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## On the Influence of Preservation on the External Appearance of Specimens of *Aplysia depilans* Linné\*)

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In May 1938 I had the opportunity to observe seven living *Aplysia depilans* in the Zoological Station Naples. Notes on the size and colour were made and different methods of preservation were tried.

As one often wonders how much of the original colour pattern has been preserved in museum specimens of *Aplysia*, it seems important to give the result of the comparison of the living specimens as studied in 1938 and the same specimens after 18 years of preservation, in 1956. The best way of preservation appears to be killing in diluted alcohol as specimen nr. V shows.

Nr. I was of varying length as it was creeping along, the maximum length measured was 115 mm. The colour was brown (with a greenish tinge in the diaphanous parts of the skin), with many fine darker veins (which were not due to the wrinkles in the skin). Sometimes the veins, flowing together, formed darker spots. Groups of more or less round lighter patches, provided with dots of white pigment, were scattered over the skin; the dark veins passed round these light patches. Along the tentacles, the rhinophores and the parapodia a violet border; the foot also was more or less violet. The mantle over the shell was strewn with dark brown dots (among which the common lighter patches with white pigment dots). It made a darker impression than the rest of the skin; in its centre the mantle opening was marked by a round patch with radiating dark lines, giving a star-like impression. The inner side of the parapodia was rather dark, with white round patches which were more numerous towards the border and gave this border a checkered appearance.

This species can swim, but it is more clumsy than the others, the mantle flaps are first folded over each other and then with an undulating movement are moved outwardly.

When the specimen Nr. I was killed in alcohol, a violet liquid was excreted, of the same colour as in *Aplysia punctata*. One gets the impression that this reaction asks a much stronger stimulance than in *Aplysia punctata*. The preserved animal is 61 mm long. The two borders of

\*) Received February 1, 1957.

the foot meet in the middle. It has retained rather much of the brownish veined ornamentation described above, especially where it was protected in the folds of the skin or under the tentacles, though it has faded on the whole and has disappeared altogether on the anterior half of the right side of the body. The lighter patches can be observed among the brown veins, but their white pigment disappeared, as did the violet pigment. The mantle over the shell clearly shows the darker brown pigment with lighter patches and the star round the mantle opening. The inner side of the parapodia also retained the brown pigment ornamentation described above.

Nr. II in life showed the same colour pattern as Nr. I, the purple border was a little less distinct. It was killed suddenly in formalin and also produced a purple fluid, which was darker, more blue than in Nr. I. The maximal length while creeping was 93 mm, the breadth then was about 22 mm. In the preserved state it is 33 mm long, 12 mm broad, it is strongly contracted, especially the head and the wrinkled foot. The two borders of the foot meet. The ornamentation has faded more than in Nr. I, though details can be observed yet. It is more clear in the folds of the skin, but the inner side of the mantle is much less distinct than in Nr. I.

Nr. III showed the same colours and ornamentation as Nr. I. When swimming it attained a length of 120 mm, while creeping a length of 60 mm and a breadth of 28 mm were measured. The animal was killed in uretano 2%, then preserved in alcohol. The preserved animal has lost nearly all of its colour. The brown vein ornamentation was only preserved where it was protected in folds of the skin. Vestiges of the purple fluid are seen on the gill and the border of the mantle covering it. The preserved animal is 48 mm long and 20 mm broad, the foot is flat and broad.

Nr. IV was more than 60 mm long when alive. It showed the colours and ornamentation of Nr. I, but with some darker pigment patches. The preserved animal is very much contracted, dried out 31 mm long. The foot is rather narrowly contracted. The skin shows vague indications of the dark veins on the body and the inside of the mantle flaps.

Nr. V was over 100 mm long, showed the colours and ornamentation of Nr. I. It was preserved in diluted alcohol and now is 85 mm long, 22 mm broad. It is beautifully preserved and clearly shows the brown vein ornamentation everywhere. No white or purple pigments are preserved.

Nr. VI was more than 80 mm long. It was rather light of colour, looking rather like *Aplysia punctata*. There was a rosy tinge along the chequered border of the parapodia, the back looked rather evenly brown. The ornamentation is a very fine veining with some lighter patches and near the foot some darker patches. Above the shell the mantle was darker with small light patches, as in the skin of *Aplysia punctata*. The free border of the mantle above the shell is rather dark. The preserved specimen has been drying out, it measures 37 mm in length and has lost nearly all pigment. On the mantle only some vague rests are discernible.

Nr. VII was larger than 50 mm in length and made a brownish impression. It was only vaguely veined with some irregular brown lines. As in *Aplysia punctata* some irregular patches of white pigment. Along the parapodia a rose border with inward pointing dashes of lighter colour. It could easily be confounded with *Aplysia punctata* but for the darker brown tinge and the rose border. The preserved animal is 27 mm long. Only vague traces of the dark vein ornamentation are left in protected areas of the skin (head, mantle, folds).