

AUSTRALIAN MUSEUM SCIENTIFIC PUBLICATIONS

Hedley, Charles, 1891. On *Hadra gulosa*, Gould. *Records of the Australian Museum* 1(9): 196–197, plate xxix. [31 October 1891].

doi:10.3853/j.0067-1975.1.1891.1256

ISSN 0067-1975

Published by the Australian Museum, Sydney

nature culture **discover**

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ON *HADRA GULOSA*, GOULD.

By C. HEDLEY, F.L.S.

(Plate xxix.)

Hadra gulosa, Gould, having been instituted by that author, the type of his genus *Badistes*, and by Pilsbry the type of the subsection of that name, it is desirable that an account of its soft parts should be placed on record. On acquiring two living specimens from Dr. Cox and Mr. Brazier, the opportunity is accordingly embraced of publishing the following observations.

Gould states, Otia, p. 18, that *H. pedestris*, imitates in its gait the geometer caterpillars and progresses by looping its foot into undulations instead of by the usual sliding motion practised by other helices. On p. 243, he transfers this extraordinary action to the credit of *H. gulosa*, for which, apparently on account of this supposed peculiarity, he creates the genus *Badistes*. I have carefully observed the animal of *gulosa*, and have never seen any such gymnastic evolutions performed by it. However Messrs. C. T. Musson and C. J. Wild, both keen observers, have separately remarked this habit in *Chloritis brevipila*, and it seems probable that it is to this animal and not to *gulosa* that the observations of Drayton (Gould's collector) refer.

The color of this animal appears to vary greatly. A specimen from Bulli presented by Dr. Cox, possessed a bright orange-red mantle margin, body and tentacles pale ochreous brown, darkening behind the tentacles and passing into orange-red on the tip of the tail, sole of foot light ochreous brown. Another specimen contributed by Mr. Brazier from Lawson, which is situated at a height of 2400 feet on the Blue Mountains, differed wholly from the foregoing, having the mantle-margin a creamy yellow, the body and tentacles coal black with ashy tubercles, sole of foot dark ashy blue. When extended the animal measured about 55 mm. in length, the tail projecting about 10 mm. behind the shell; tentacles 12 mm. in length. The facial area is defined by two not very distinct grooves which run upwards and backwards from the lips to the mantle. Along the median dorsal line two rugae or sets of rugae bound a furrow which proceeds from the mantle and terminates between the tentacles. On either side of these about six ranks of long narrow tubercles extend from the mantle outwards and downwards. The genital orifice appears in the right facial groove behind the right tentacle. The tentacles taper

and spring from swollen bases 2 mm. apart, their ocular bulbs are rounded and symmetrical. The rest of the body is covered with irregular polygonal tubercles which usually are partially subdivided into minor tubercles, those on the tail are round, small and entire. At the origin of the left facial groove, two small lobes spring from the mantle, they measure together 2 x 4 mm., these are undoubtedly the homologues of the lobes which attain so great a development in the *Naninidae*. I have observed them in other *Hadrae*, but am not aware whether these rudimentary lobes are common to other divisions of the helices.

Jaw arched, crossed asymmetrically by nine stout flat-topped ribs of various widths, the central the narrowest, denticulating both margins, ends smooth, angled.

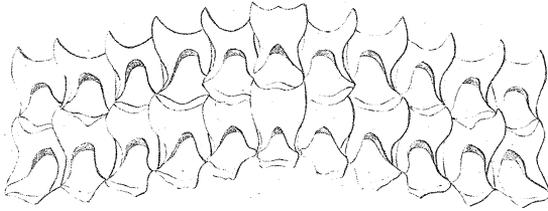
Radula strap shaped, three times as long as broad, rows flattened bracket (—) shaped, formula 180 rows of 39 : 18 : 1 : 18 : 39 ; rachidian reflection unicuspidate, linguiform extending along two-thirds of a base which is longer than wide and slightly expanded posteriorly ; the immediate laterals are also unicuspidate and linguiform, twice as large as the rachidian, the reflection cusp falling short of the margin of the base whose alate angle is curved and acuminate, the distant laterals are more slender and inclined projecting past the basal margin ; the marginals acquire proximal and distal accessory cusps which increase in size proportionally as the ranks retreat.

In the genitalia the penis sac is expanded into a wide reniform dilatation and bears at its apex a slender flagellum 15 mm. in length, the ovoid spermatheca is seated at the termination of a long duct.

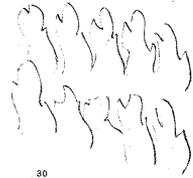
EXPLANATION OF PLATE XXIX.

- Fig. 1. Two ranks of eleven teeth from the centre, and of the thirtieth to the thirty-fourth from the margin, of the radula of *H. gulosa*, Gould : much magnified.
- „ 2. Jaw of same : magnified.
- „ 3. Sculpture of the shell of the same, drawn from below the suture of the last whorl behind the aperture : magnified.
- „ 4. Genital system of the same.
- „ 5. Animal of the same, left side, mantle-collar reflected and exposing rudimentary lobes : enlarged one and a-half diameters.
- „ 6. Animal of the same, right side, showing mode of progression and the mantle lobes surrounding the pulmonary orifice : enlarged one and a-half diameters.

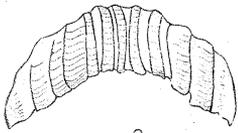
(Reproduced from drawings by C. Hedley.)



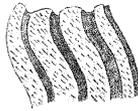
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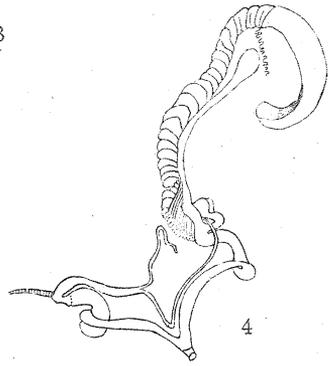
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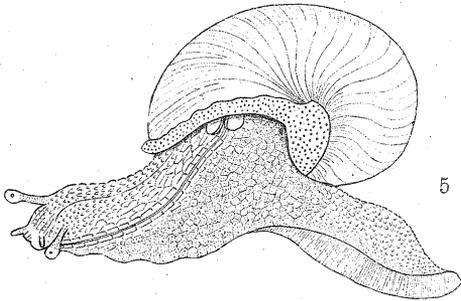
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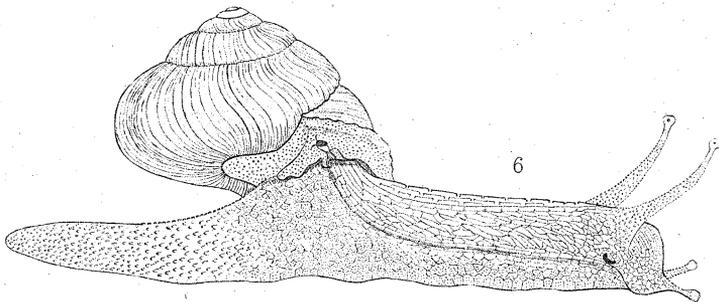
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