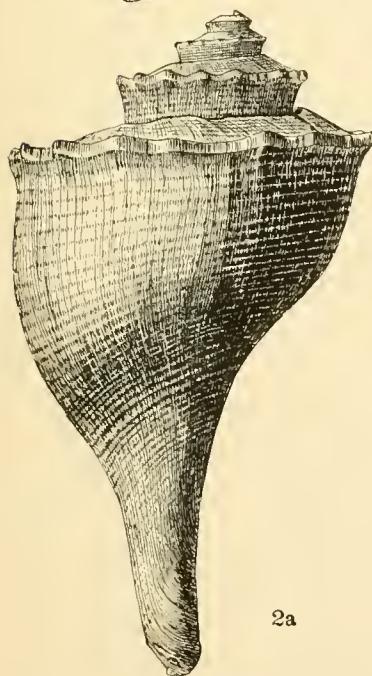
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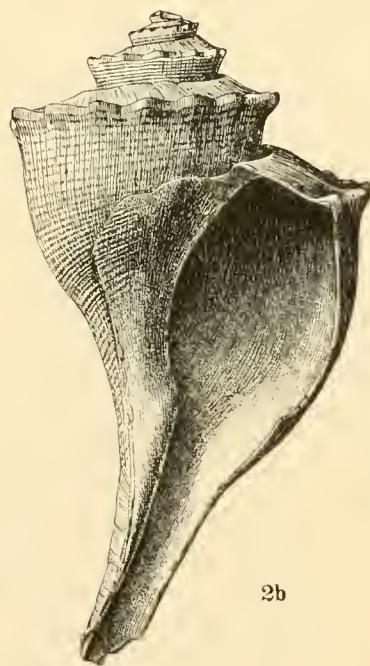
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1b



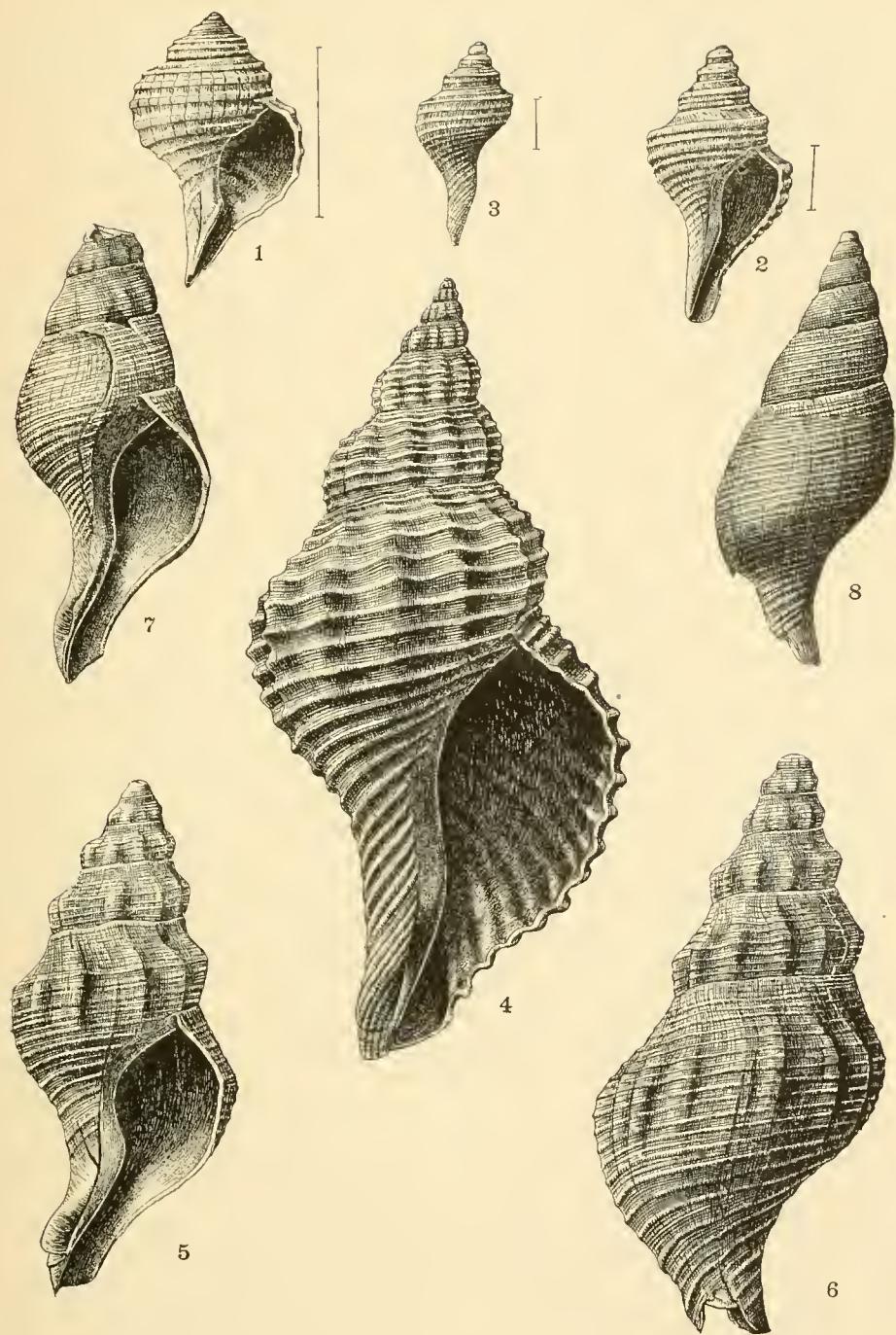
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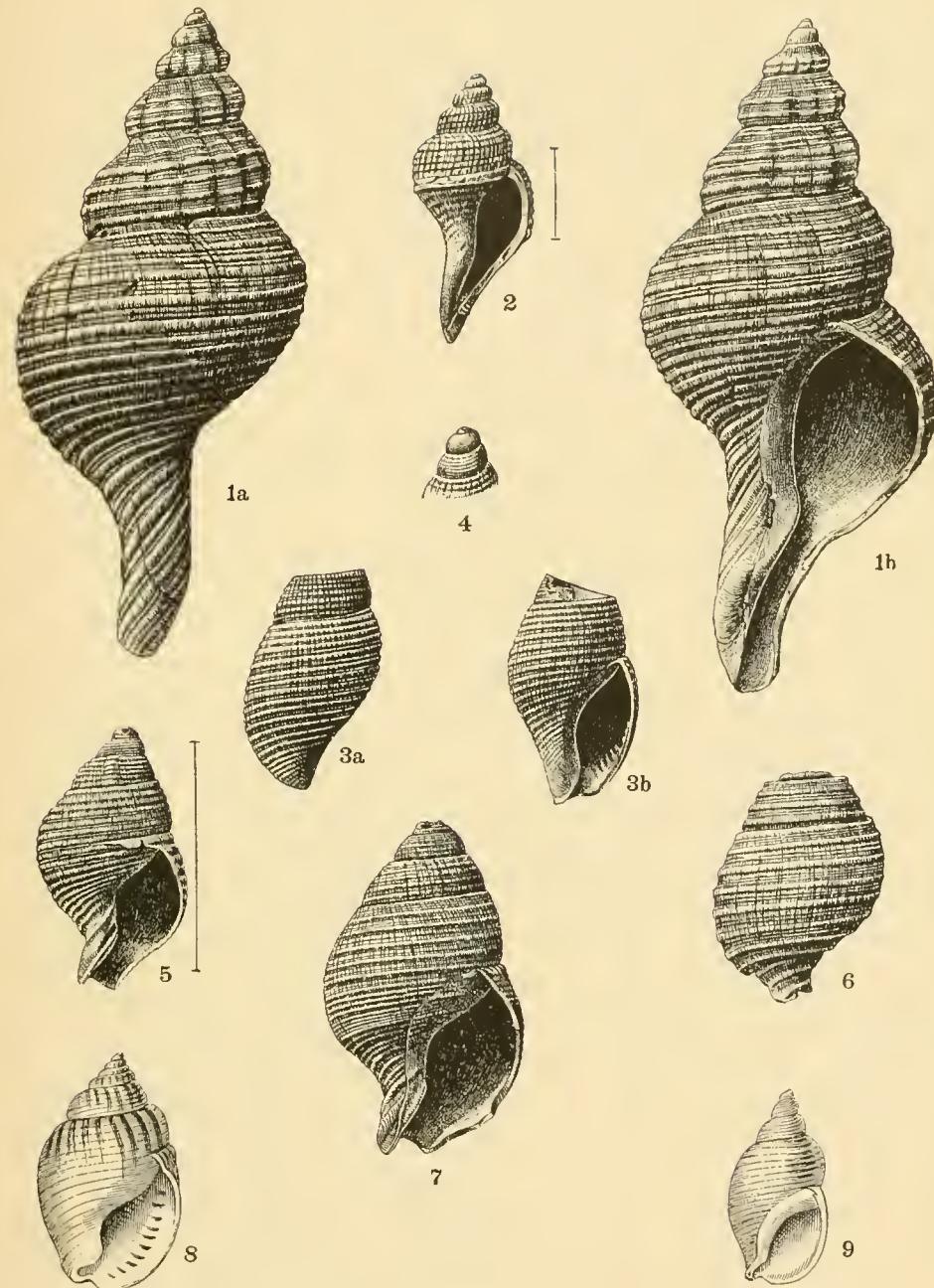
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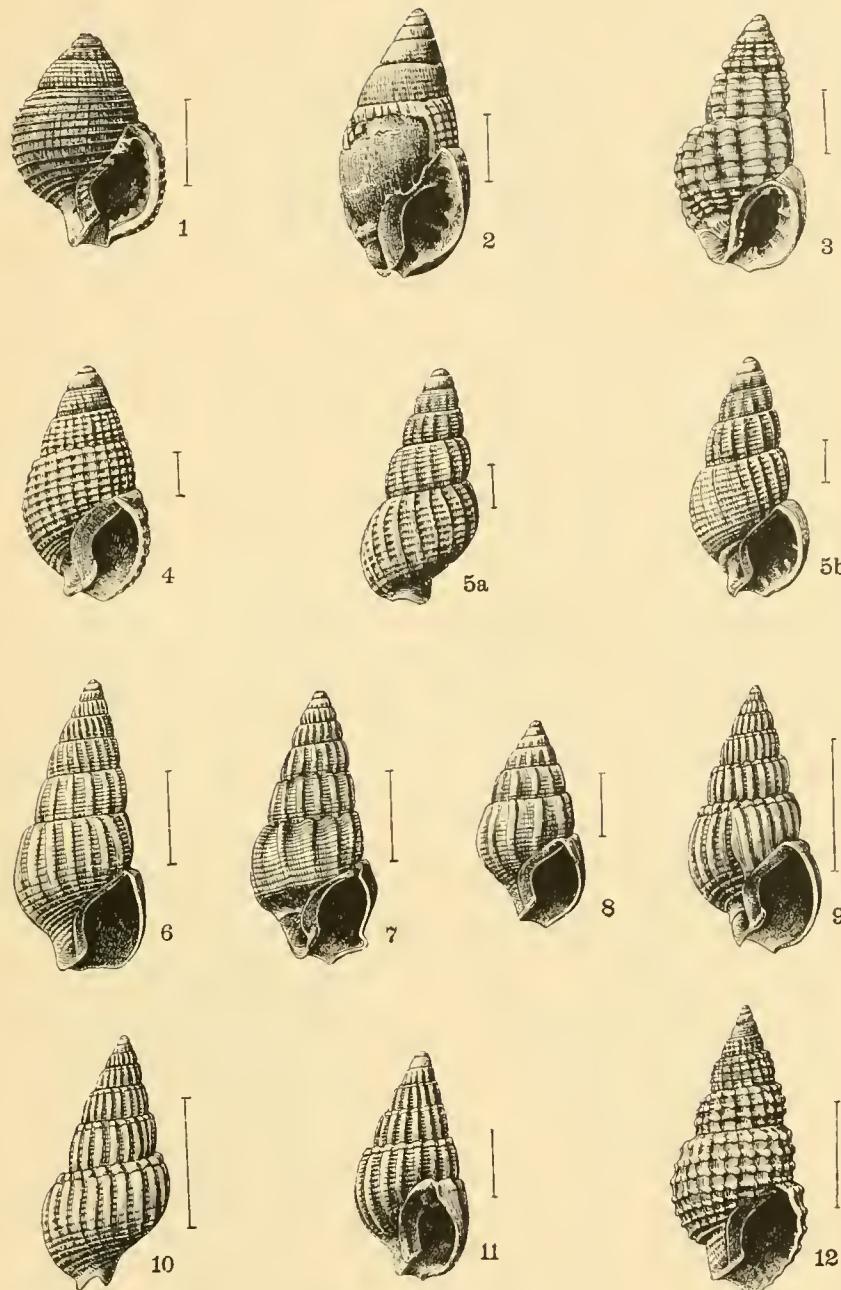
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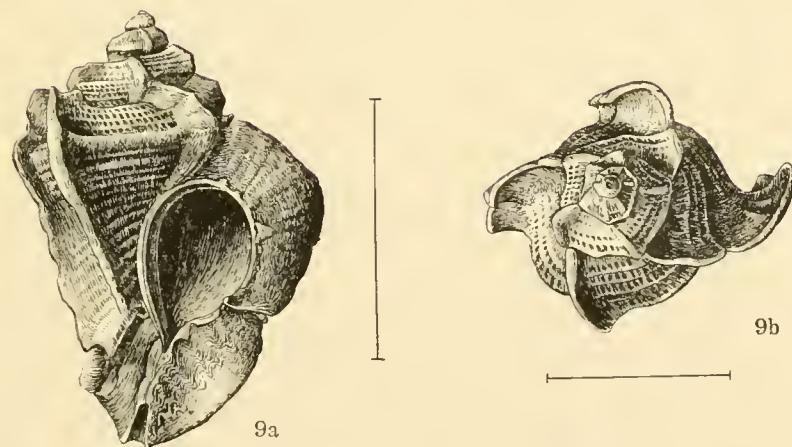
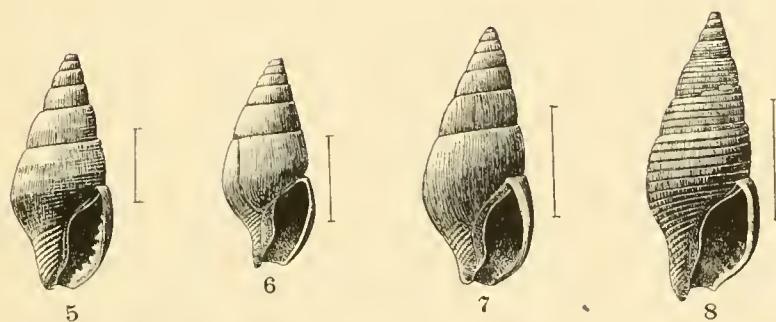
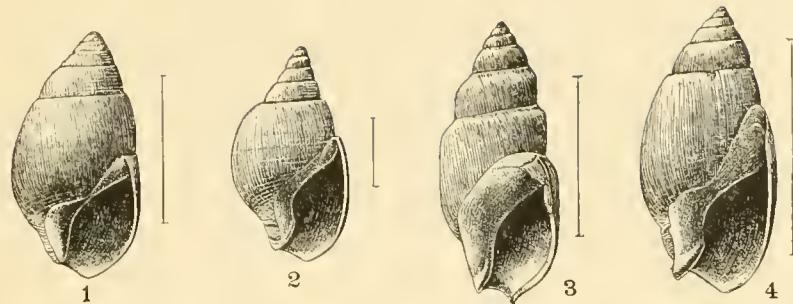
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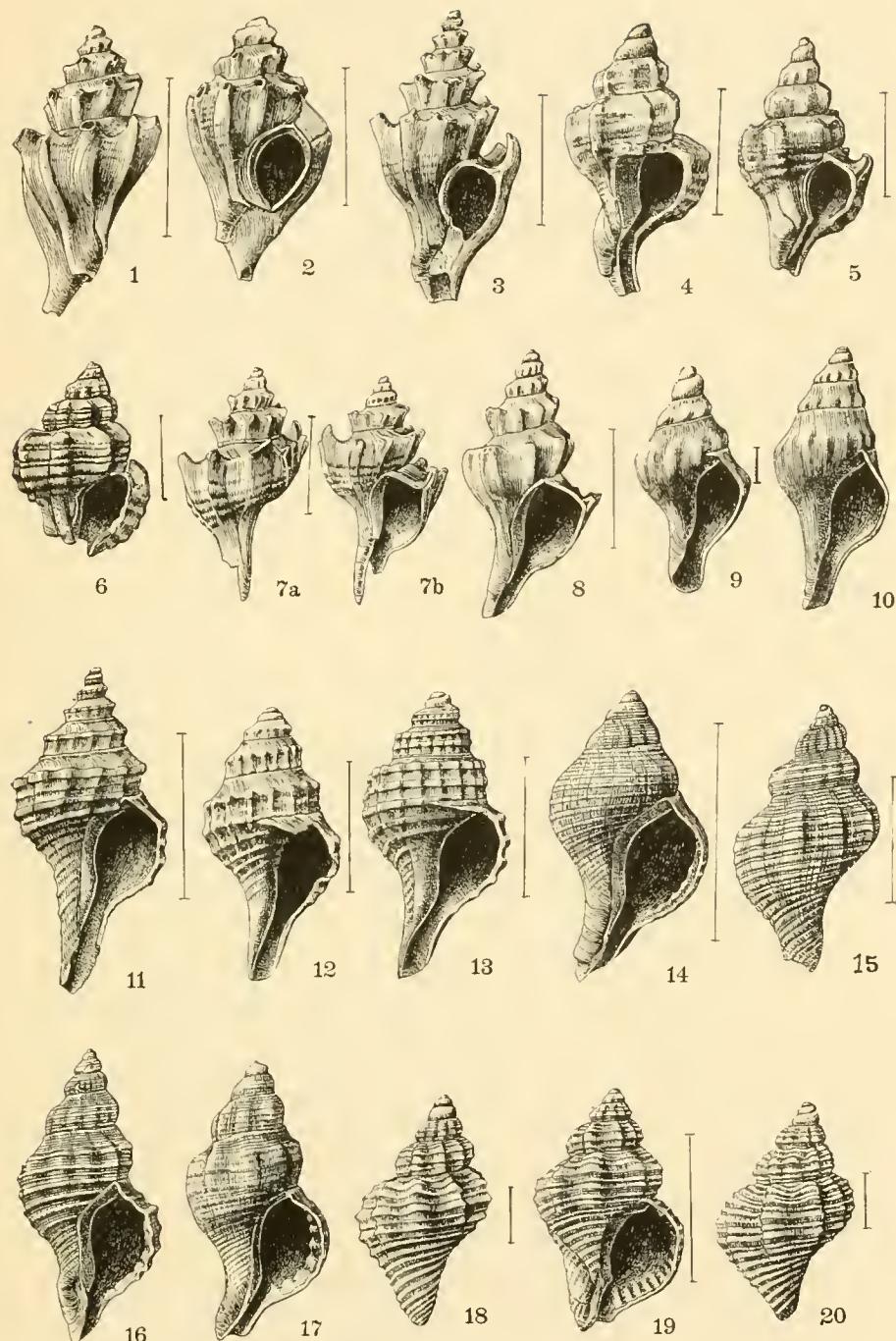
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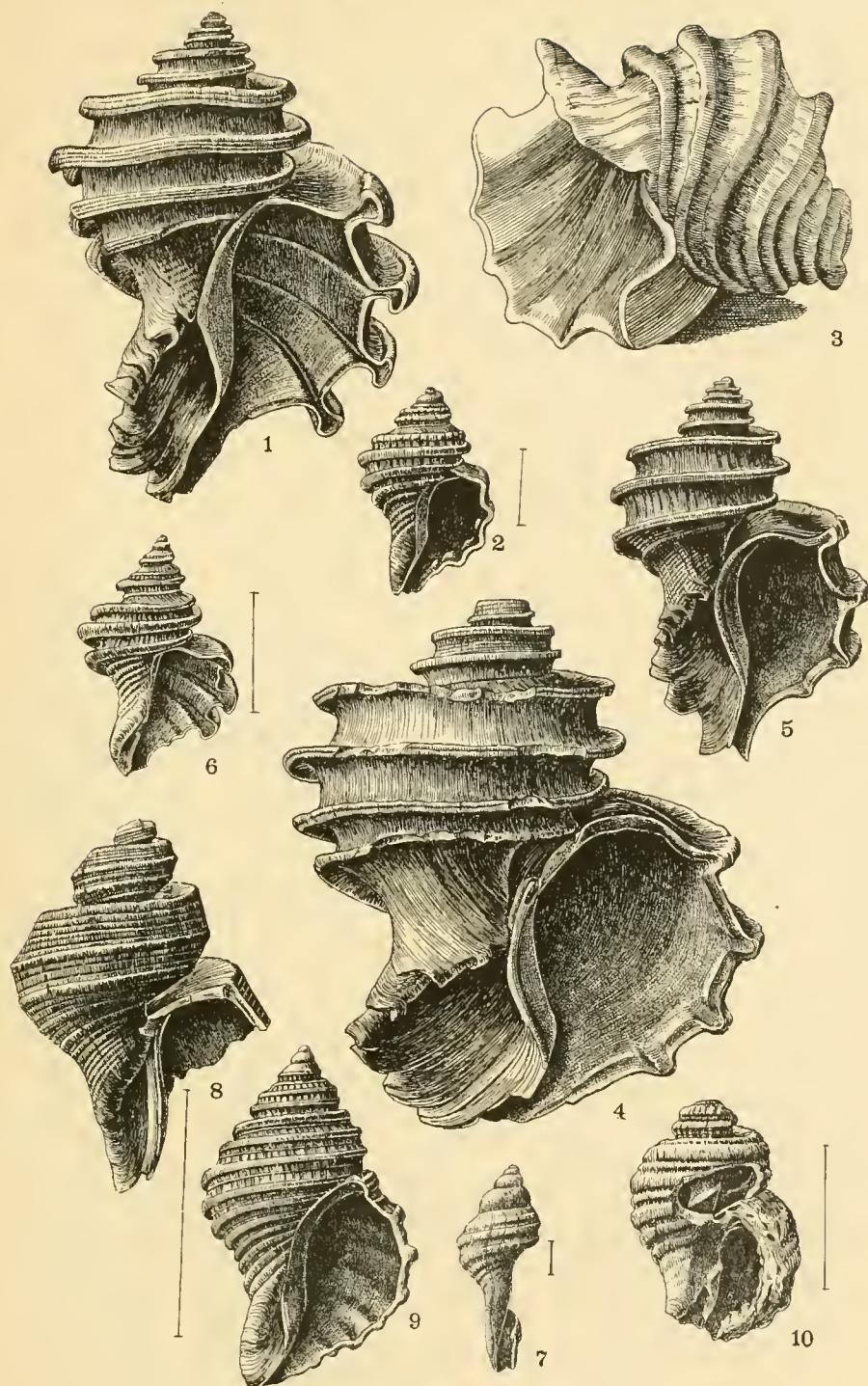
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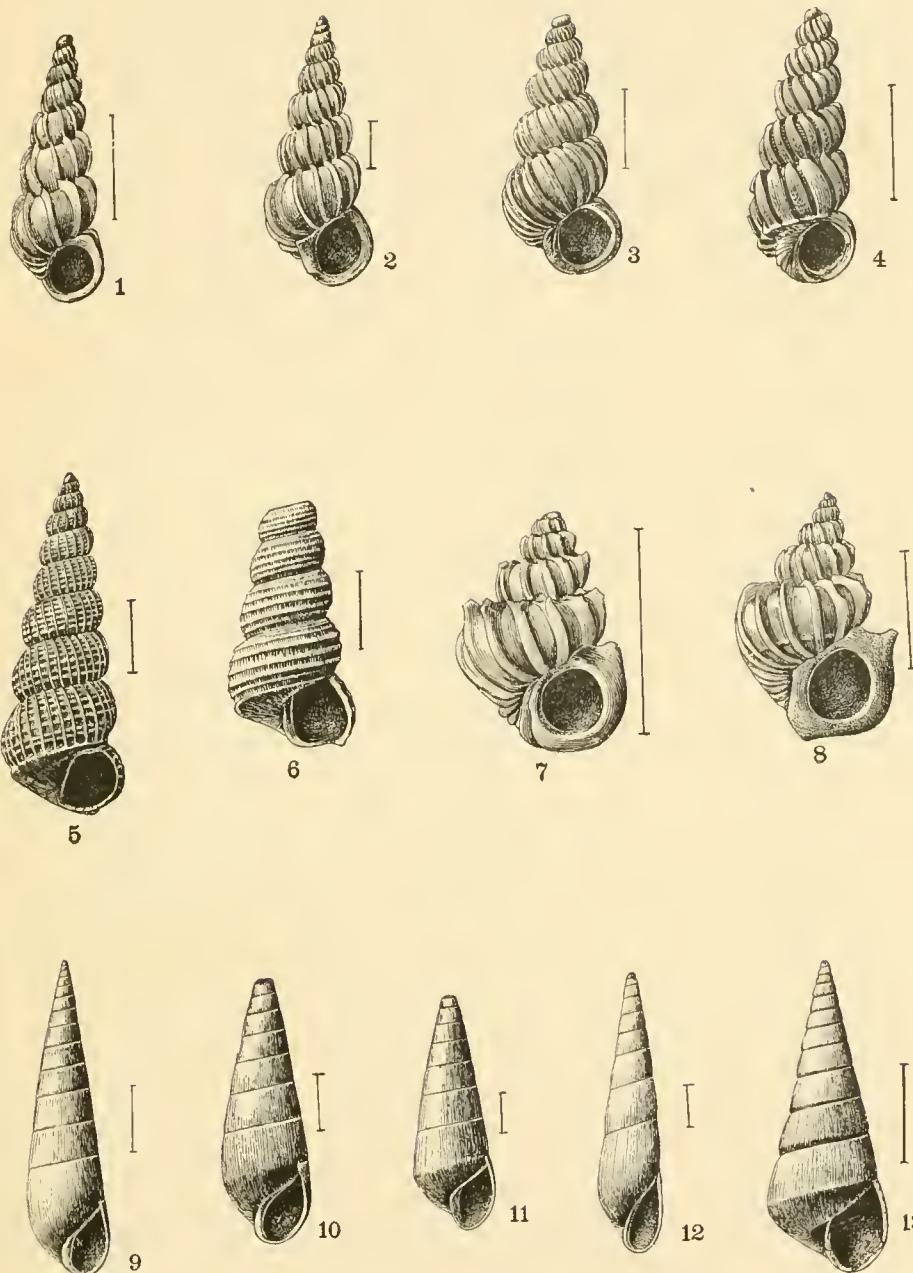
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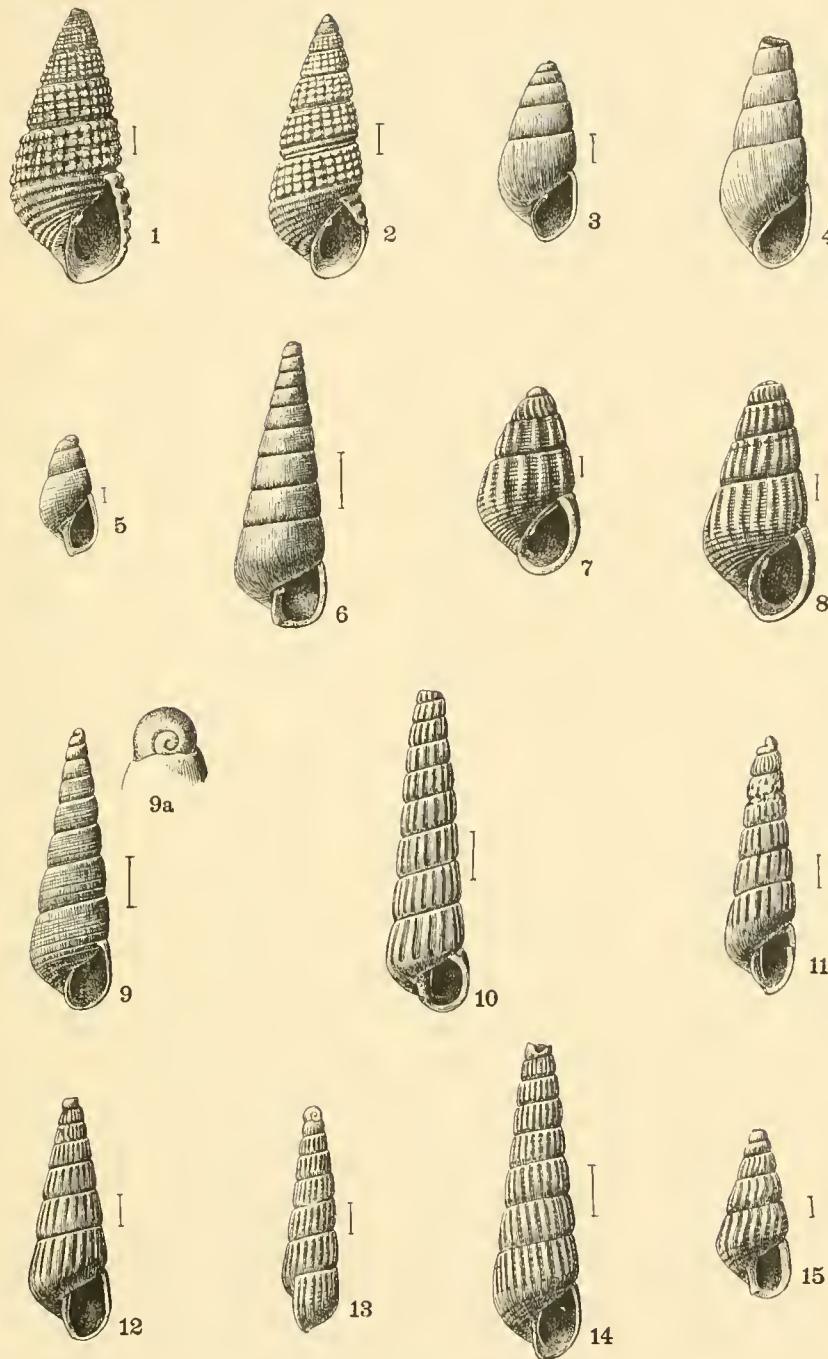
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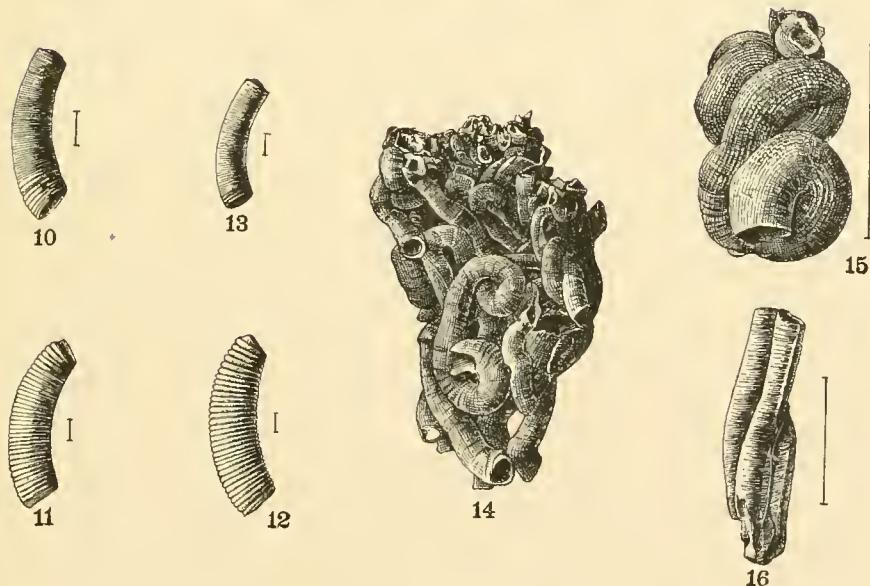
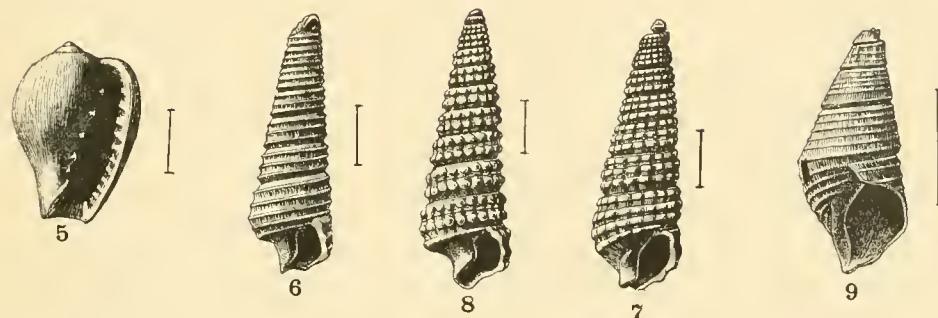
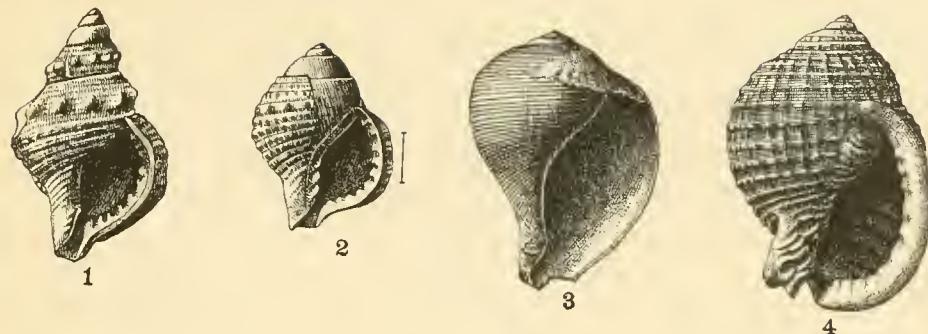
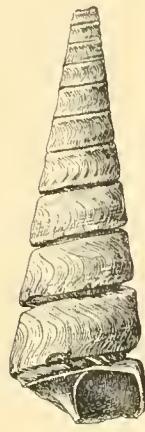
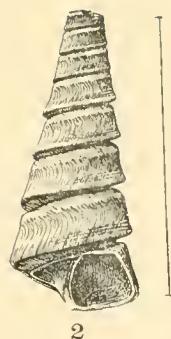


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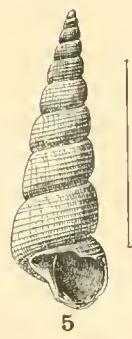
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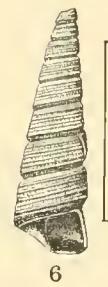
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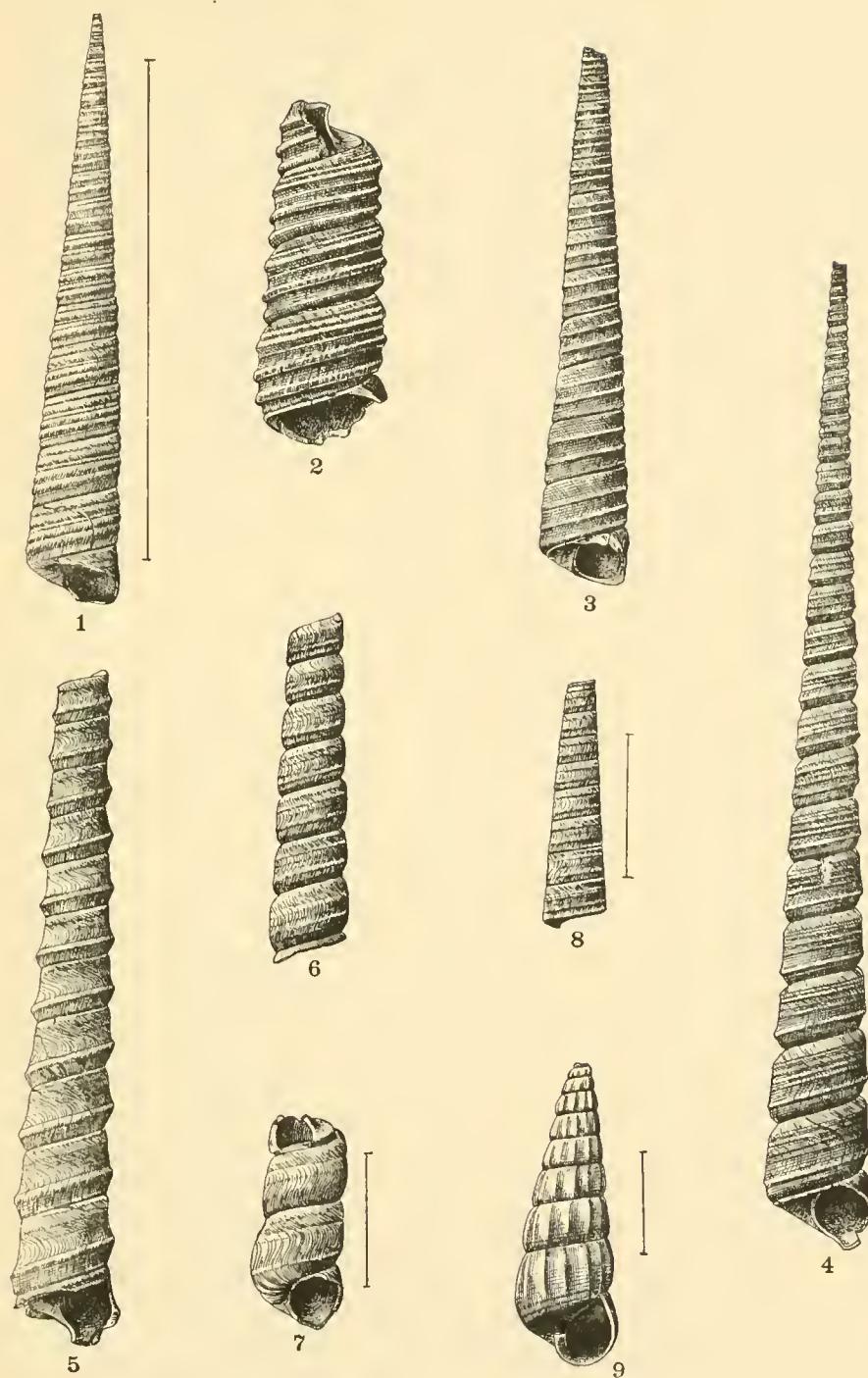
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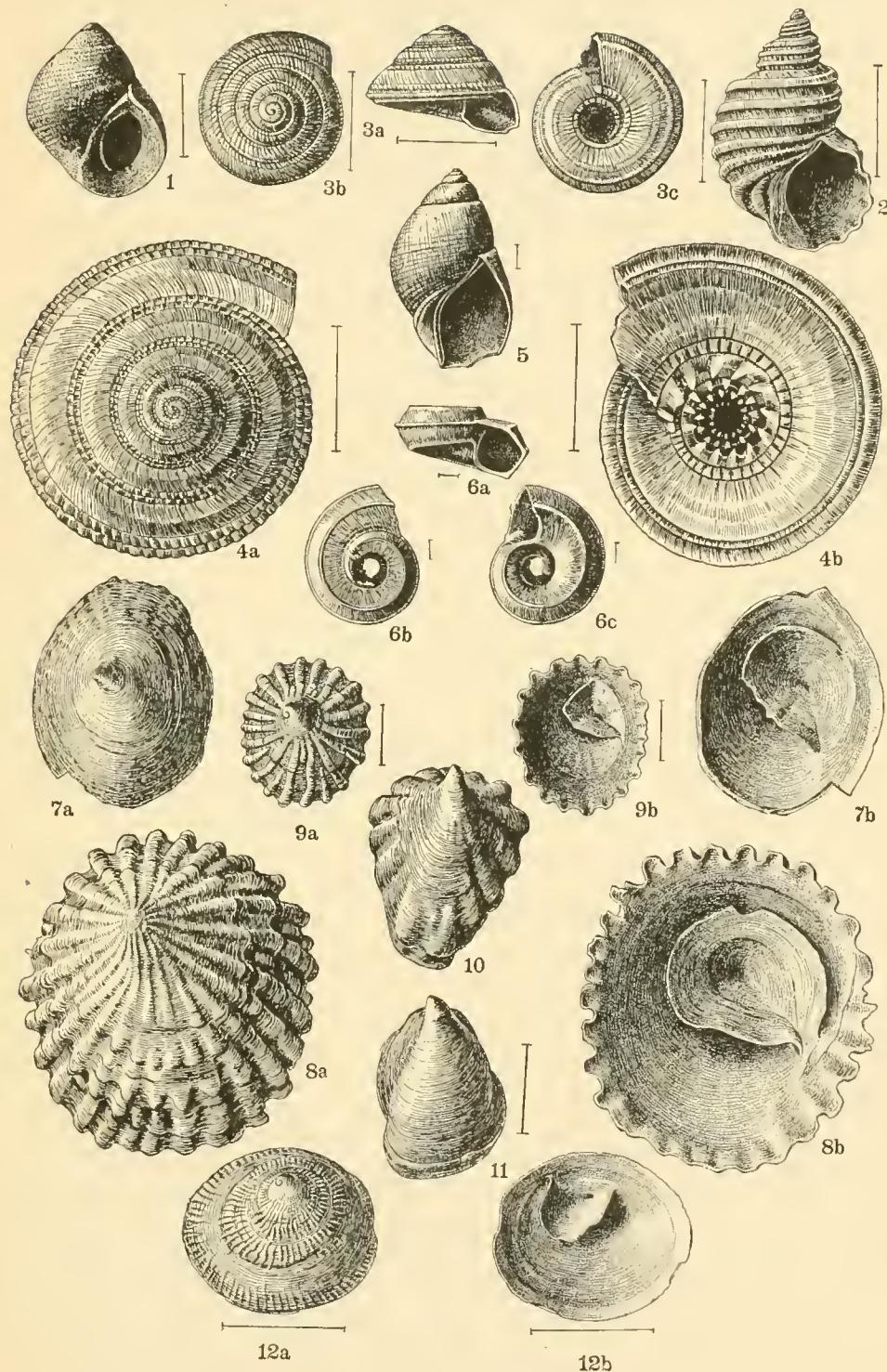
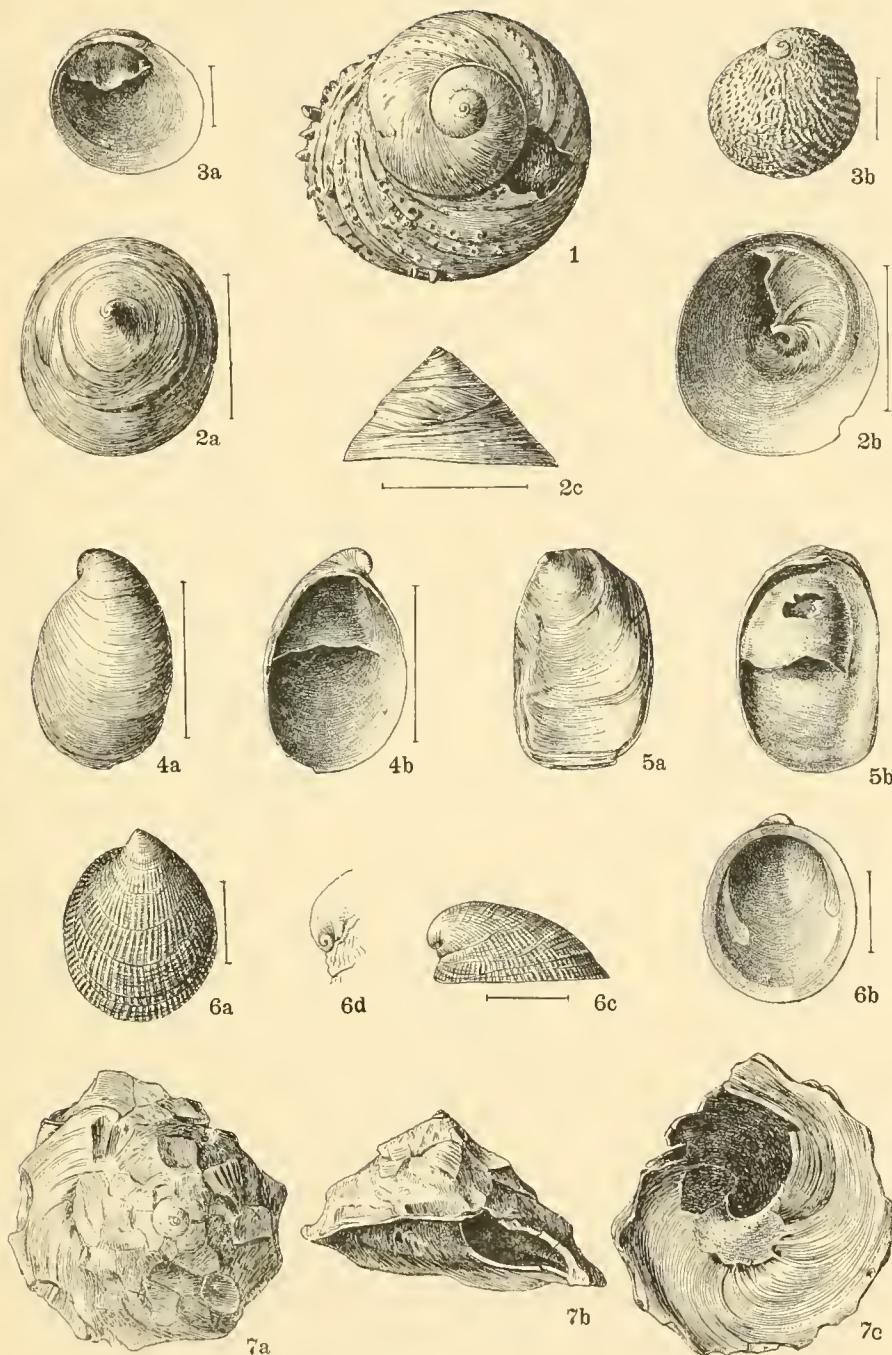


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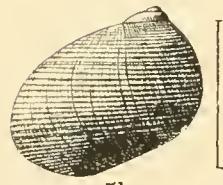
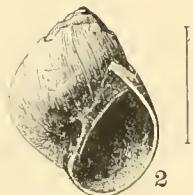
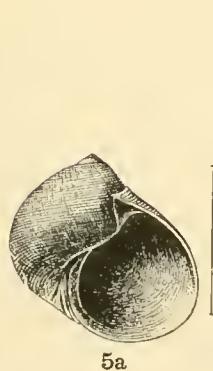
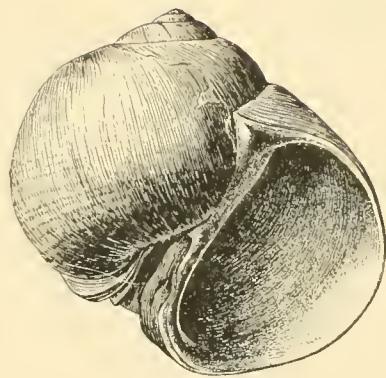
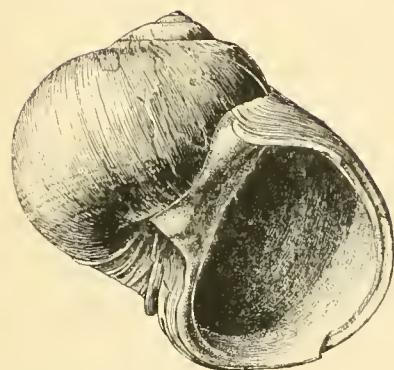
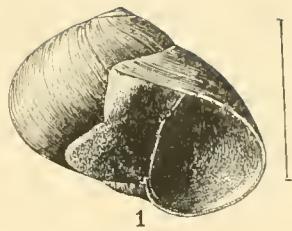
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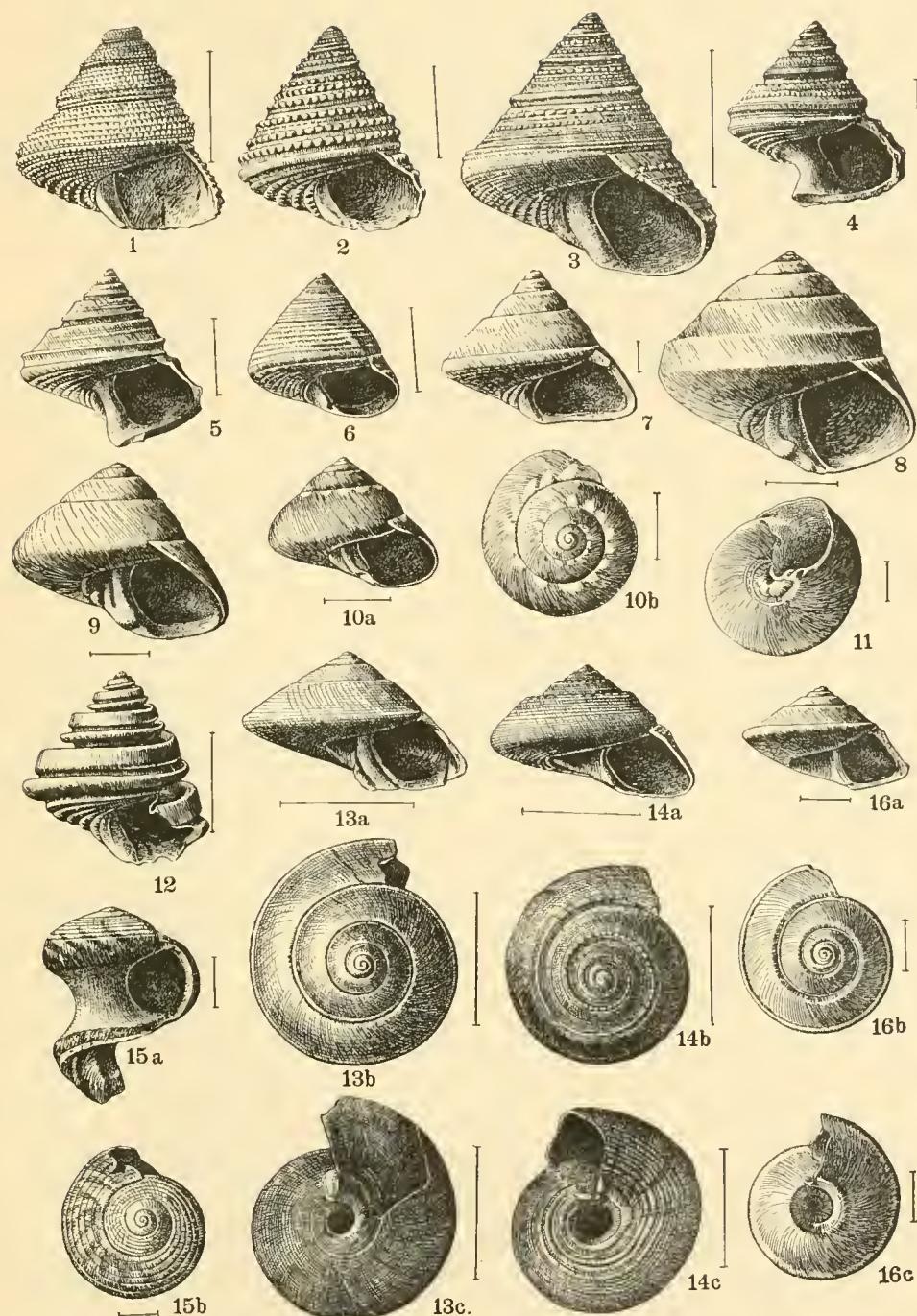
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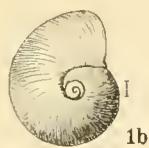
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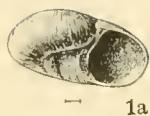
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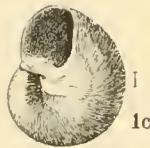
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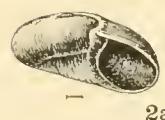
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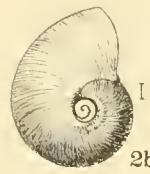
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2c



2a



2b



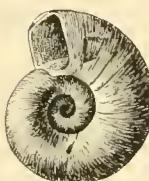
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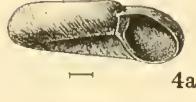
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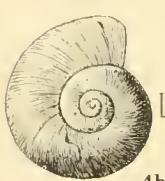
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4c



4a



4b



5b



5a



5c



6c



6a



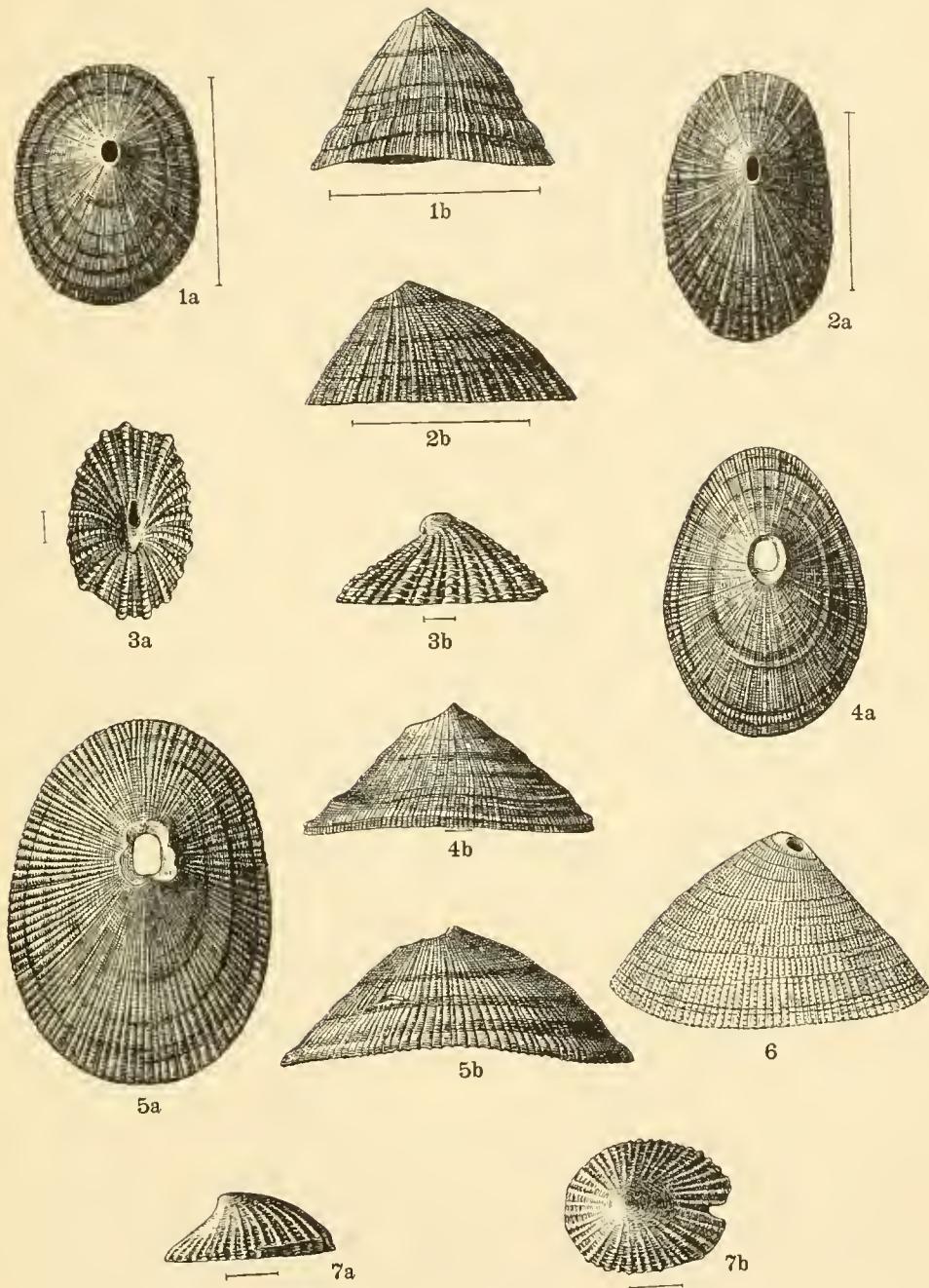
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6b

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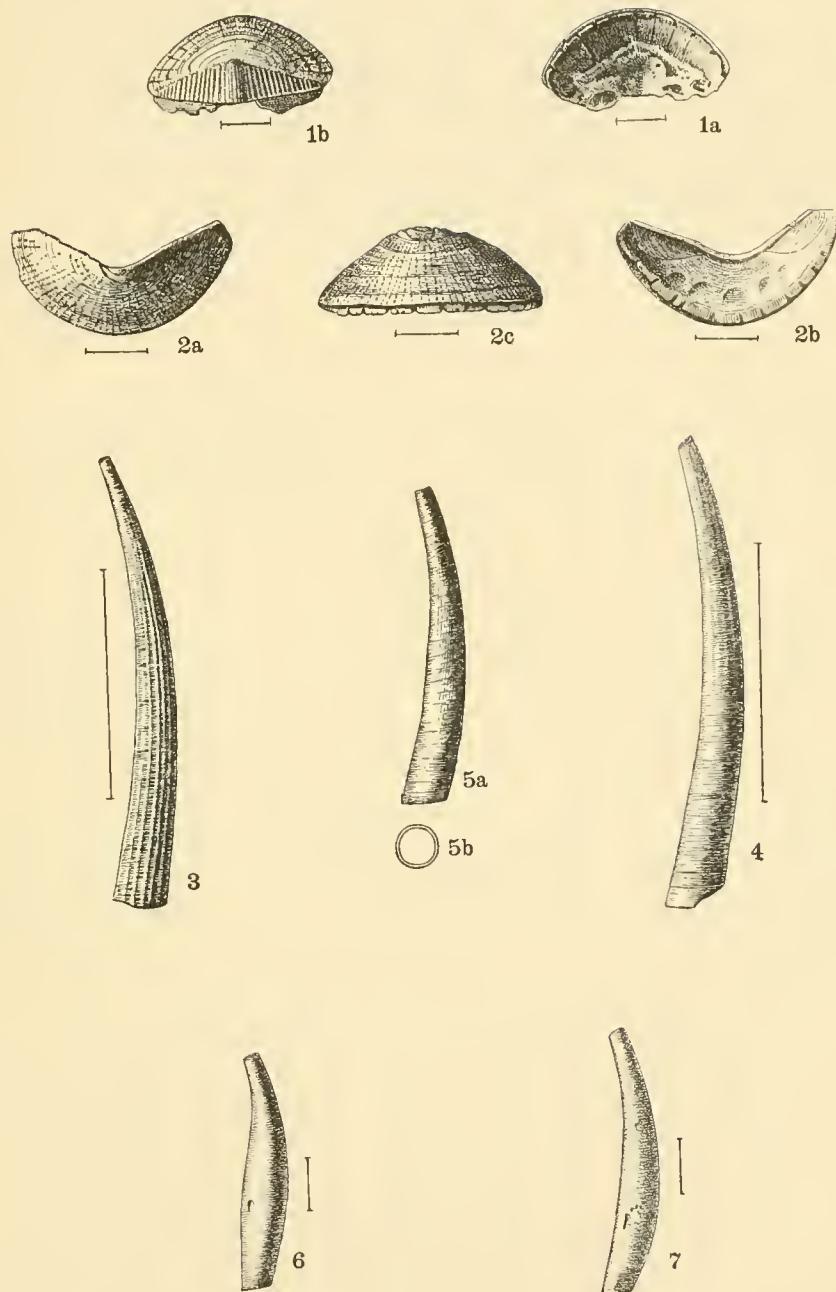
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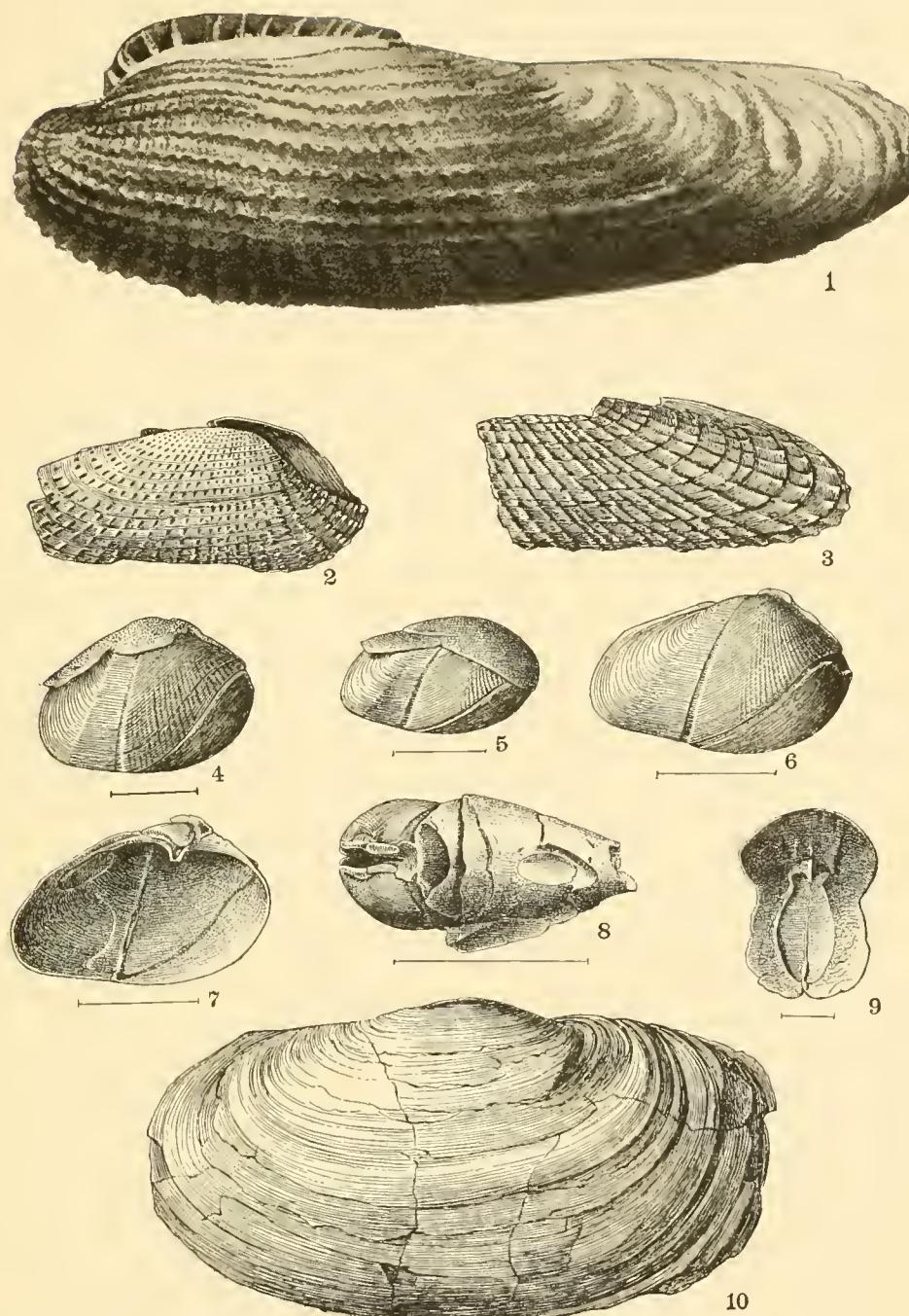
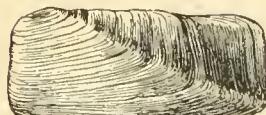
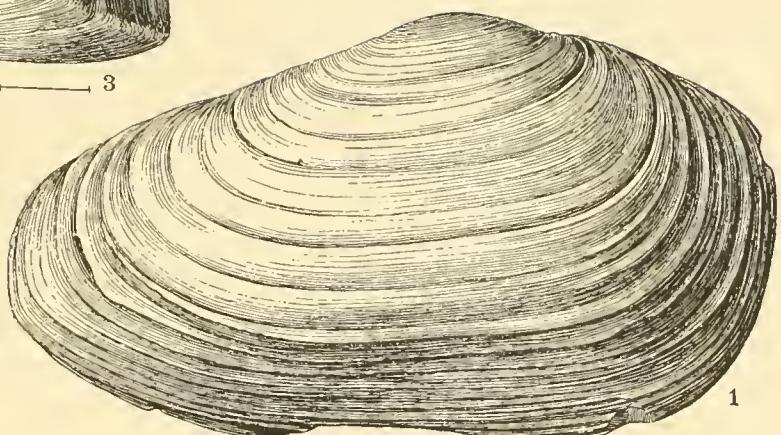


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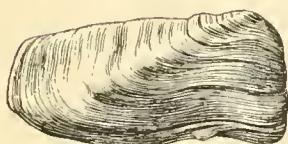
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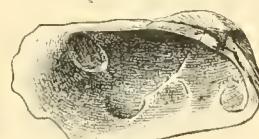
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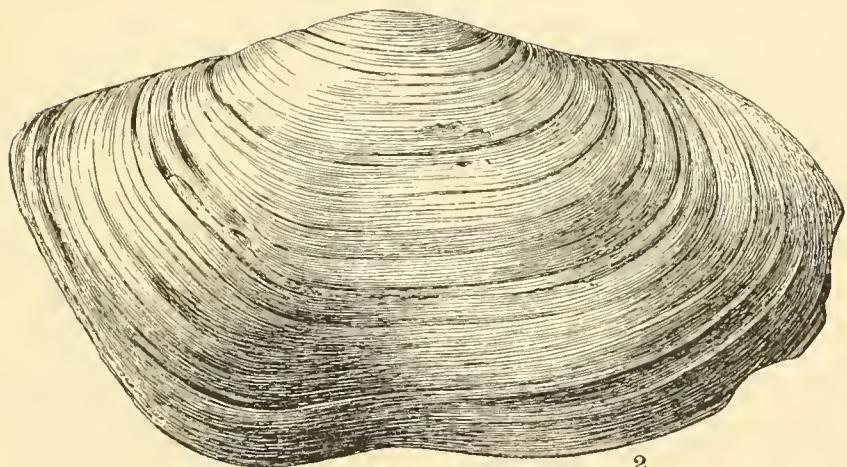
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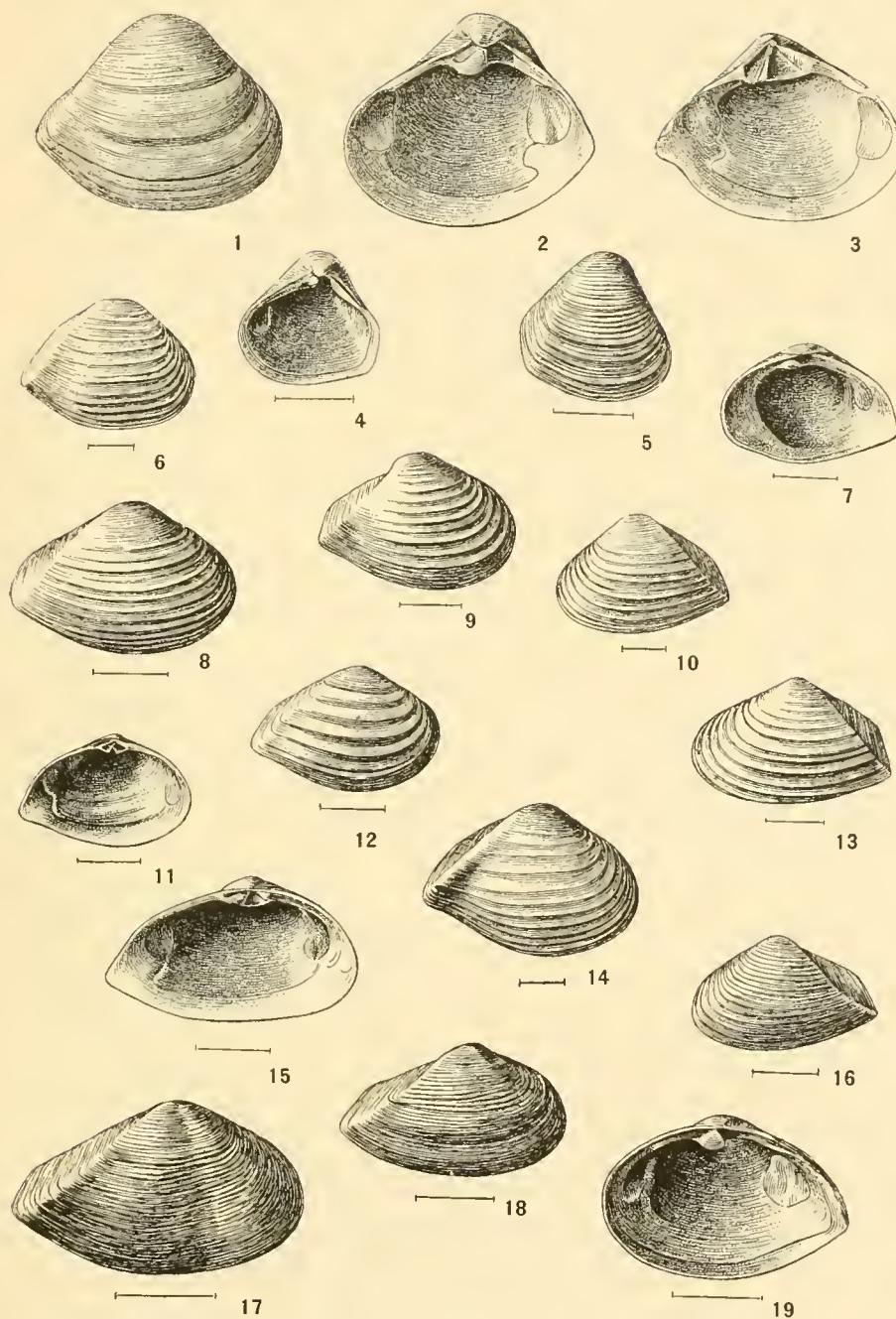


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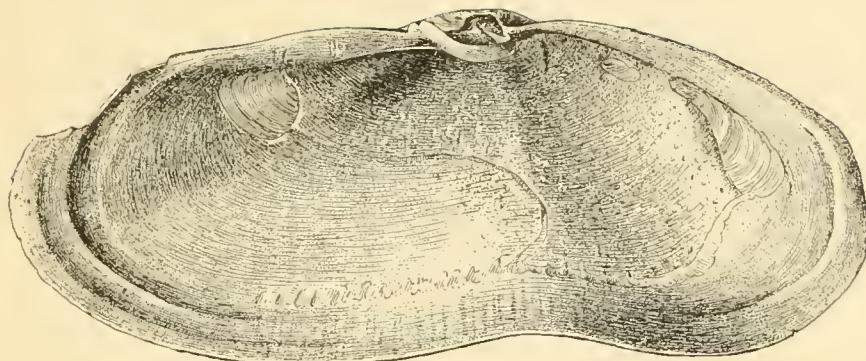
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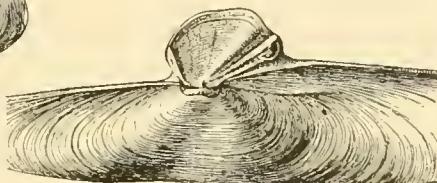
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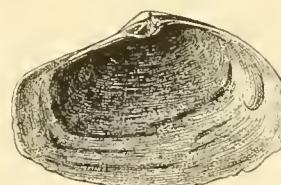
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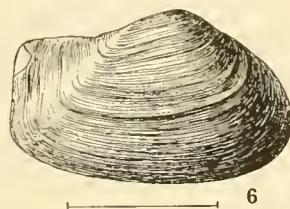
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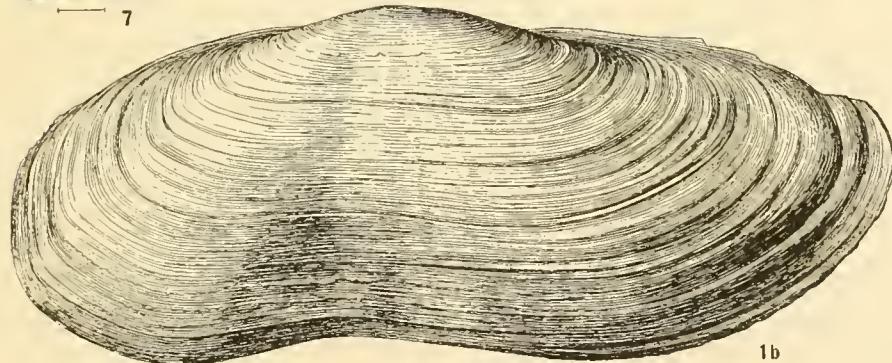
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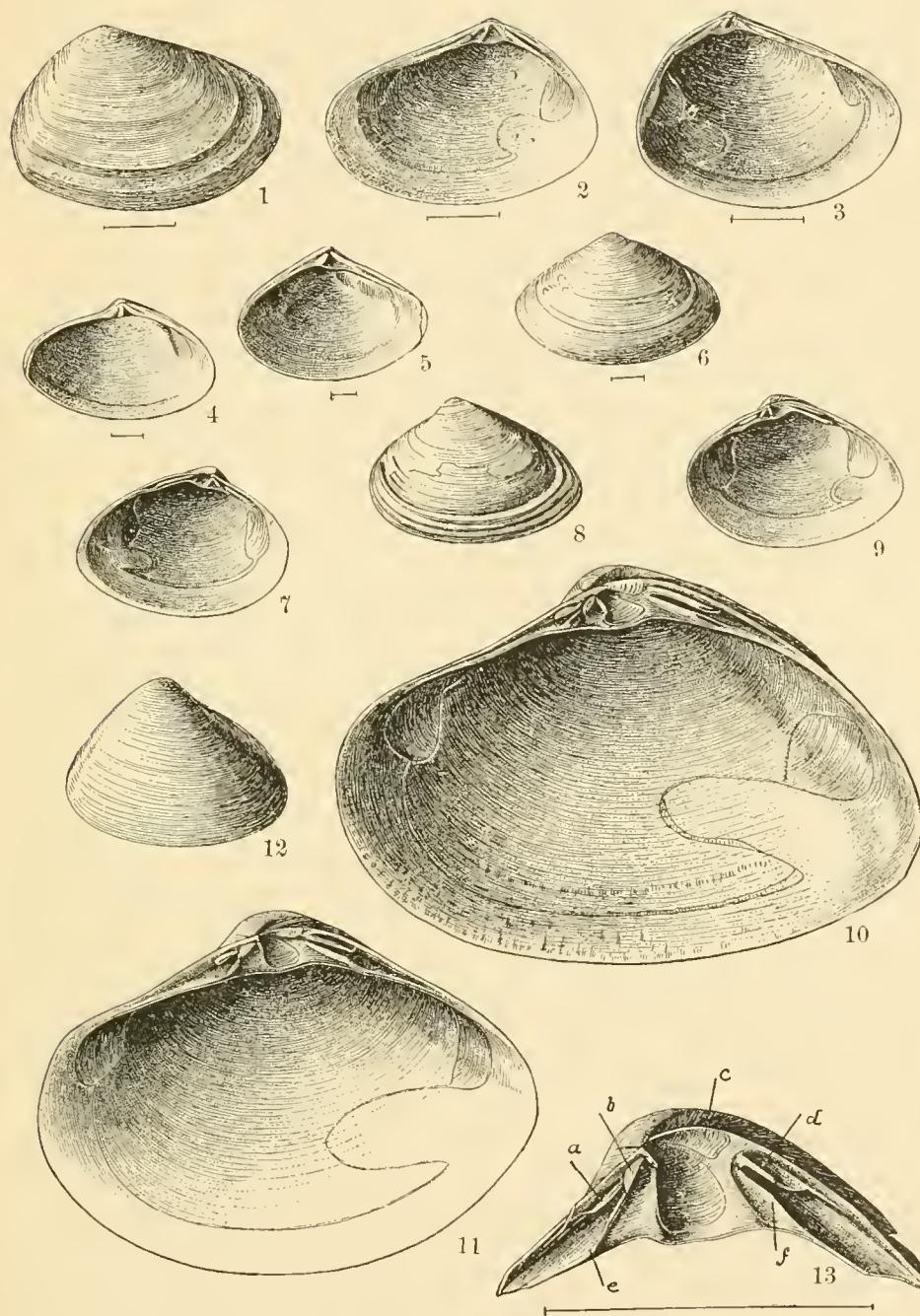


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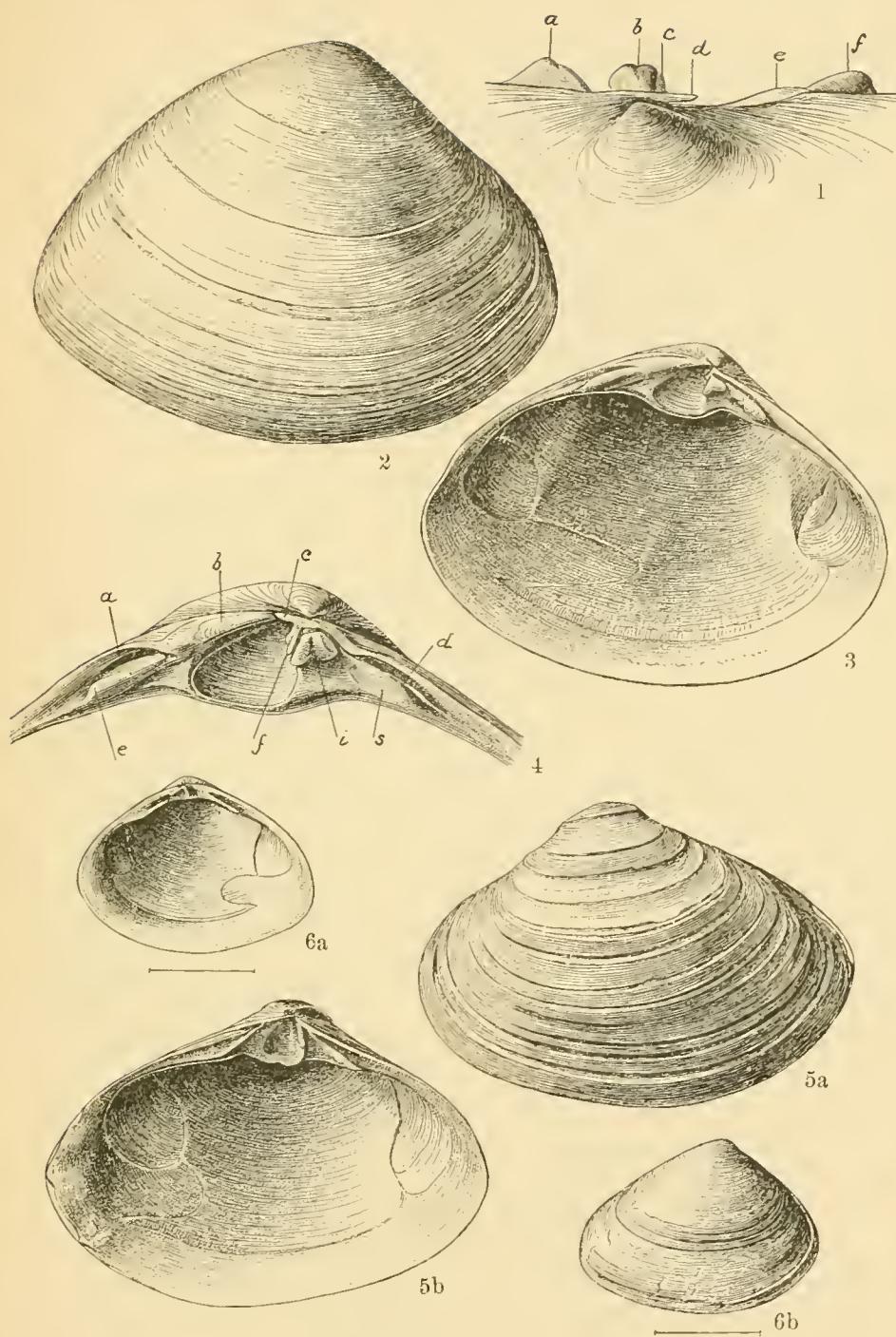
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MOLLUSCA—PELECYPODA.

## PLATE LXX.

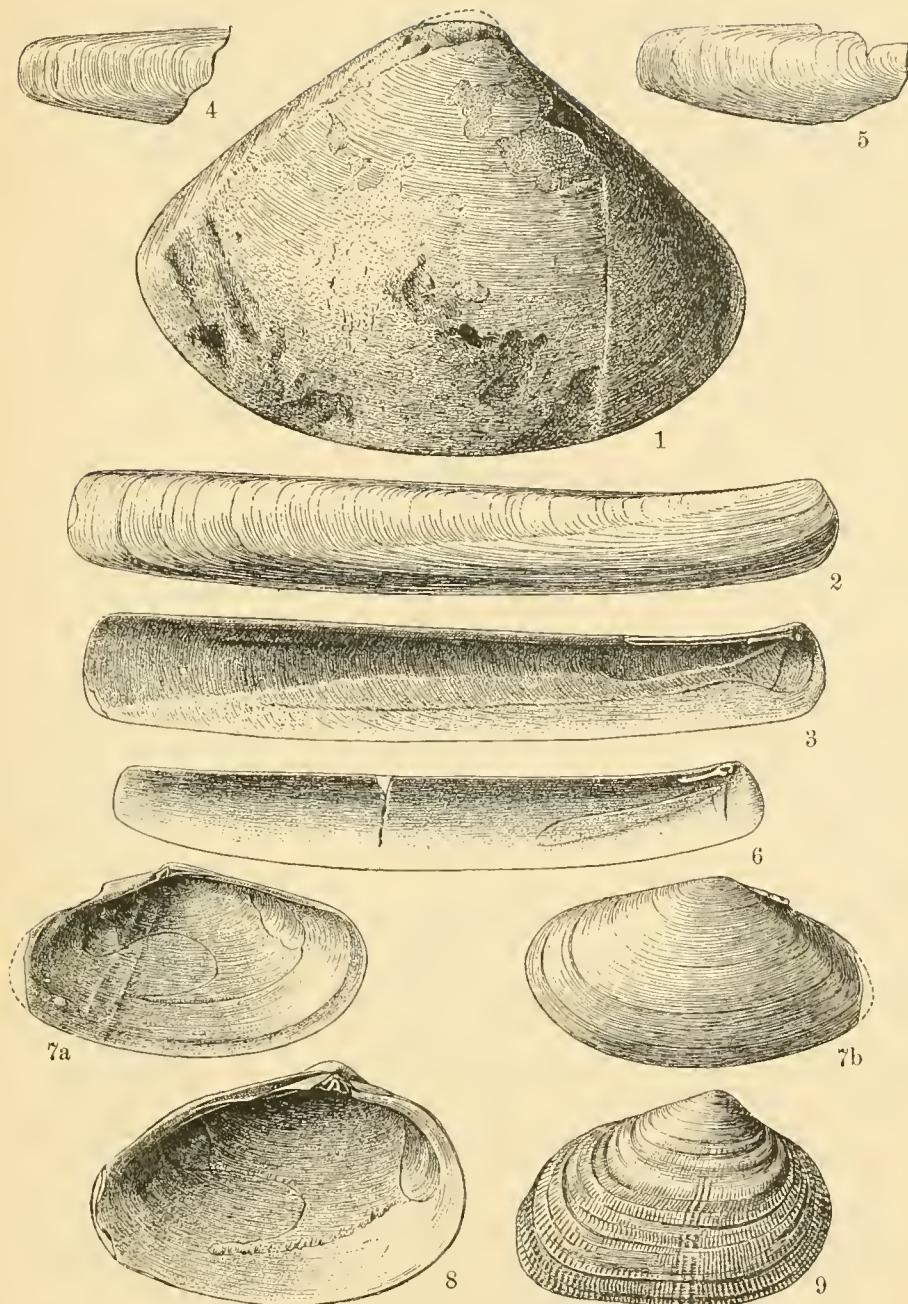
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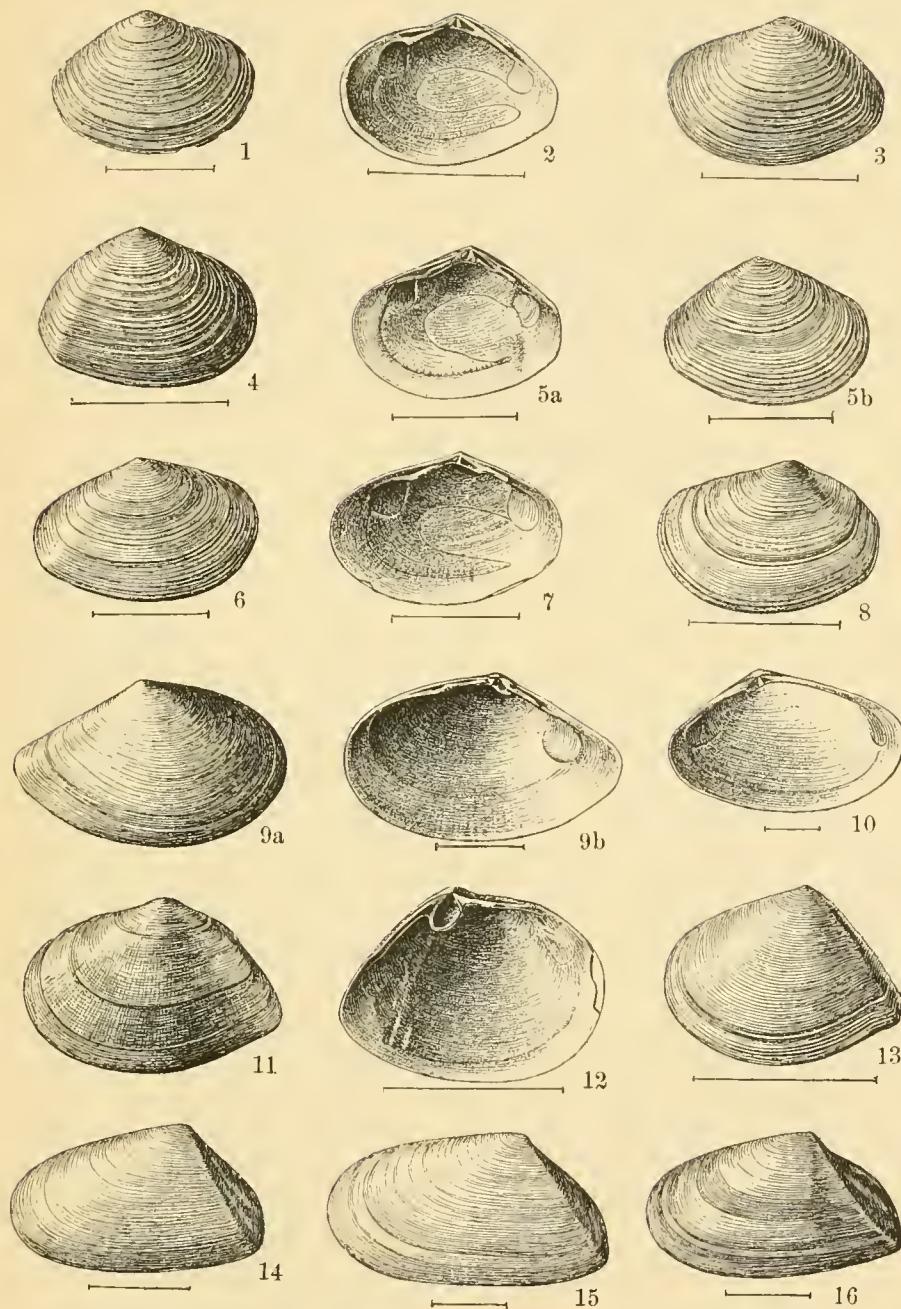
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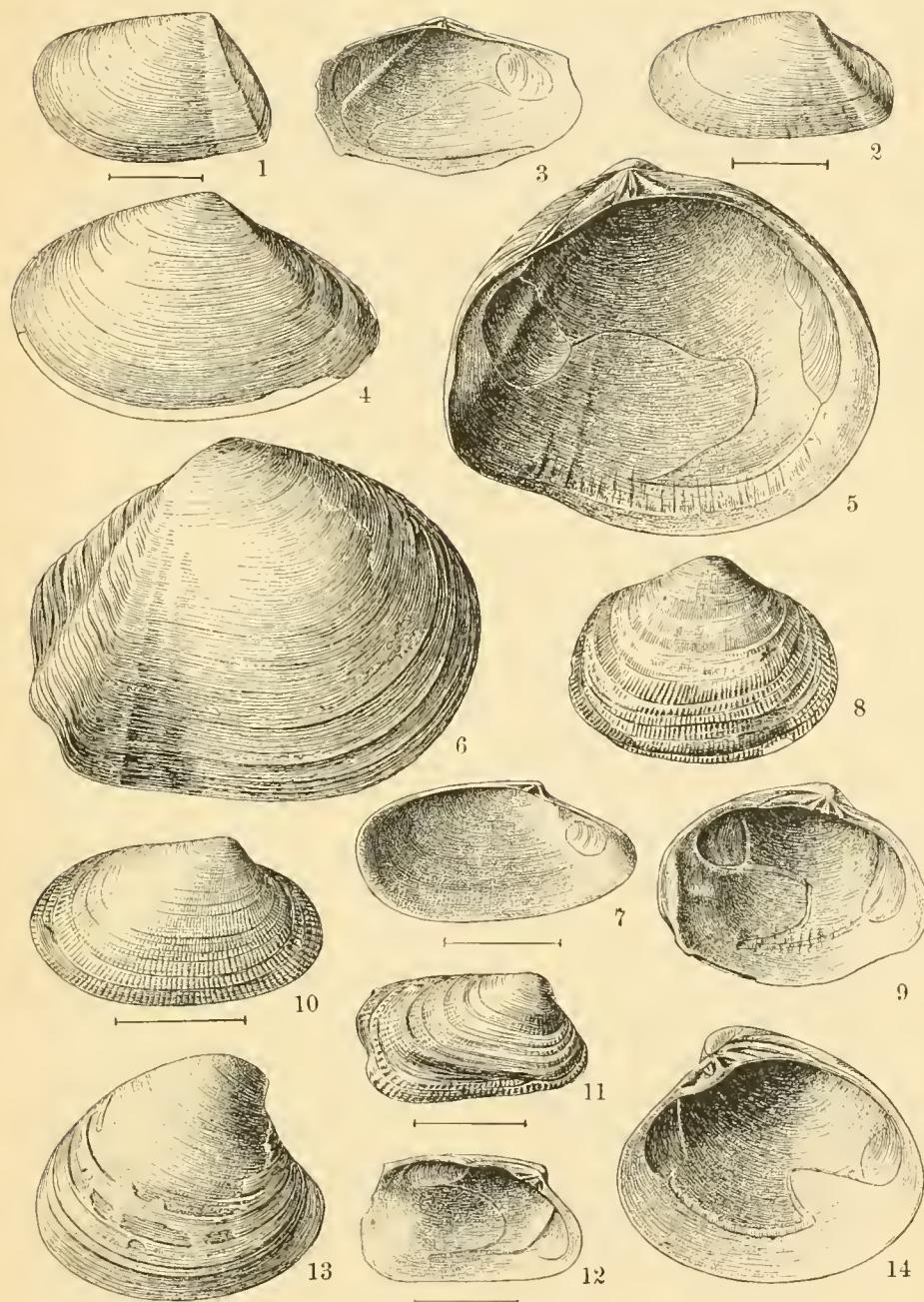
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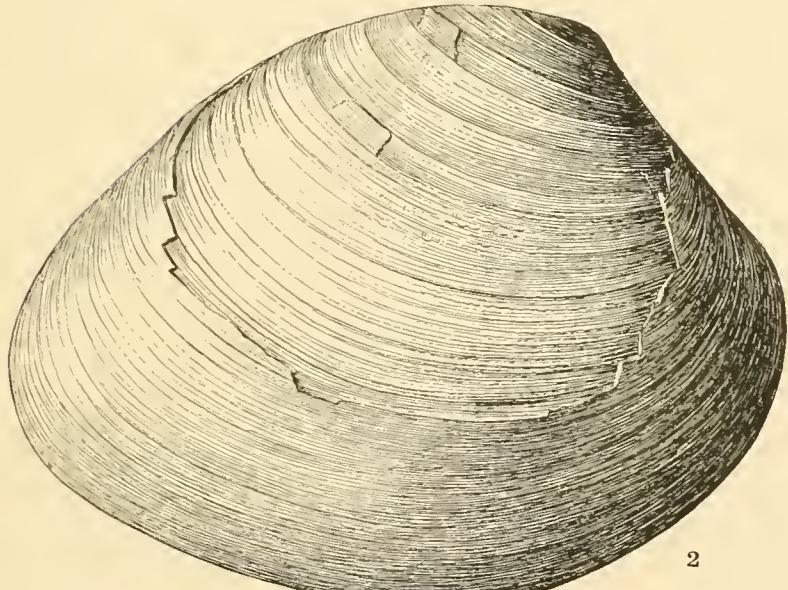
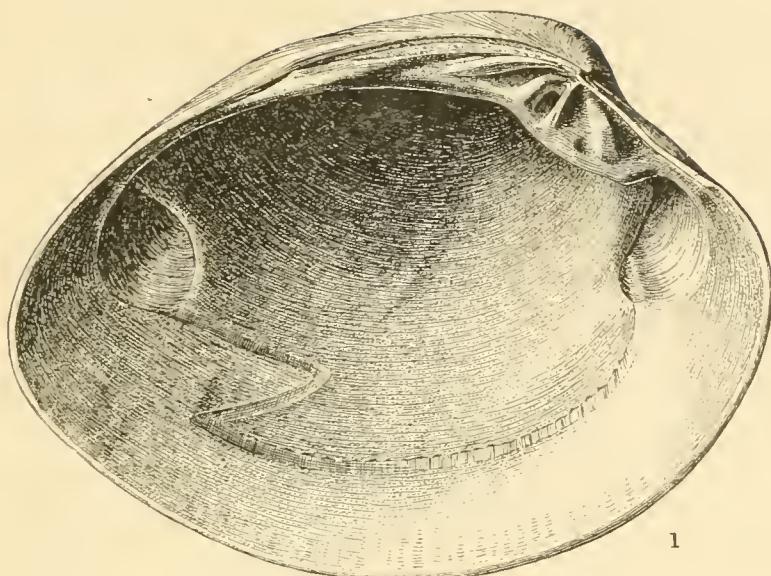
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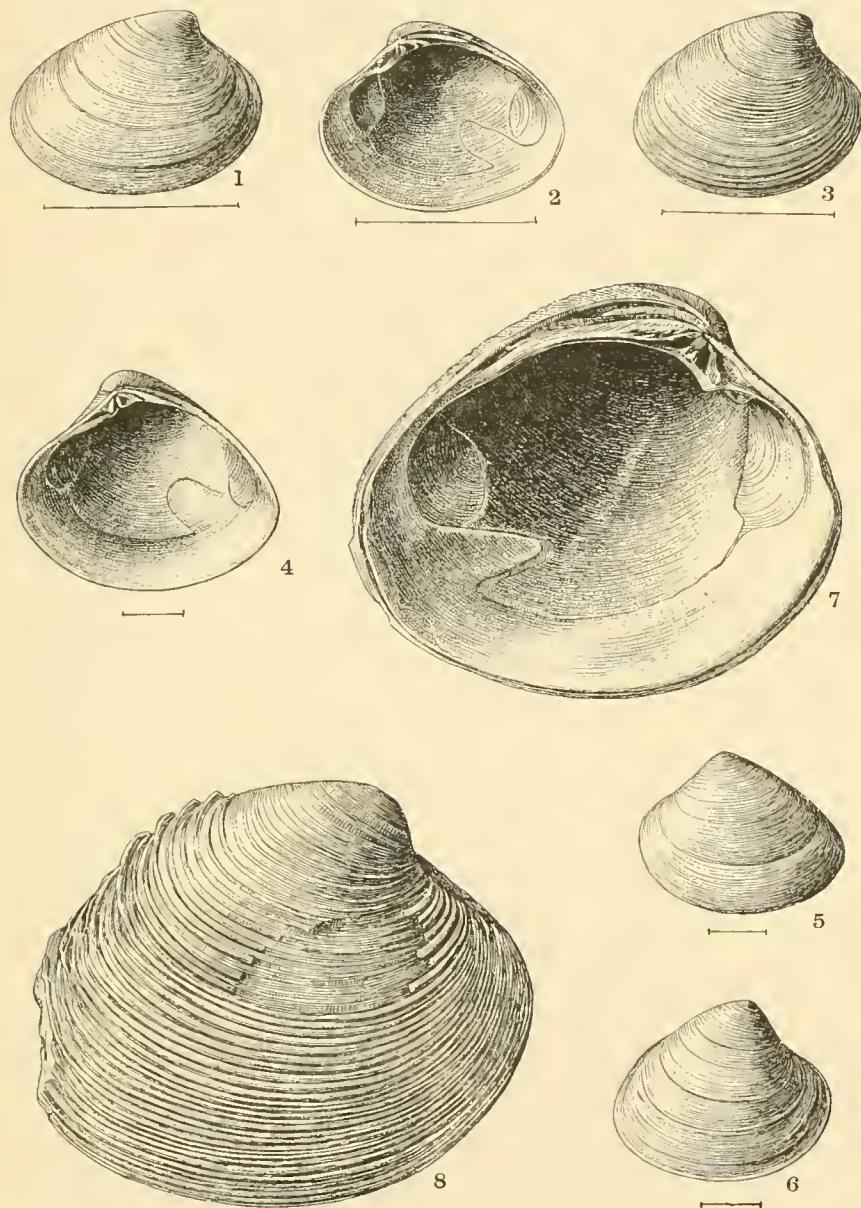
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MOLLUSCA—PELECYPODA.

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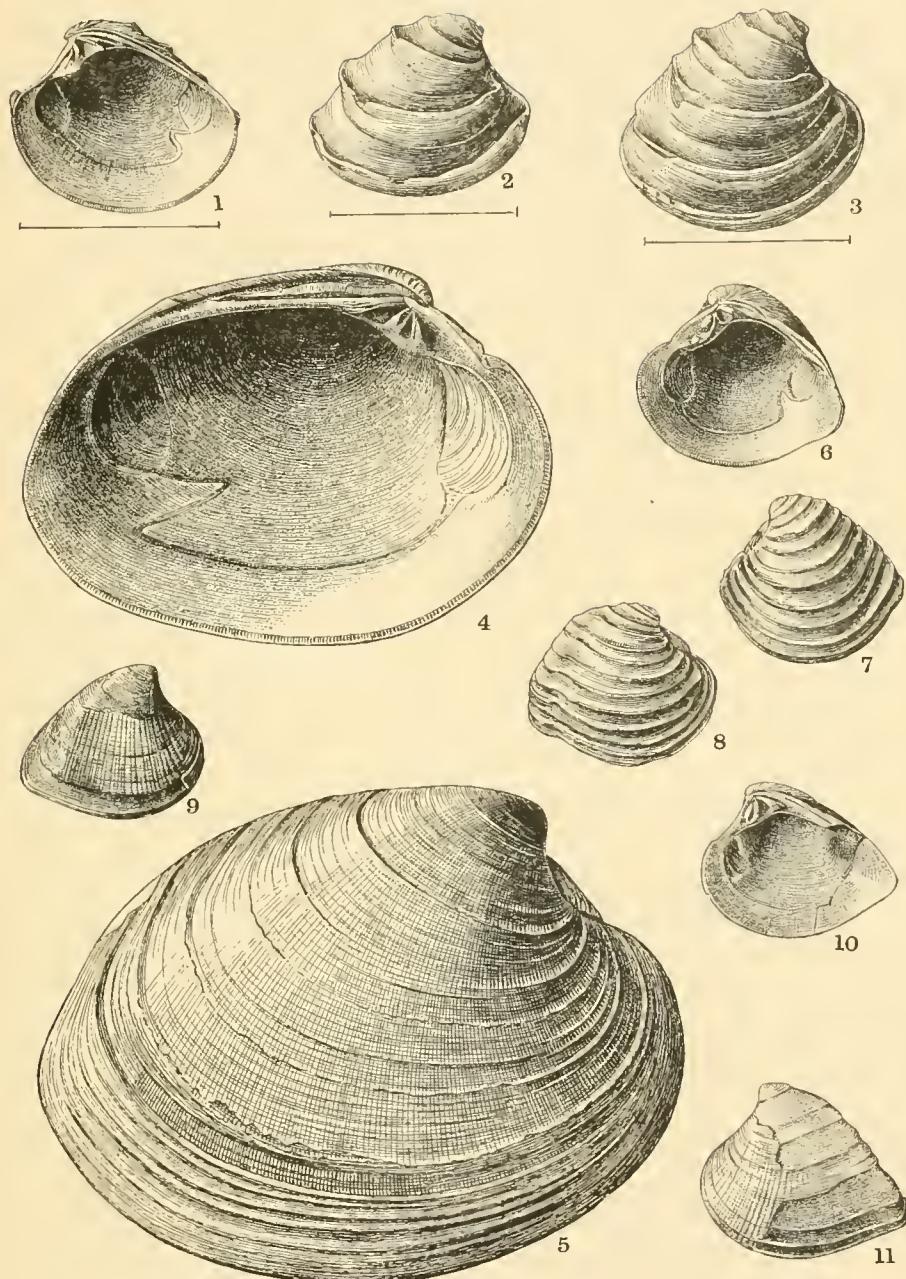


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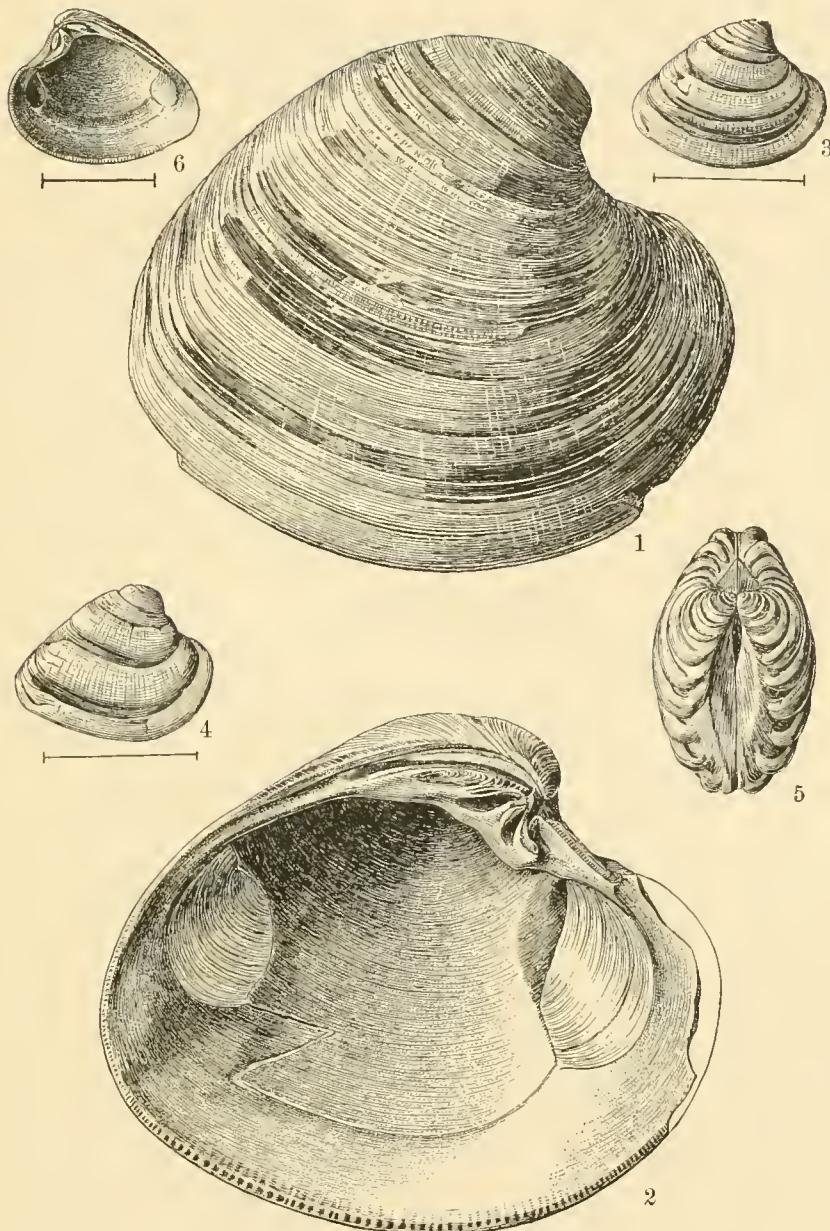
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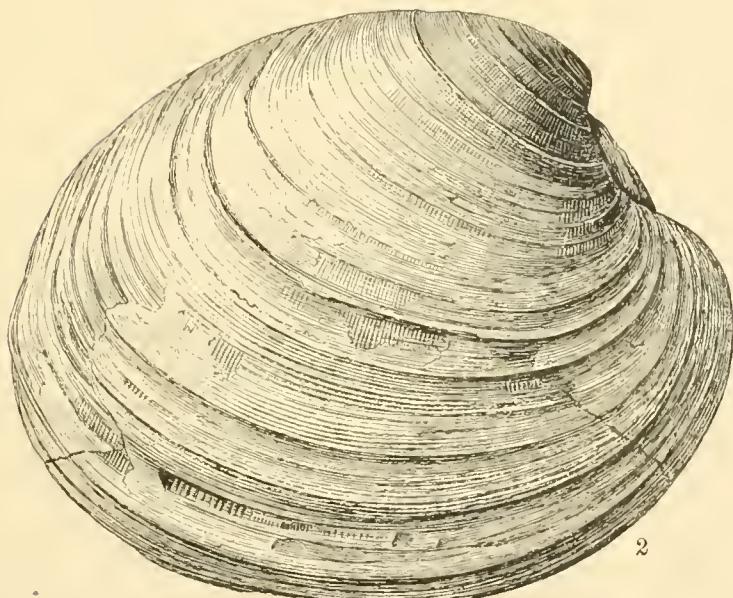
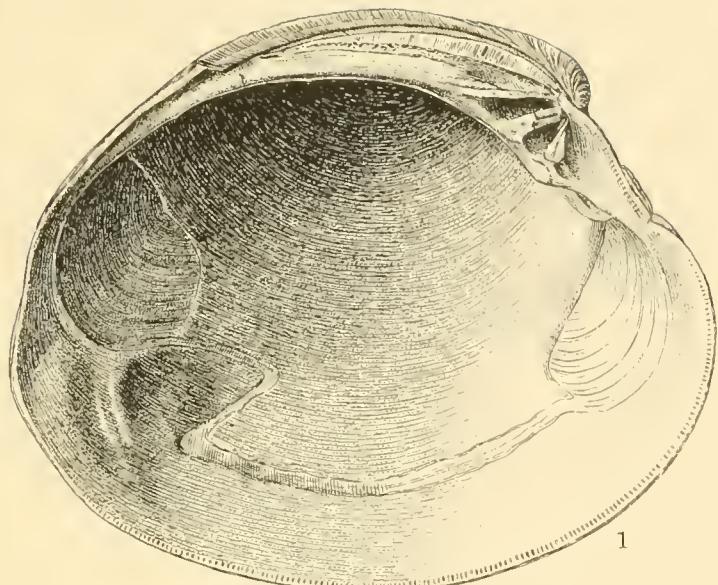
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MOLLUSCA—PELECYPODA.

PLATE LXXVIII.

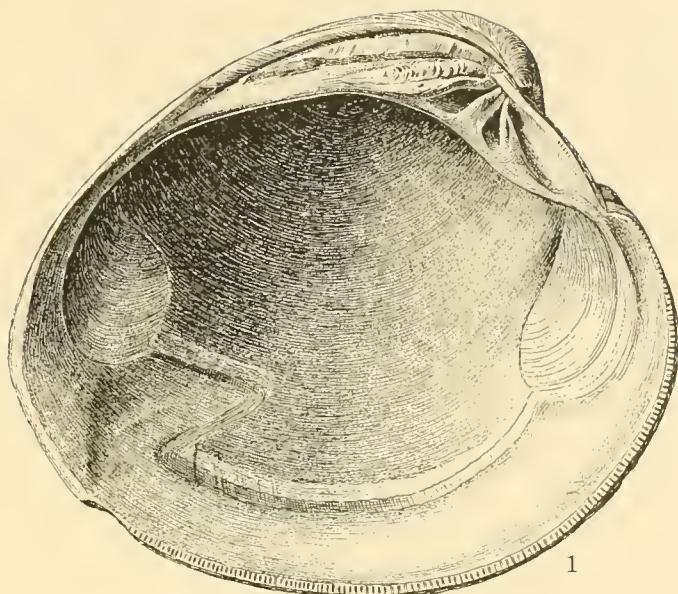
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2. Exterior of right valve. Same locality.	



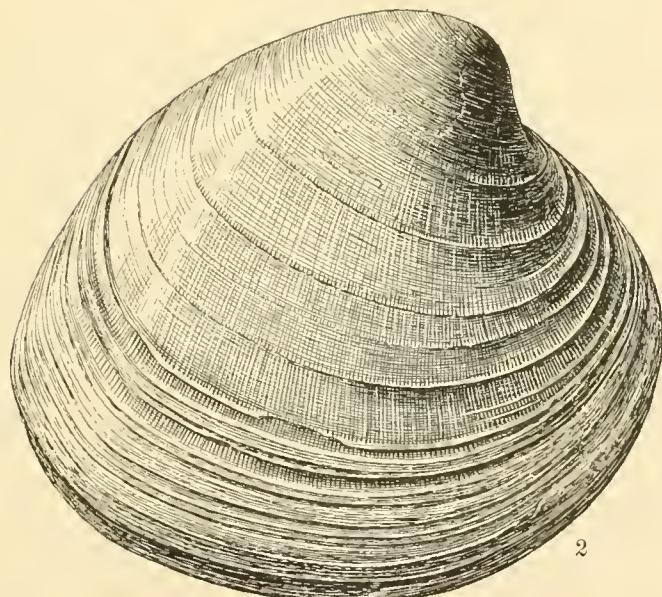
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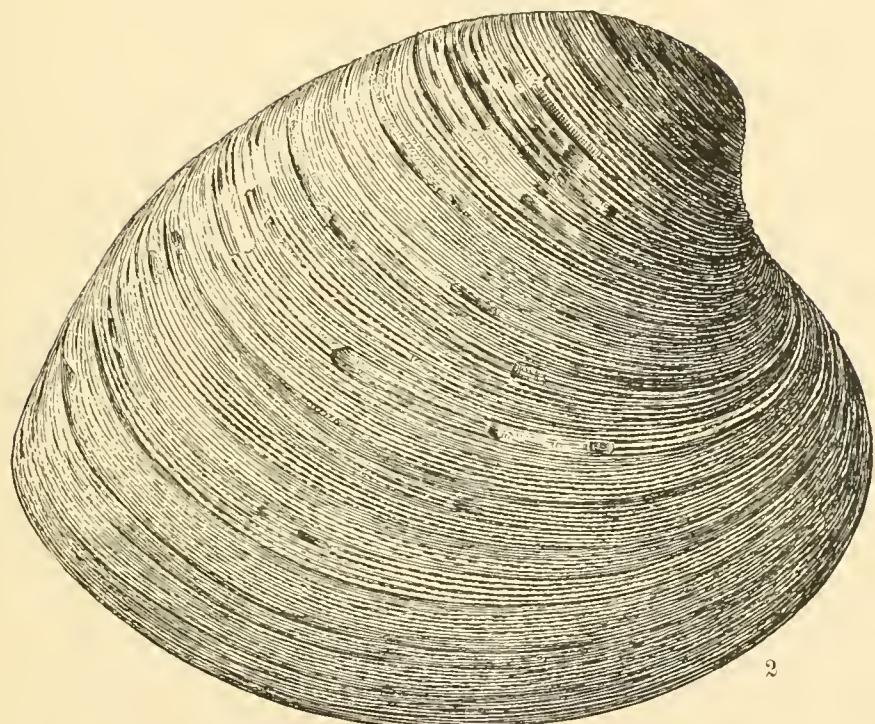
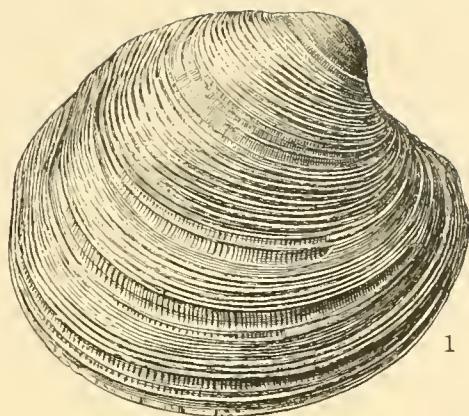


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MOLLUSCA—PELECYPODA.

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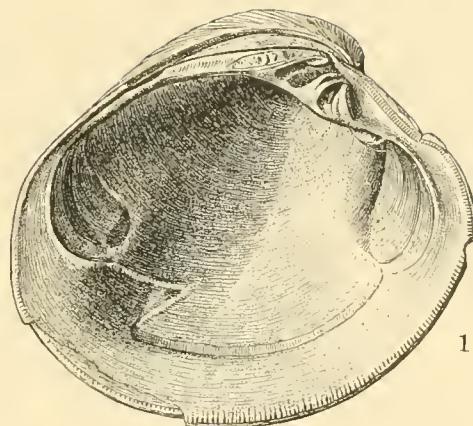
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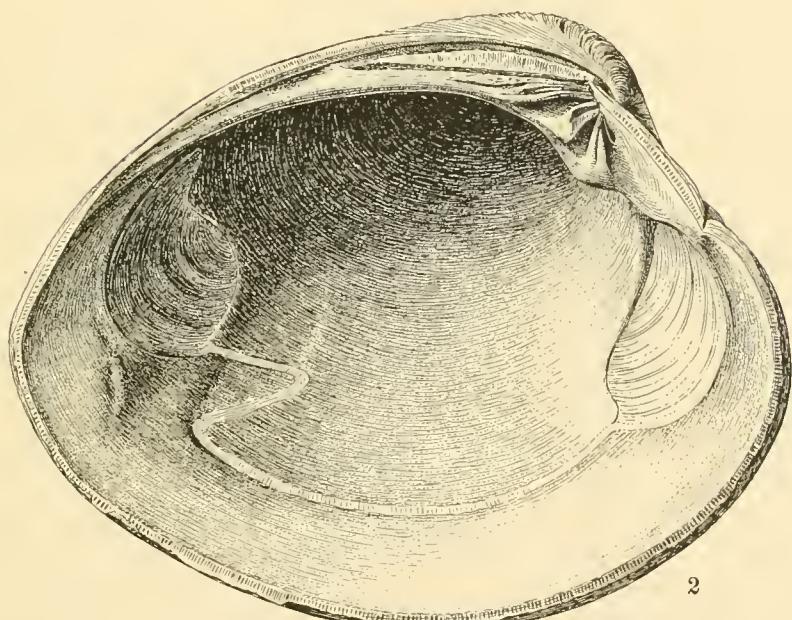
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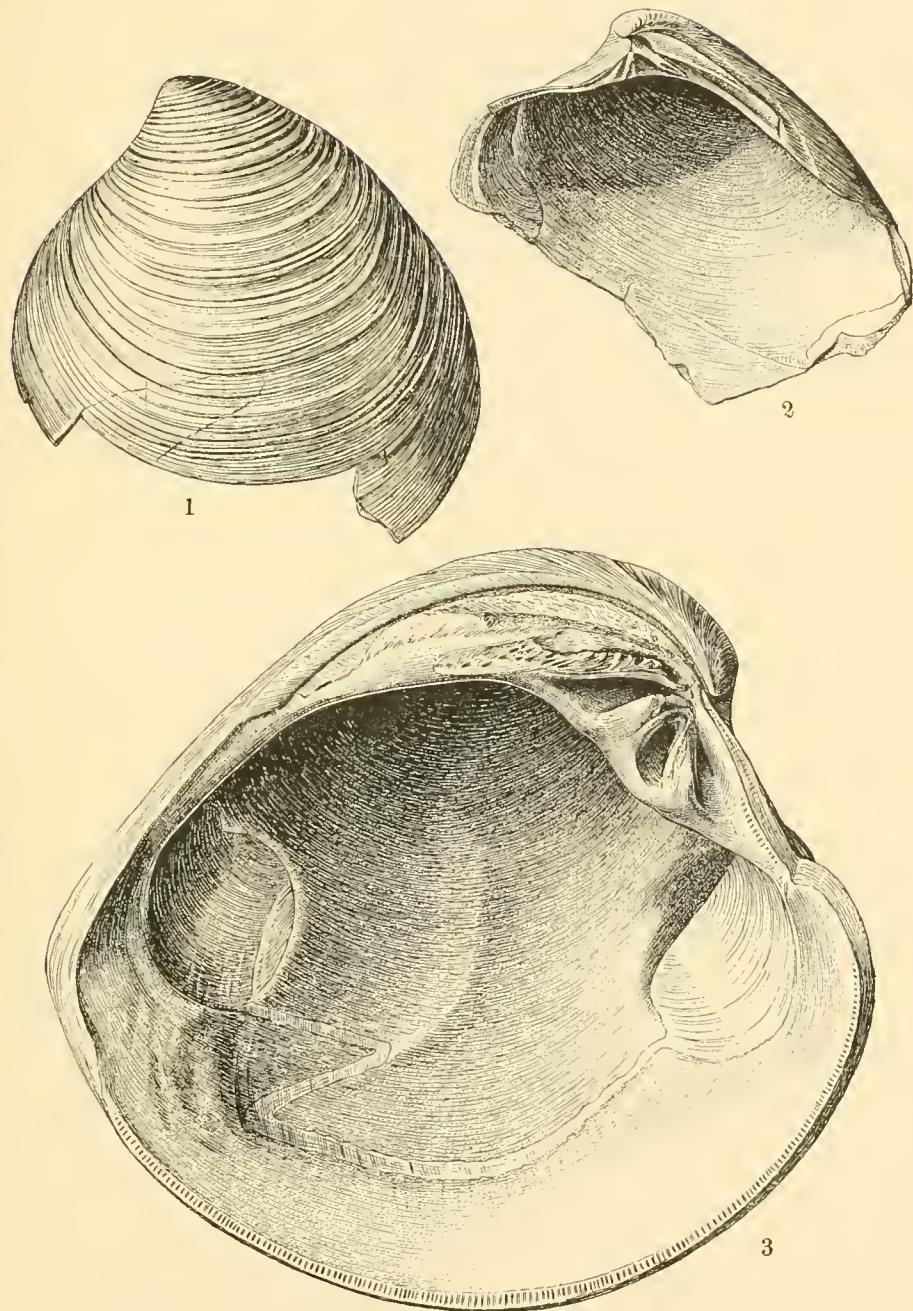


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MOLLUSCA—PELECYPODA.

PLATE LXXXII.

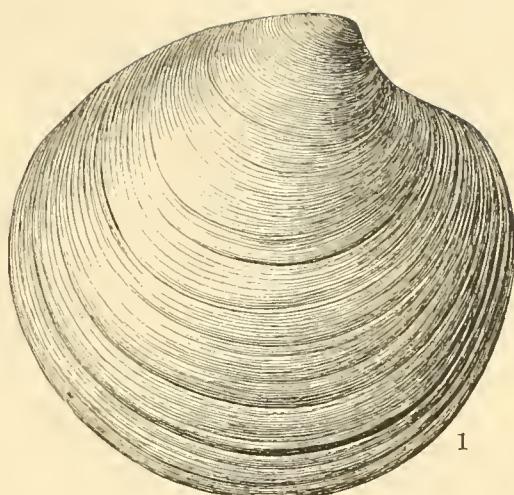
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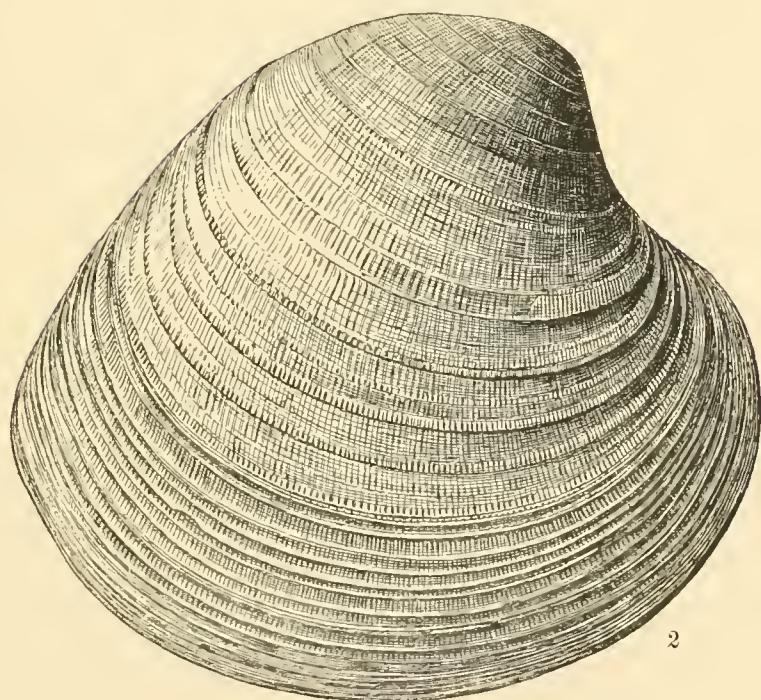
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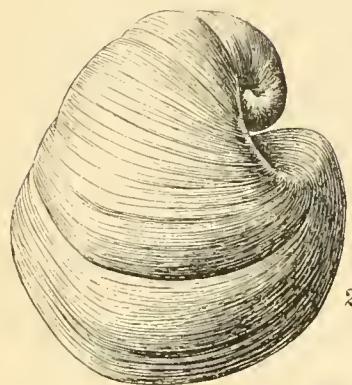
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MOLLUSCA—PELECYPODA.

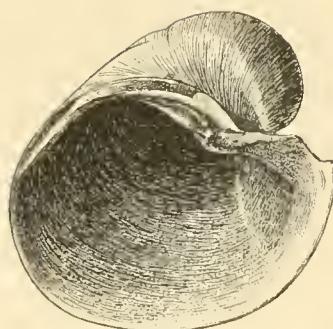
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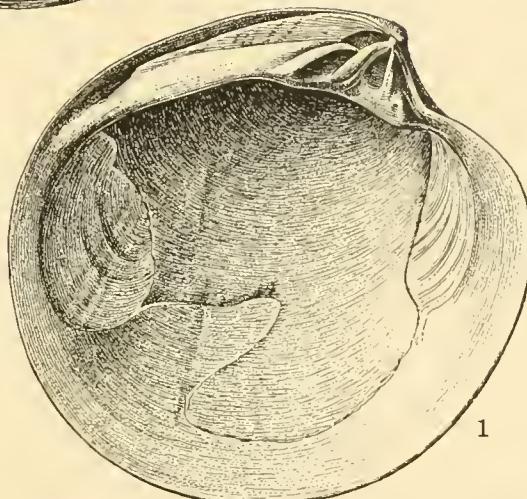
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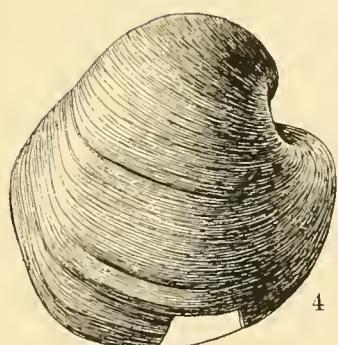
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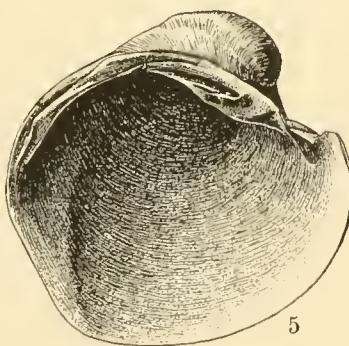
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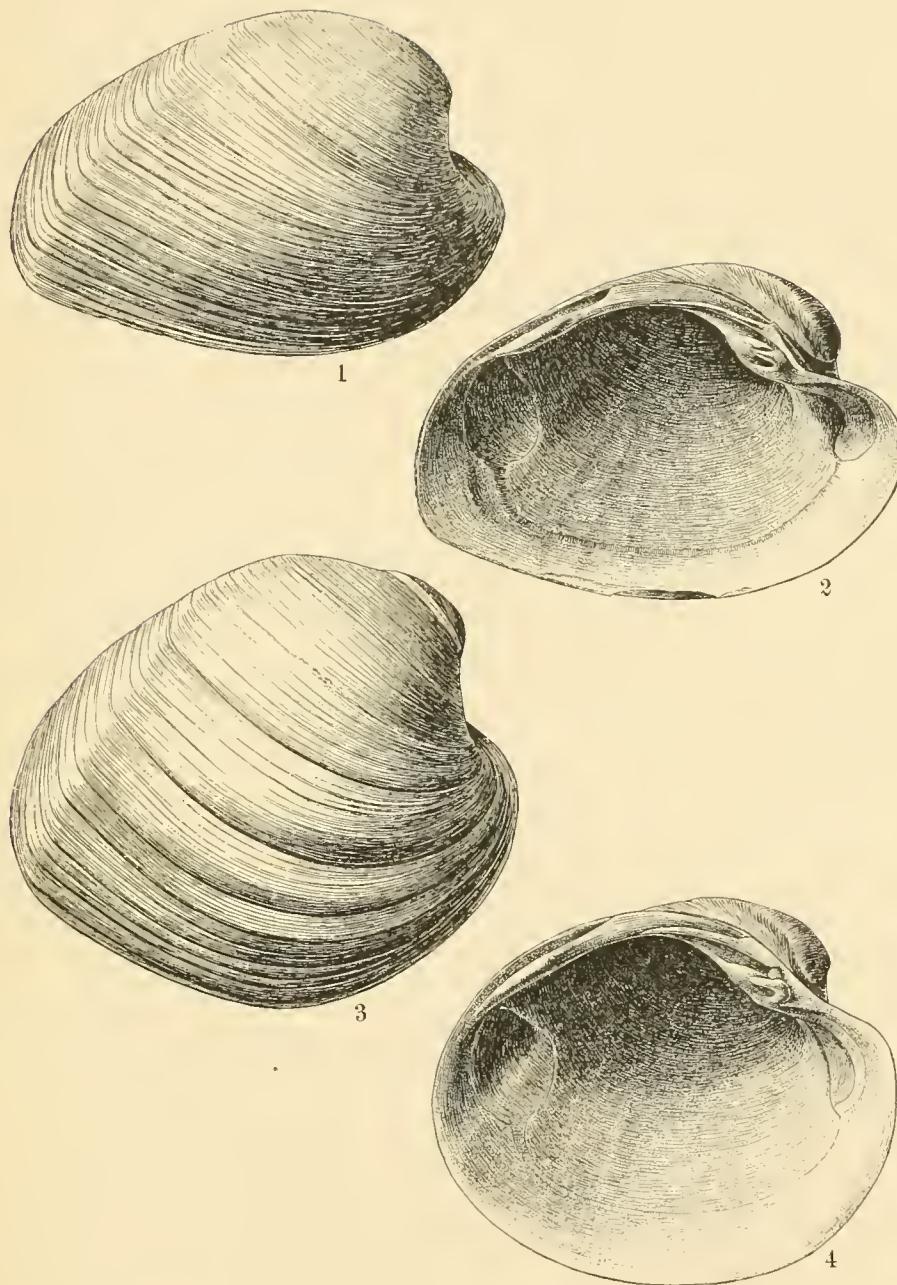
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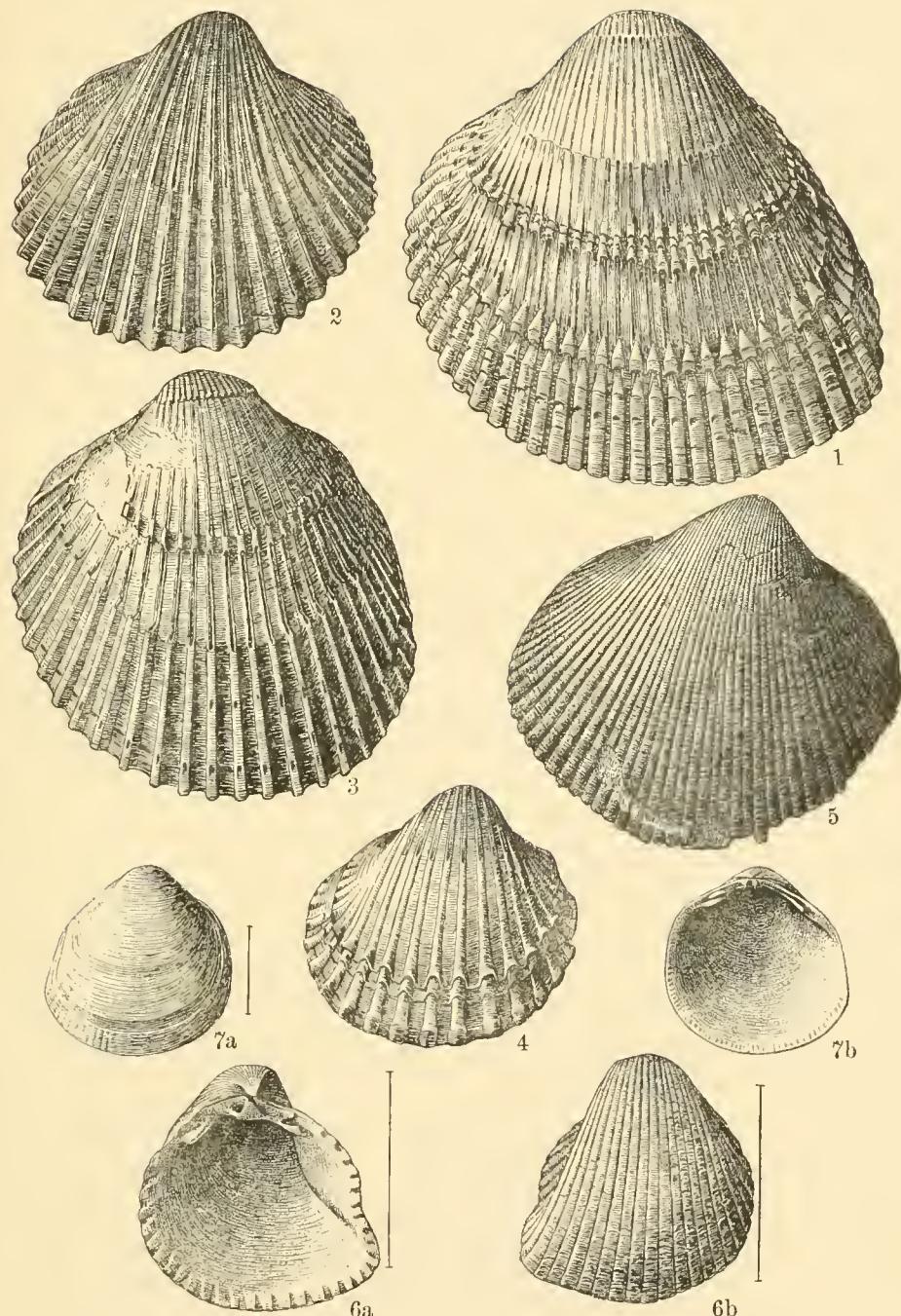
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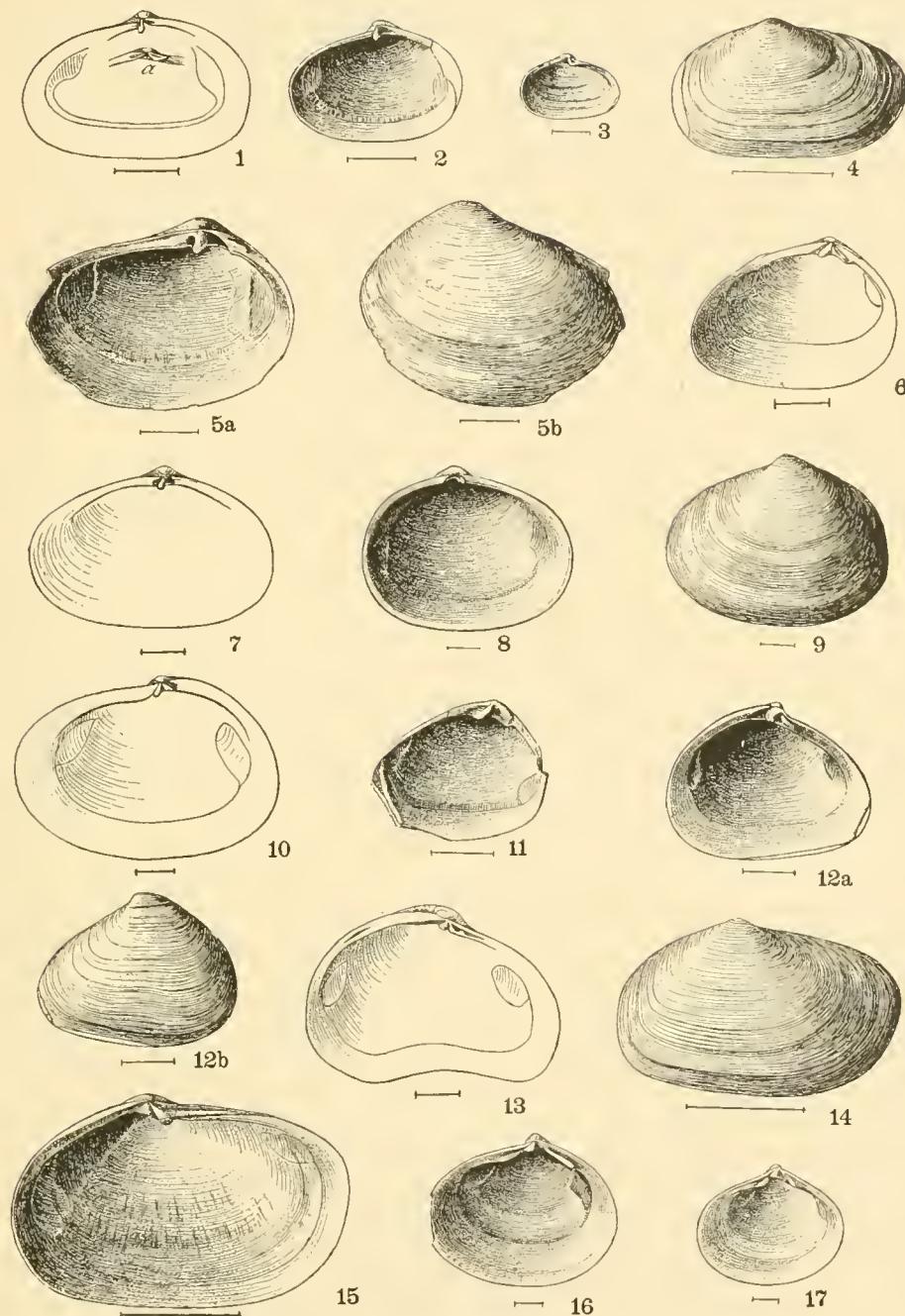
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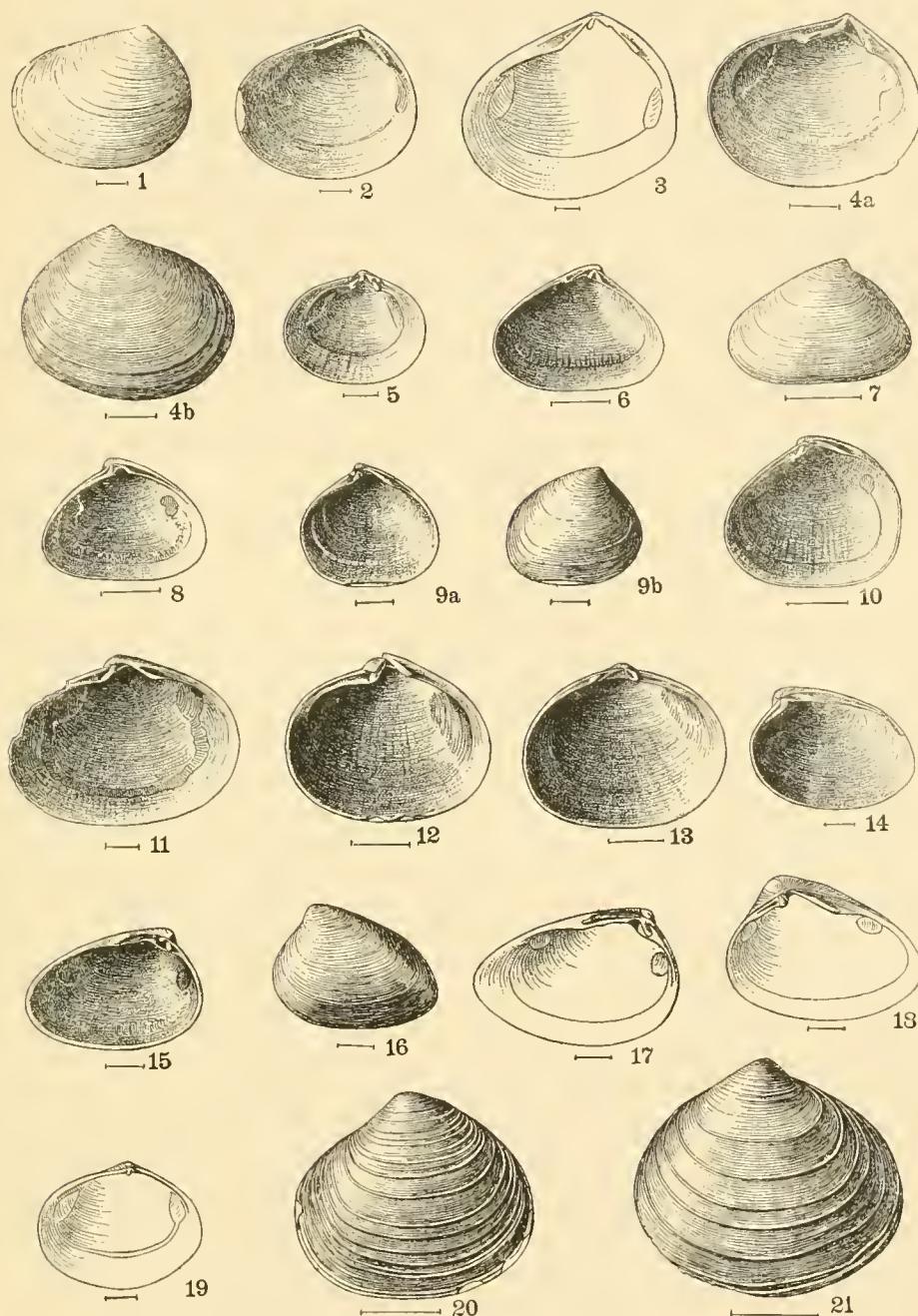
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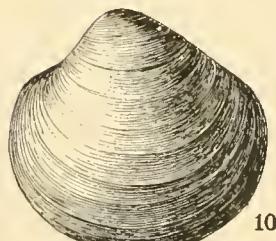
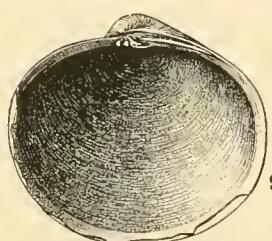
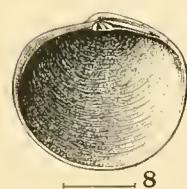
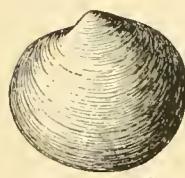
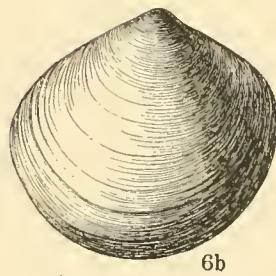
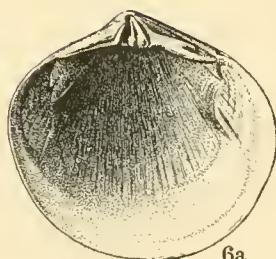
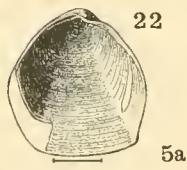
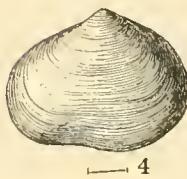
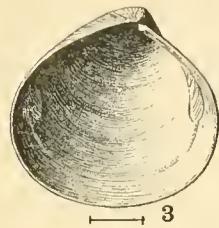
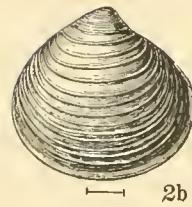
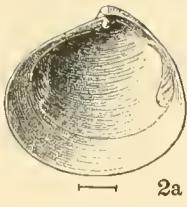
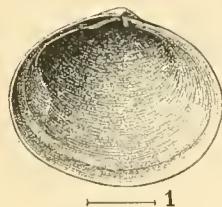
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MOLLUSCA—PELECYPODA.

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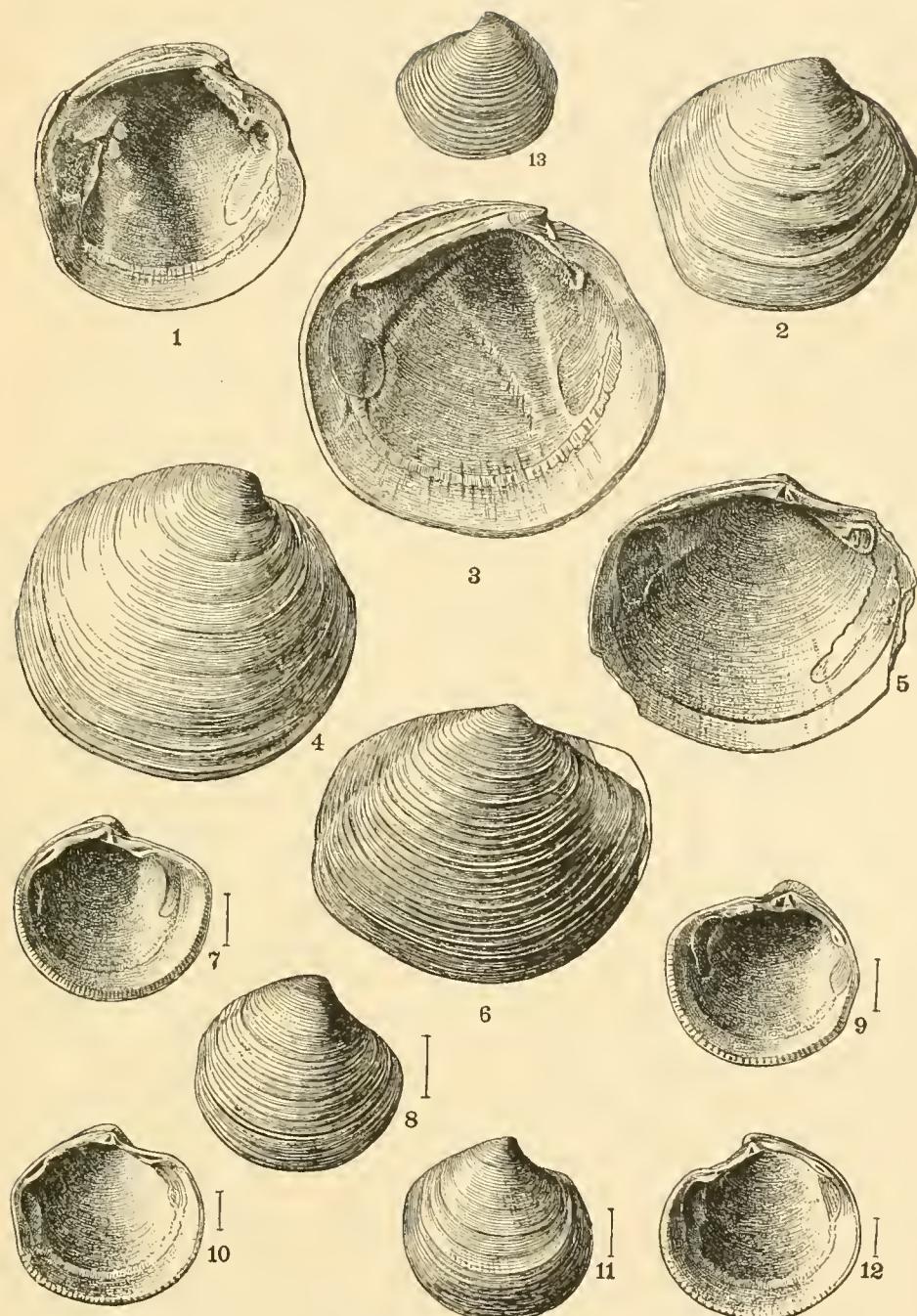
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MOLLUSCA—PELECYPODA.

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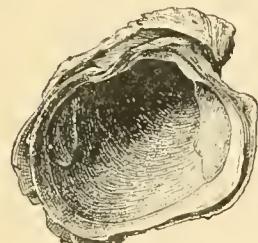
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MOLLUSCA—PELECYPODA.

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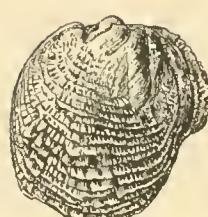
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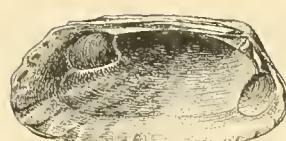
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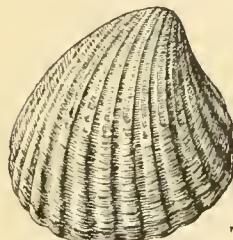
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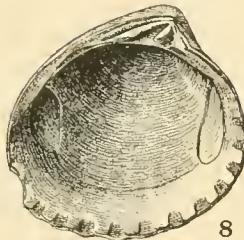
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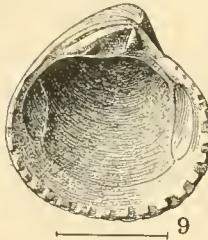
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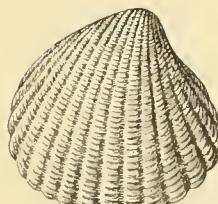
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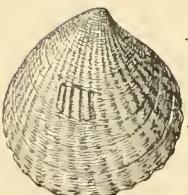
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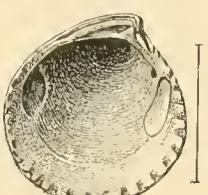
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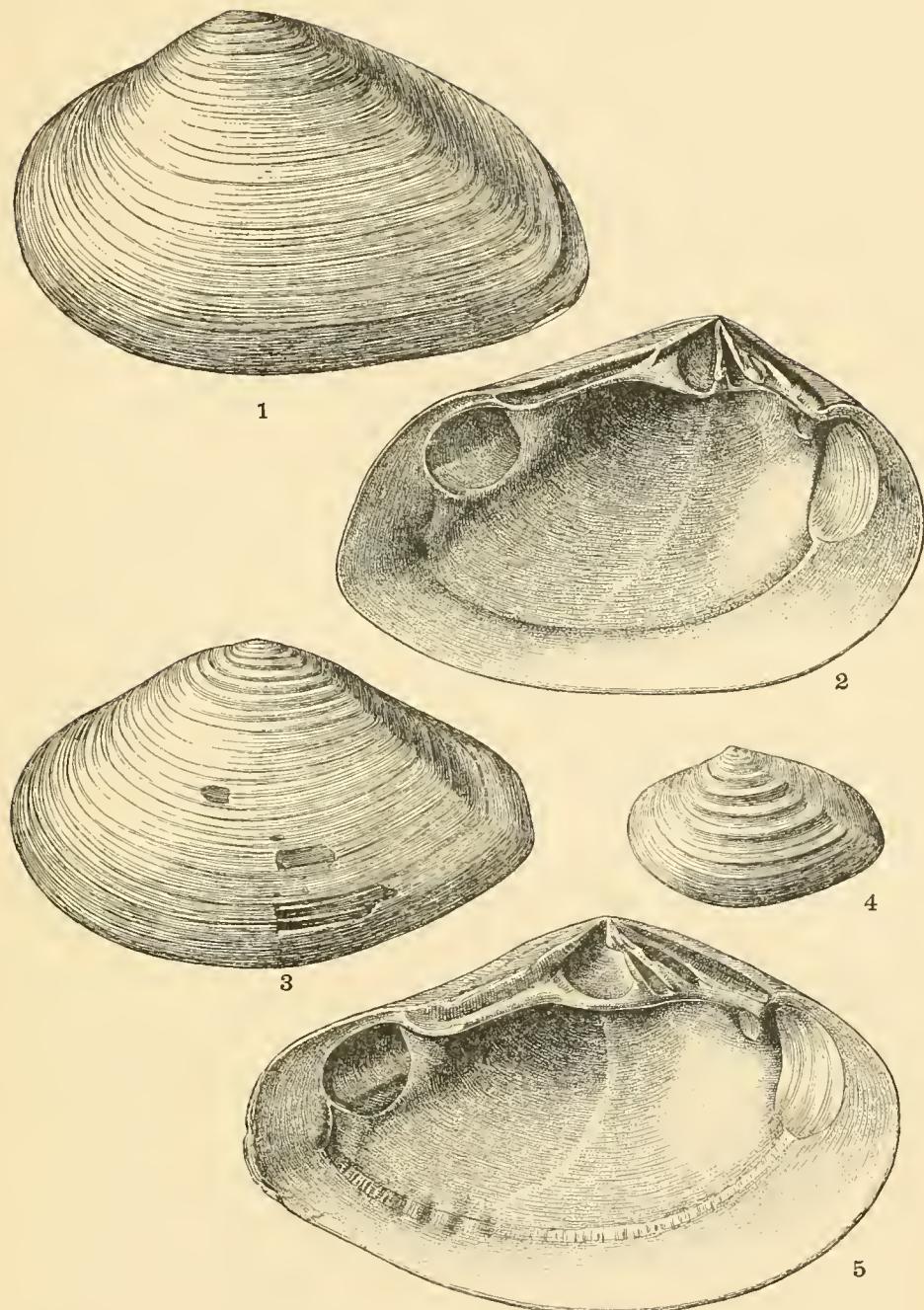


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MOLLUSCA—PELECYPODA.

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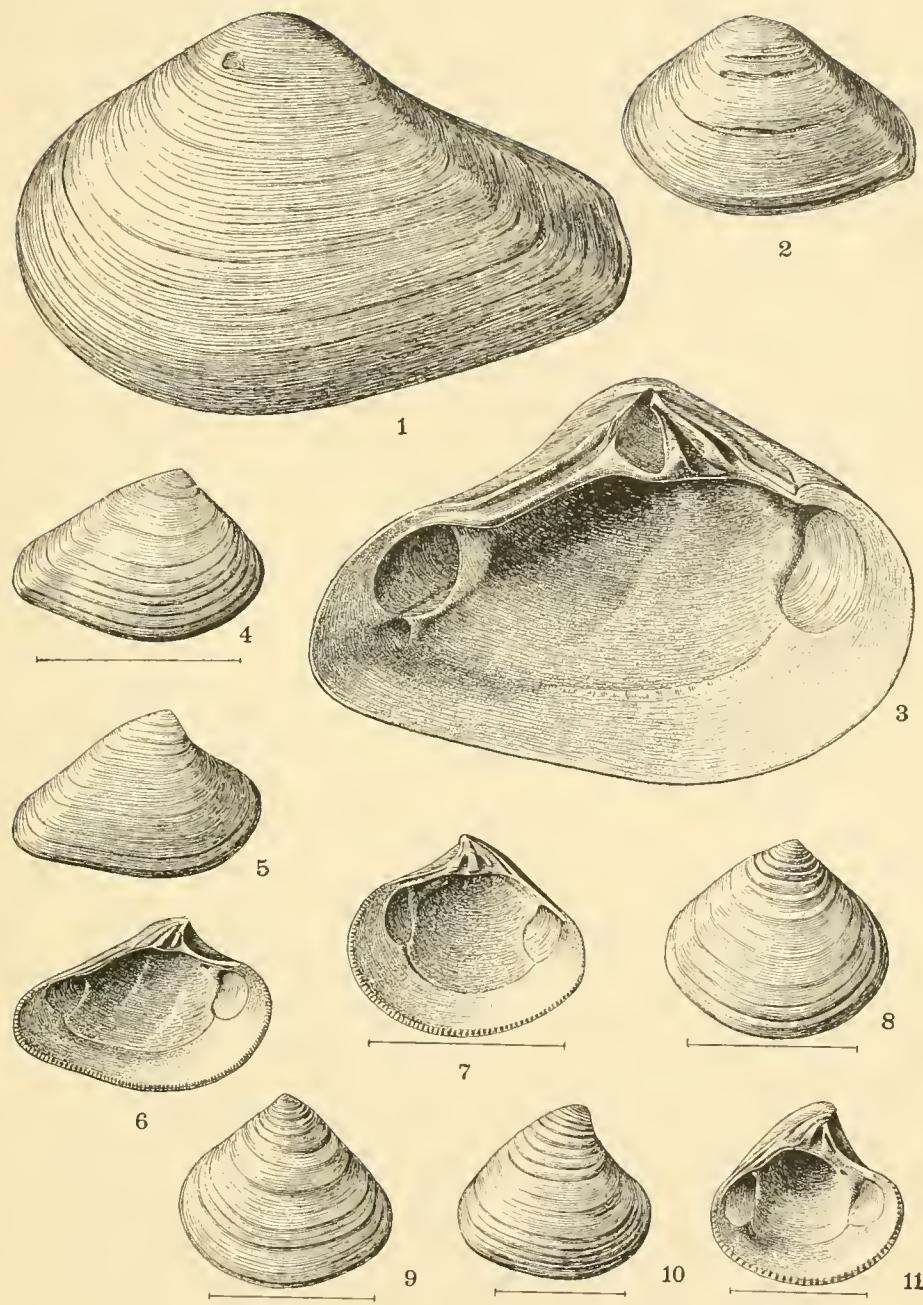
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MOLLUSCA—PELECYPODA.

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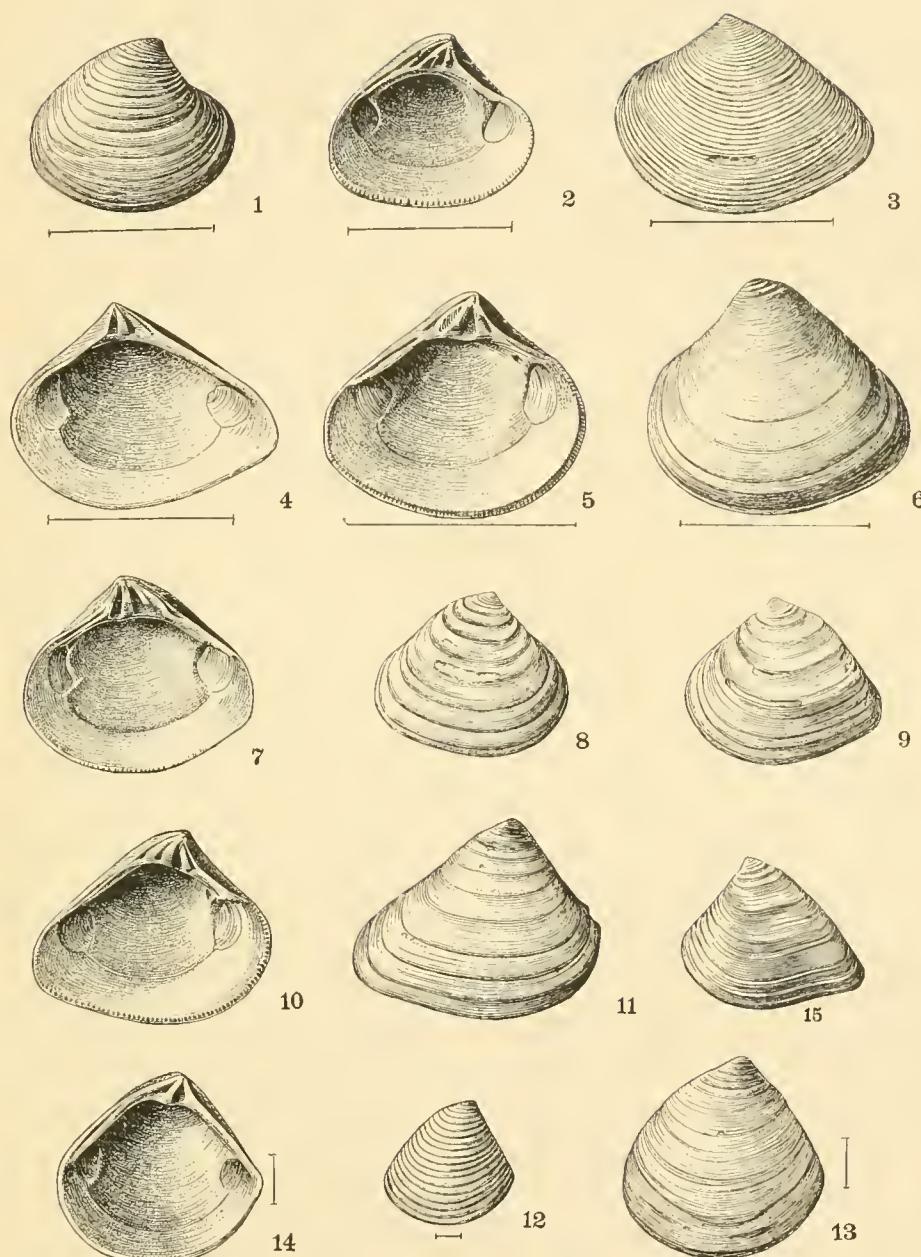
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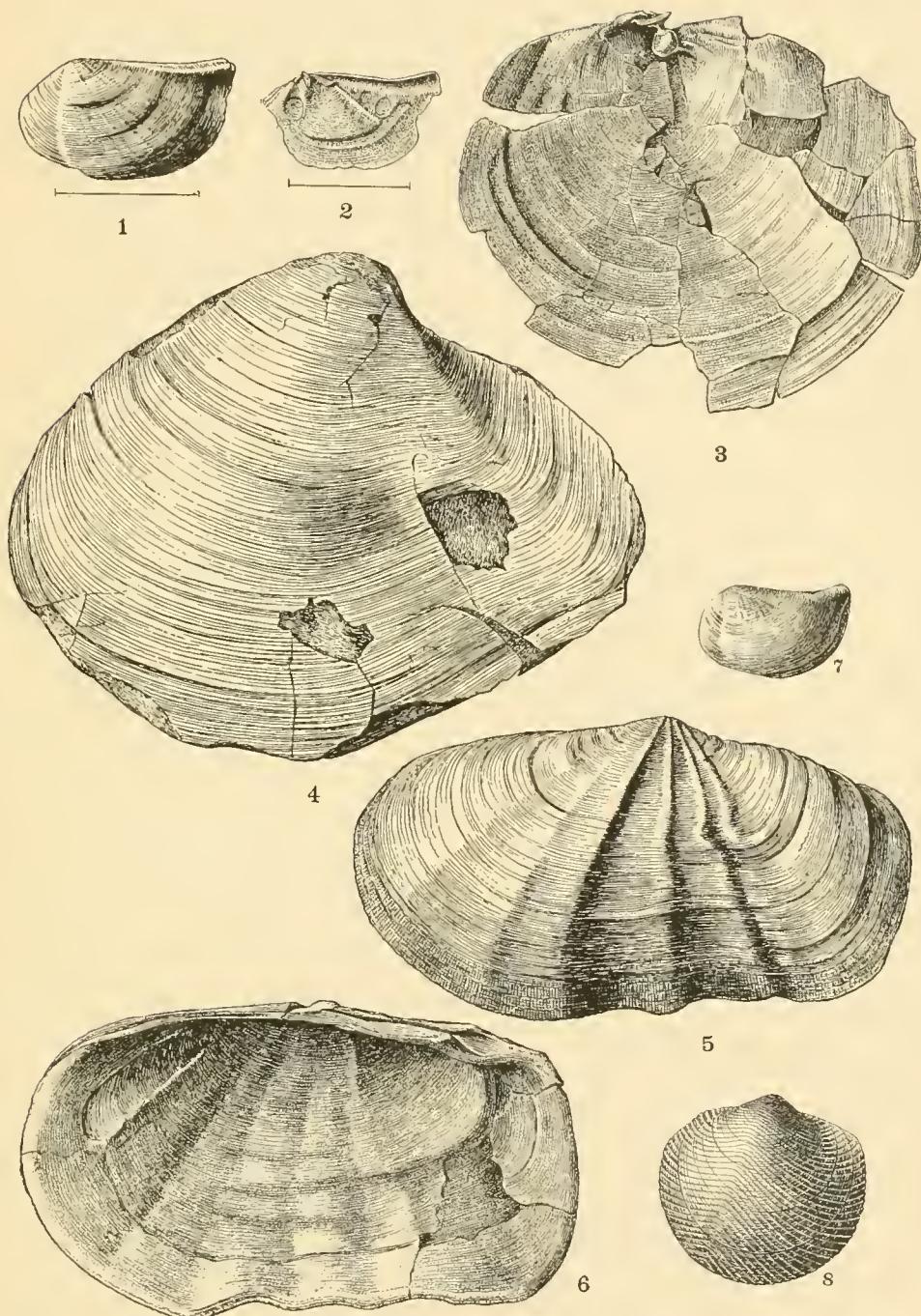


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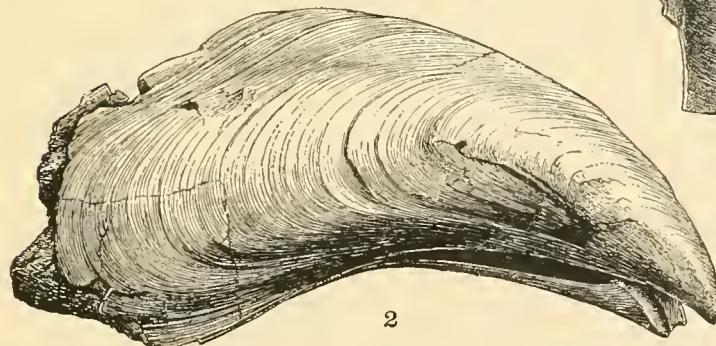
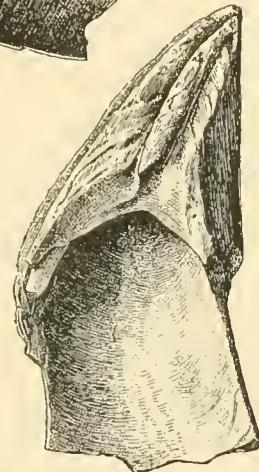
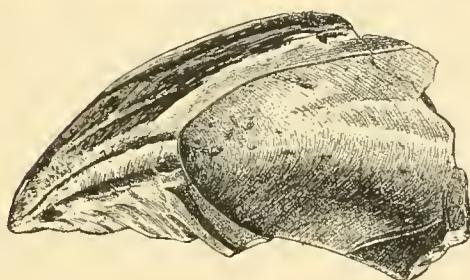
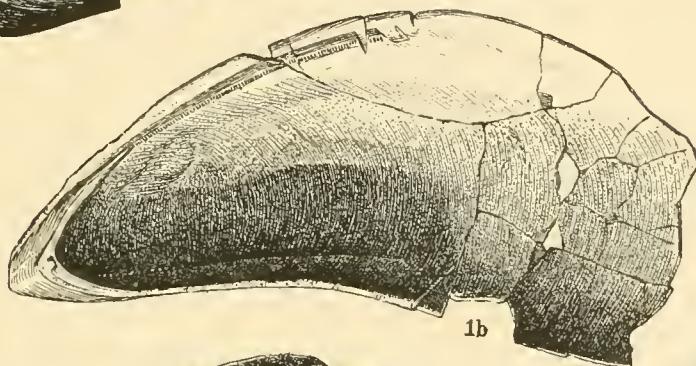
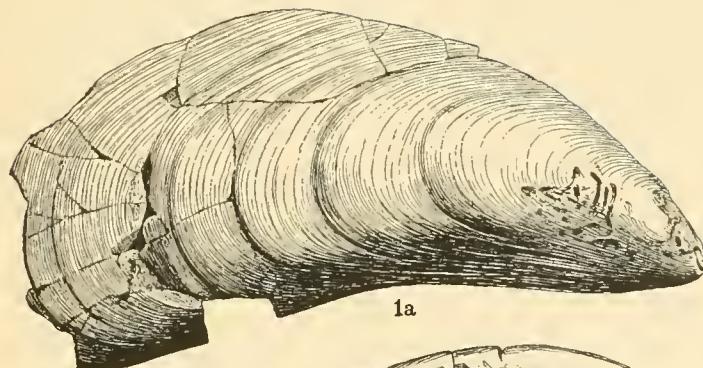
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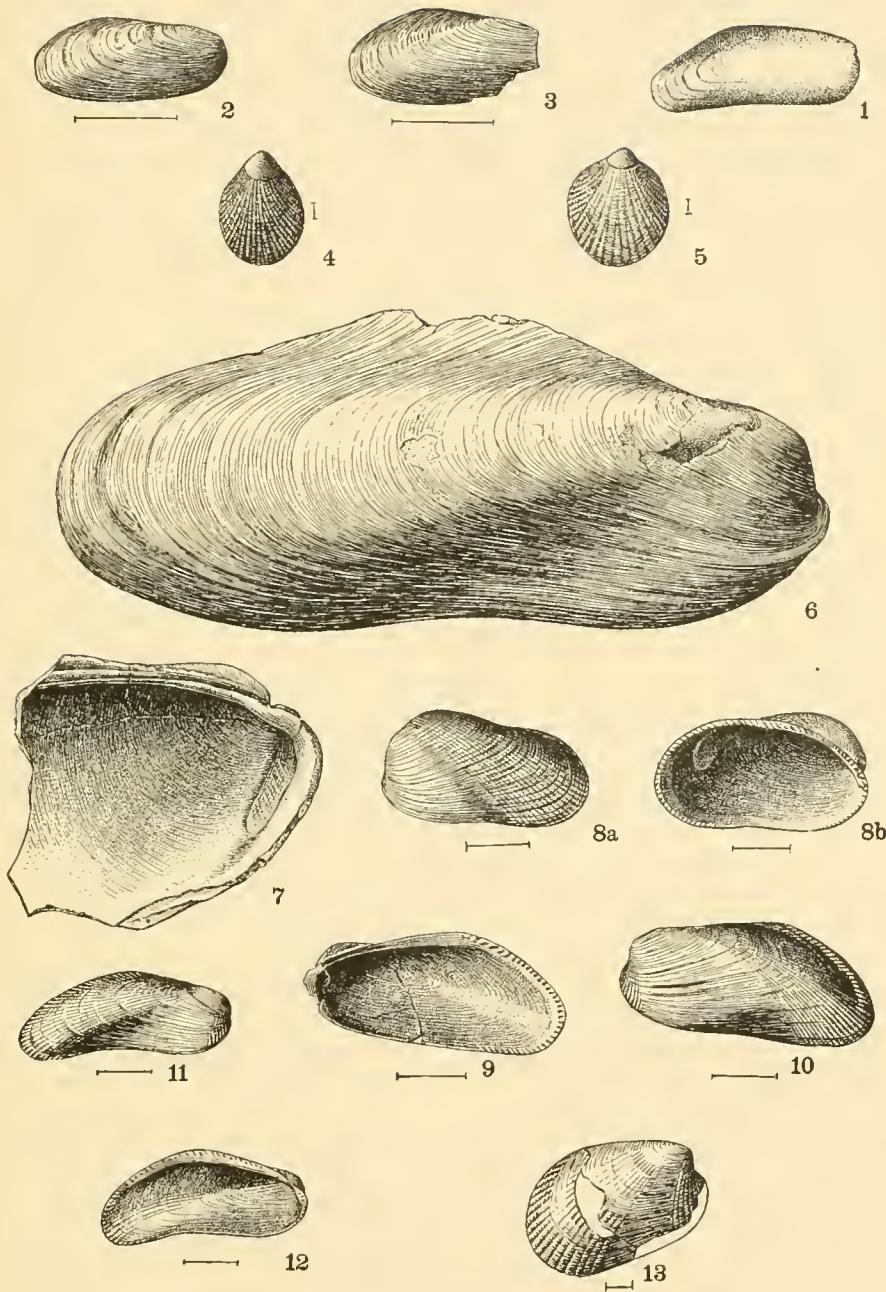
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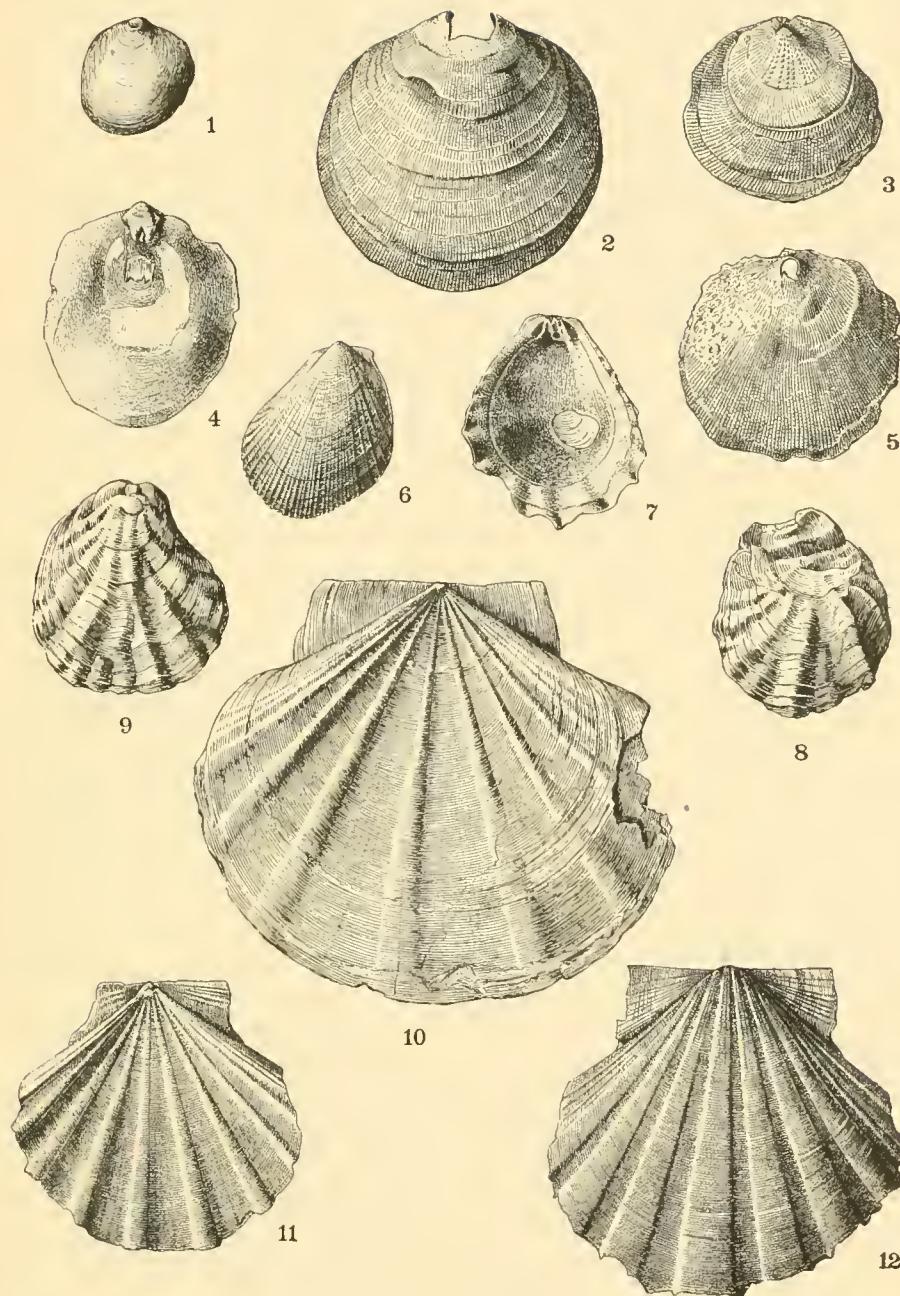
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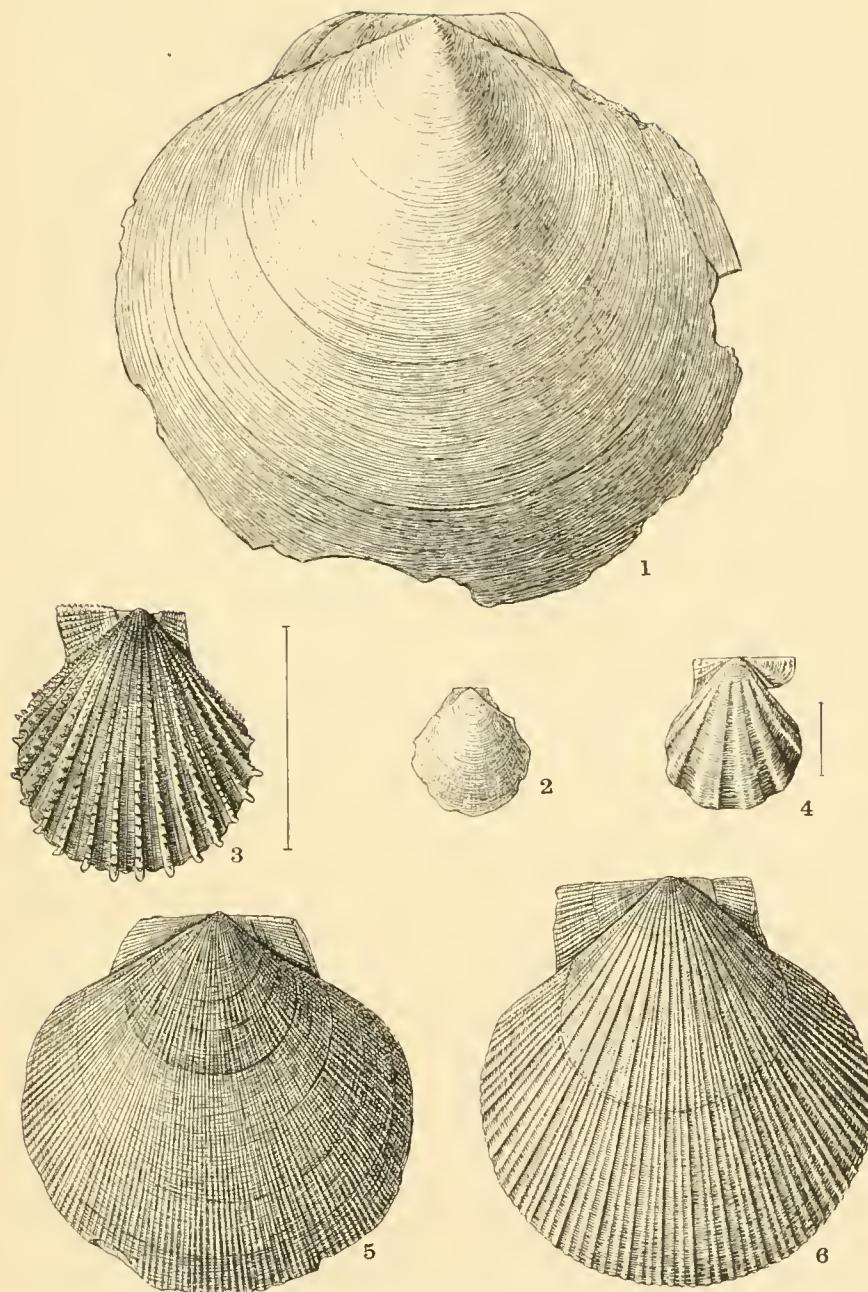
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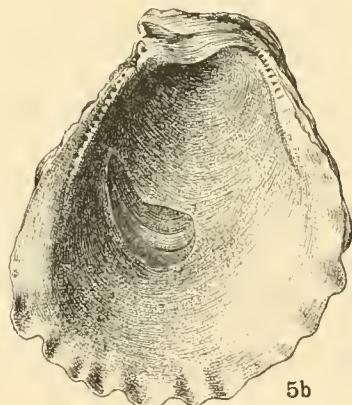
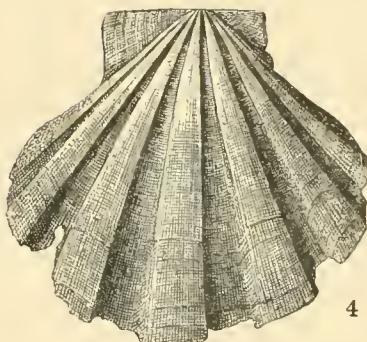
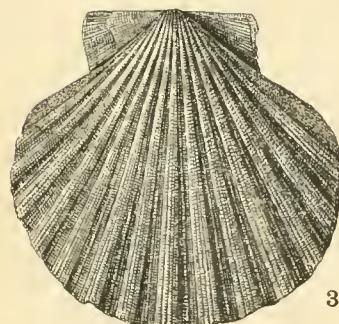
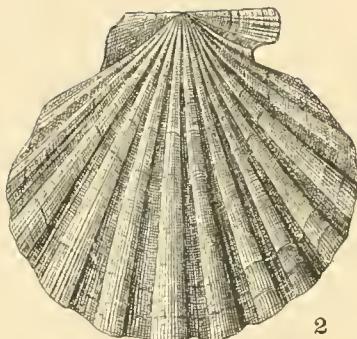
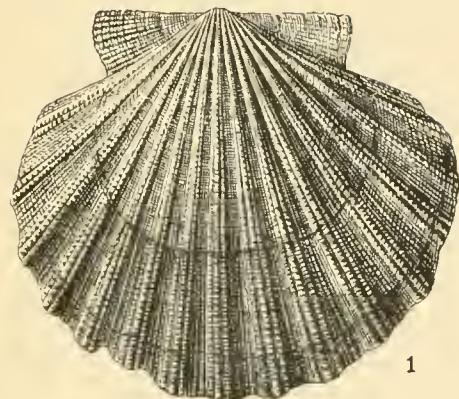
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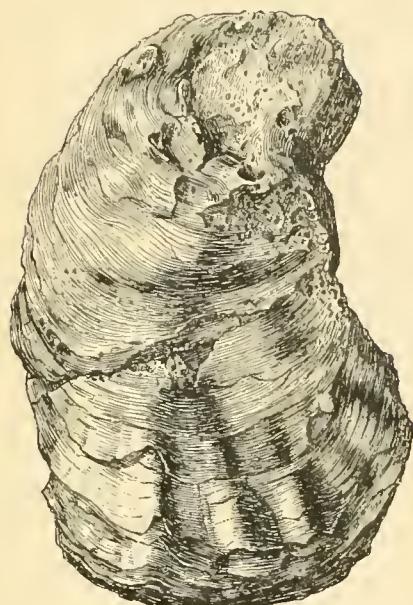
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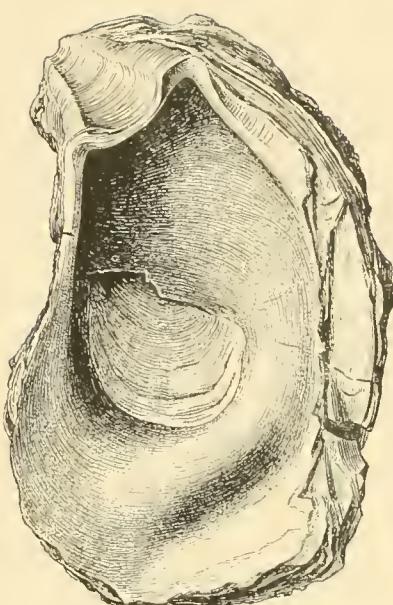
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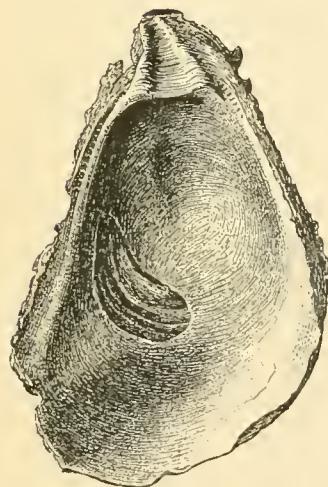
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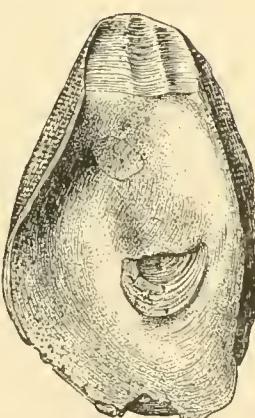
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1b



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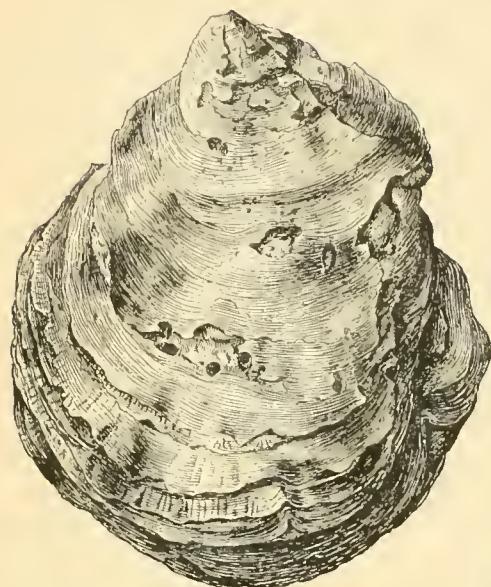


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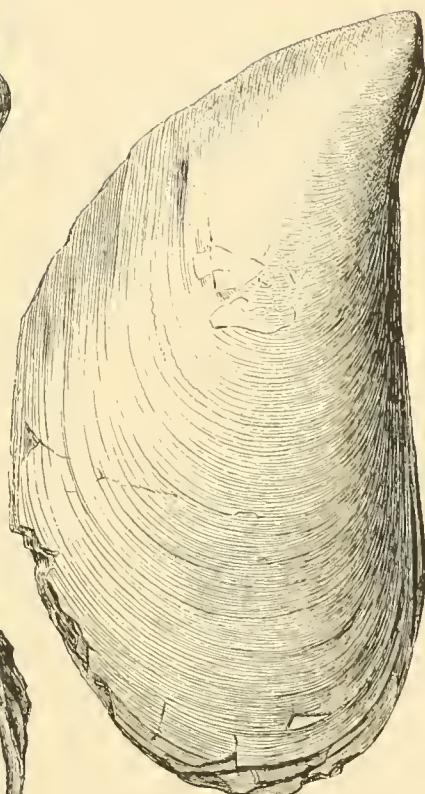
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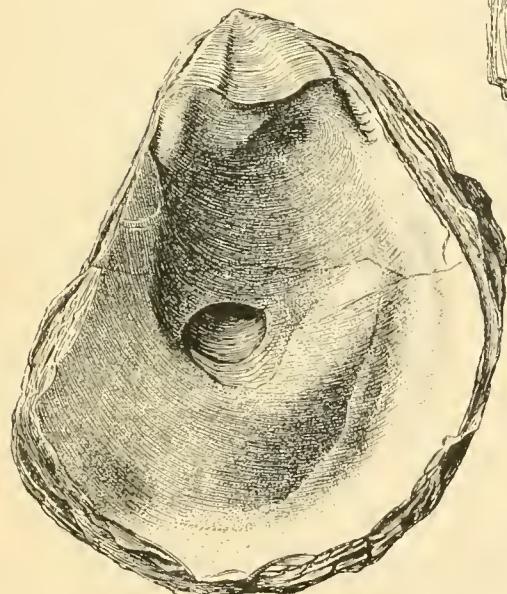
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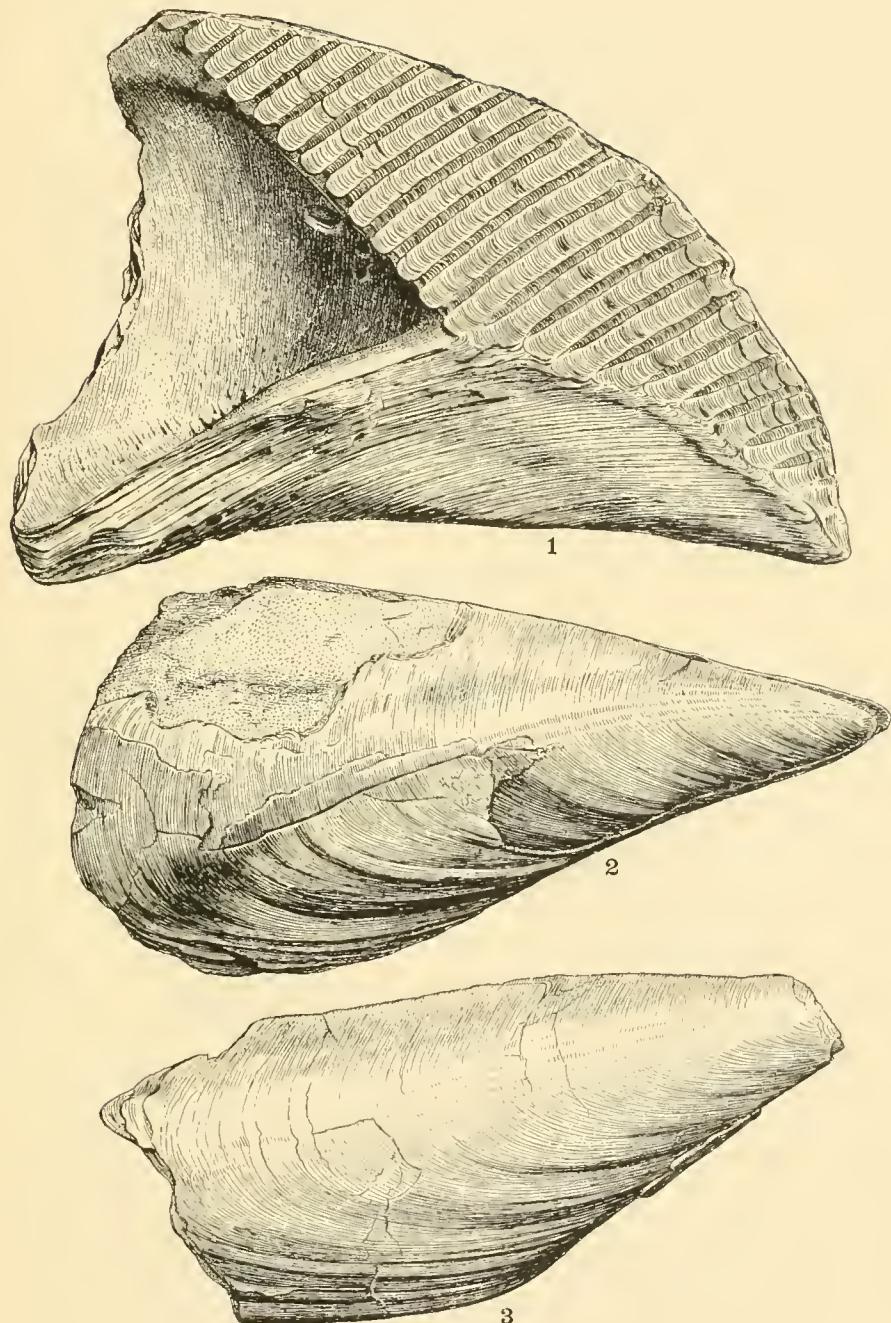
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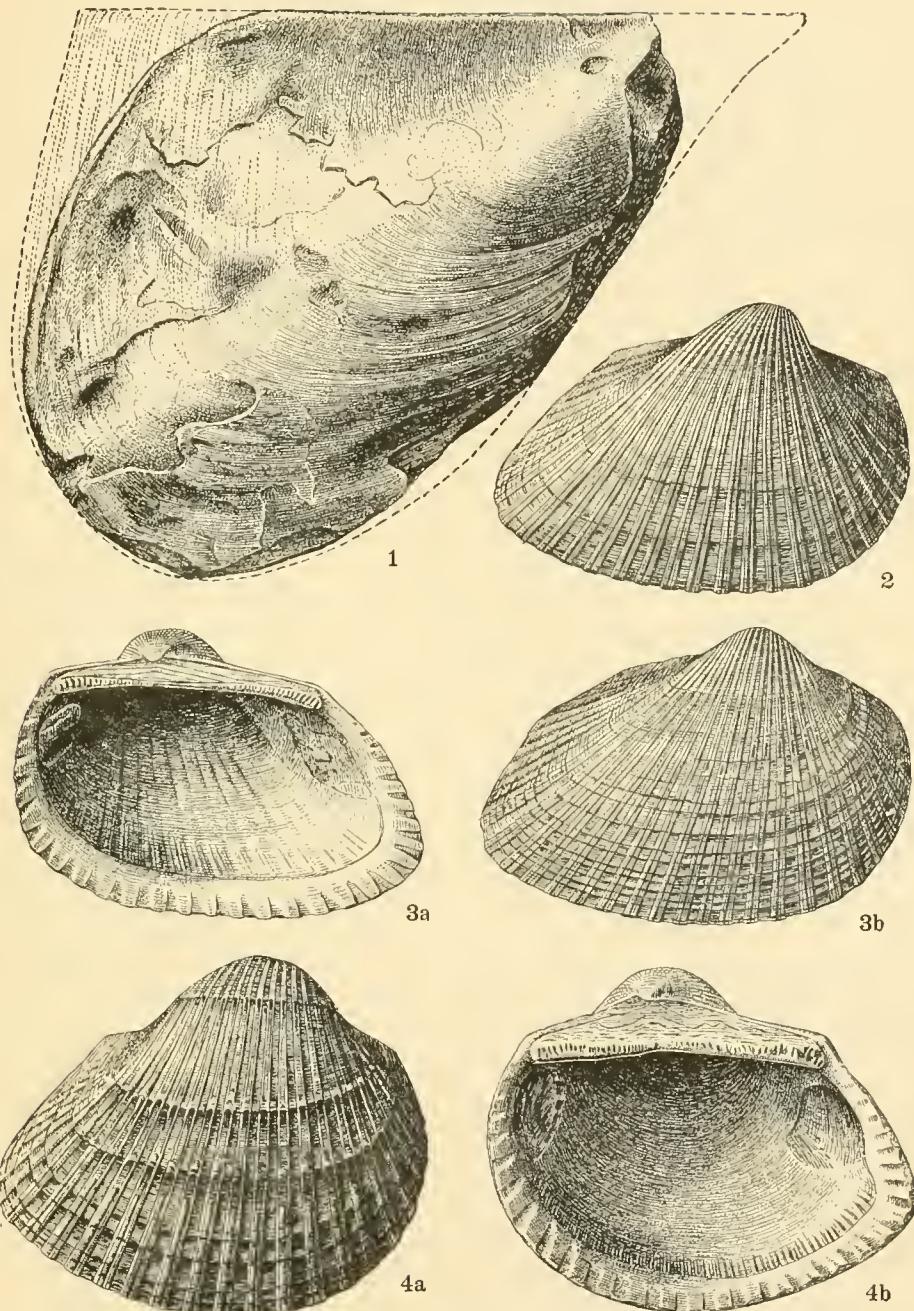
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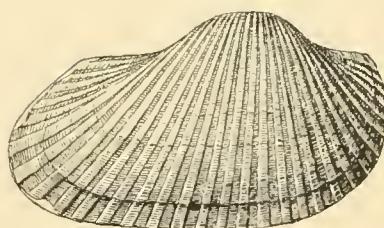
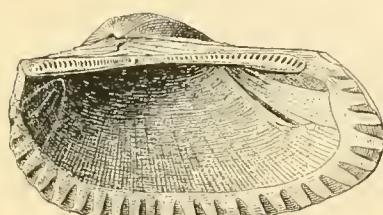
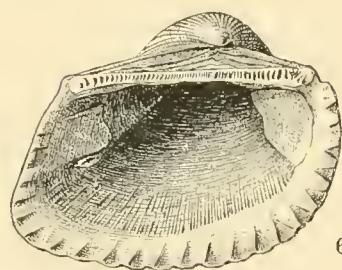
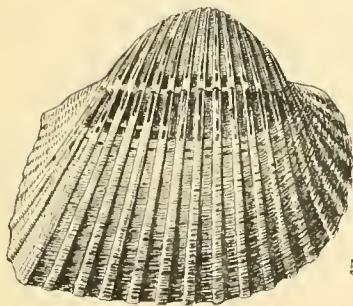
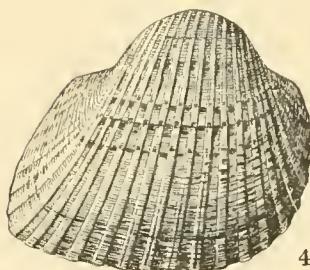
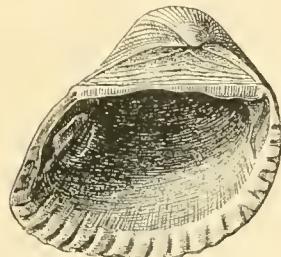
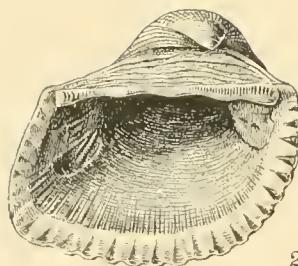
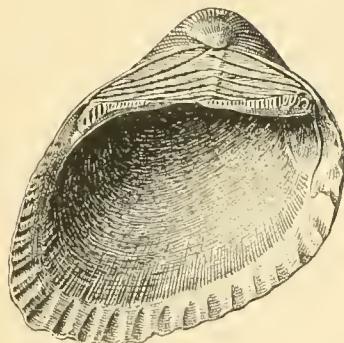
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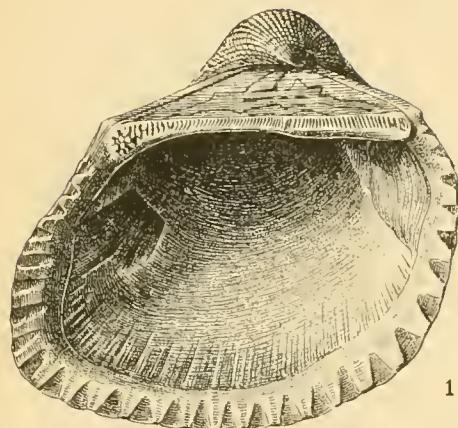


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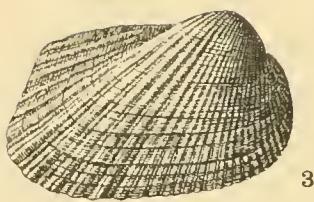
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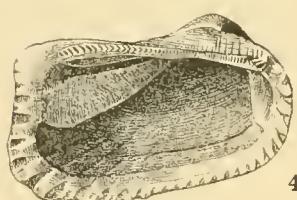
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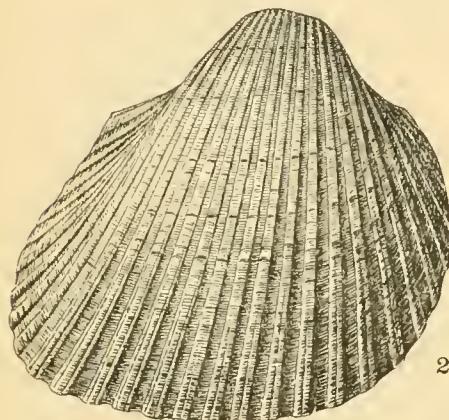
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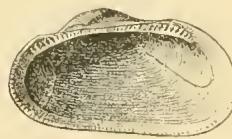
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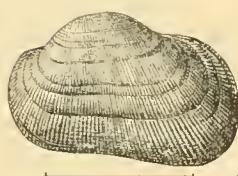
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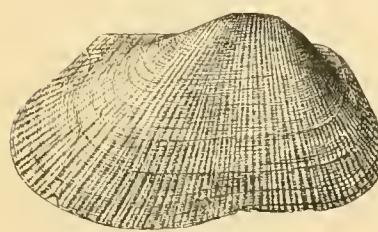
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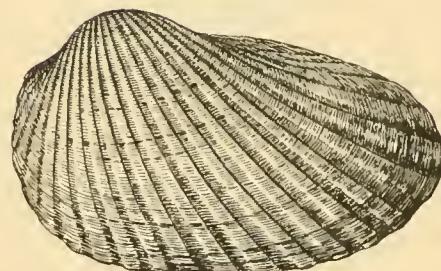
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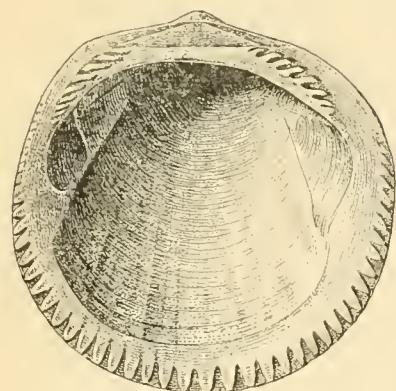
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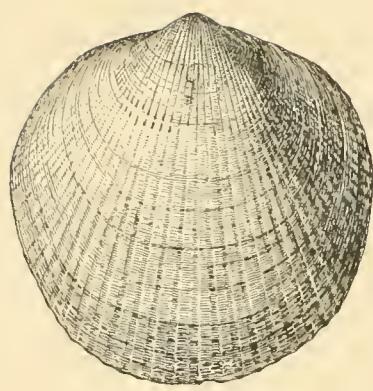
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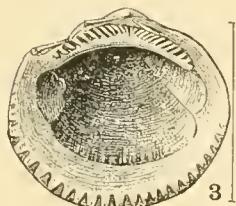
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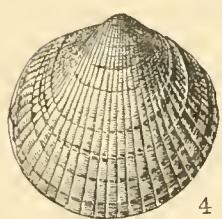
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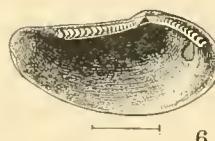
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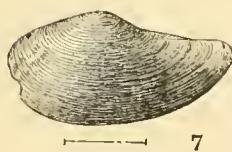
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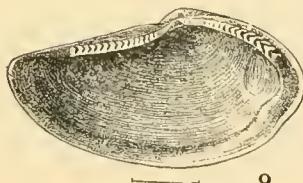
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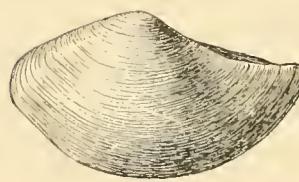
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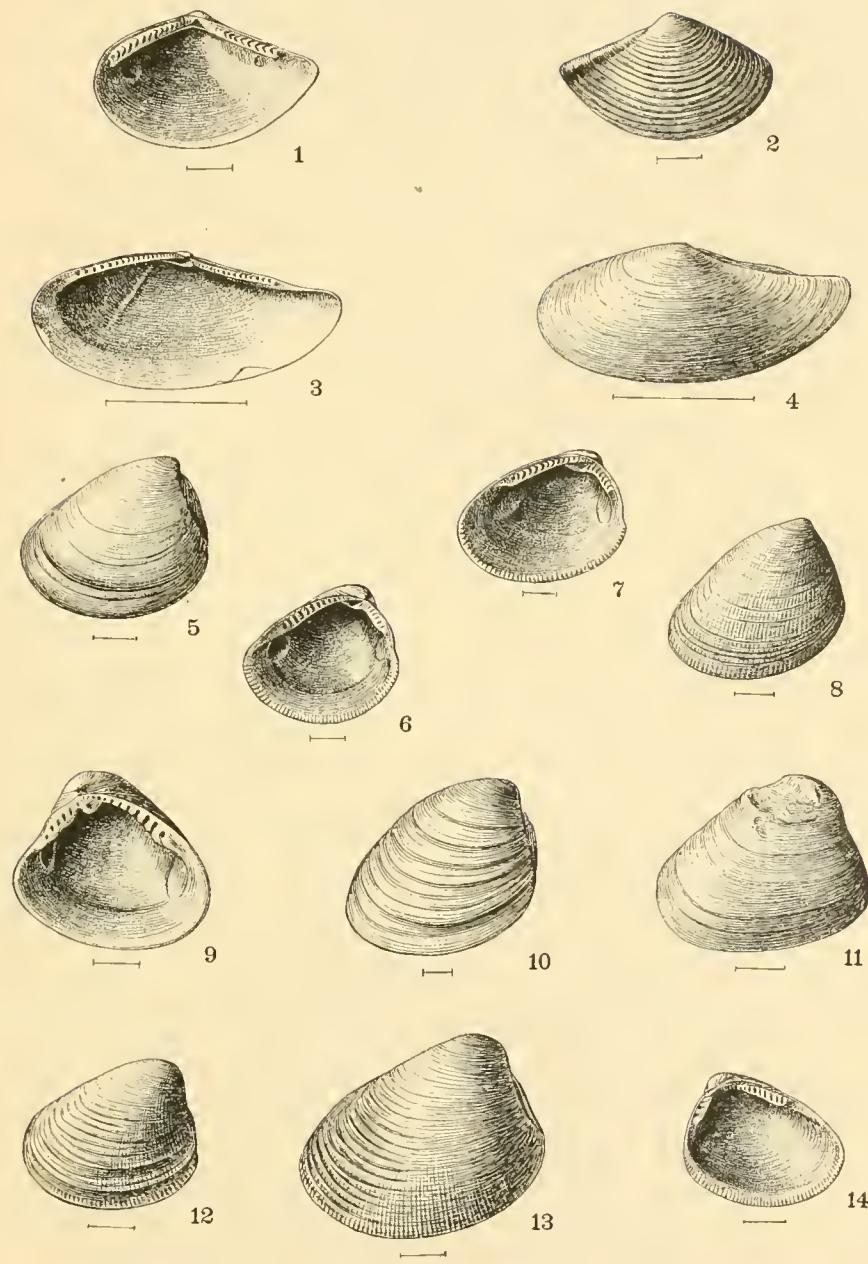


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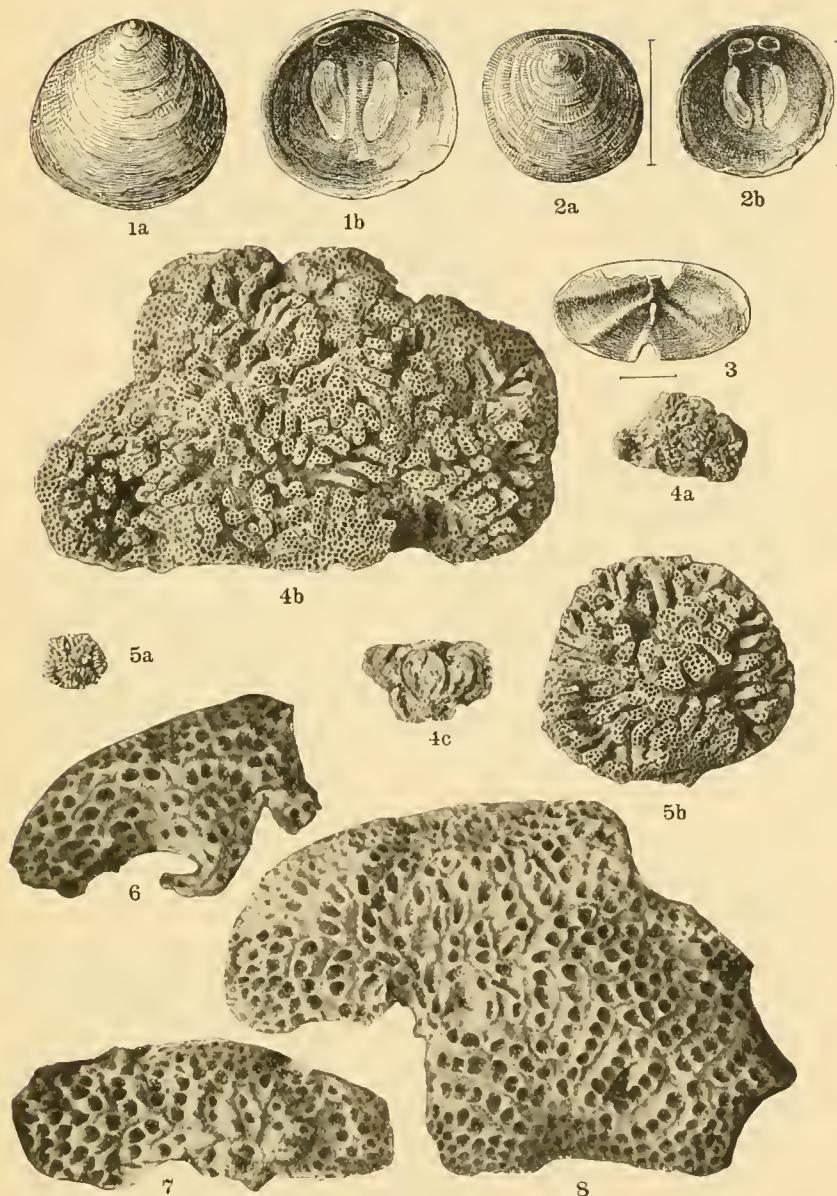
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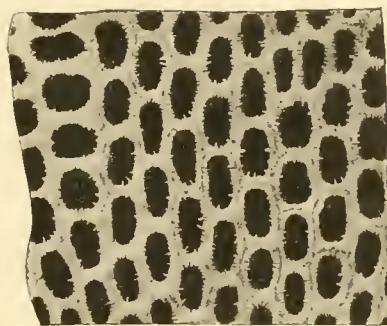
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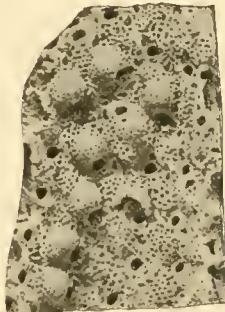
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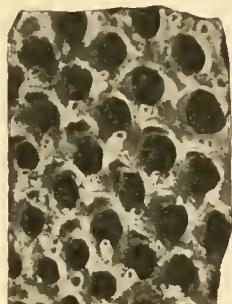


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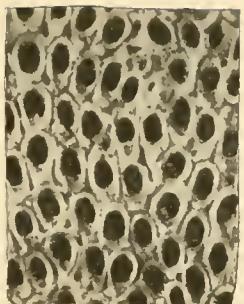
MOLLUSCOIDEA—BRYOZOA.

## PLATE CXI.

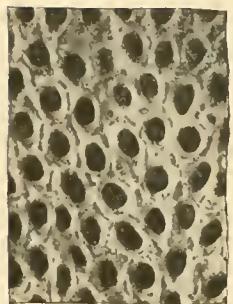
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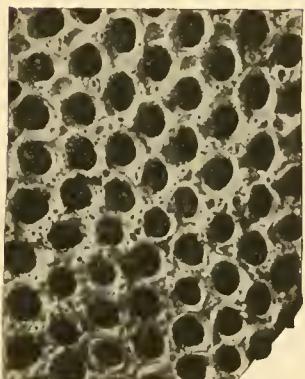
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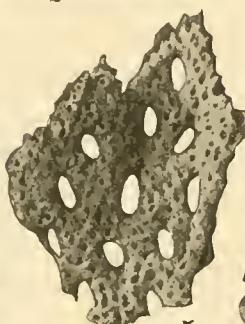
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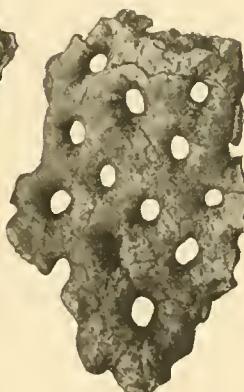
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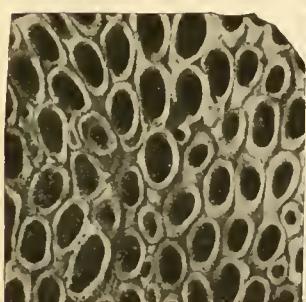
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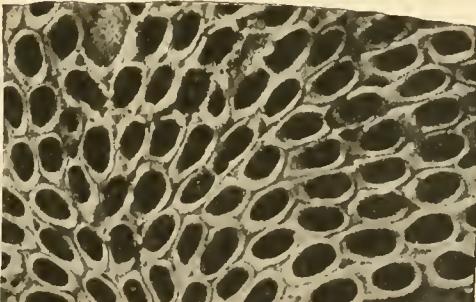
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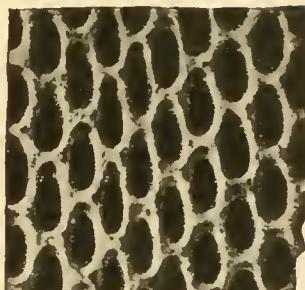
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MOLLUSCOIDEA—BRYOZOA.

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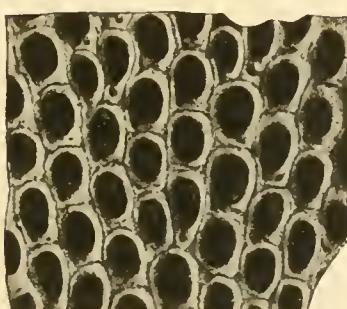
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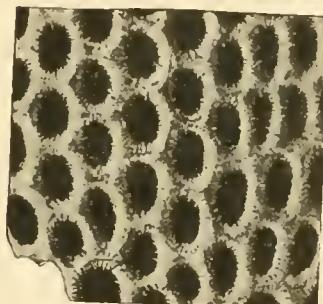
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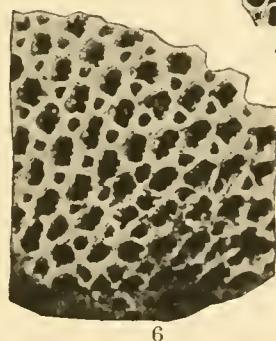
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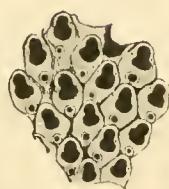
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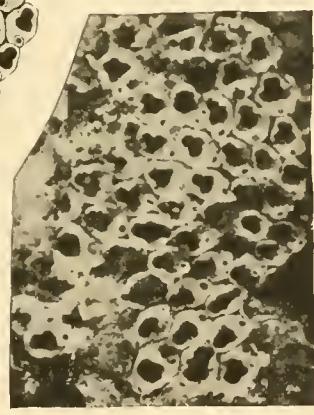
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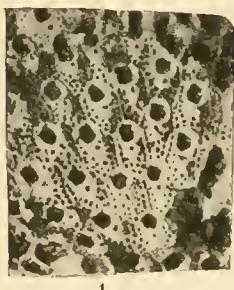


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MOLLUSCOIDEA—BRYOZOA.

PLATE CXIII.

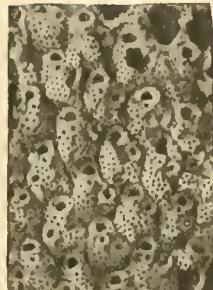
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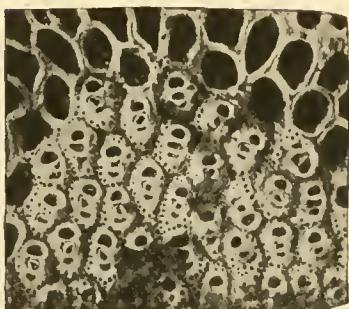
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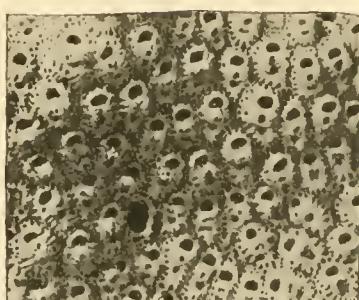
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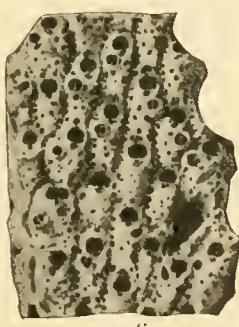
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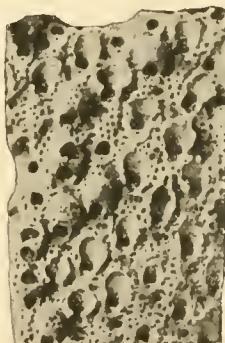
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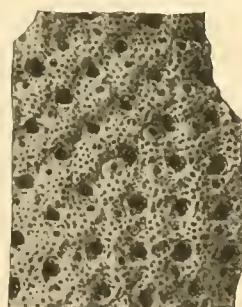
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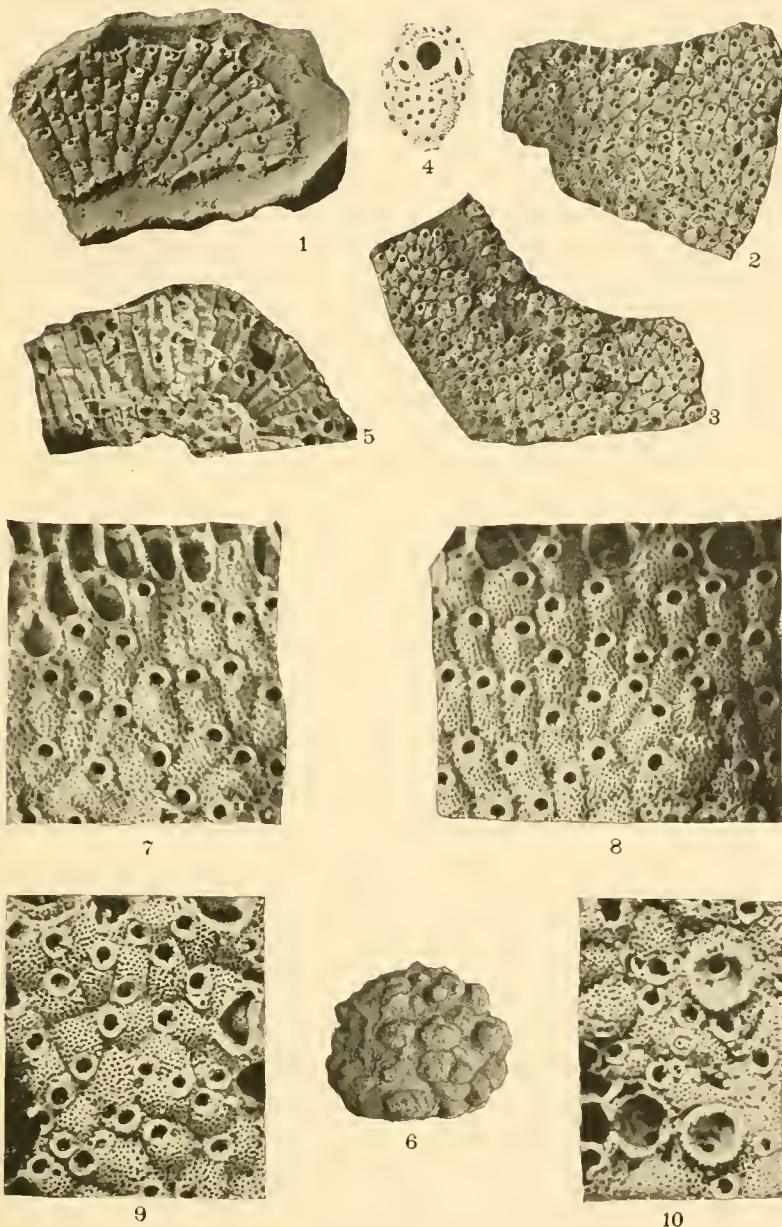


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MOLLUSCOIDEA—BRYOZOA.

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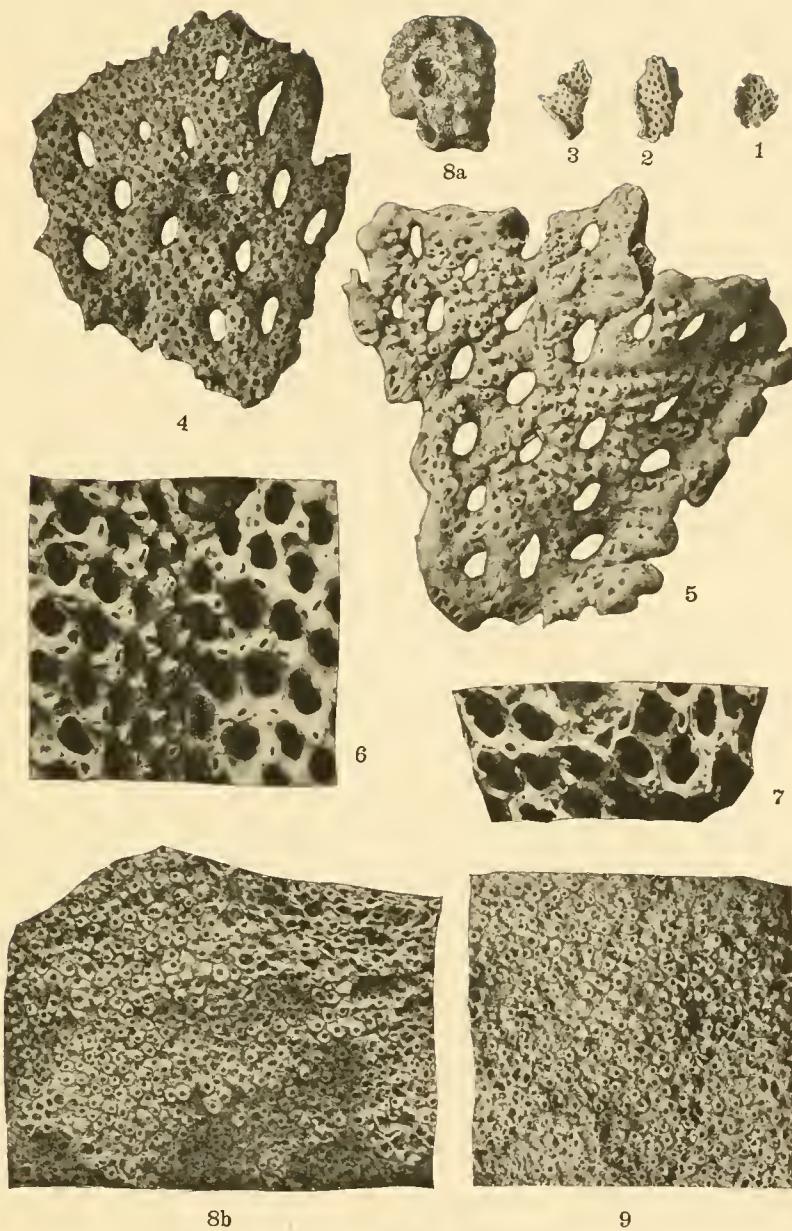


MOLLUSCOIDEA—BRYOZOA.

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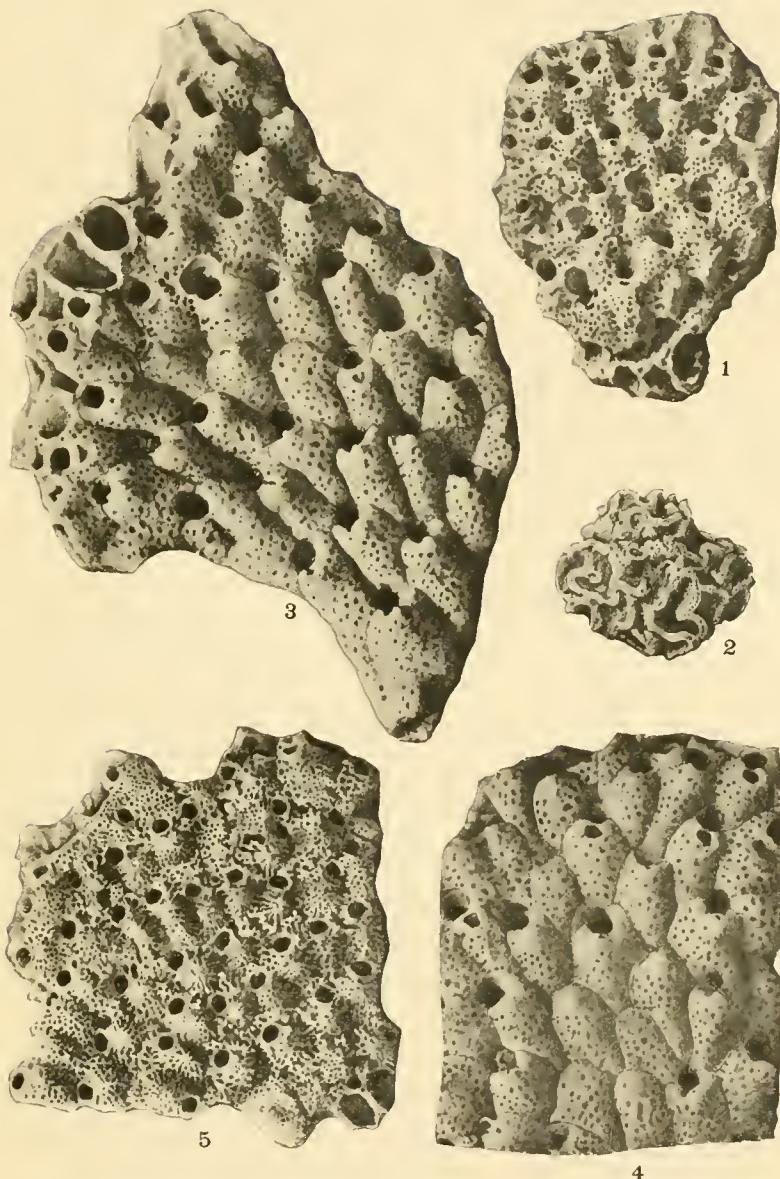


MOLLUSCOIDEA—BRYOZOA.

## PLATE CXVI.

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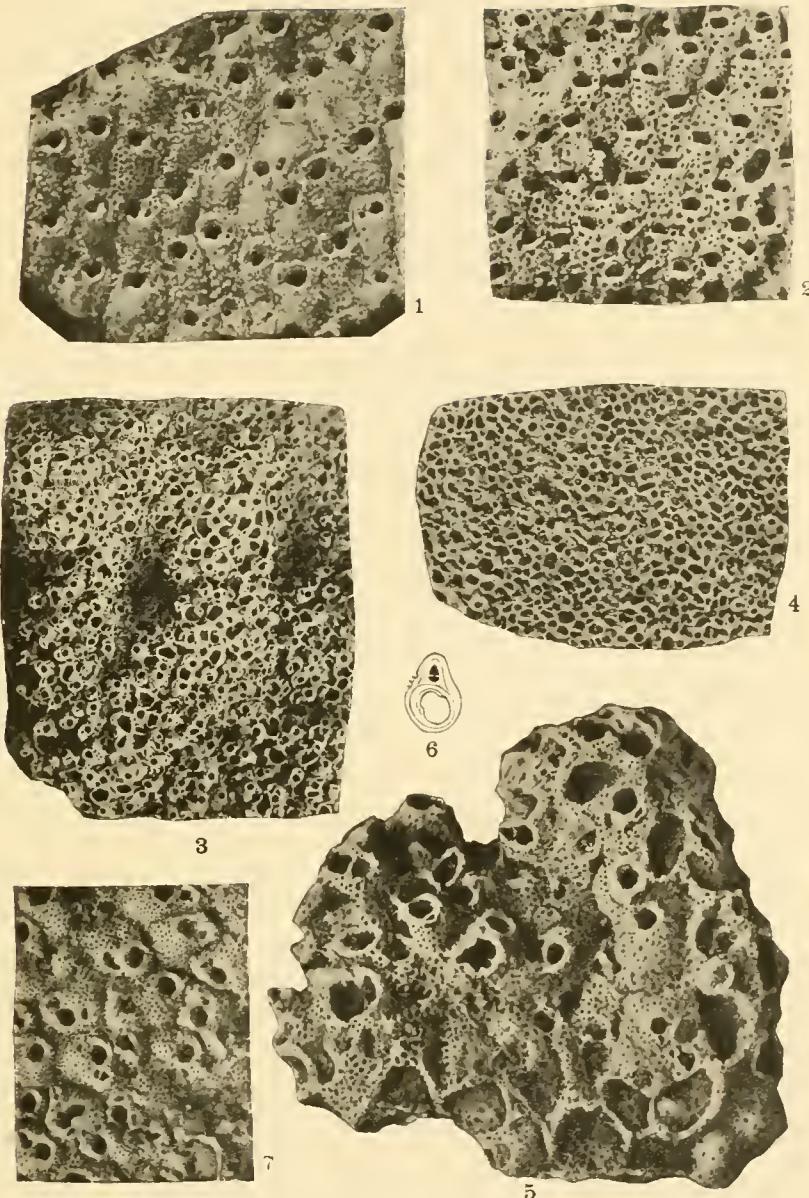
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MOLLUSCOIDEA—BRYOZOA.

PLATE CXVII.

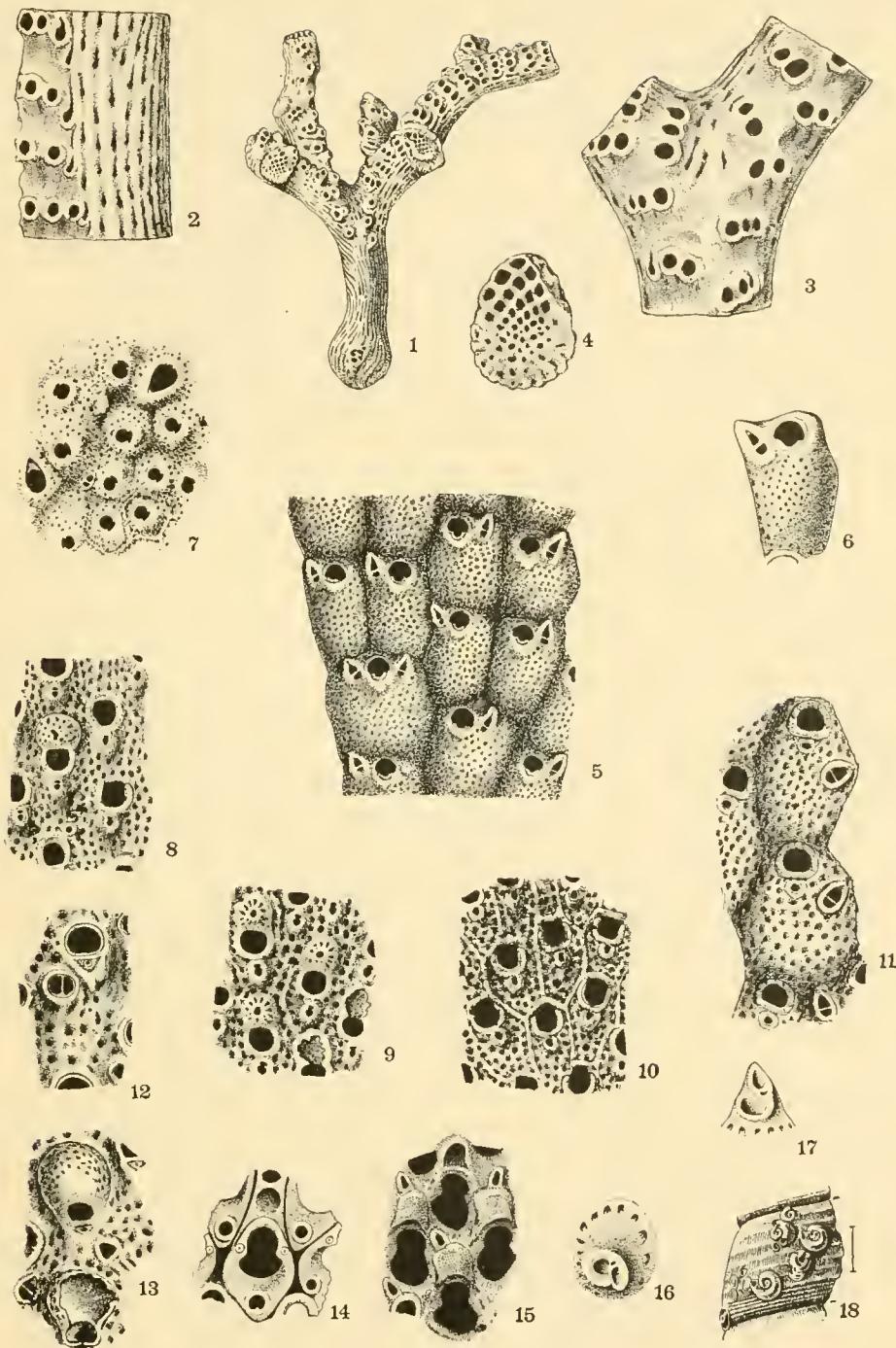
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MOLLUSCOIDEA—BRYOZOA.

PLATE CXVIII.

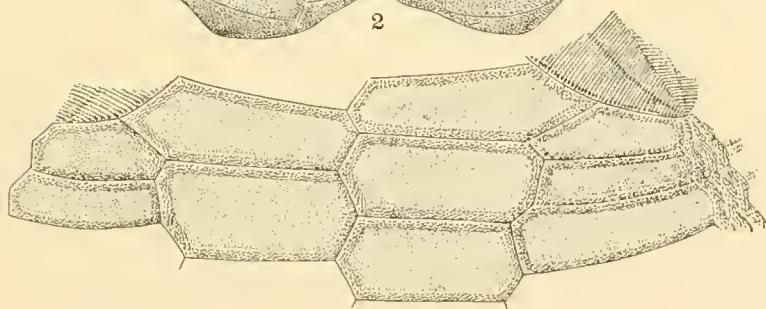
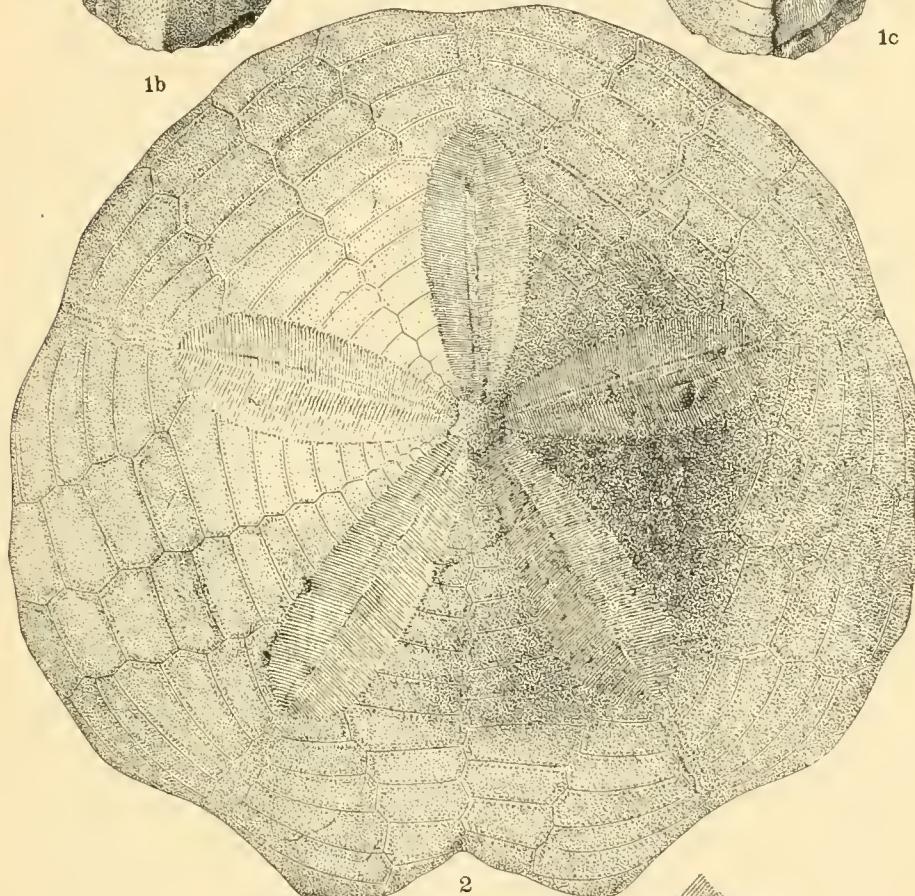
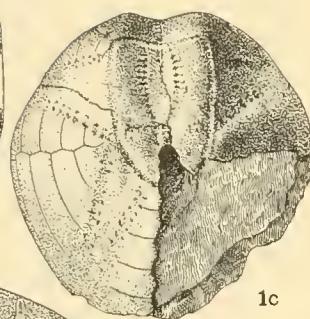
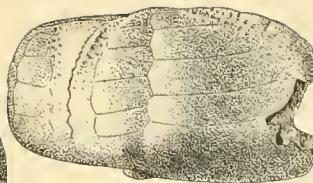
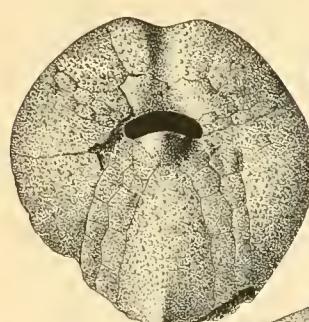
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MOLLUSCOIDEA—BRYOZOA, AND VERMES.

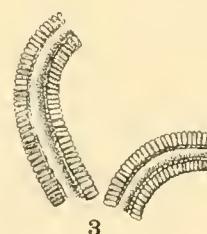
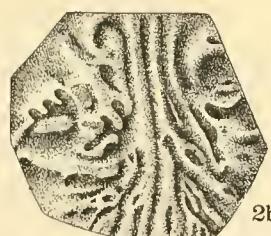
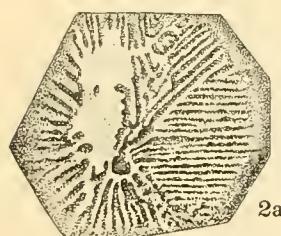
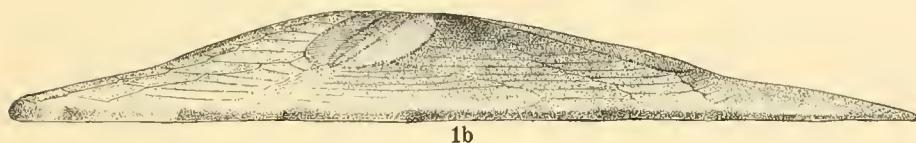
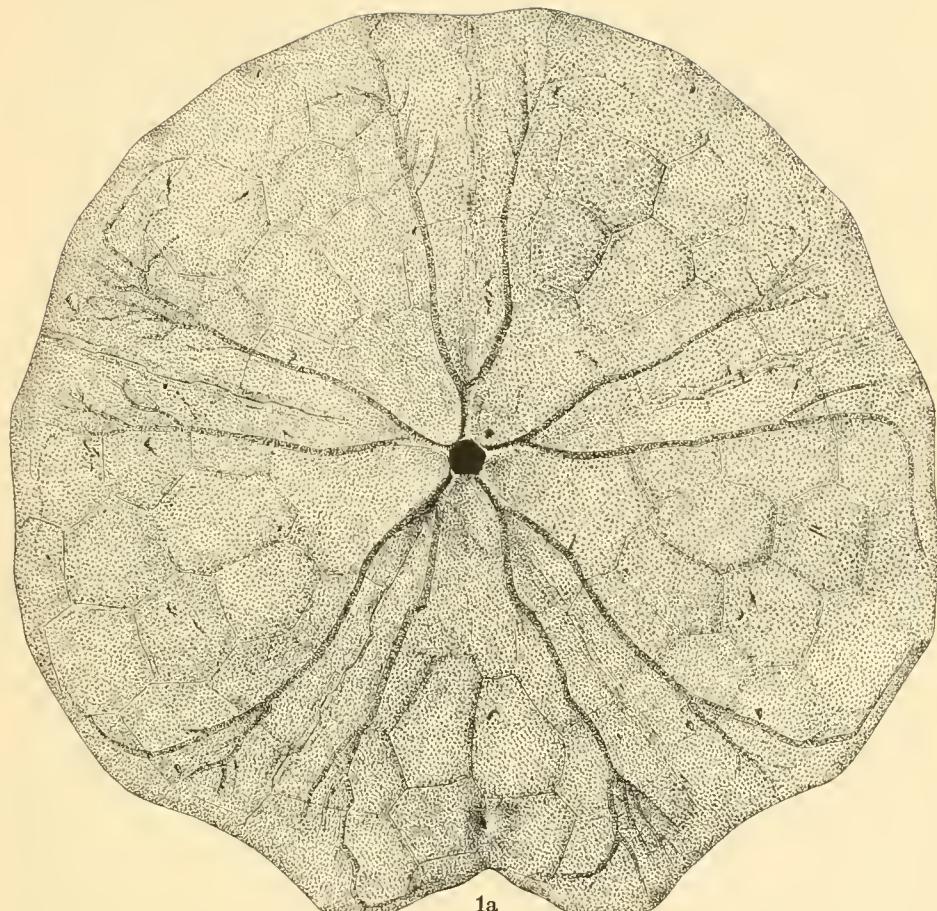
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## PLATE CXX.

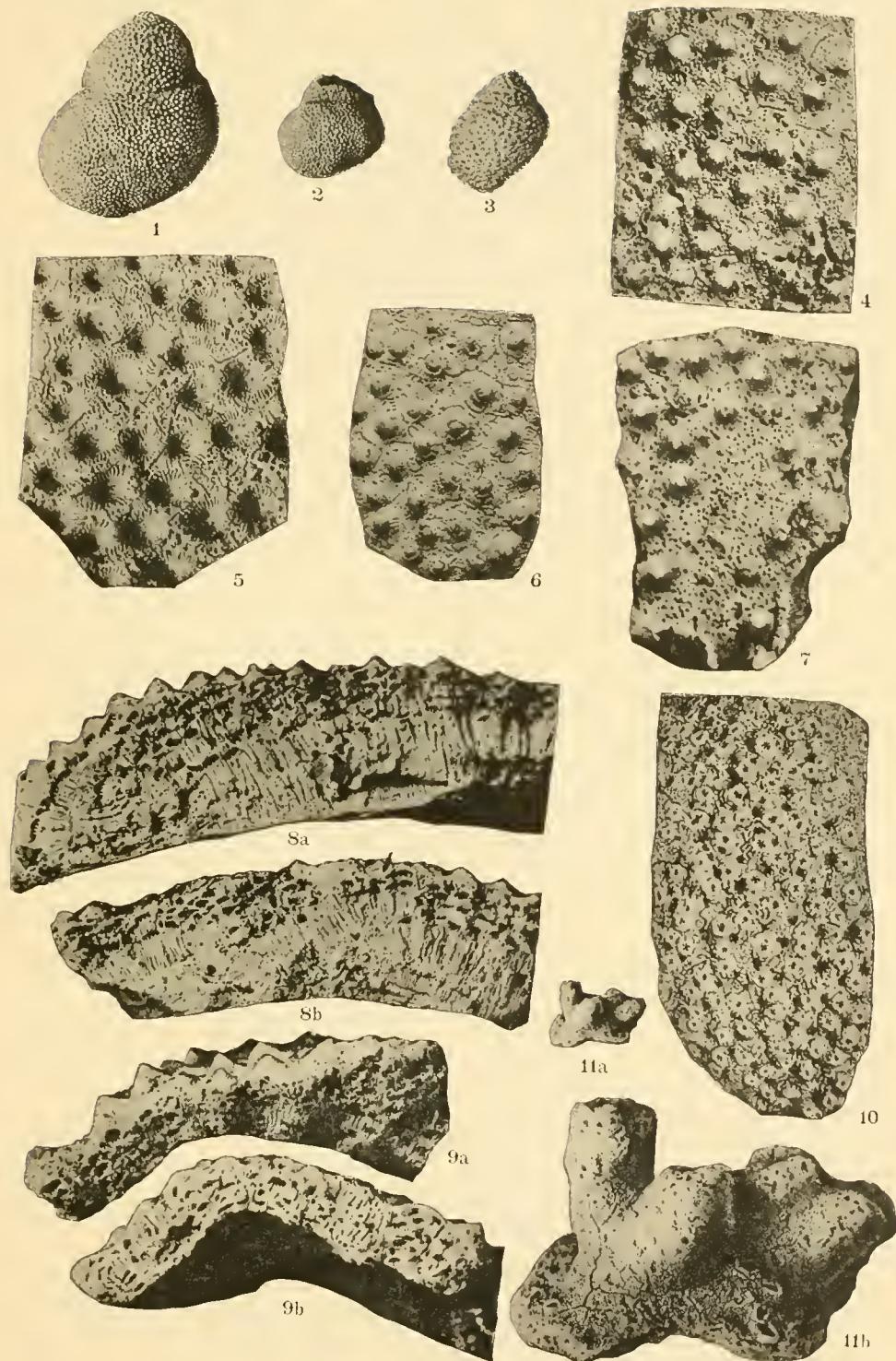
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ECHINODERMATA.

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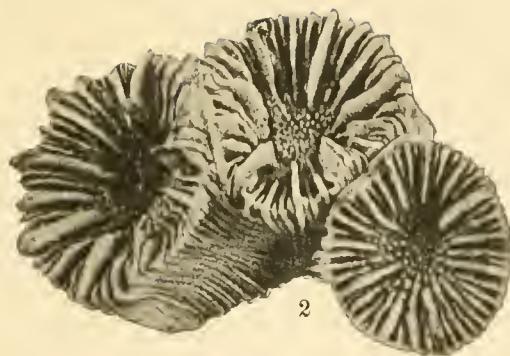


COELENTERATA—HYDROZOA.

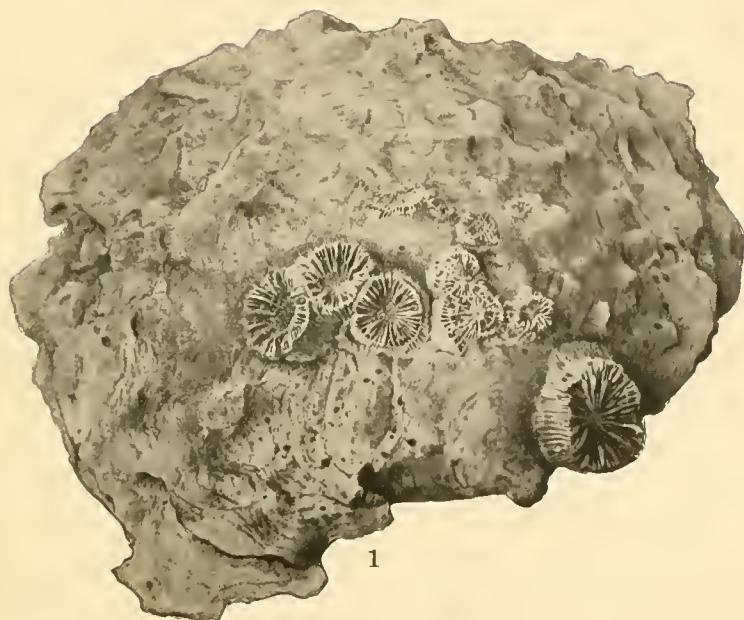
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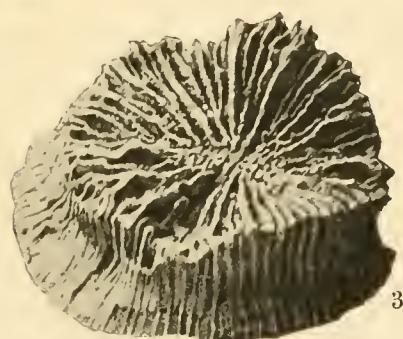
<sup>1</sup> The following plates illustrating the corals are reproductions from photographs. Mr. Levin C. Handy made the negatives; prints on velox paper were made by Mr. Norman W. Carkhuff of the U. S. Geological Survey. Miss Frances Wieser retouched some of the prints.



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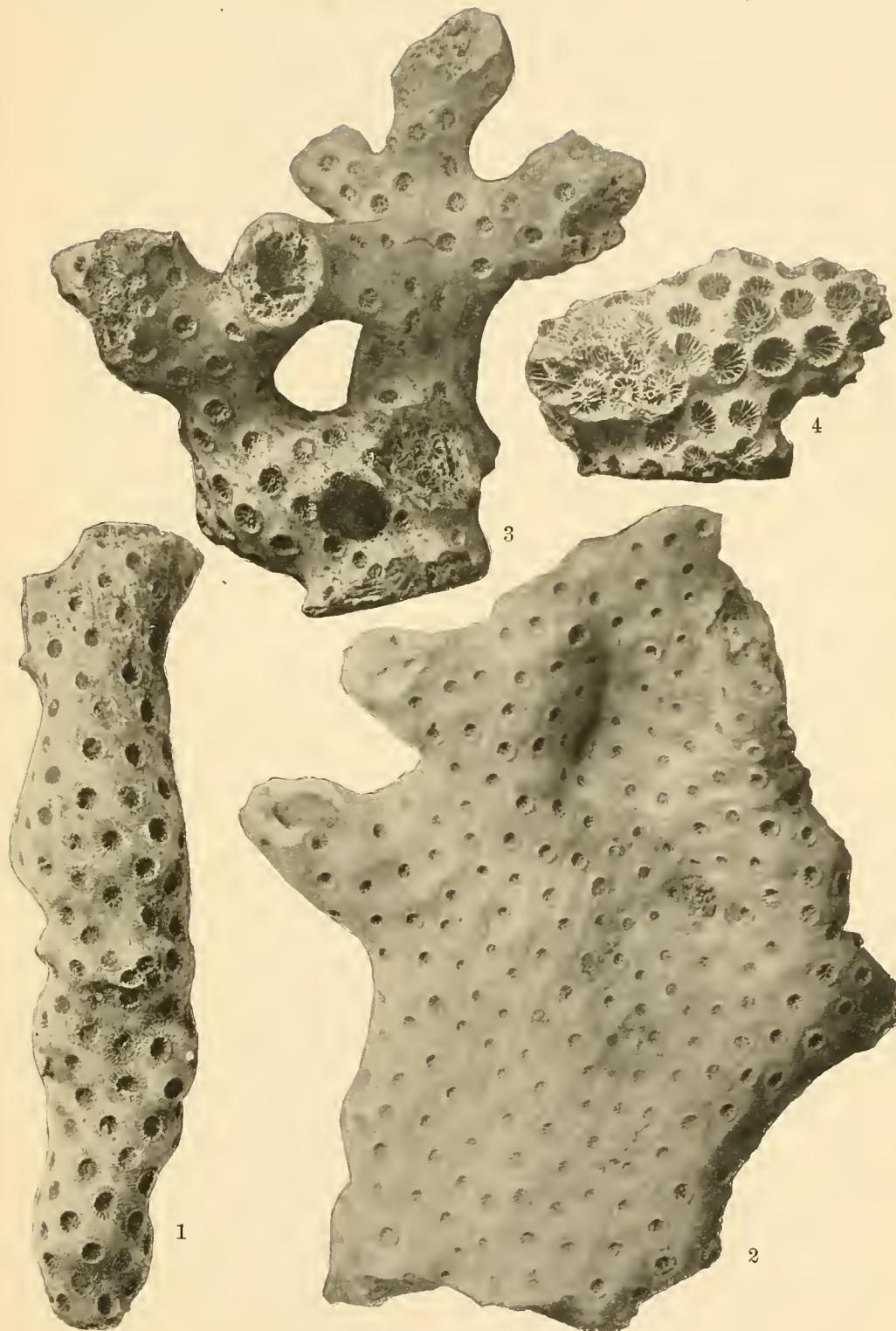


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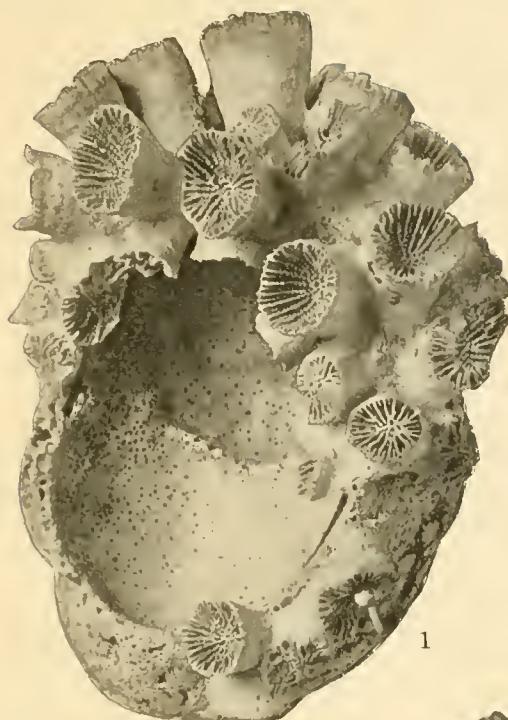


COELENTERATA—ANTHOZOA.

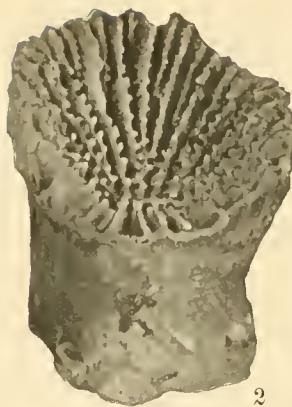
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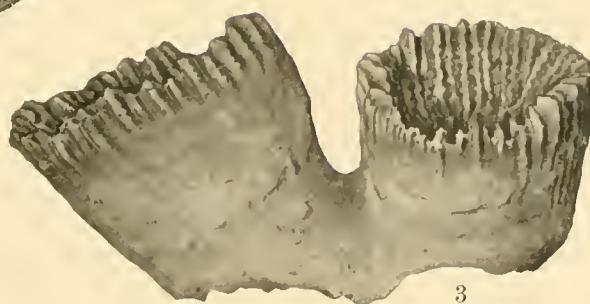
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Figured specimen in collection of Johns Hopkins University.	



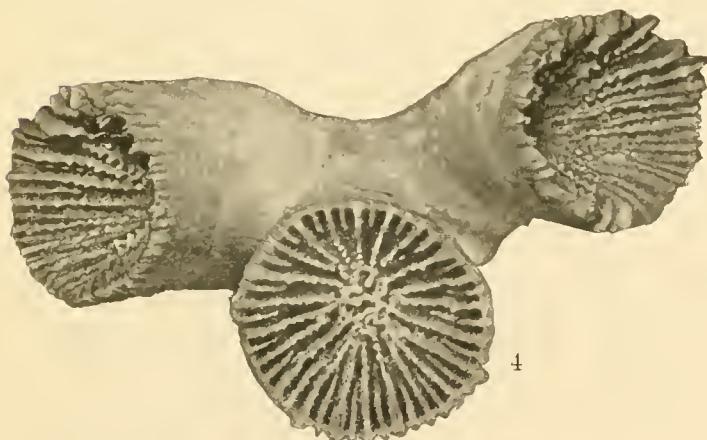
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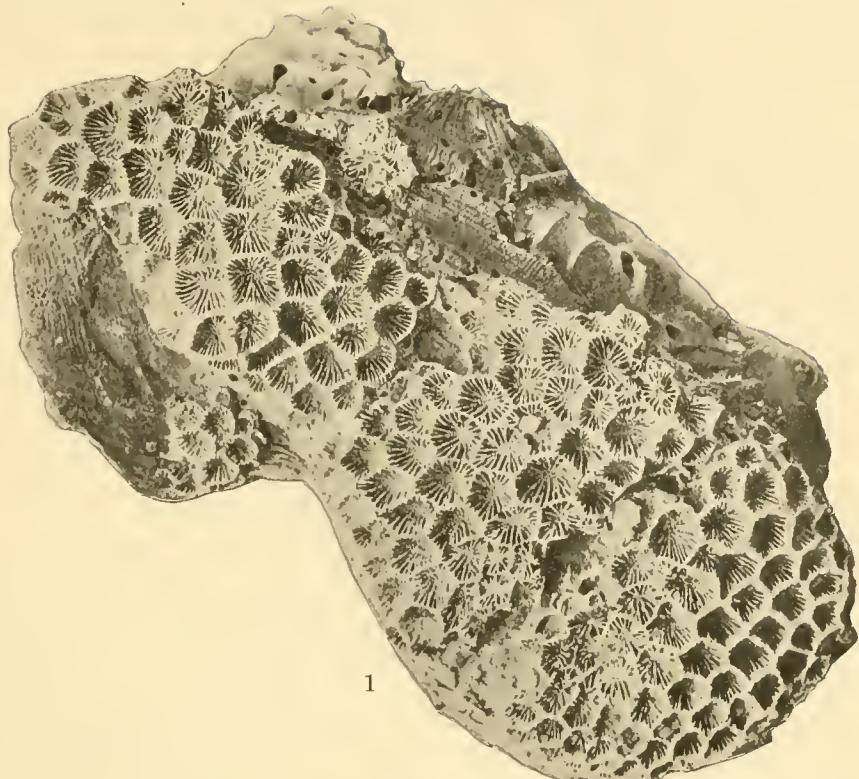
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COELENTERATA—ANTHOZOA.

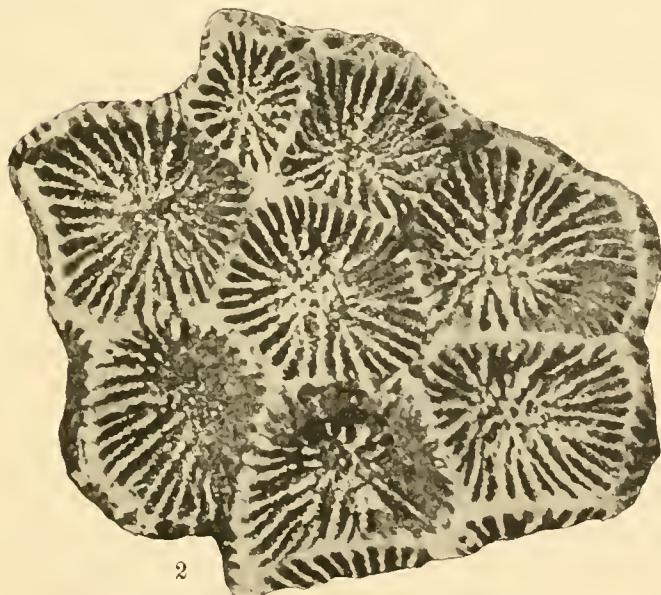
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| 2. Several calices. $\times$ about 5  |     |
| Figured specimen in collection of Wagner Free Institute of Science.         |     |



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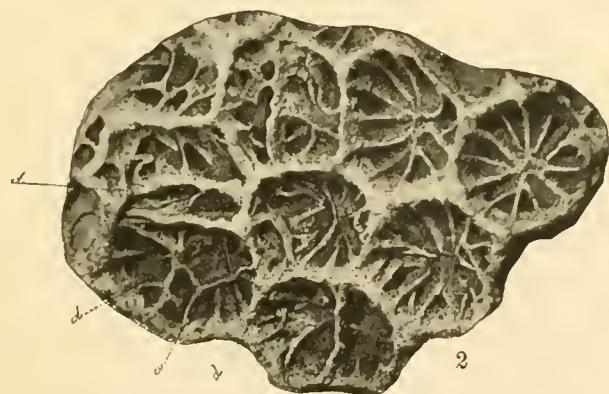
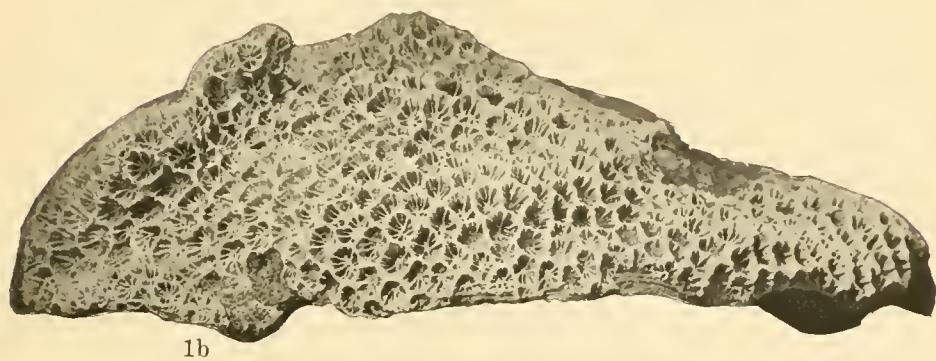
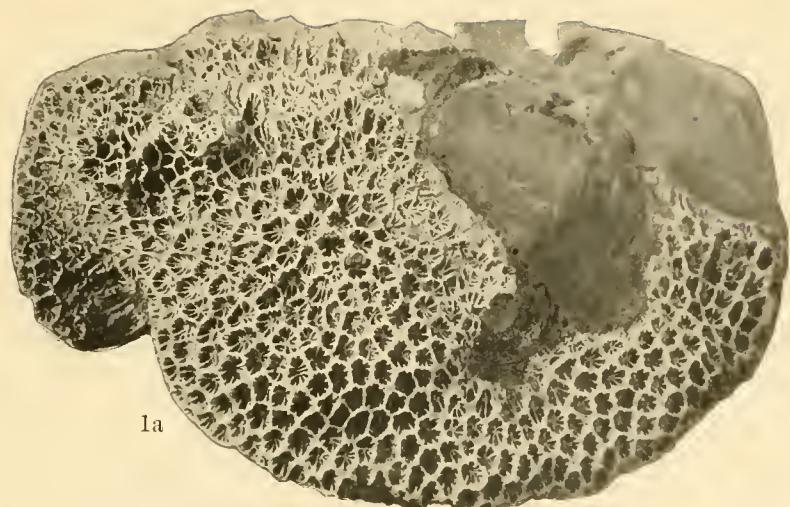
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COELENTERATA—ANTHOZOA.

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mental budding. The calice at the bottom of the figure  
has apparently divided by fission. The greatest distance  
across the figured portion is 16 mm. × about 5
- Figured specimens in collection of Johns Hopkins University.



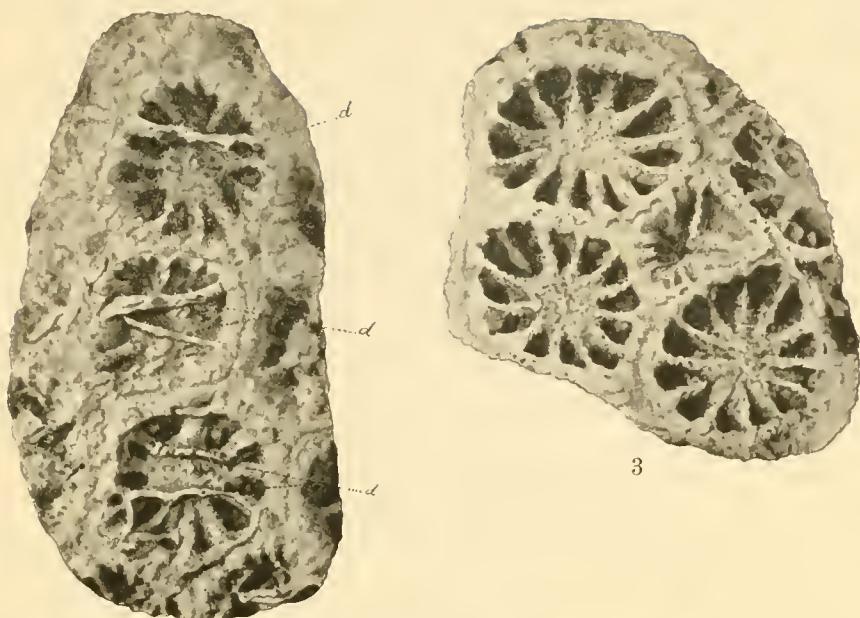
COELENTERATA—ANTHOZOA.

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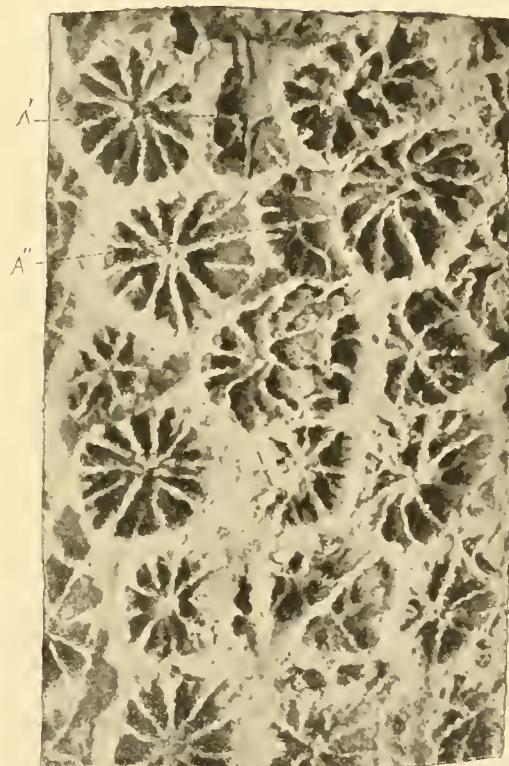
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Figured specimens in collection of Johns Hopkins University.



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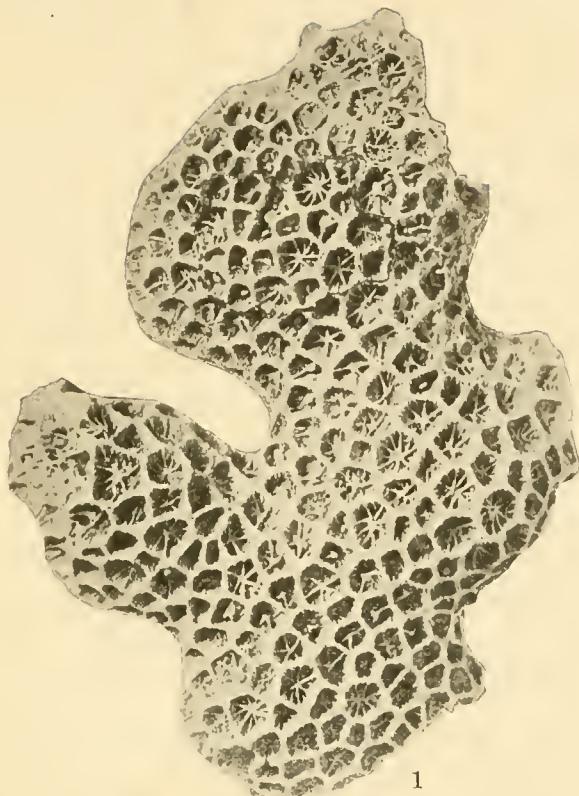
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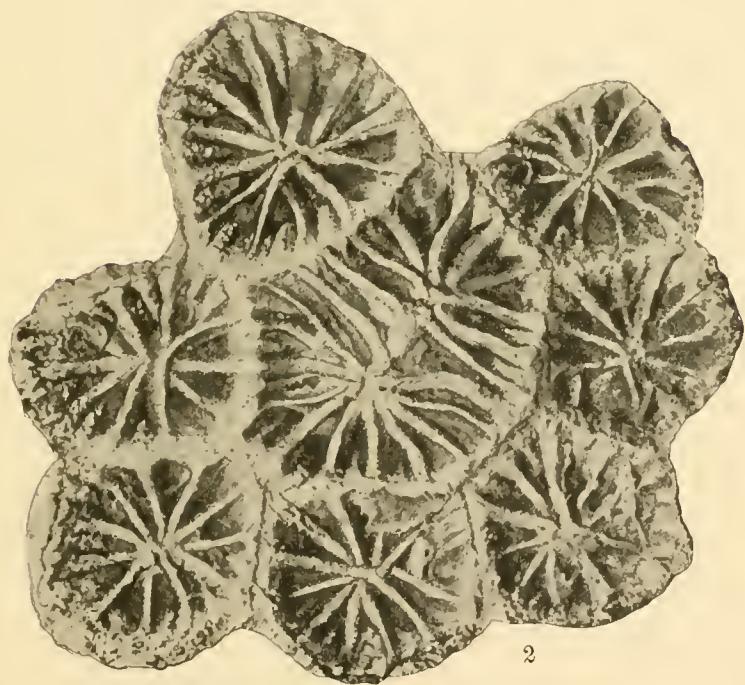
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Figured specimens in collection of Johns Hopkins University.	



1

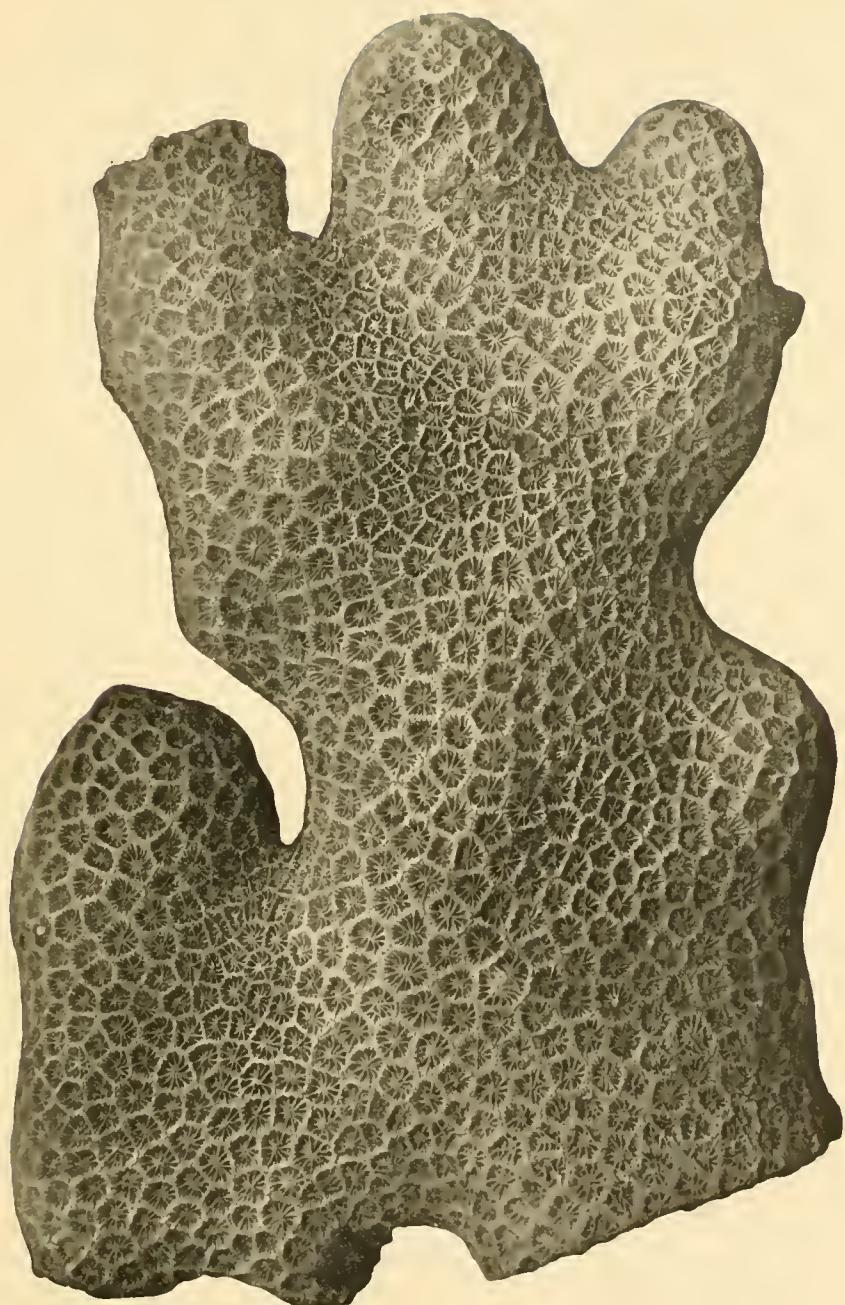


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COELENTERATA--ANTHOZOA.

PLATE CXXIX.

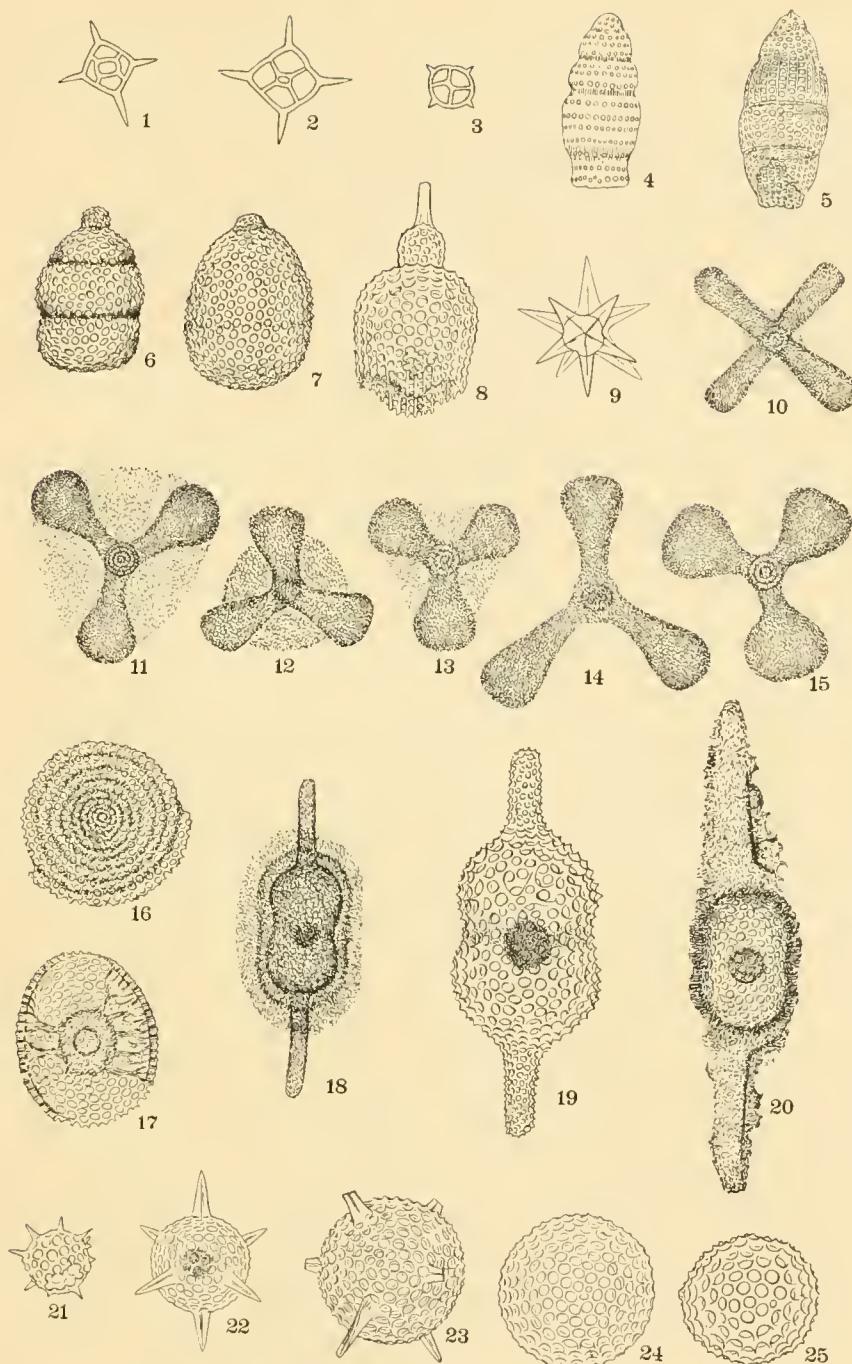
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General view of a specimen 175 mm. long, the figure slightly less than natural size.	
Figurered specimen in collection of Johns Hopkins University.	



COELENTERATA—ANTHOZOA.

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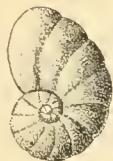
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PROTOZOA—RADIOLARIA.

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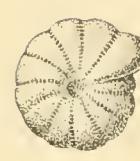
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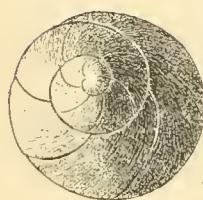
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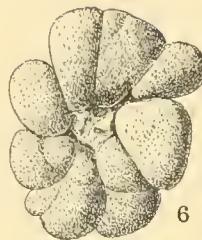
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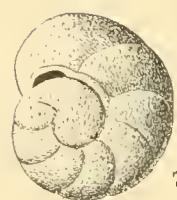
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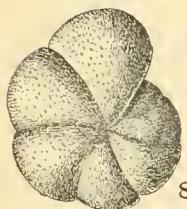
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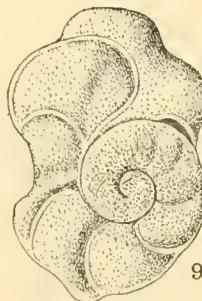
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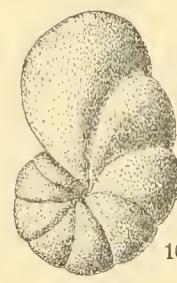
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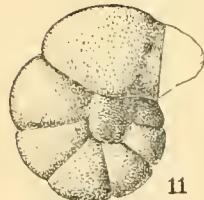
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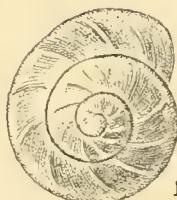
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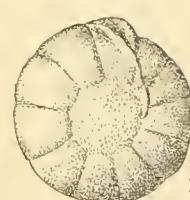
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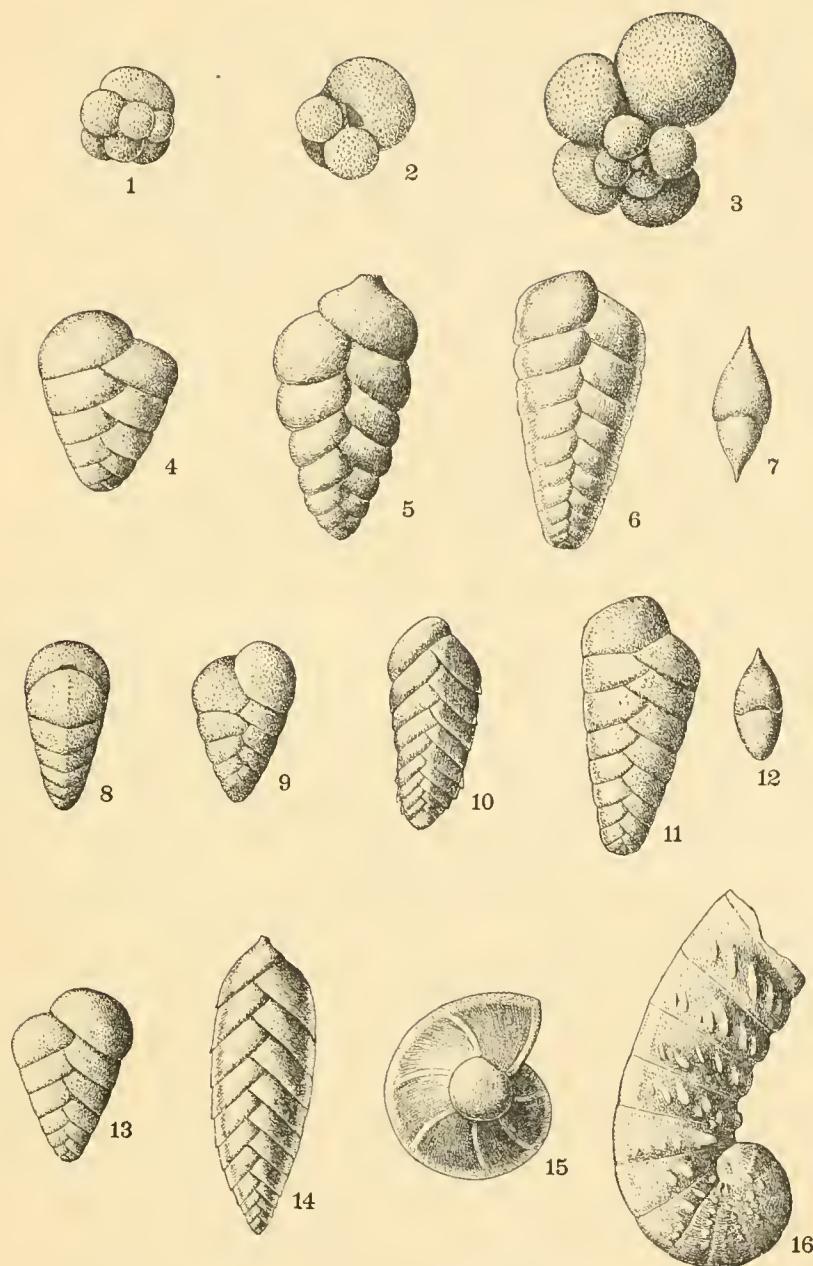


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PROTOZOA—FORAMINIFERA.

## PLATE CXXXII.

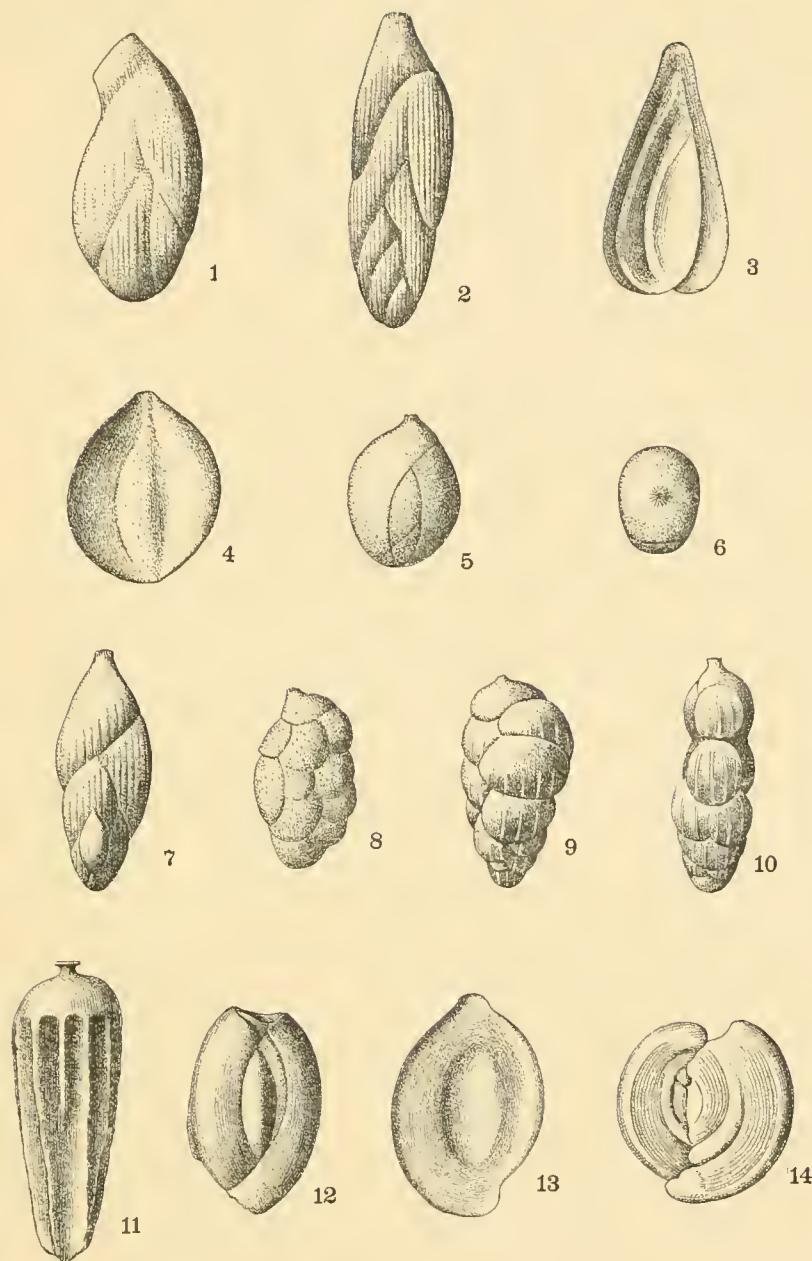
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PROTOZOA—FORAMINIFERA.

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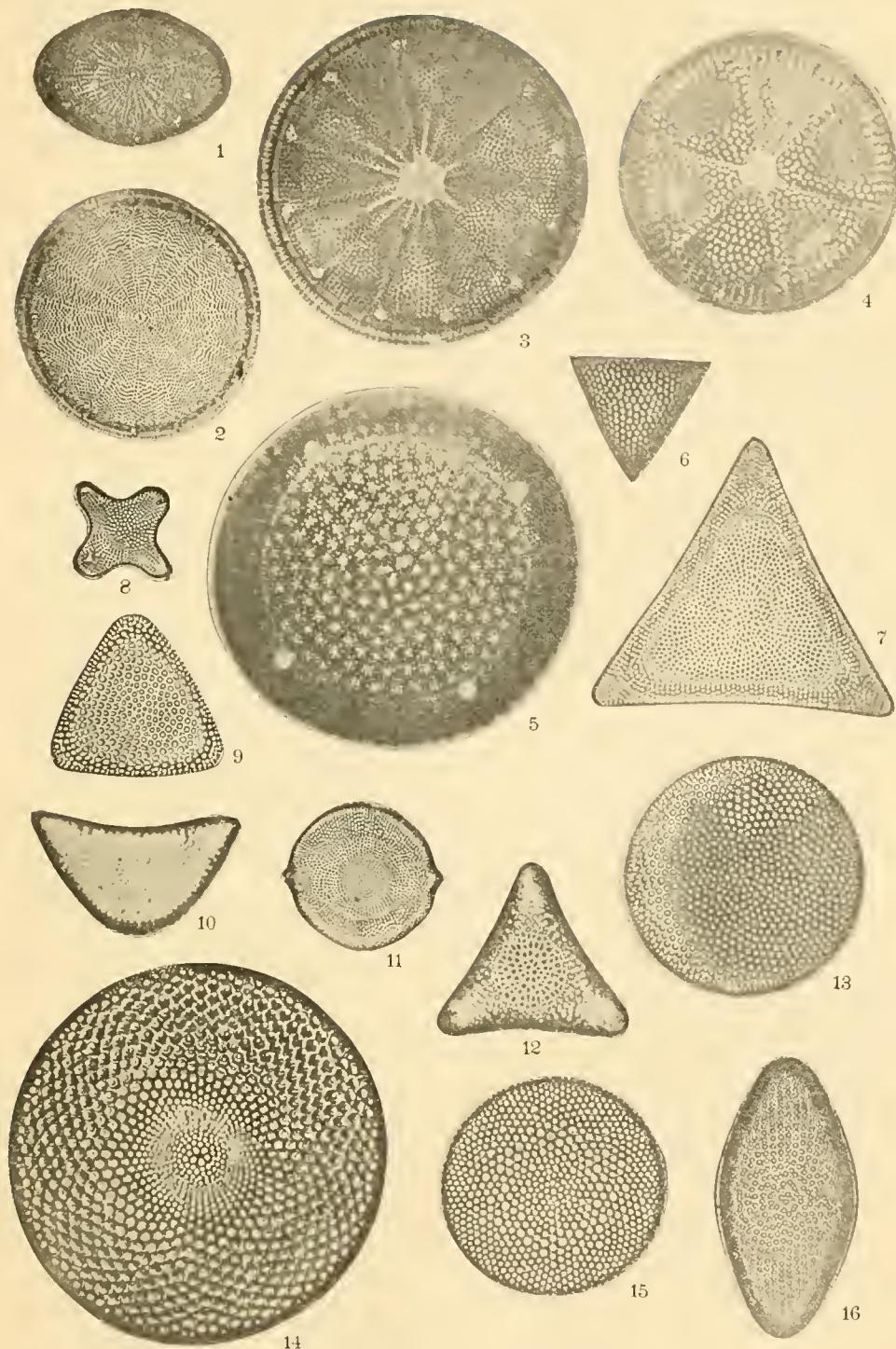
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PROTOZOA—FORAMINIFERA.

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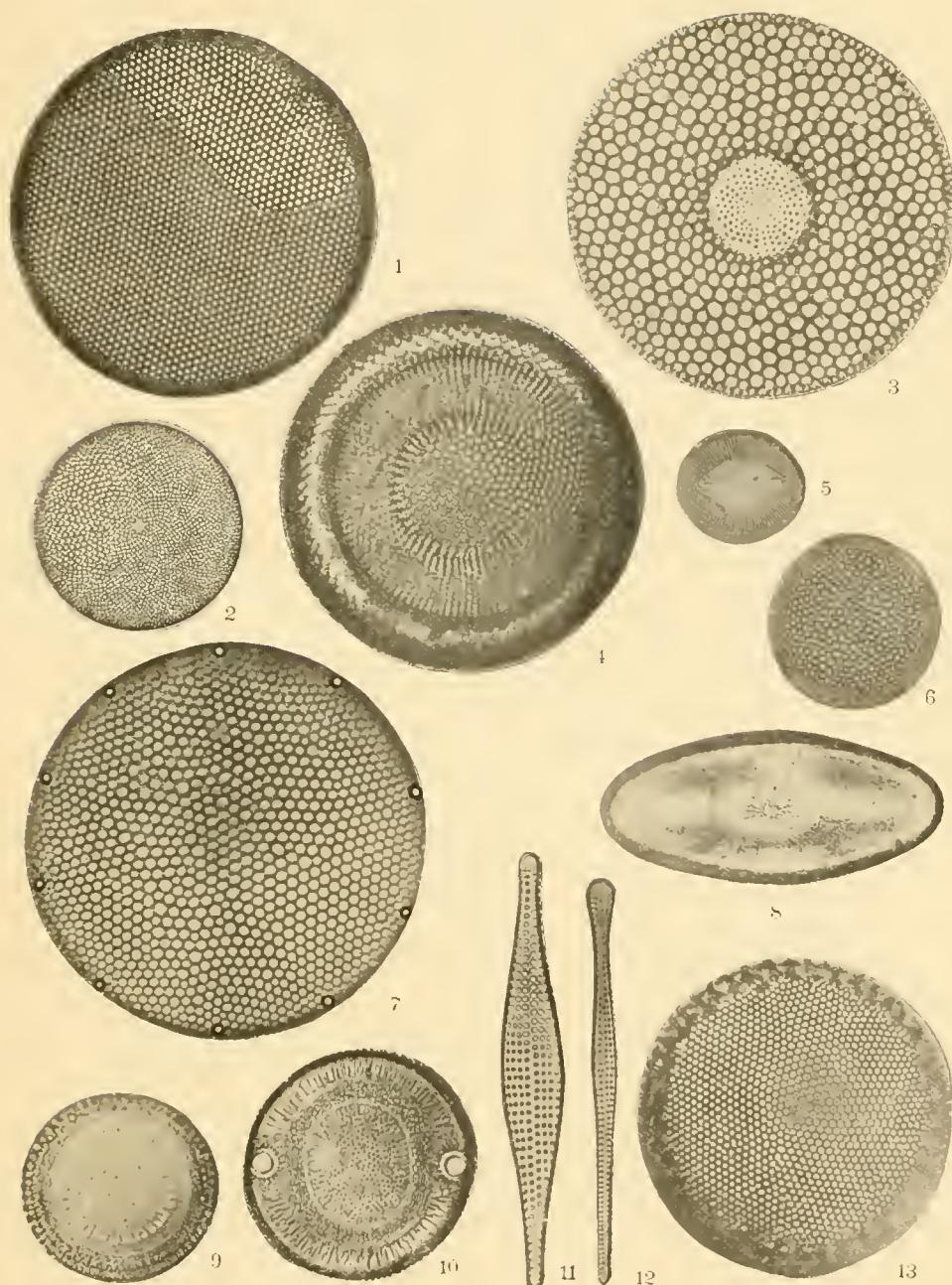
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PLANTÆ—THALLOPHYTA, DIATOMACEÆ.

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