

ON A SPECIES OF THE GENUS *BERTHELLINA*
(OPISTHOBRANCHIA : NOTASPIDEA) OF THE GULF OF KUTCH

By

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INTRODUCTION

WHILE studying the Opisthobranchs of the Gulf of Kutch, the author (Narayanan, 1969 : 191-193) described a Berthellinid Pleurobranch and provisionally assigned it to *Berthellina minor* Bergh (1905). More specimens have now become available and with an extensive study of the literature, the author is now able to make a more definite identification.

While revising the classification of Pleurobranchacea and creating a new sub-family Berthellinae, Burn (1962) recognised six valid species of the genus *Berthellina* viz., *B. engeli* Gardiner (1936), *B. edwardsi* (Vayssiere, 1896), *B. quadrens* (Morch, 1863), *B. oblonga* (Savigny—Audouin, 1825), *B. saidensis* (O'Donoghue, 1929), and *B. citrina* (Ruppell et Leuckart, 1828). Of these *Berthellina citrina* appears to enjoy a very wide distribution in the Indo-Pacific and it appears that *Berthella minor* from the Siboga collections, *Pleurobranchus citrinus* (?) Ruppell described by Kelaart (1854) from Ceylon and *Pleurobranchus (Berthella) citrinus* Farran (1905) from Ceylon are synonyms of it. A comparative statement showing the characters of these specimens is given in Table 1. All available information indicate that the present material of *Berthellina* from the Gulf of Kutch belongs to the species *B. citrina* (Ruppell et Leuckart, 1828).

Description of *Berthellina citrina* (Ruppell et Leuckart)

The Gulf of Kutch forms are smaller in size than the Australian forms and grow to a size of 10 to 17 mm. in length and 6 to 12 mm. in breadth. They are bright orange in colour throughout the body, with groups of white punctae. However, when they are kept alive in an aquarium, they may or may not change their colour into pale orange, yellowish orange and greenish yellow. In the preservative, however, they turn to dirty or brownish white.

On the right side is situated a single gill, with 17 to 20 pairs of lamellae. The anus is situated (in a specimen having 17 pairs of lamellae) at the level of the tenth pair just dorsal to it. The male and female genital openings are situated anterior to the gill base. The jaw elements are smooth and hook-like. The radula has 108 rows of pectinate teeth. Each half row has 150-170 teeth. Teeth have generally 10 denticles; but the inner ones have lesser denticles (generally 7 to 9) and the outer ones have 11 to 14 denticles. The shell is triangular and anteriorly placed. It is thin and flat with many rings dorsally. Its size varies from 2 to 6 mm in length and is about 1/3 to 1/5 of the body length.

TABLE 1

| Characters | <i>P. citrina</i> Kelaart (1854) | <i>B. minor</i> Bergh (1905) | <i>P. (B) citrinus</i> Farran (1905) | <i>B. citrinus</i> Burn (1962) | <i>B. minor</i> Narayanan (1969) |
|-----------------|-------------------------------------|--------------------------------------|---|---|--|
| EXTERNAL COLOUR | Orange red with white spots | Whitish with white spots | Brilliant orange with white spots | Greenish yellow to orange with or without punctae | Orange with white punctae |
| SIZE OF ANIMAL | 25 mm. in length | 14×6.5 mm. | 17 mm. in length | 50×25 mm. | 10 to 17×6 to 12 mm. |
| GILL | .. | 20 pairs of lamellae | 25 pairs of lamellae without laterals | 16 to 17 pinnae with smooth rhachis | 17 to 20 pectinate lamellae. Smooth rhachis |
| SHELL | .. | 6×2 mm. Longish flat; rings anterior | 5 mm. Anteriorly placed | Triangular. 1/5th of the body. Whorls present | 4.5×2.5 mm. Triangular flat with rings. Anteriorly placed. |
| JAW PLATES | .. | Hooks with smooth margins | .. | Smooth-edged. In these specimens 1 to 3 denticles. | Smooth and hook-like |
| RADULA | .. | 100 rows. Tooth has 15 denticles | Knife-shaped teeth with 14 denticles | 90×160-0-160. Inner teeth have 6 to 8 denticles. Pleurals with 12 to 18 denticles. Marginals have 11 to 15 denticles. | 108×170-150-0-150-170. Teeth comb-shaped with ten denticles. |

Though very widely distributed in the Indo-Pacific waters, *Berthellina citrina* (Ruppell et Leuckart, 1828) does not appear to have been recorded from the Indian coasts before Narayanan (1969), although some accounts of the Pleurobranchs of Karachi (White, 1946), Karachi-Maskat (Eliot, 1905), Okhamandal (Eliot, 1909) and Southern India (O'Donoghue, 1932; Sathyamurthi, 1952; Rao *et al.*, 1961; Narayanan, 1968) are available.

ACKNOWLEDGEMENTS

The author is indebted to Mr. Robert Burn, Hon. Associate, National Museum of Victoria, Melbourne, Australia, for guidance received and Dr. W. B. Rudman, University of Auckland, Auckland, New Zealand, for critically going through the manuscript. Special thanks are due to Mr. K. S. Bhullar, I.A.S., Commissioner of Fisheries to the Government of Gujarat, Ahmedabad, India, for permission to publish this paper.

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