

**DESCRIPTIONS OF NUDIBRANCHIATE MOLLUSCA, INHABITING POLYNESIA.**

BY W. HARPER PEASE.

The following series of nudibranchiate mollusca was collected by Mr. Andrew Garrett, and the drawings from which the figures are taken were made by him from the living specimens, and may be relied on as strictly accurate. It will be noticed, that with few exceptions all the Genera heretofore described from the East Indies by Dr. Kelaart, Mr. A. Adams and Alder and Hancock, inhabit Polynesia. I do not discover, however, that any one species is common to the two localities. Our knowledge at present is too limited to allow us to offer any idea as to the distribution of genera and species over the tropics, or compare them with those inhabiting the temperate regions. As the anatomy of the genera is worked out, especially of the widely diverse forms now included under genus *Doris*, which abound over Polynesia, it will be found necessary to separate many now confounded, especially those supposed to be common to the tropical and temperate provinces. It becomes more evident from year to year, as our researches extend, that the distribution of the genera of shell-bearing mollusca is confined to isothermal lines, and such will prove to be the case with the above order, with few exceptions.

Genus DORIOPSIS, Pease.

Proc. Zool. Soc., London, 1860, p 32.

The above genus, founded on a species inhabiting the Hawaiian Islands, has been confirmed by two others from southern Polynesia, which agree with the type in their generic characters, though specifically widely distinct.

The genus may now be characterized as follows :

“Body oblong, oval, depressly convex above, surrounded equally on all sides by a flat, depressed marginal mantle, cover-

ing the head and foot. Dorsal tentacles two, lamellate and retractile. Oral tentacles none. Branchiæ simple, linear, pinnate, surrounding the posterior end of the body, retractile into a semicircular slit."

In the Transactions of the Zool. Soc., London, 1864, p. 124, Messrs. Alder and Hancock adopt the above name *Doridopsis*\* for a genus inhabiting India. The species cannot be distinguished externally from the typical forms of *Doris*. The authors discovered, however, that the mouth was suctorial, without teeth or jaws. From this peculiarity, I propose to distinguish it by the name of "Hanstellodoris," the names of both the authors being pre-occupied.

I take occasion to note that the genus *Phyllobranchus* (Alder and Hancock) Trans. Zool. Soc., London, 1864, p. 145, is synonymous with *Polybranchia* (Pease) Proc. Zool. Soc., London, 1860, p. 141. This genus differs widely from any previously described and may be easily recognized. The only difference between the species described by Alder and Hancock from India and those inhabiting Polynesia, is that the branchial lobes on the former are slightly indented at their upper termination. On examining several specimens after the original description was published, I came to the conclusion that the radiating lines enclosed in the lobes were not branchiæ, and consequently changed the name of the genus to "*Lobifera*." As Messrs. Alder and Hancock have decided them to be true branchiæ, the original name should be retained.

DORIOPSIS SCABRA, Pease. Plate 19, fig. 2, a, b, c.

Body coriaceous, subpellucid, pale orange yellow, oval, rounded above, slightly the widest at the middle, covered with minute filiform asperities.

Dorsal tentacles remote, oblong ovate, mucronate, erect, closely lamellate, retractile into simple cavities, peduncles short.

Branchiæ small, plumules 10, linear, pinnate, procumbent, decreasing in length either way from the two central ones, projecting beyond the mantle posteriorly. Head without labial appendages. Foot oblong oval. Dorsal tentacles and branchiæ colorless.

Length, six-tenths of an inch.

*Habitat*, Tahiti.

*Station*, (under stones, in the upper region of the laminarian zone. Motions extremely sluggish. A.G.)

\* The letter d was dropped for the sake of euphony.

DORIOPSIS VIRIDIS, Pease. Plate 19, fig. 1, *a, b, c*.

Proc. Zool. Soc., London, 1861, p. 244.

We furnish a figure of this species in further illustration of the genus.

? TRIOPA GRACILIS, Pease. Plate 19, figs. 3, *a, b, c, d*.

Body elongate, narrow, rounded above, becoming laterally compressed behind the branchiæ, and tapering to an acute point posteriorly, rounded in front; subpellucid, pale cream color, and ornamented with small acute orange yellow papillæ.

Margin of the mantle provided with a series of tentacular processes, which are the largest in front, and diminishing gradually posteriorly.

Head conspicuous and furnished with small cylindrical tapering appendages.

Dorsal tentacles ovate, mucronate, coarsely obliquely lamelated, subretractile (so that the tips are only visible). Eyes distinct, immediately behind the tentacles. Branchial star about the middle of the body, very small, much narrower than the mantle, plumules eight, rounded, arborescent, and retractile into a simple common cavity.

Vent a prominent tube. Foot very thin, pellucid, colorless, widest anteriorly, gradually tapering posteriorly, where it is wider and longer than the body.

Length one inch.

*Habitat*, Huaheine.

*Station*, (on sea weed at low water mark. Motions lively. A. G.)

*Remarks*. I refer the above species to genus *Triopa* with some doubt, being hardly probable that it is related generically to the species inhabiting Great Britian, on which the genus was founded. No species, so far as I can learn, has been described from the tropics.

One has been discovered at the Cape of Good Hope and one from South Australia.

TREVELYANA PICTA, Pease. Pl. 20, fig. 1.

Animal pellucid, smooth, very delicate, considerably compressed, dorsal region much elevated at the middle, where it is also the widest, tapering either way, more suddenly posteriorly. Color pale watery white, and conspicuously marked with a few remote, bright orange red circular spots, some of which are

elevated, forming rounded tubercles. Foot margined with orange. Dorsal tentacles small, compressed, oblong, ovate, tips rounded, erect and furnished with about twelve very oblique coarse lamellæ, retractile into simple cavities, the upper and anterior portions bright orange red.

Labial tentacles fused into a veil, which is notched in front.

Branchial star large, non retractile, wider than the body and consisting of twelve or more suberect, bipinnate plumules, of a narrow lanceolate form, encircling the vent, which is a simple orifice, rachis of the plumules bright orange red. Foot large, very thin, much wider than the body, truncate in front, widest on the posterior half, lance pointed behind and projecting considerably behind the body.

Length, two and a half inches.

*Habitat.* Island of Huaheine.

GONIOBRANCHUS ALBOMACULATUS, Pease. Plate 20, fig. 2, a,b,c.

American Jour. of Conch., vol. 2, 1866, p. 204.

BORNELLA ARBORESCENS, Pease. Plate 20, fig. 3, a,b,c.

Body smooth, subpellucid, elongate, rounded above, somewhat compressed, tapering posteriorly into a bifid tip. Branchial processes six on each side of the back, opposite, cylindrical, tapering to a point, the first trifid, the succeeding four bifid, and the last simple; from the inner axillæ of each process arises small, pinnate branchiæ. The head furnished anteriorly with two stellated processes, the rays being about ten or twelve in number, unequal in size. Mouth just in front of the locomotive disk, and between the stellated processes.

Tentacles compressed, lanceolate, pinnate, retractile into large cylindrical tapering sheaths, which terminate in four unequal tapering branches. Foot or locomotive disk narrow and grooved. At the base of the tentacular sheaths are immersed two black specks, which, possibly, may be eyes. Color pale cream yellow, finely reticulated with orange and the upper portion of all the processes zoned with orange red. Foot colorless.

Length, one and a half inches.

*Habitat.* Tahiti.

*Remarks.* In addition to the two species collected by Mr. Adams, during Voy. Samarang, on which the genus was founded, two others have been discovered inhabiting Ceylon and South

Australia. The above is the most nearly allied to *B. digitata* (A. Ad.) from which it differs in the number and character of its branchial and tentacular processes, &c.

As remarked by Mr. Adams, the animal lives on sea weed, for which its foot is adapted, is active and occasionally swims by rapid lateral undulations of its body.

PLACOBANCHUS GRACILIS, Pease. Plate 21, fig. 1, a, b.

Animal oblong, depressed, tapering posteriorly and truncate behind. Head broad, cordiform in front. Tentacles tapering, involute. Eyes black, on a slight prominence between the tentacles. Veil cordiform in front and slightly auriculate. Color cream yellow, with shades of a pale dove color, sides shaded with light ochre yellow. The posterior end margined with violet, also the anterior edge of the head and veil. Tentacles annulated with violet near their tips and a shade of the same color beneath. The upper surface is closely ocellated with small, irregular sized, olivaceous yellow round dots, with whitish irides. Along the sides and on the front of the head the ocelli are larger, with bluish green pupils, black and white rings. The lower surface is bluish white and closely ocellated with irregular sized olivaceous yellow pupils and white irides. Branchiæ deep grass green.

Length, two inches.

*Habitat.* Tahiti.

PLACOBANCHUS VARIEGATUS, Pease. Plate 21, fig. 2, a, b.

Animal smooth, elongate, oblong, truncate behind, sides nearly parallel, and slightly tapering posteriorly. Head large, broad, rounded and slightly emarginate in front. Tentacles large, grooved and blunt. Eyes approximating on a prominent tubercle, between the hinder bases of the tentacles. Veil well developed, rounded in front, auriculate, with a slight anterior emargination.

Color pale brownish grey, paler beneath. The upper part covered with closely set ocelli; those on the mantle have ochre yellow pupils, and white irisis; among them are interspersed a few black dots and rings. Along the sides, the pupils of the ocelli are rich yellow. The ocelli on the head have yellow pupils and white irisis. Beneath the ocelli are much more remote, and have black pupils. The branchiæ are rich green.

Length, two and a half inches.

*Habitat.* Island of Huaheine.

*Station*, (on sea weed in sheltered places. They are very active and when at rest the tentacles are recumbent, like the ears of a rabbit. A.G.)

*PTEROGASTERON MARGINATUS*, Pease. Plate 21, fig. 3.

Mantle lobes, when spread out, oblong cordate, margins somewhat waved. Tentacles stout, ear shaped and somewhat involute. On the interior surface of the mantle lobes, three pale lines radiate from the posterior part of the body on its left side and two on the right, one of the latter bifurcate, which probably are the branchiæ.

Color olivaceous green, gradually becoming greenish white beneath; somewhat remotely dotted with black and opaque white.

Mantle lobes margined with orange, white and black. There is a tinge of orange at the tips of the tentacles and an oblong white spot on each. The inner surface of the lobes is the same color as without, but paler and fewer spots.

Length, two and a half inches.

*Habitat*. Island of Huaheine.

*PTEROGASTERON RUFESCENS*, Pease. Plate 22, figs. 1, a, b, c.

Animal rather slender, truncated behind. Color rufous brown passing into whitish beneath, and olivaceous brown on the head. Closely spotted with small, irregular, greenish white spots, which gives the ground color a reticulated appearance.

Front of the head, in the region of the lips, white. Tentacles lineated with greenish white, and tinged with violet on their outer part. Mantle lobes edged with dark lead color, and an intramarginal orange line. Disk pale with opaque white spots. Inner surface of the lobes edged the same as outside, but the ground color is greenish lead, becoming paler centrally, with whitish spots, and remotely punctured with vermilion. Eyes pale with black pupils.

Length, one and a quarter inches.

*Habitat*. Tahiti.

*PTEROGASTERON NIGROPUNCTATUS*, Pease. Plate 22, figs 2, a, b, c, d.

Mantle lobes rounded behind; tentacles stout, upper lip bilobed; locomotive disk small. Color olive green, clouded with darker, paler beneath, and finely reticulately veined with darker green. The whole surface with small irregular whitish spots and punctured with jet black, the latter small beneath, larger

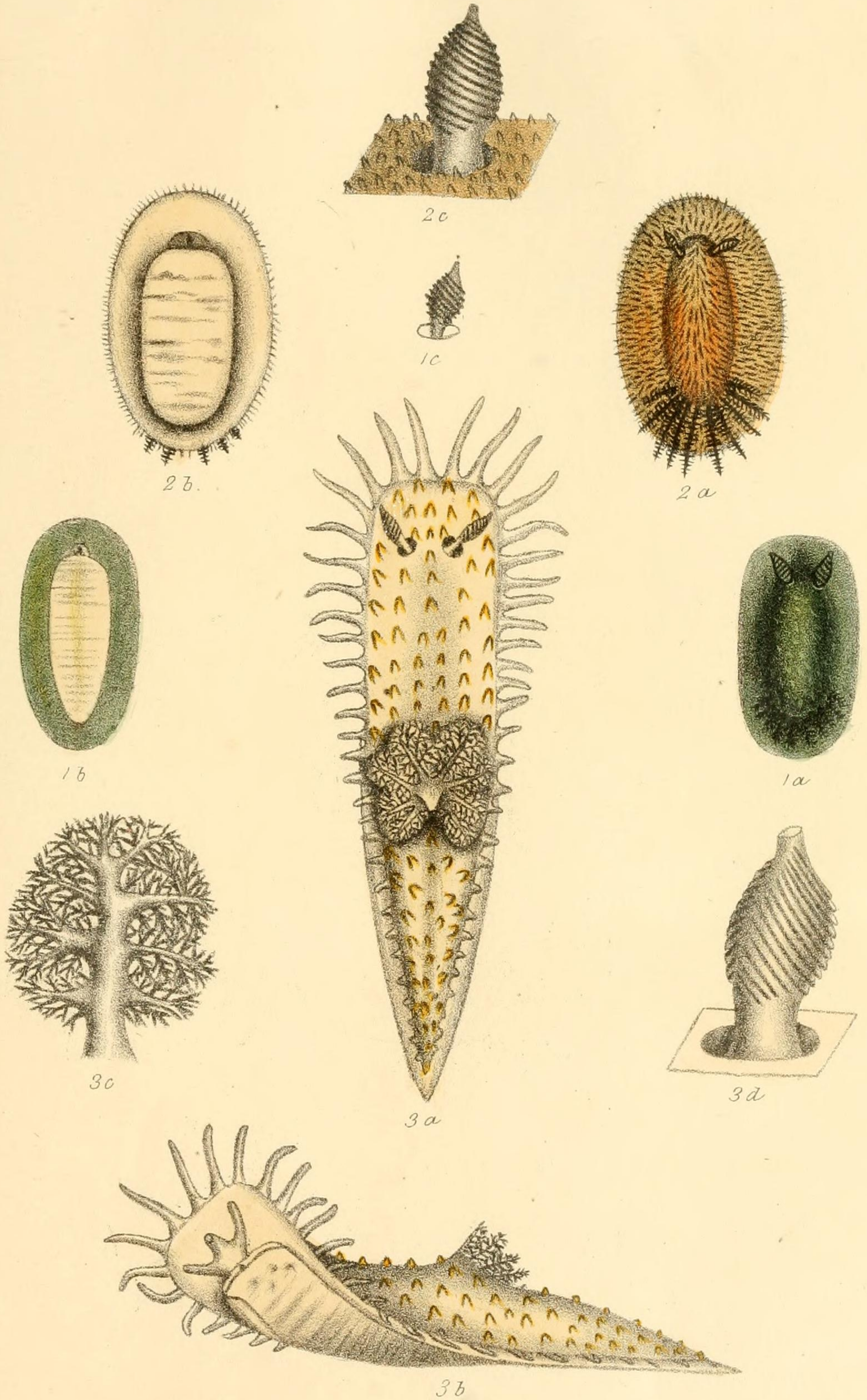
and crowded along the margins of the mantle lobes, and on the tentacles. The inner surface differs but slightly, being only much paler centrally and unclouded.

Length, one inch.

*Habitat.* Tahiti.

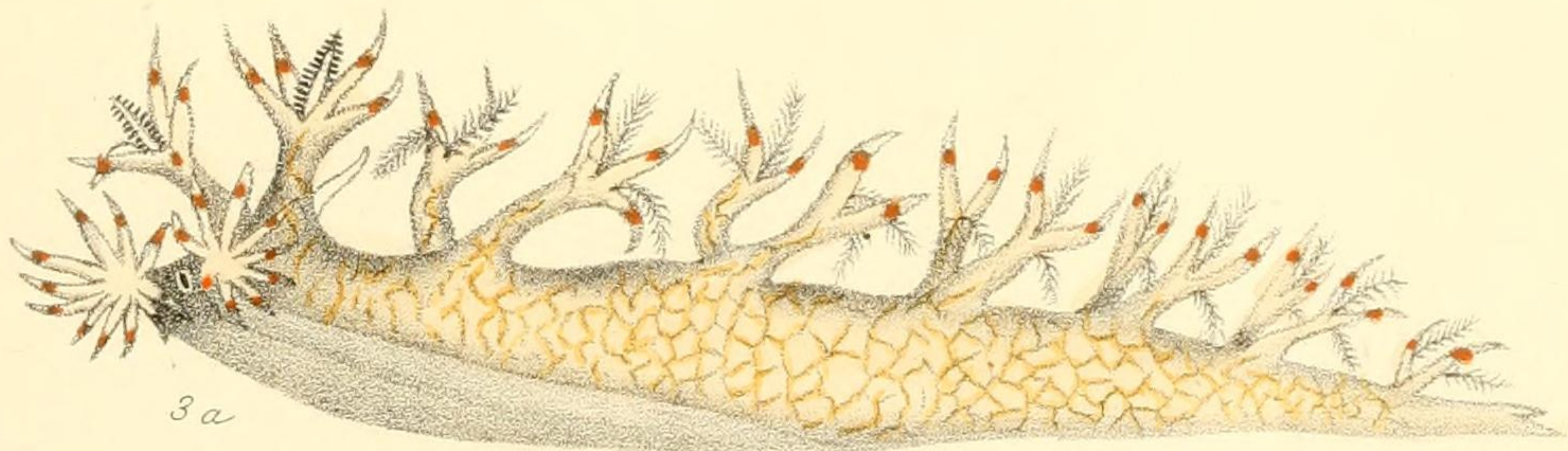
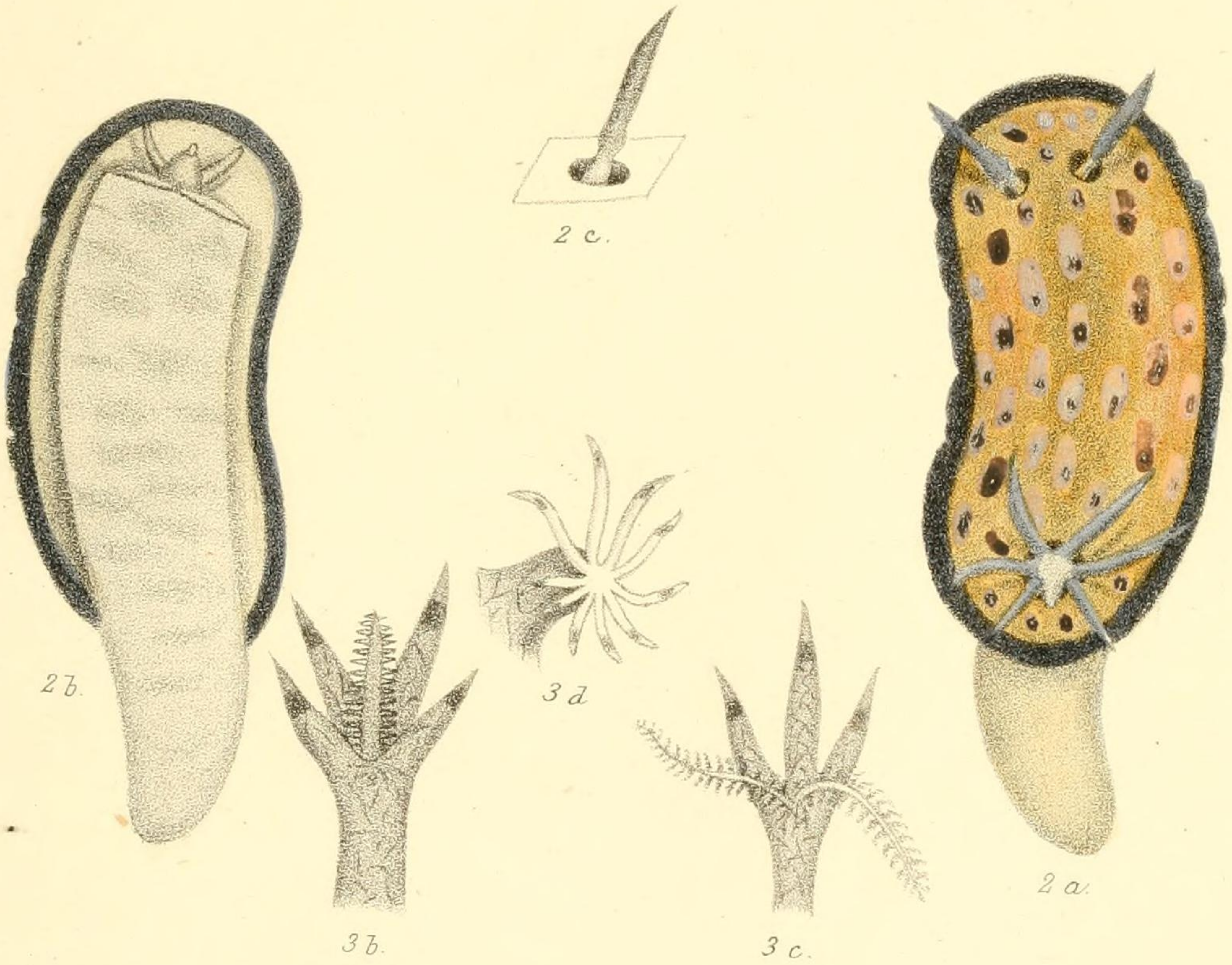
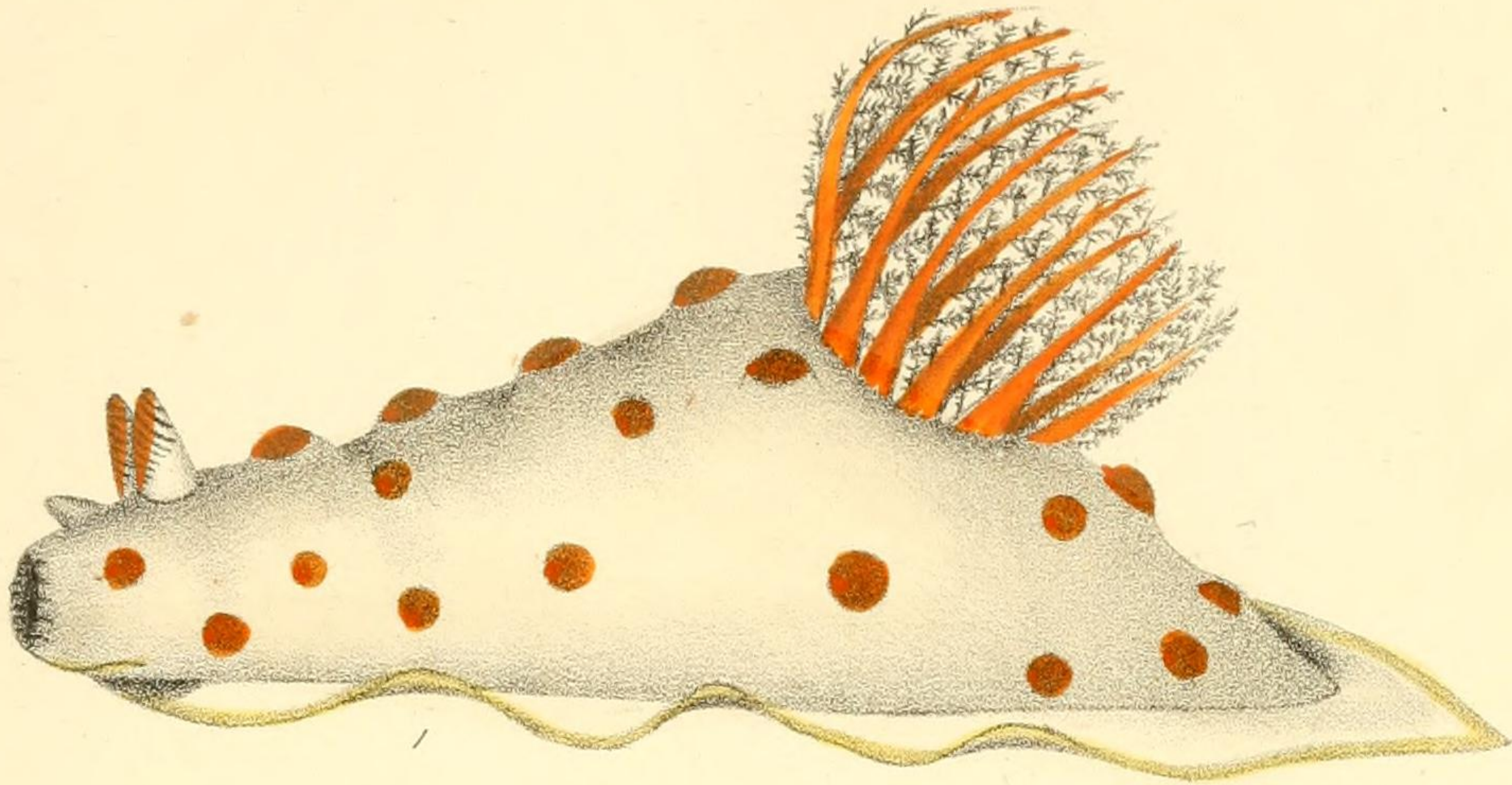
*Remarks.* There is little doubt but that the branchiæ in this genus are immersed in the surface of the mantle lobes, radiating in lines from the body, as in genus *Placobranchus*.

*Elysia grandifolia*, *E. punctata* and *E. cœrulea*, (Kelaart) inhabiting Ceylon, belong to the above genus. The provisional name, *Hydropsyche*, proposed for the genus by Dr. Kelaart, being pre-occupied, the above will take precedence.

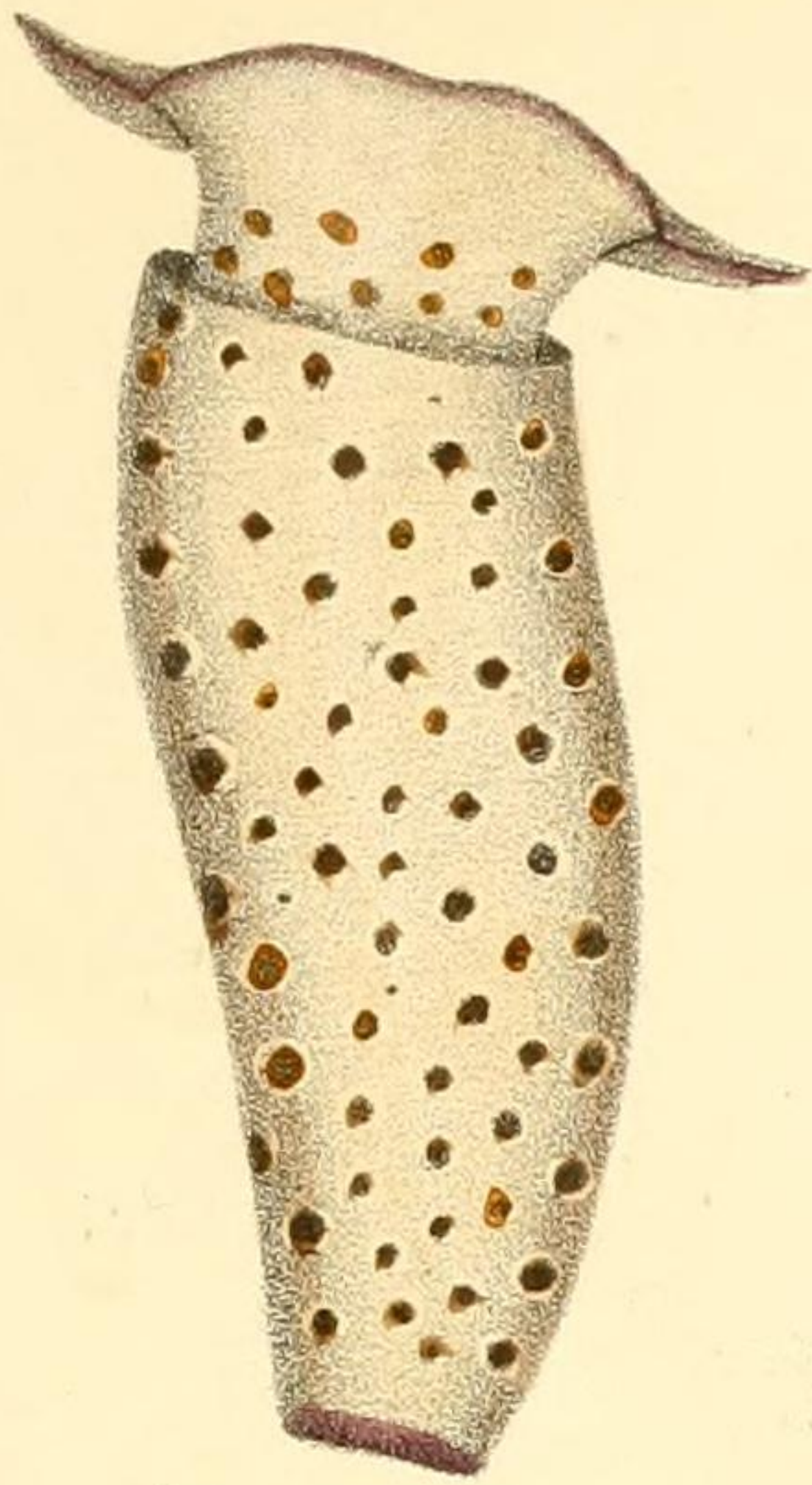


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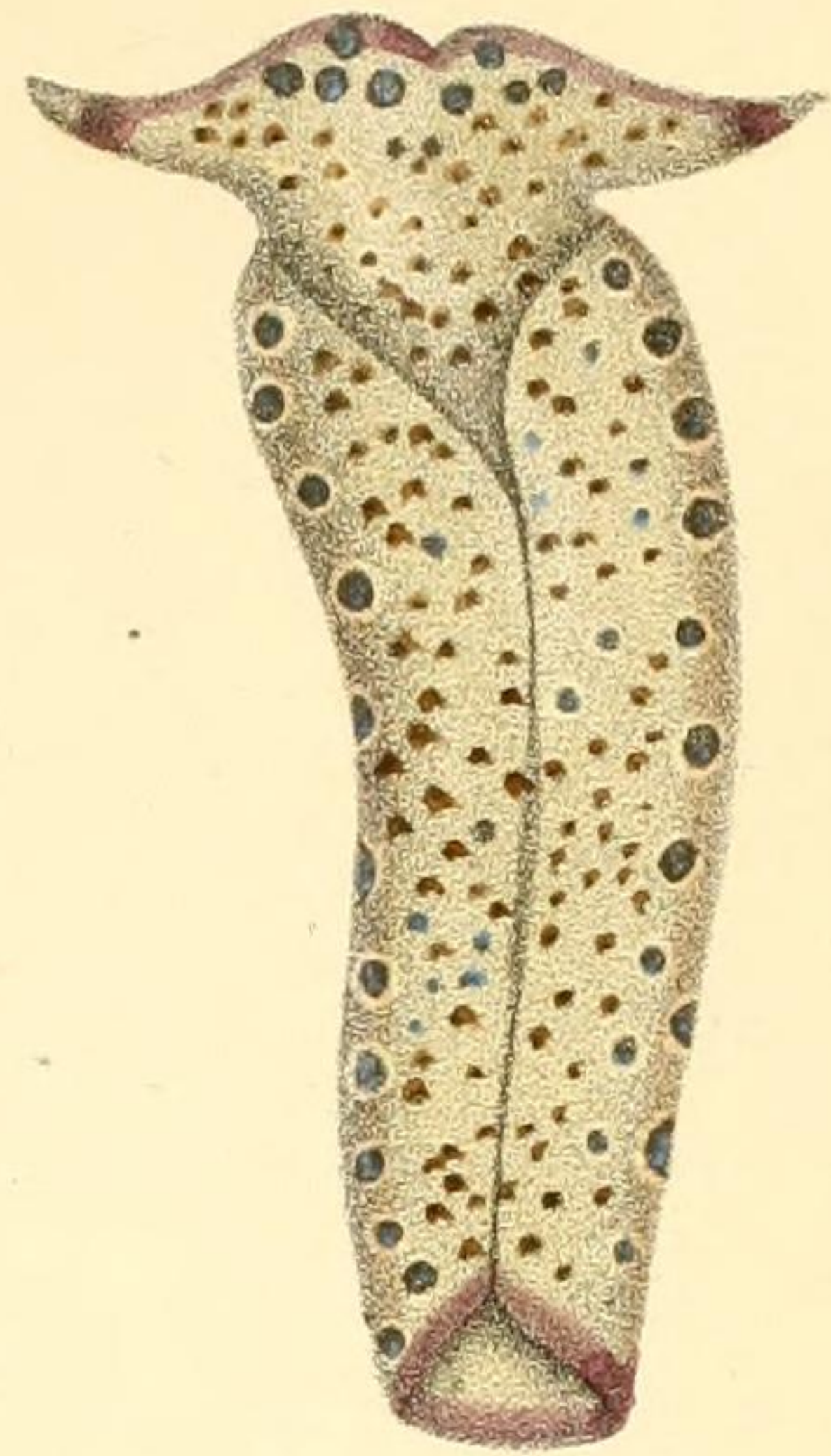




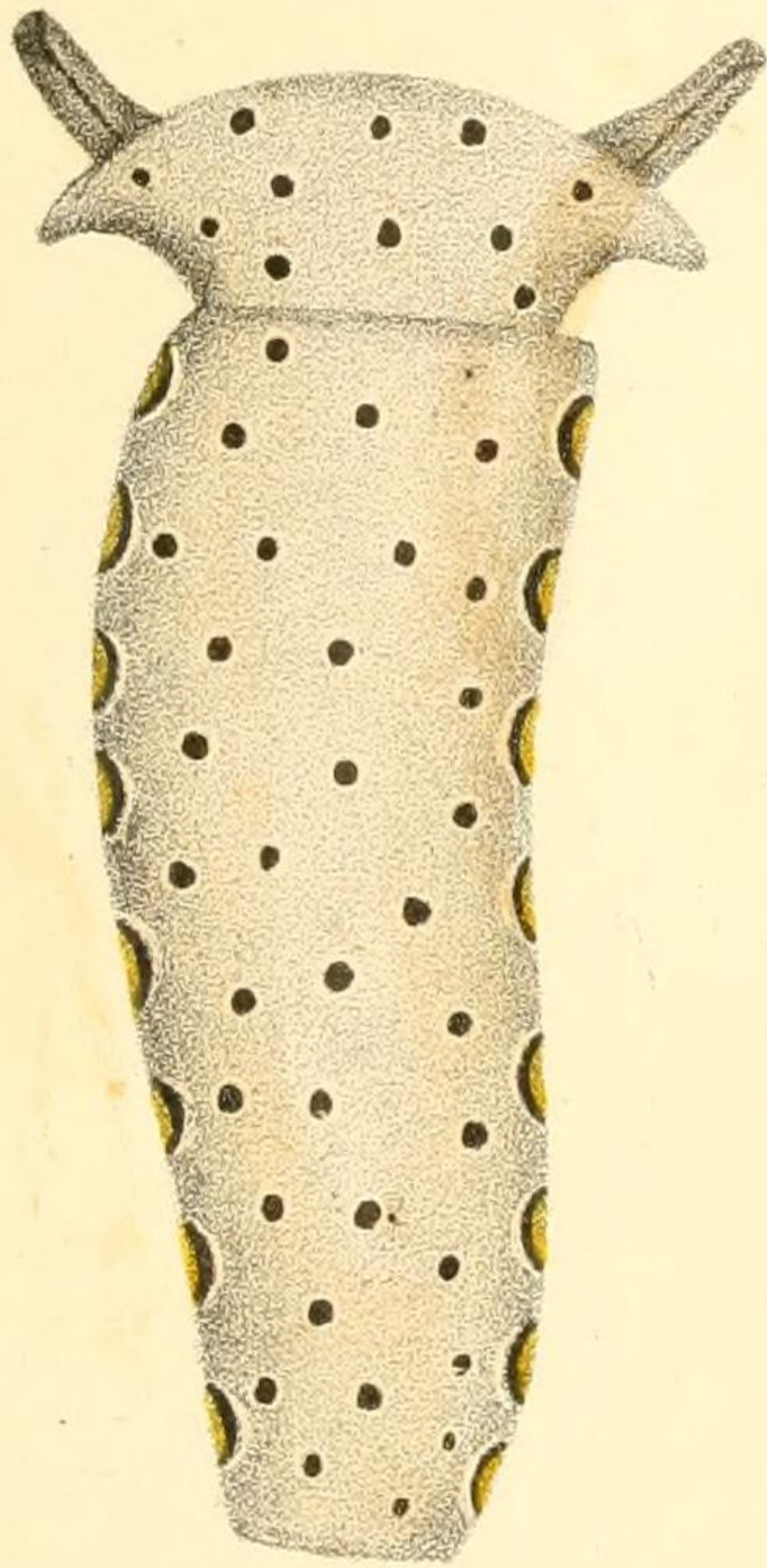
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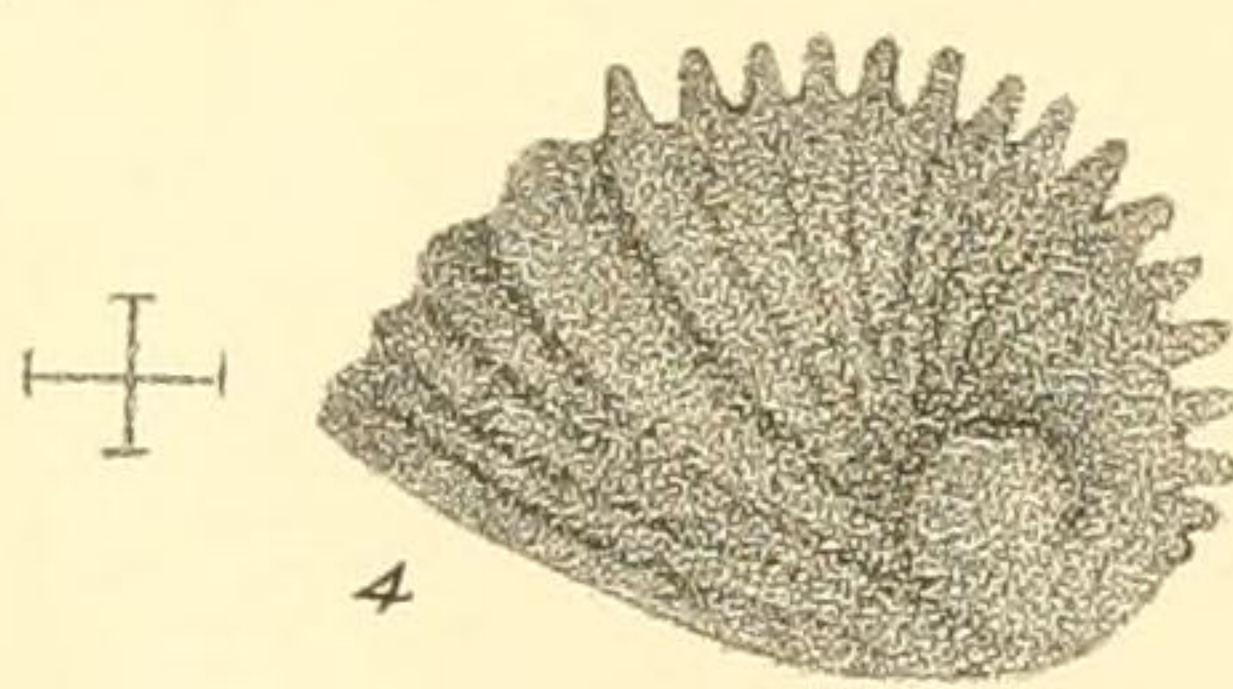
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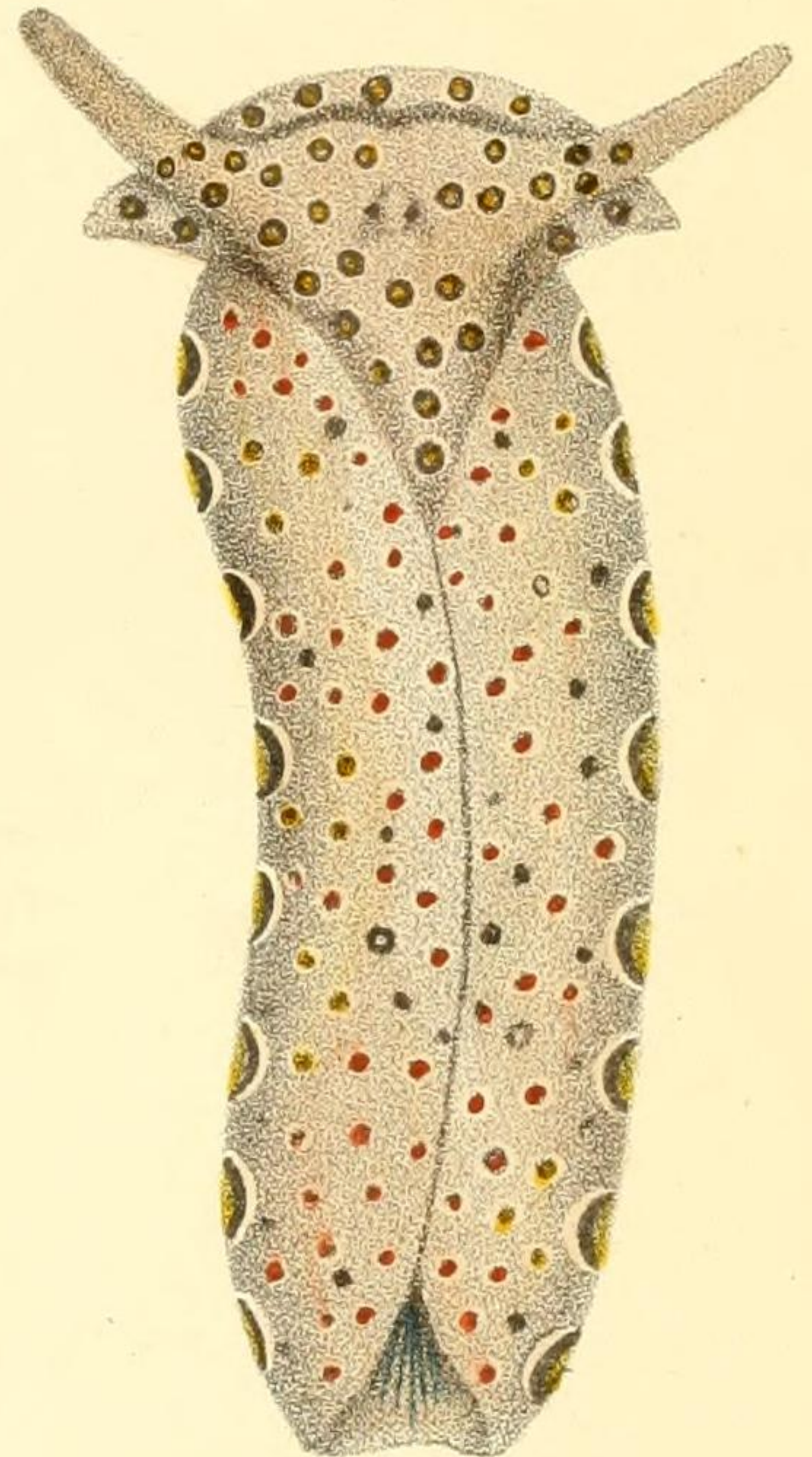
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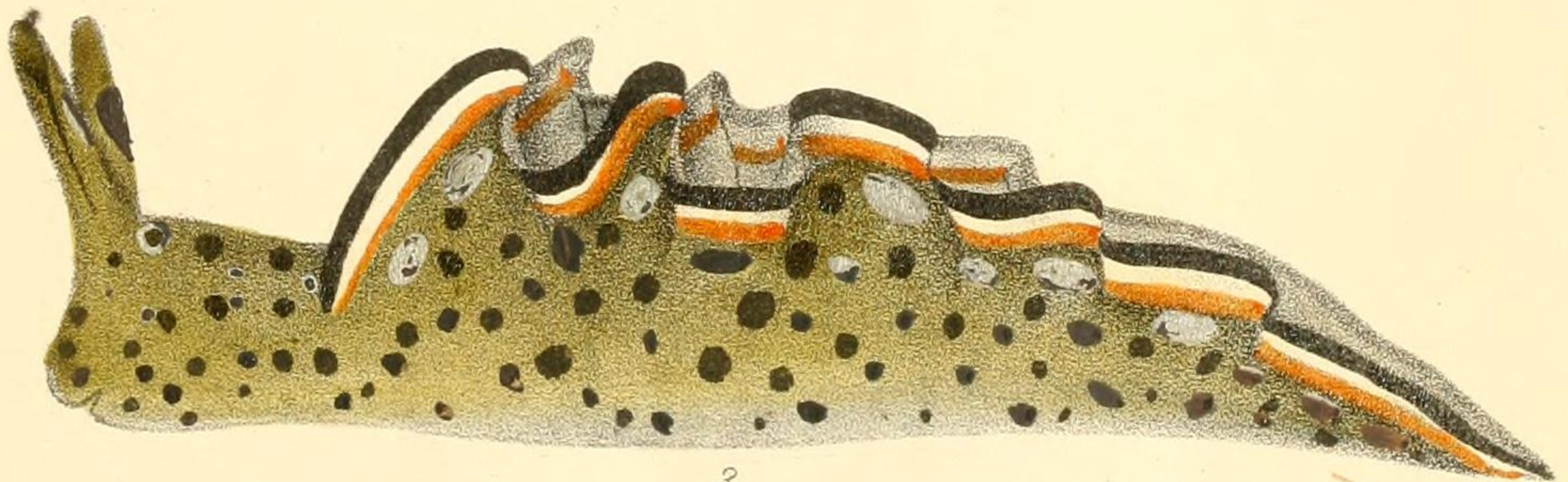
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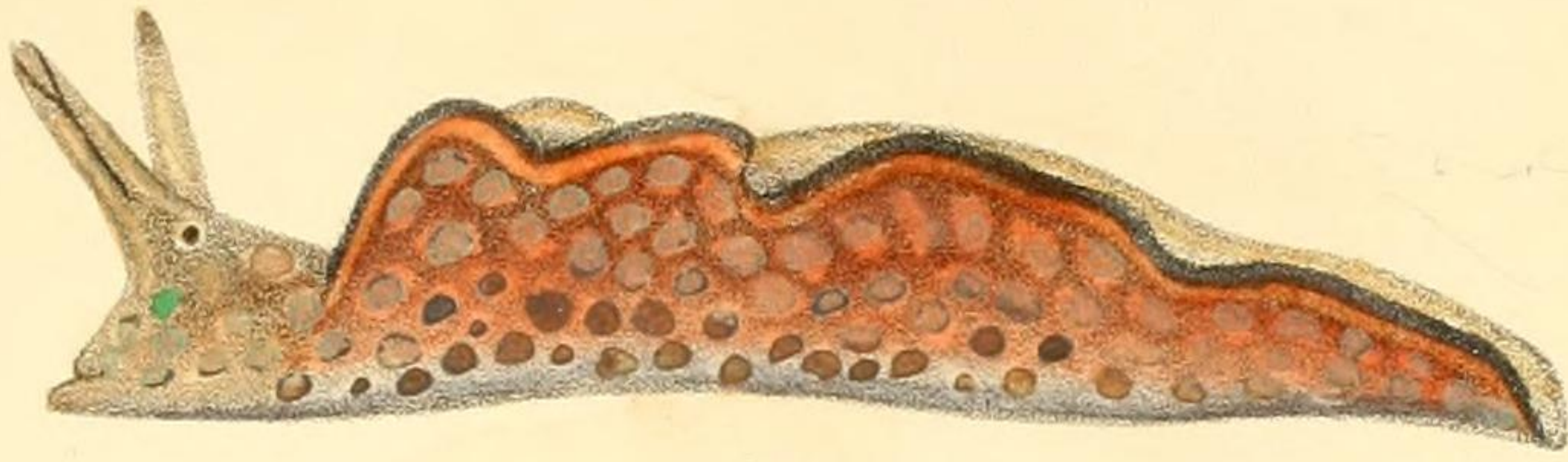


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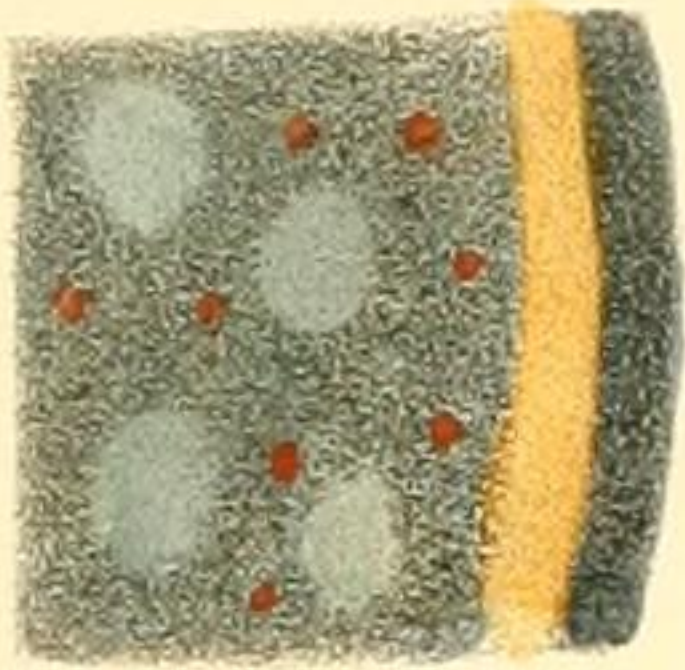


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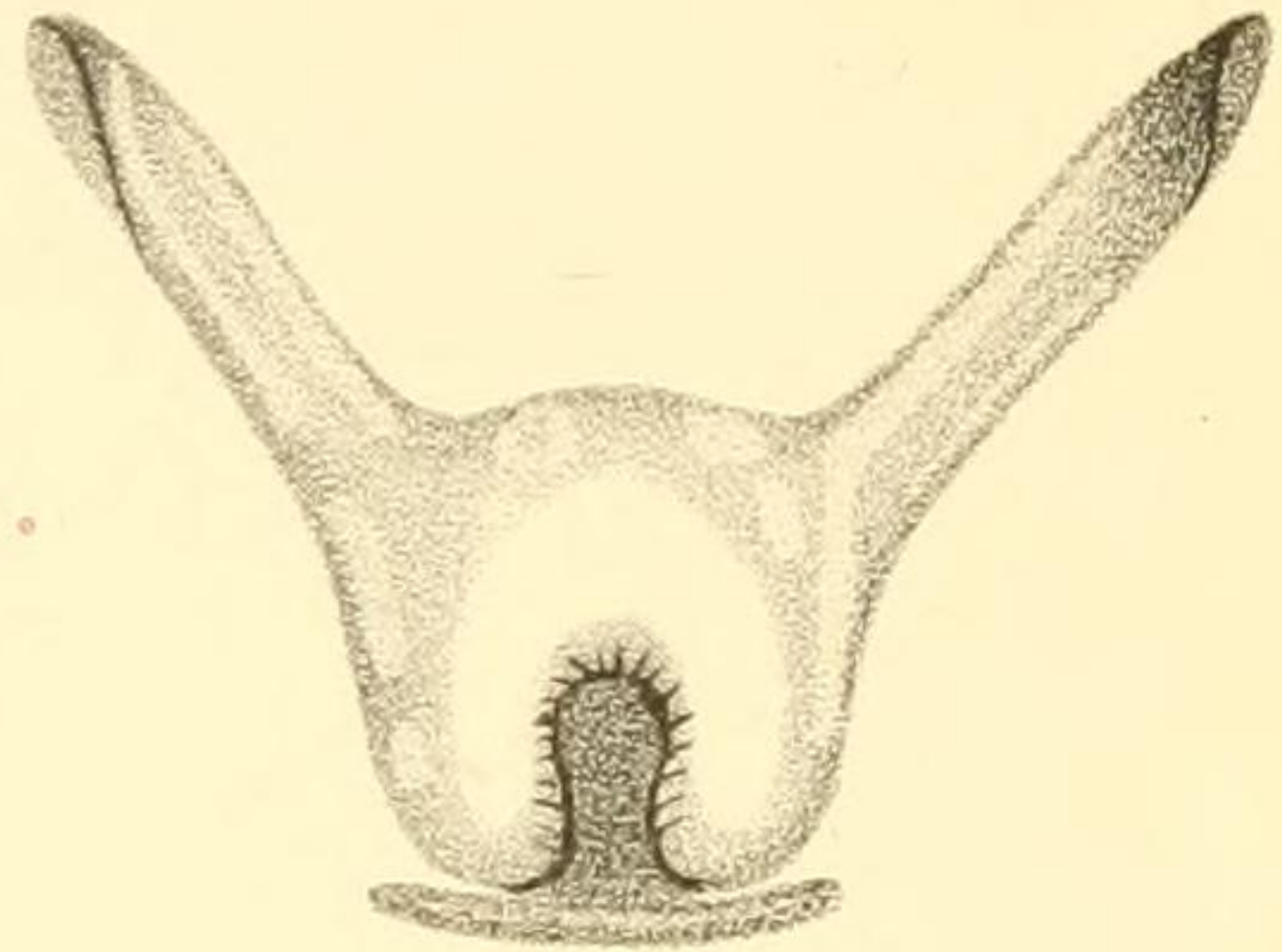
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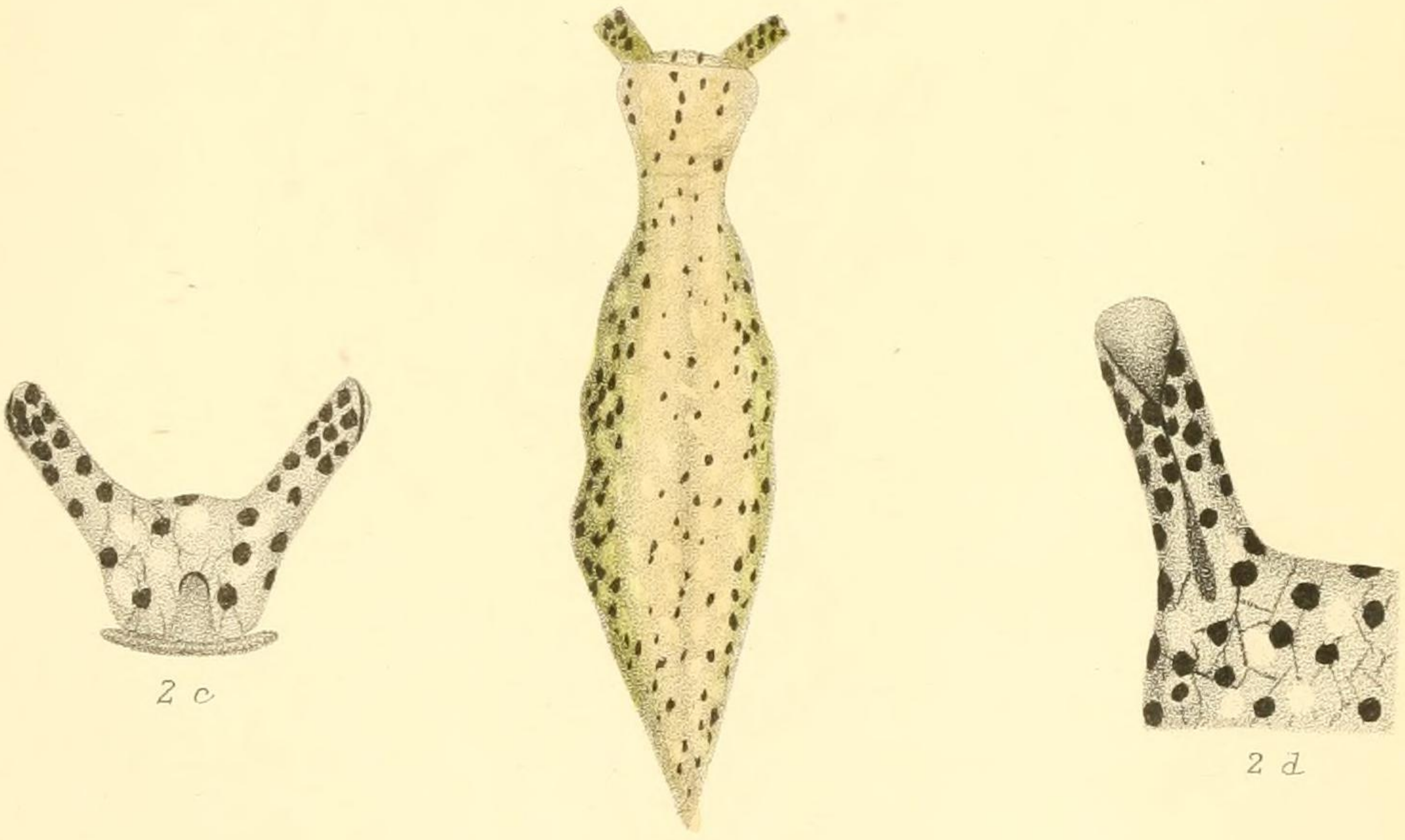
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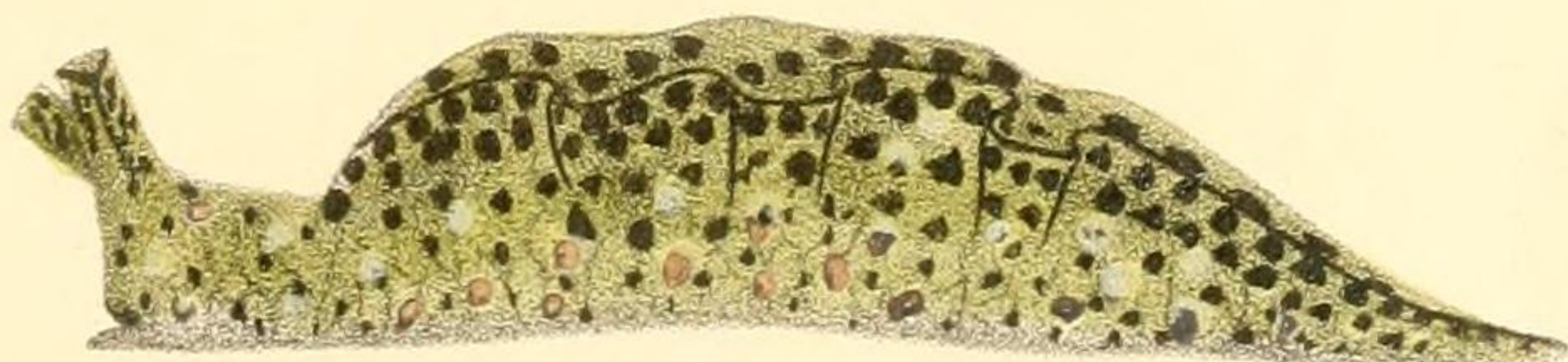
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2 b.

2 d



2 a

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