

## EXPLANATION OF THE PLATES.

### PLATE XIII.

Figure 1.—*Architeuthis Harveyi* (No. 5). Head and arms,  $\frac{1}{3}$  natural size, from a photograph of the specimen when freshly caught. The back of the head rests upon an oar so as to cause the beak to protrude, while the arms hang down in a reversed position. The diameter of the bathing tub was 38.5 inches: *a*, left, and *a'* right ventral arms; *b*, left, and *b'* right arms of the third pair; *c*, left, and *c'* right arms of the second pair; *d'*, right dorsal arm, mostly concealed behind the others; *e*, left and *e'*, right tentacular-arms, folded several times over the oar; *i* to *iv*, the 'club'; *i* to *ii*, the 'wrist'; *ii* to *iii*, the part bearing large suckers; *iii* to *iv*, the terminal division; *o*, the beak.

Figure 2.—Part of the body and caudal fin of the same specimen,  $\frac{1}{3}$  natural size, from a photograph made at the same time with the preceding; *u*, mantle cut open; *t*, tip of tail; *b*, right and *l*, left lateral lobes of caudal fin.

### PLATE XIV.

Figure 1.—*Architeuthis Harveyi*. A restoration,  $\frac{1}{2}$  natural size, based on the preceding figures and on the specimens received. (See note, p. 184).

### PLATE XV.

Figure 1.—*Architeuthis Harveyi* (No. 5). Upper mandible, natural size.

Figure 2.—Lower mandible of same, natural size; lacks a small piece at *a*.

Figure 3.—Anterior part of the 'pen' of the same specimen,  $\frac{1}{4}$  natural size. The dotted lines indicate missing parts. (Restored and drawn by the author).

Figures 1 and 2 were drawn by Mr. J. H. Blake, from alcoholic specimens.

### PLATE XVI.

Figure 1.—*A. Harveyi* (No. 5). Portion of the lining membrane of the palate, enlarged.

Figure 2.—*A. Harveyi* (No. 5). Caudal fin,  $\frac{1}{10}$  natural size, drawn from the preserved specimen.

Figure 3.—*A. Harveyi* (No. 5). Suckers of tentacular-arm, natural size; *a*, one of the largest suckers; *b*, one of the marginal suckers.

Figure 4.—The same. Horny marginal ring of one of the suckers from a sessile arm, enlarged 2 diameters.

Figure 5.—*A. Harveyi* (No. 4). One of the larger suckers from the tentacular-arms, natural size. From a dried specimen.

Figure 6.—Portion of the marginal ring of the same sucker, enlarged.

Figure 7.—*Loligo pallida* V. Part of odontophore, much enlarged.

Figure 8.—*Architeuthis Hartingii* V. Part of odontophore, enlarged. Copied from Harting's figures.

Figures 5 and 6 were drawn by J. H. Emerton; the rest by the author.

## PLATE XVIa.

- Figure 1.—*Architeuthis Harveyi* V. (No. 5). Teeth of the odontophore, from the anterior portion, enlarged 18 diameters; *a*, median; *b*, inner lateral; *c*, and *d*, the two outer lateral teeth; *e*, marginal plates.
- Figure 2.—The same. Teeth from the same specimen, from farther back, on the dorsal portion of the odontophore. Lettering as in figure 1.
- Figure 3.—The same. Anterior portion of odontophore, showing the teeth nearly in their natural positions, enlarged.
- Figure 4.—The same. Portion of the membrane lining the palate, showing teeth and hard granules, enlarged.
- Figure 5.—The same. Two of the granules from the membrane lining the mouth, enlarged 18 diameters.
- Figures 6 and 6\*.—The same. One of the largest and least oblique of the horny rings from the suckers of the sessile arms; top and side-views, enlarged  $1\frac{1}{2}$  diameters.
- Figures 7 and 7\*.—The same. One of the medium sized, and more oblique suckers of the sessile arms; top and side-views, enlarged  $1\frac{1}{2}$  diameters.
- Figure 8.—The same. Another similar sucker, but smaller and more oblique; top-view, enlarged  $1\frac{1}{2}$  diameters.
- Figures 9 and 9a.—The same. One of the horny rings from one of the smooth-rimmed suckers on the 'wrist' of the 'club' of the tentacular-arms; top and side-views, enlarged 3 diameters.
- Figures 10 and 10a.—The same. One of the small suckers from the terminal portion of the 'club,' top and side-views, enlarged 3 diameters.
- Figures 1 to 5, and 8, are camera-drawings by the author. The others are by J. H. Emerton.

## PLATE XVII.

- Figures 1 and 1\*.—*Architeuthis princeps* Verrill (No. 14). A marginal ring from one of the large suckers of the tentacular-arm; 1, side-view, enlarged  $1\frac{1}{2}$  diameters; 1\*, portion of the rim, enlarged 3 diameters.
- Figures 2 and 2\*.—The same. One of the medium-sized oblique sucker-rims from a sessile arm, enlarged  $1\frac{1}{2}$  diameters; top and side-views.
- Figures 3 and 4.—The same. Top and side-views of one of the smaller sucker-rims from a sessile arm, enlarged 3 diameters.
- Figures 5 and 6.—The same. Top and side-views of a complete sucker, with its pedicel, from a sessile arm, enlarged  $1\frac{1}{2}$  diameters.
- Figure 7.—The same. Top-view of one of the smaller, very oblique sucker-rims from a sessile arm, enlarged 3 diameters.
- Figure 8.—The same. Portion of the horny rim of a medium-sized sucker from a sessile arm; top-view, enlarged 6 diameters, from a camera-drawing.
- Figure 9.—The same. Side-view of the horny ring of one of the largest and least oblique of the suckers of the sessile arms, enlarged  $1\frac{1}{2}$  diameters.
- Figure 10.—The same. Side-view of the horny ring of one of the marginal suckers of the tentacular-club, enlarged 3 diameters.
- Figure 11.—*A. princeps* (No. 13). Portions of the horny ring of one of the large suckers of the tentacular-arm, much enlarged; *a* and *b*, portions of the margin, from the outside; *c*, portion seen from the inside.
- Figures 8 and 11 are camera-drawings by the author; all the others are by J. H. Emerton.

## PLATE XVIII.

- Figure 1.—*Architeuthis princeps* V. (No. 10). Upper jaw, natural size.  
 Figure 2.—The same. Lower jaw; the dotted line shows the parts that are present on the opposite side.  
 Figure 3.—*Architeuthis princeps* (No. 1). Part of lower jaw, natural size.  
 Figures 1 and 2 were drawn by the author; figure 3 by J. H. Emerton.

## PLATE XIX.

- Figure 1.—*Architeuthis princeps* V. (No. 14). Caudal fin from beneath; from the specimen a few days after it had been placed in alcohol.  
 Figure 2.—The same specimen, after it had been preserved several months in strong alcohol.  
 Figure 1 was drawn by J. B. Holder, M.D.; figure 2, by the author.

## PLATE XX.

- Architeuthis princeps* V. (No. 14). General figure; from the recently preserved specimen; restored, in part, in accordance with the measurements of the freshly caught specimen;  $\frac{1}{3}$  natural size. Drawn by the author.

## PLATE XXI.

- Figure 1.—*Sthenoteuthis megaptera* Verrill. Body seen from beneath,  $\frac{1}{2}$  natural size; from the alcoholic specimen.  
 Figure 2.—The same. Part of the membrane lining the palate, enlarged 8 diameters; *a*, and *b*, from different places.  
 Figure 3.—The same. A single row of teeth from the odontophore, enlarged 8 diameters.  
 Figure 4.—The same. Teeth from the odontophore, enlarged 16 diameters; *a*, two median teeth; *b*, inner lateral teeth; *c* and *d*, teeth of the two outer lateral rows.  
 Figure 5.—The same. Two of the outer lateral teeth, profile-view, enlarged 16 diameters.  
 Figure 6.—The same. Several lateral teeth in their natural sequence, enlarged 16 diameters.  
 Figure 7.—The same. Two of the next to the outer lateral teeth, enlarged 16 diameters.  
 Figures 8 and 8<sup>a</sup>.—The same. Twenty-second sucker from the ventral arm; front and side-views, enlarged 3 diameters.  
 Figure 9.—The same. One of the largest suckers from the club of the tentacular arm; front view, enlarged 3 diameters.  
 Figures 8, 8<sup>a</sup> and 9 are by J. H. Emerton; the others by the author; 2 to 7 are camera-drawings.

## PLATE XXII.

- Histioteuthis Collinsii* Verrill. Side-view of the head and arms; from the preserved specimen,  $\frac{1}{4}$  natural size. Drawn by J. H. Emerton.

## PLATE XXIII.

- Figure 1.—*Onychoteuthis robusta* (Dall). Side-view of one of the specimens, as found on the beach,  $\frac{1}{15}$  natural size.

Figure 2.—The same. Dorsal view. The dotted lines indicate portions of the arms that had been destroyed.

Figure 3.—The same. Side-view of the head and siphon, with the anterior part of the mantle, cut open; *e*, the eye; *s*, siphon; *a*, *a'*, *a''*, the three nuchal frills; *c*, *c'*, *c''*, the smooth facets, where the mantle bears upon the neck; *c*, ventral facet of mantle; *c'*, ventral facets at base of siphon; *c''*, dorsal facet of neck; *m*, *m'*, cut edge of mantle.

Figure 4.—The same. The entire dorsal 'pen'; side-view,  $\frac{1}{2}$  natural size.

Figure 5.—The same. Ventral view.

Figure 6.—The same. A portion from the middle of the 'pen,' less reduced.

All the figures were made from the fresh specimens by Mr. W. H. Dall.

#### PLATE XXIV.

Figure 1.—*Onychoteuthis robusta* (Dall). Odontophore; side-view, enlarged  $3\frac{1}{2}$  diameters.

Figure 2.—The same. Part of a row of the teeth from near the anterior bend of the odontophore,  $\times 22$  diameters; *a*, median tooth, front view; *a'*, side-view of same; *b*, first lateral; *b'*, the same, side-view; *c*, second lateral, front view; *d*, outer lateral, front view.

Figure 3.—The same. One of the inner lateral teeth, side-view.  $\times 54$  diameters.

Figure 4.—The same. Median tooth, side-view,  $\times 54$  diameters.

Figure 5.—The same. Upper mandible, natural size.

Figure 6.—The same. Lower mandible, natural size.

Figure 7.—The same. Anterior end of cone of pen, showing portion of posterior end of quill inserted into it,  $\frac{1}{2}$  natural size.

Figure 8.—The same. Section of a ventral arm, close to the base, natural size; *a*, one of the suckers, side view; *b*, and *b'*, marginal membranes; *c*, crest on membrane along outer angle; *e*, median vessel near inner surface.

Figures 1 to 4 are camera-drawings by the author; the rest are by J. H. Emerton.

#### PLATE XXV.

Figure 1.—*Architeuthis Hartingii* V. Lower mandible, showing anterior portion only, natural size; *1a*, section of a sucker of sessile arm of same; *1b*, horny ring of same, natural size. After Harting.

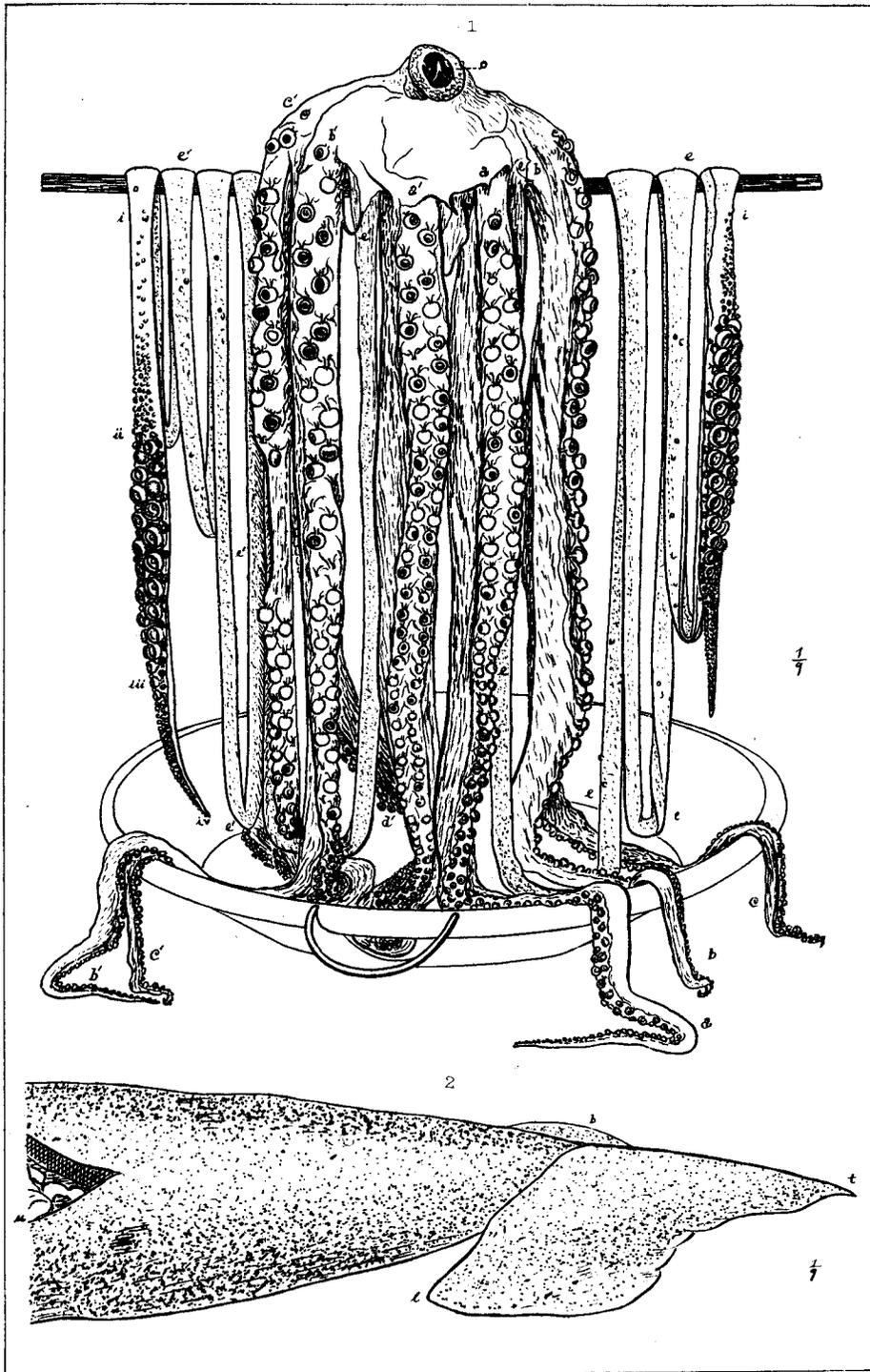
Figure 2.—*Architeuthis dux* Steenstrup. Lower mandible, natural size. Copied from Harting's figure, after Steenstrup.

Figure 3.—*Architeuthis monachus* Steenstrup (type specimen). Lower mandible, natural size. After Steenstrup.

Figure 4.—*Enoploteuthis Hartingii* Verrill. A section of one of the claw-bearing suckers, somewhat enlarged; *4a*, the horny claw, isolated; *4b*, median and lateral teeth of odontophore. After Harting.

Figures 5 and 5a.—*Architeuthis Harveysi* V. (No. 4). The two halves of the lower mandible, natural size. Camera-drawings from the specimen, by the author.

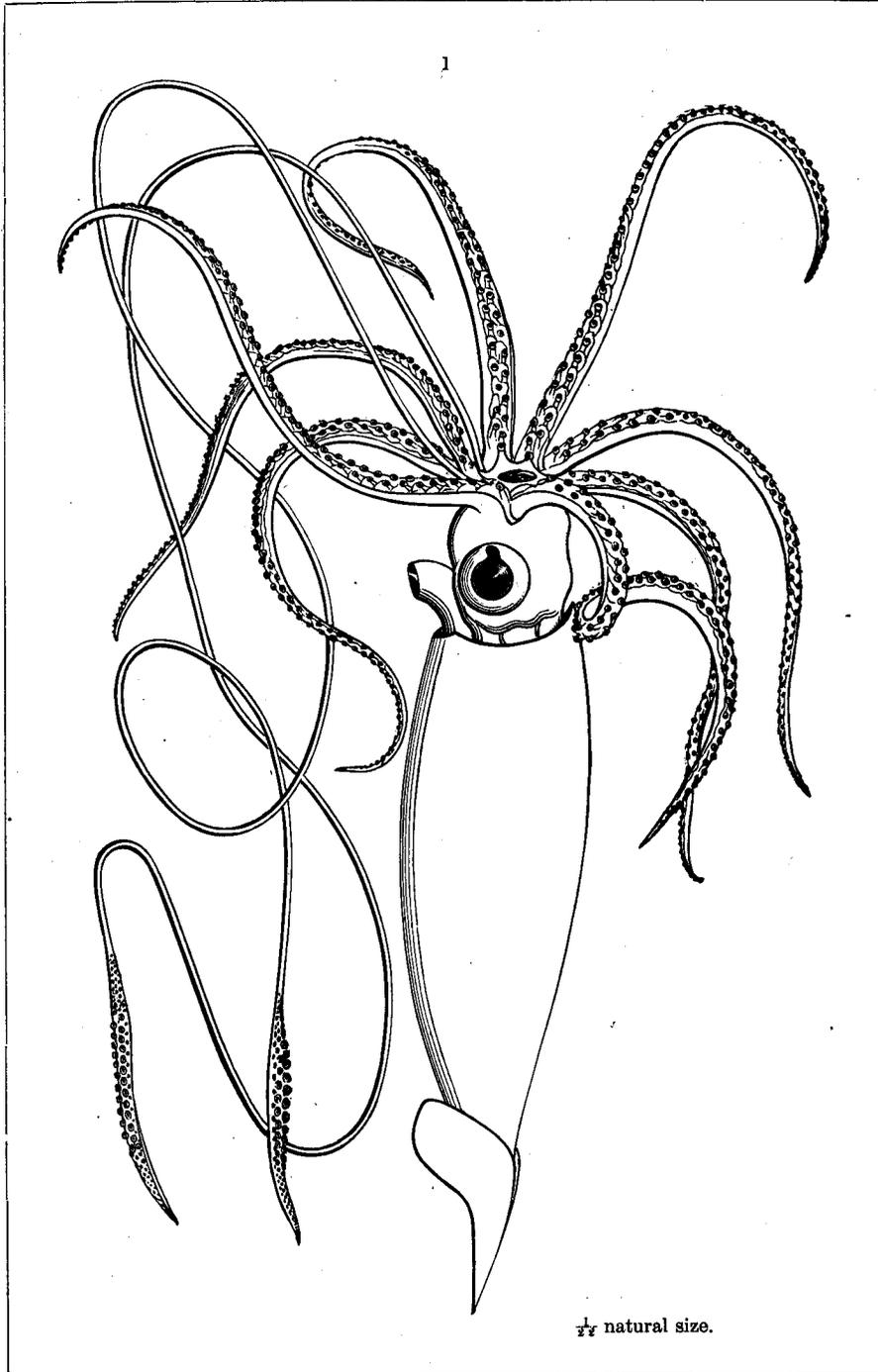
The author is greatly indebted to Professor S. F. Baird, U. S. Commissioner of Fish and Fisheries, for the use of a large number of the excellent drawings made by Mr. J. H. Emerton, of Salem, Mass., under the direction of the author, for the Fish Commission, many of which are included in these plates.



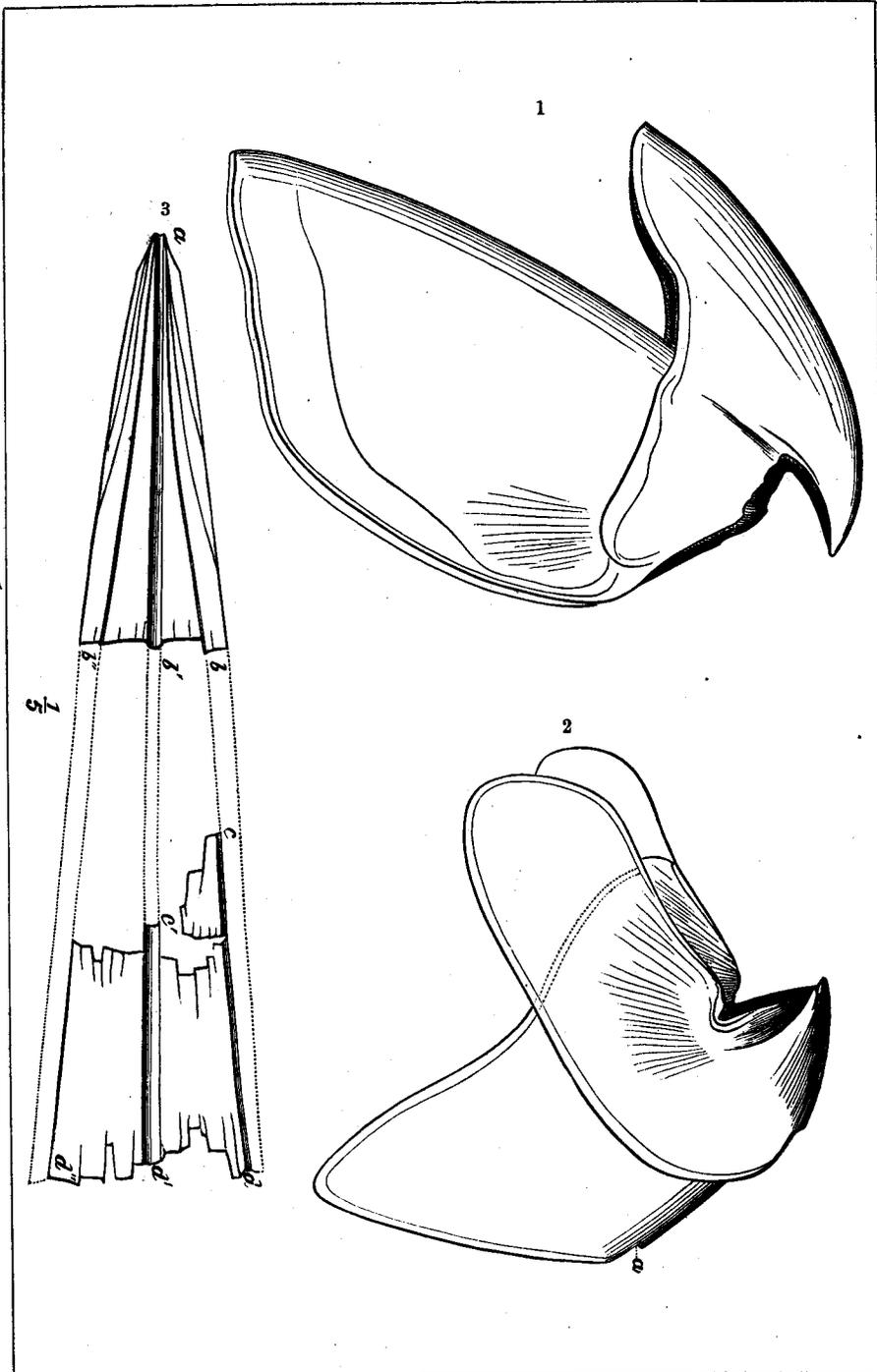
A. E. Verrill & J. H. Emerton.

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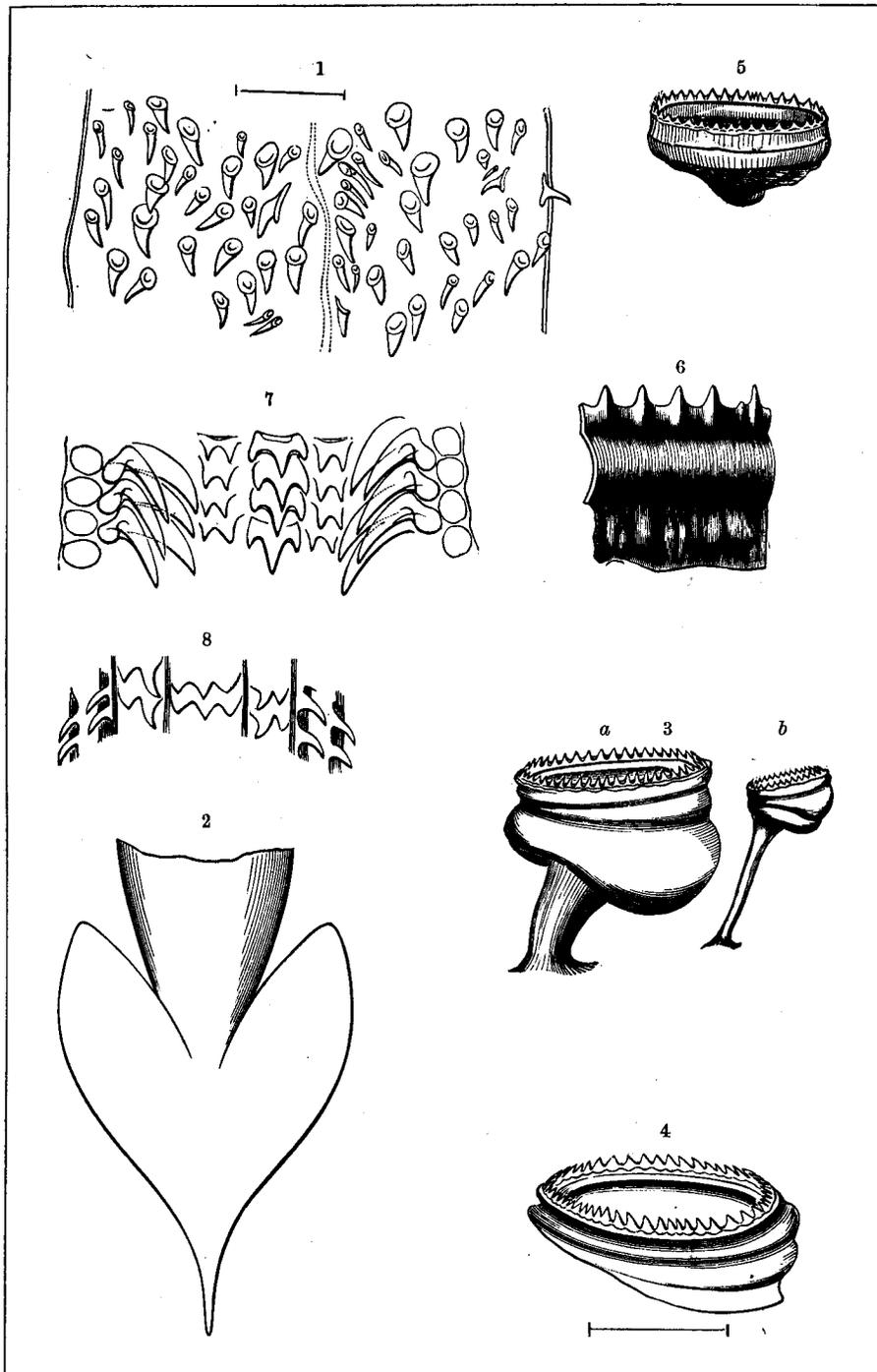
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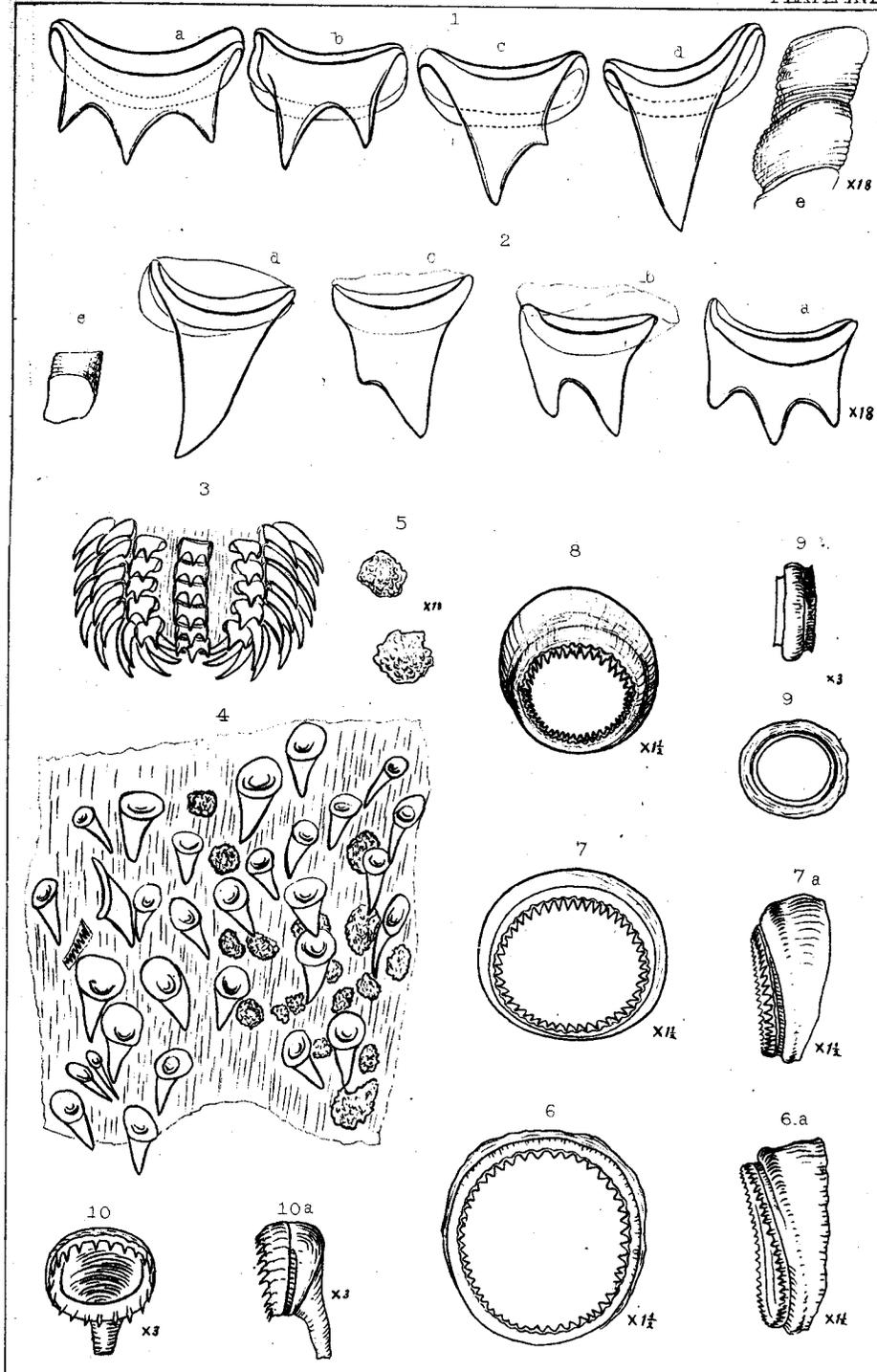
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Architeuthis Harveyi.



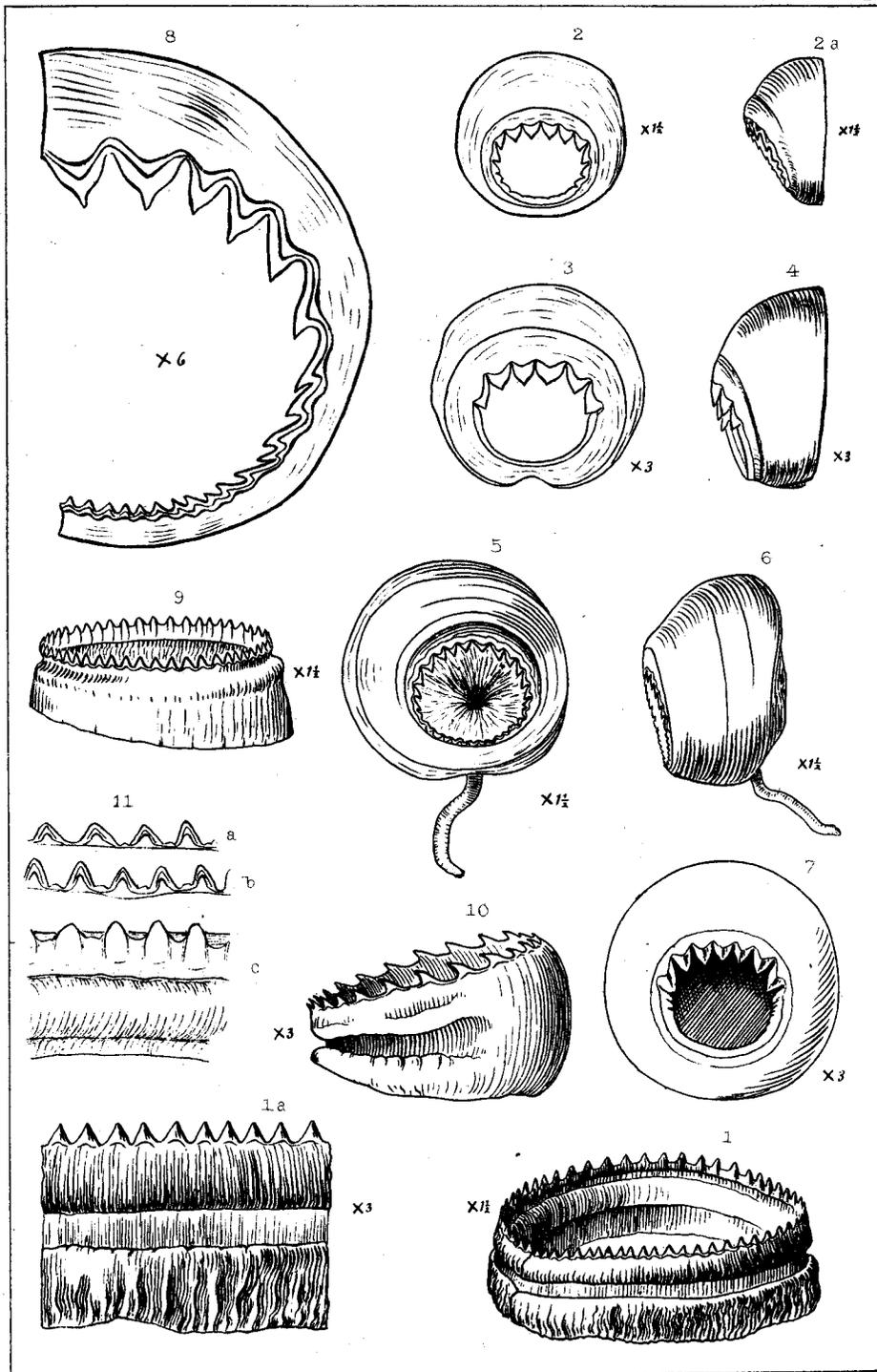
Architeuthis Harveyi, etc.



A. E. Verrill & J. H. Emerton from nature.

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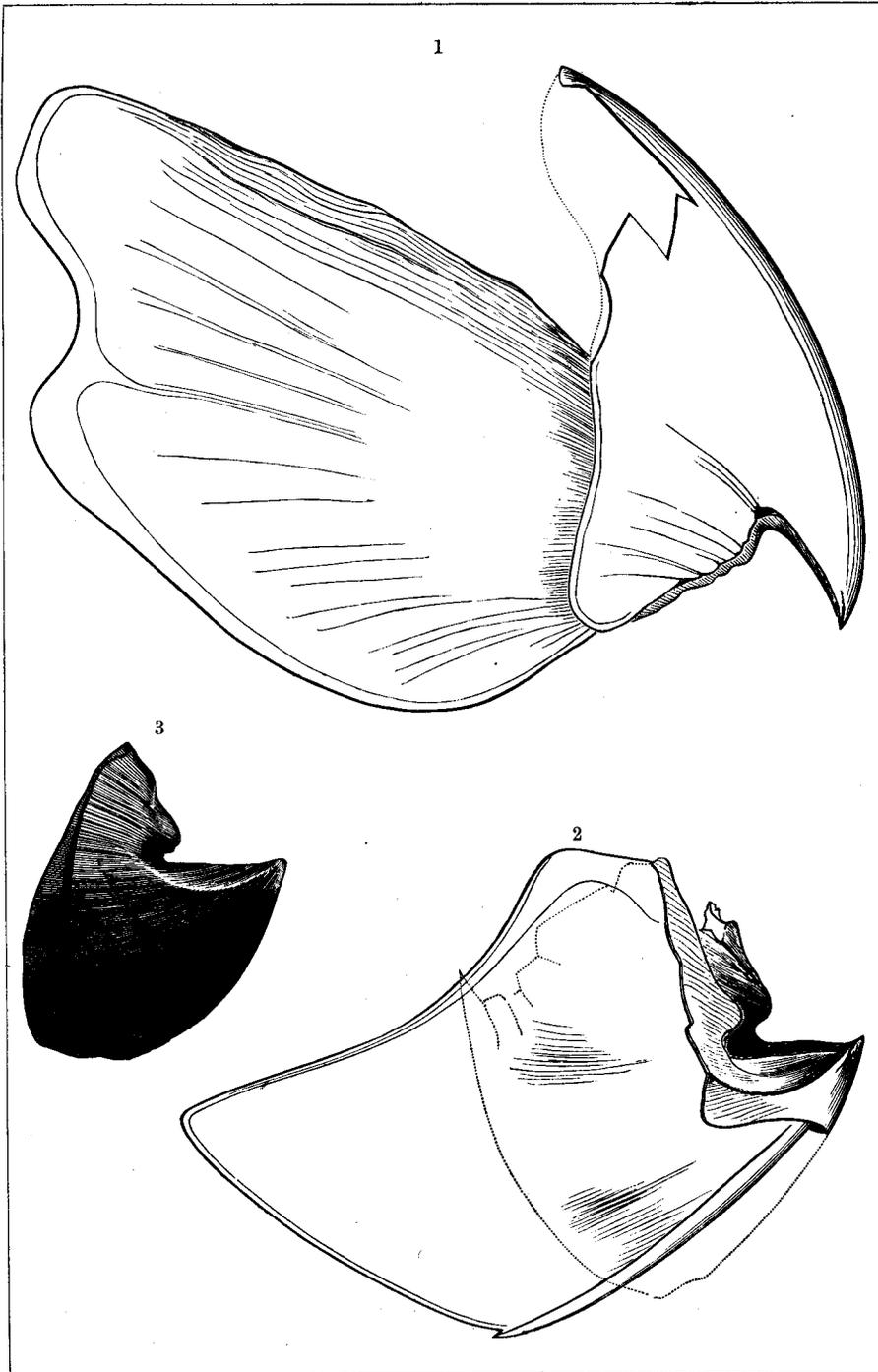
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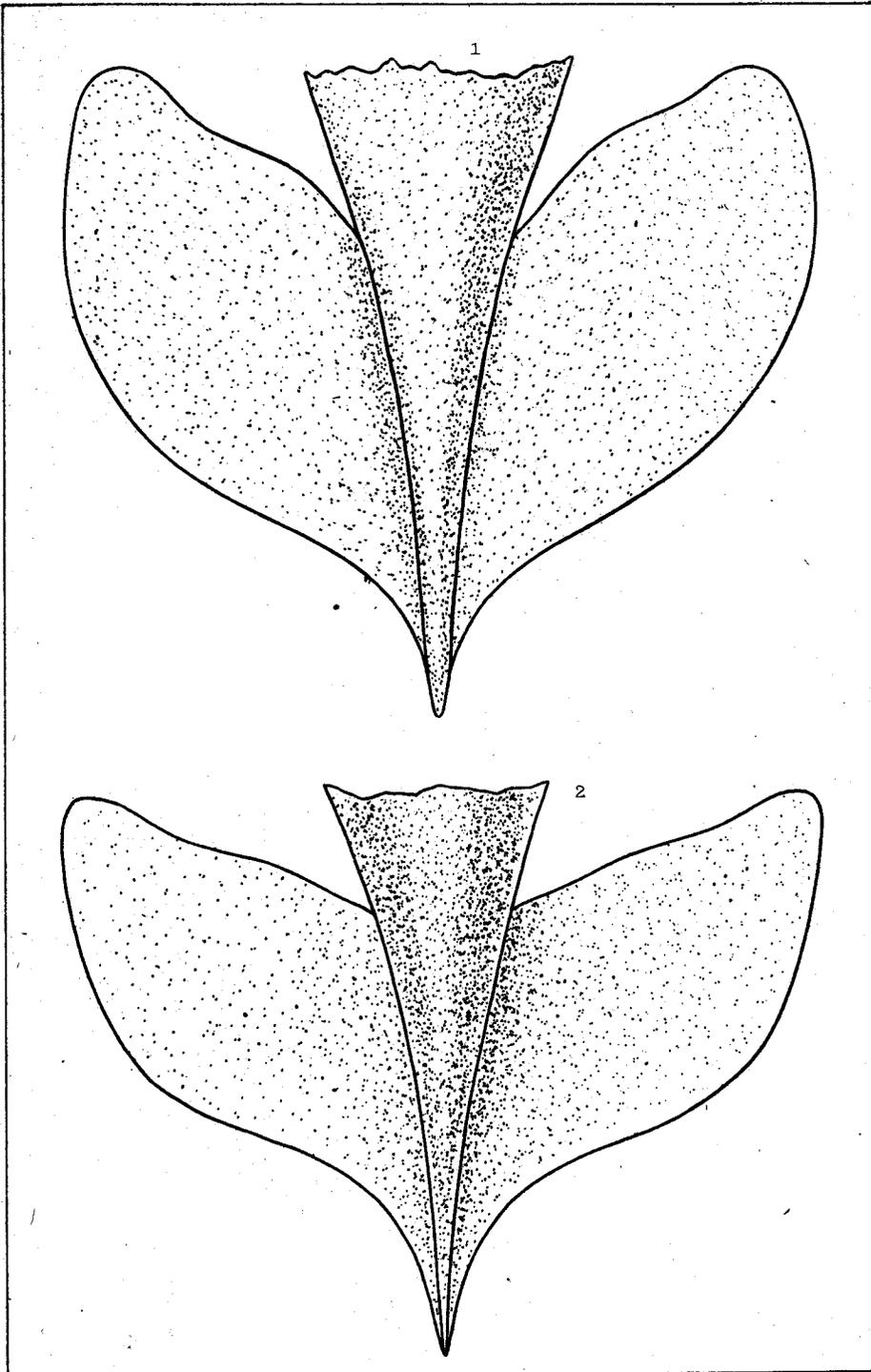
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ARCHITEUTHIS PRINCEPS VERRILL



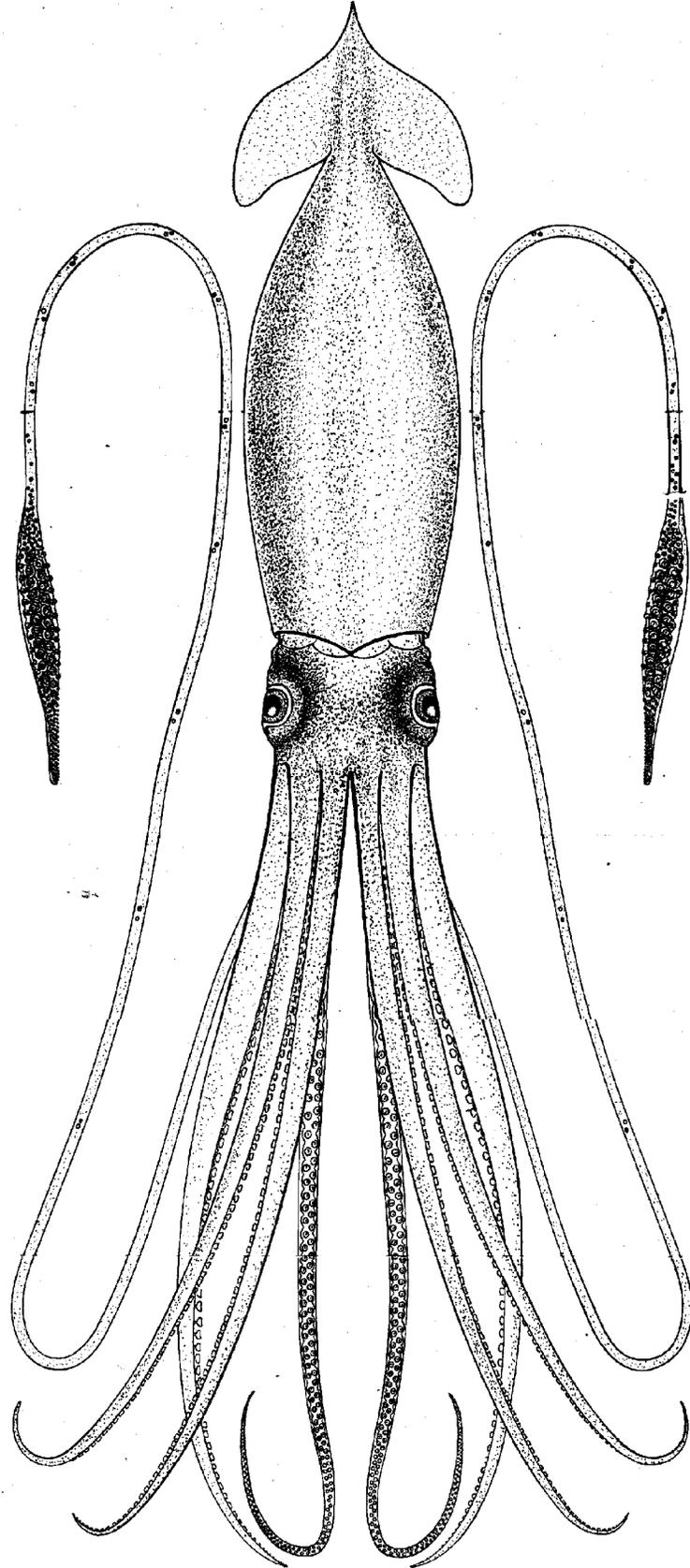
*Architeuthis princeps.*



A. E. Verrill & J. B. Holder from nature.

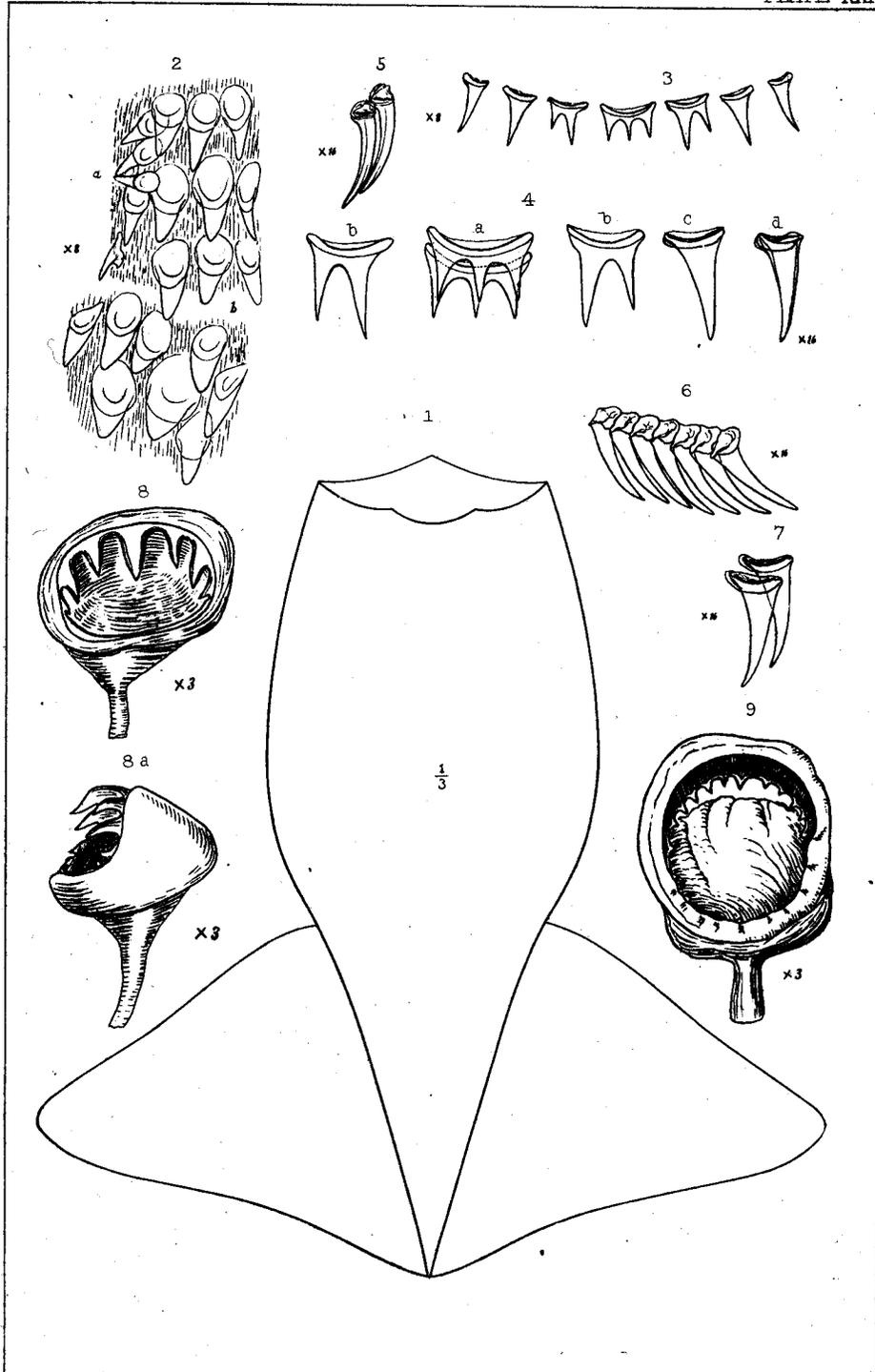
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ARCHITEUTHIS PRINCEPS VERRILL



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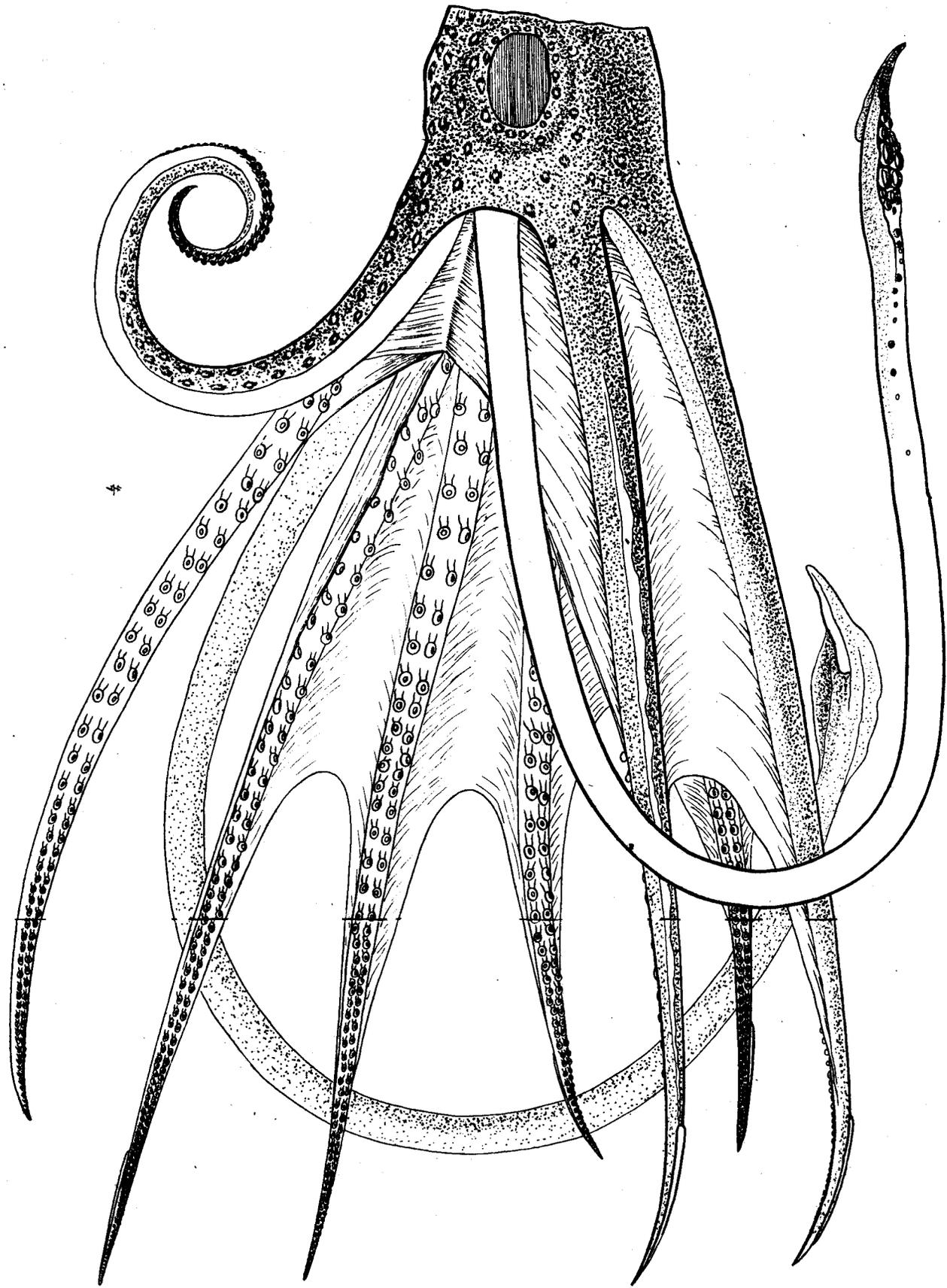
PLATE XX



A.E. Verrill & J.H. Emerton from nature.

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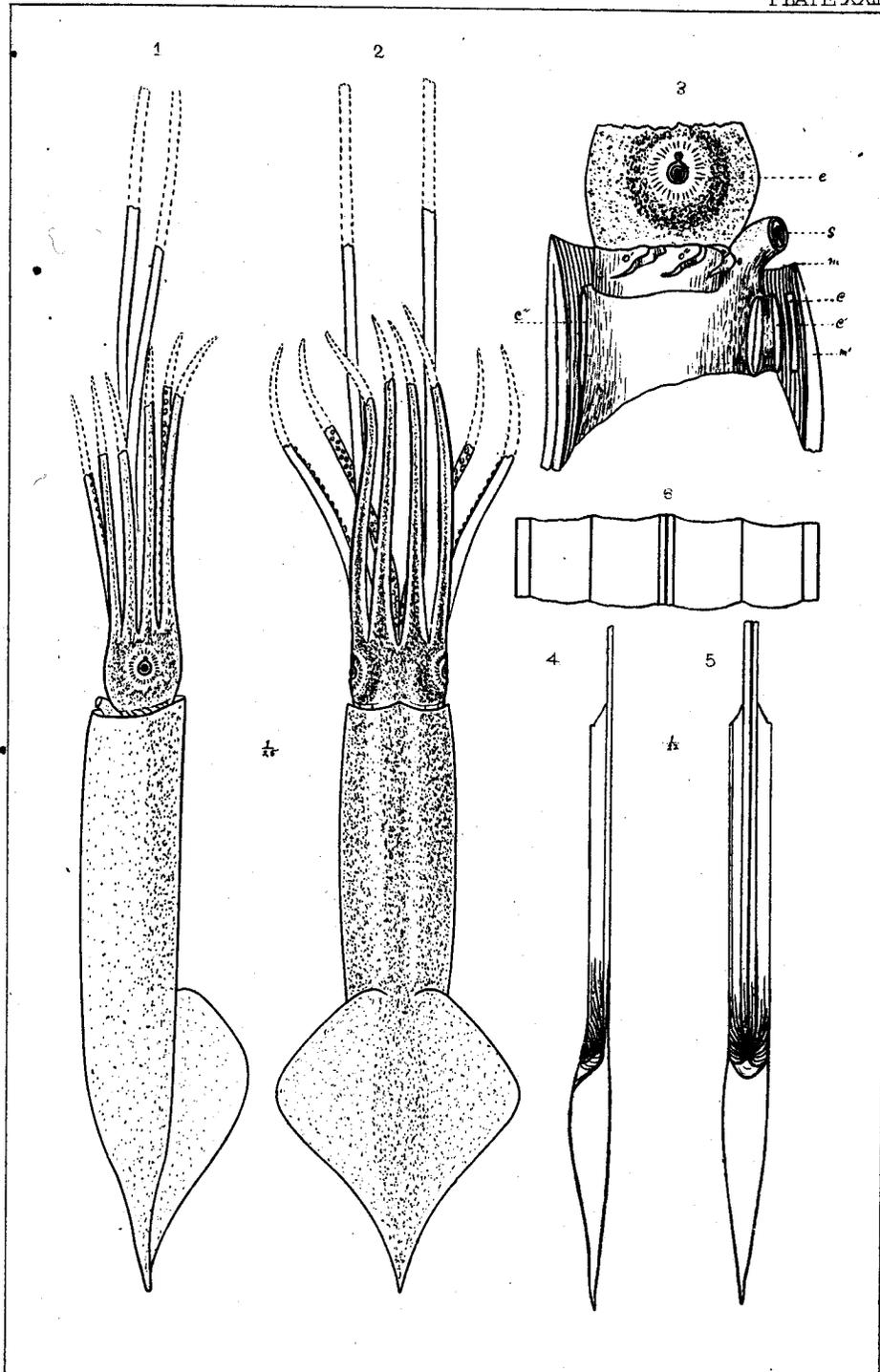
ARCHITEUTHIS MEGAPTERA VERRILL



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H. Edwards from Verrill

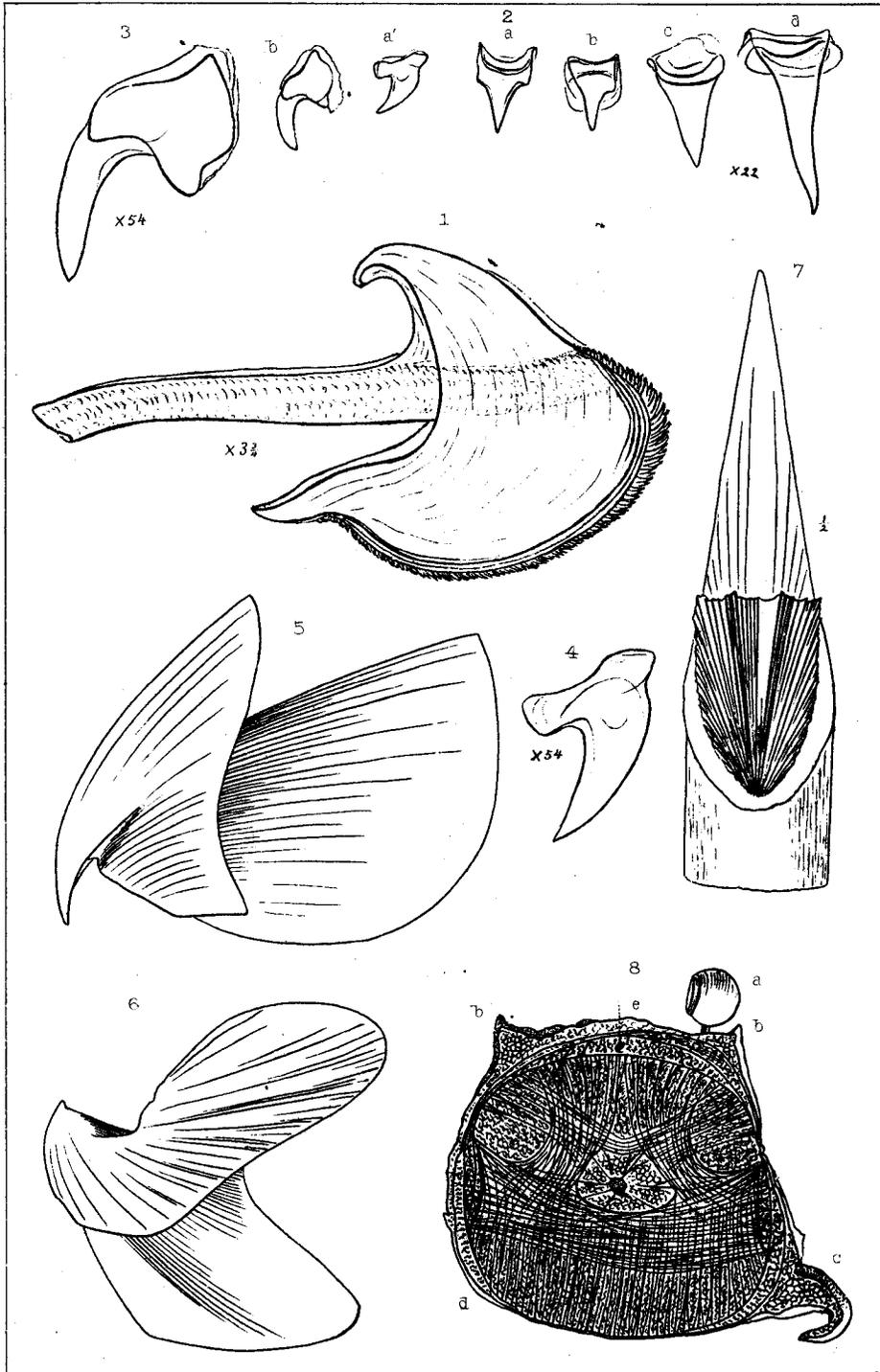
Photo Lith. Punderson & Forward New Haven, Ct.



W. H. Dall from nature

Photo Lith. Fimdersen & Grisard New Haven, Ct.

ONYCHOTEUTHIS ROBUSTA (Dall.)



A. E. Verrill & J. H. Emerton from nature.

Photo Lith. Furderson & Crusand, New Haven, Ct.

ONYCHOTEUTHIS ROBUSTA (Dall.)

