



Record of *Phyllidiella zeylanica* (Mollusca: Gastropoda: Opisthobranchia) after 42 years from Gujarat, India

Manoj Matwal¹ & Dhiresh Joshi²

^{1,2} Wildlife Trust of India F-13, Sector -8, Noida, Uttar Pradesh 201301, India

¹ Deepkamal Apartments II floor, Opp. KCC Cricket Ground, Veraval, Gujarat 362265

² 4 Akar Apartments, 12 New Brahmashastria Society, Paldi, Gujarat, India

Email: ¹ manojmatwal@gmail.com (corresponding author);

² dhiresh@wti.org.in

Nudibranchs belonging to the subclass Opisthobranchia are among the least studied molluscs in India. The work done on opisthobranchs in India is sparse and patchy. The earlier works date back to the 1880s by Alder & Hancock (1864), Kelaart (1858a,b; 1859a,b,c; 1883) and Bergh (1877). Notable works on Indian Opisthobranchia are by Gardiner (1903), Eliot (1905, 1906a,b,c, 1909a,b, 1910a,b, 1916), Farran (1905), Hornell (1909a,b, 1949, 1951), O'Donoghue (1932), Rao (1936, 1952, 1961), Satyamurthi (1952), Rao & Alagarwami (1960), Burn (1970), Rao et al. (1974), Rao & Rao (1980), Valdés et al. (1999) and Fontana et al. (2001).

In recent times Apte (2009), Apte & Bhawe (2010,

2011), Raghunathan (2010), Ramakrishna et al. (2010), Sreeraj et al. (2010) and Apte & Salahuddin (2011) studied opisthobranch fauna of India.

Work on marine fauna of Gujarat, specifically the Gulf of Kutch and its adjoining areas, was first initiated by Hornell (1909a,b) and was continued by Eliot (1909), Gideon et al. (1957), Kundu (1965), Narayanan (1968, 1969, 1970, 1971a,b), Burn (1970), Menon et al. (1970), Rudman (1980) and Deomurari (2006). The most comprehensive work on opisthobranchs of the Gulf of Kutch was that by Narayanan (1968, 1969, 1970, 1971a,b) after that, for a long time no such focused studies were conducted and the only recent information from this area about nudibranchs comes from the checklist prepared by Apte et al. (2010).

Two specimens of *Phyllidiella zeylanica* (Kelaart, 1859) measuring 20 and 22 mm were first reported at Pirotan Island, Gulf of Kutch by Narayanan (1968). Since then this species was never reported in any study or research work done on the marine fauna of Gujarat.

Location: This interesting sighting occurred on 03 April 2010 during a regular coral monitoring survey under “Coral reef restoration programme” by the Wildlife Trust of India at Mithapur reef’ (22°25.672’N & 68°59.510’E), at a depth of 1.5m on dead corals substrate (Images 1 & 2).

Description: Presently reported (23–24 mm) individual has identical external morphological features which typify *P. zeylanica*. The dorsal surface of the mantle has five longitudinal rows of pink

Date of publication (online): 26 July 2011
Date of publication (print): 26 July 2011
ISSN 0974-7907 (online) | 0974-7893 (print)

Editor: Deepak Apte

Manuscript details:

Ms # o2769
Received 22 April 2011
Final received 20 May 2011
Finally accepted 13 June 2011

Citation: Matwal, M. & D. Joshi (2011). Record of *Phyllidiella zeylanica* (Mollusca: Gastropoda: Opisthobranchia) after 42 years from Gujarat, India. *Journal of Threatened Taxa* 3(7): 1951–1954.

Copyright: © Manoj Matwal & Dhiresh Joshi 2011. Creative Commons Attribution 3.0 Unported License. JoTT allows unrestricted use of this article in any medium for non-profit purposes, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Acknowledgements: The Authors wish to acknowledge the constant support and encouragement received from our partners TATA CHEMICALS Ltd. We are also thankful to Deepak Apte and Vishal Bhawe of the Bombay Natural History Society for providing necessary information, literature and identification review.

OPEN ACCESS | FREE DOWNLOAD



Image 1. The reported individual (*Phyllidiella zeylanica*)



Image 2. Area of sighting
(Source: Sen Gupta et al. 2003 and Google Earth)

tubercles which are arranged in a semicircular fashion along the anterior and posterior margins except the median one. Irregular tubercles are arranged in a group of two or three. Median ridge forms a canal like structure at the centre which is filled in by black lines. These lines, excepting the median one are all along the posterior and anterior margins in a semicircular fashion (Narayanan 1969). The reported individual also possessed the same rough ridges which are the typical features for this species (Brunckhorst 1993). Rhinophores are black with colourless stalks. The foot sole is white.

Discussion: Though *Phyllidiella zeylanica* is a common nudibranch species in Lakshadweep and Andaman and Nicobar Islands (Apte 2009; Ramakrishna et al. 2010; Sreeraj et al. 2010), its occurrence in Gujarat and particularly in the Gulf of Kutch is rare. This probably is due to the lack of studies on the opisthobranchs in this region. It is important to have conservation based systematic and comprehensive studies on these animals so that base line information may be generated on these animals and their habitat.

REFERENCES

- Alder, J. & A. Hancock (1864). Notice on the collection of Nudibranchiate mollusca made in India by Walter Eliot
- Esq. with descriptions of several new genera and species. *Transactions of the Zoological Society of London* 5: 117–147.
- Apte, D.A. (2009). Opisthobranch fauna of Lakshadweep Islands, India with 52 new records to Lakshadweep and 40 new records to India. *Journal of the Bombay Natural History Society* 106(2): 162–175.
- Apte, D.A., V. Bhave & D. Parasharya (2010). An annotated and illustrated checklist of the opisthobranch fauna of Gulf of Kutch, Gujarat, India with 20 new records for Gujarat and 14 new records for India—Part 1. *Journal of the Bombay Natural History Society* 107(1): 14–23.
- Apte, D.A. & V. Bhave (2011). Fourteen new records of opisthobranchs from Lakshadweep, India—Part 2. *Journal of the Bombay Natural History Society*. (in press)
- Apte, D.A. & V.K. Salahuddin (2011). Record of *Hexabranchius sanguineus* (Rüppell & Leuckart 1828) from Lakshadweep Archipelago, India. *Journal of the Bombay Natural History Society*. (in press)
- Bergh, L.S.R. (1877). Malacologische Untersuchungen. In: Semper, C.G. (ed.). *Reisen im Archipel der Philippinen, Wissenschaftliche Resultate* Band 2, Heft 12: 495–546, pls. 58–61.
- Brunckhorst, D.J. (1993). The systematics and phylogeny of *Phyllidiid* Nudibranchs (Doridoidea). *Records of the Australian Museum, Supplement* 16: 1–107.
- Burn, R. (1970). *Phyllidia* (*Phyllidiella zeylanica*) Kelaart, a rare nudibranch from the Indian subcontinent. *Memoirs of National Museum of Victoria* 31: 37–40.
- Deomurari, A. (2006). *Berthellina citrina* from the Gulf of Kutch, India. In: *Sea Slug Forum*. Australian Museum, Sydney. <<http://www.seaslugforum.net/find/1718>>. Downloaded on 29 July 2006.

- Eliot, C. (1905).** Nudibranchs of the Indo-Pacific Islands. Notes on a collection dredged near Karachi and Maskat. *Journal of Conchology* 11(8): 237–256
- Eliot, C.N.E. (1906a).** On the nudibranchs of southern India and Ceylon, with special reference to the drawings by Kelaart and the collections belonging to Alder and Hancock preserved in the Hancock Museum at Newcastle-on-Tyne. *Proceedings of the Zoological Society of London*, 636–691pp.
- Eliot, C.N.E. (1906b).** On the nudibranchs of southern India and Ceylon, with special reference to the drawings by Kelaart and the collections belonging to Alder and Hancock preserved in the Hancock Museum at Newcastle-on-Tyne. No. 2. *Proceedings of the Zoological Society of London*, 999–1008pp.
- Eliot, C.N.E. (1906c).** Nudibranchiata, with some remarks on the families and genera and description of a new genus, Doridomorpha, pp. 540–573, pl. 32. In: Gardiner, J.S. (ed.). *The fauna and geography of the Maldive and Laccadive Archipelagoes, being the account of the work carried on and of the collections made by an expedition during the years 1899 and 1900*, Vol. 2.
- Eliot, C.N.E. (1909a).** Report on the nudibranchs collected by Mr. James Hornell at Okhamandal in Kattiawar in 1905–06. In: Report to the government of Baroda on the marine zoology of Okhamandal, 137–145pp.
- Eliot, C.N.E. (1909b).** Notes on a collection of nudibranchs from Ceylon. *Spolia Zeylanica, Colombo* 6(23): 79–95.
- Eliot, C.N.E. (1910a).** Nudibranchs collected by Mr. Stanley Gardiner from the Indian Ocean in H.M.S. Sealark. In: Reports of the Percy Sladen Trust Expedition to the Indian Ocean in 1905, under the leadership of Mr. J. Stanley Gardiner, M.A. *Transactions of the Linnaean Society, Zoology* (Series 2), 13(2): 411–439.
- Eliot, C.N.E. (1910b).** Notes on nudibranchs from the Indian museum. *Records of the Indian Museum* 5(4): 247–252.
- Eliot, C.N.E. (1916).** Mollusca Nudibranchiata. In: Fauna of the Chilka Lake. *Memoirs of the Indian Museum* 5: 375–380.
- Eliot, C. (1909).** Report on the Nudibranchs collected by Mr. James Hornell at Okhamandal in Kattiawar in 1905–06. James Hornell's report to the Government of Baroda on the marine zoology of the Okhamandal in Kattiawar, Williams and Norgate, London, 137–145pp.
- Farran, G.P. (1905).** Report on the Opisthobranchiate Mollusca collected by Prof. Herdman. In: W.A. Herdman's report on the pearl oyster fisheries of the Gulf of Mannar. The Ray Society, London, 29–364pp.
- Fontana, A., M.L. Ciavatta, L. D'Souza, E.Mollo, C.G. Naik, P.S. Parameswaran, S. Wahidulla & G. Cimino (2001).** Selected chemo-ecological studies of marine opisthobranchs from Indian coasts. *Journal of the Indian Institute of Science* 81(4): 403–415.
- Gardiner, J.S. (1903).** *The Fauna and Geography of The Maldives and Laccadive Archipelagoes—Vol. 2*. Cambridge University Press, 1080pp.
- Gideon, P.W, K.B. Menon, S.R.V. Rao & K.V. Jose (1957).** On the marine fauna of the Gulf of Kutch a preliminary survey. *Journal of the Bombay Natural History Society* 54(3): 690–706.
- Hornell, J. (1909a).** Report to the Government of Baroda on the marine zoology of Okhamandal in Kattiawar, Williams and Norgate, London, 1pp.
- Hornell, J. (1909b).** A note on the presence of symbiotic algae in the integuments of nudibranchs of the genus *Melibe*. In: Report to the government of Baroda on the marine zoology of Okhamandal, 1, 145–148pp.
- Hornell, J. (1949).** The study of Indian molluscs (part II). *Journal of the Bombay Natural History Society* 48(3): 543–569.
- Hornell, J. (1951).** Indian molluscs. *Journal of the Bombay Natural History Society* 1–96, pl+1.
- Kelaart, E.F. (1858a).** Descriptions of new and little known species of Ceylon nudibranchiate molluscs and zoophytes. *Journal of the Ceylon Branch of the Royal Asiatic Society* 3(1): 84–139.
- Kelaart, E.F. (1858b).** Description of a new Ceylonese nudibranch. *Annals and Magazine of Natural History* (Series 3), 1(4): 257–258.
- Kelaart, E.F. (1859a).** Descriptions of new and little-known species of Ceylonese nudibranchiate molluscs. *Annals and Magazine of Natural History* (Series 3), 3: 291–304.
- Kelaart, E.F. (1859b).** Descriptions of new and little-known species of Ceylonese nudibranchiate molluscs. *Annals and Magazine of Natural History* (Series 3), 3: 488–496.
- Kelaart, E.F. (1859c).** On some additional species of nudibranchiate molluscs from Ceylon. *Annals and Magazine of Natural History* (Series 3), 4: 267–270.
- Kelaart, E.F. (1883).** New and little known species of Ceylon nudibranchiate molluscs, and zoophytes. *Journal of the Ceylon Branch of the Royal Asiatic Society* 3(9): 76–125.
- Kundu, H.L. (1965).** On the marine fauna of the Gulf of Kutch: Part 3 - Pelecypods. *Journal of the Bombay Natural History Society* 62(2): 84–103.
- Menon, P.K.B., A.K. Dattagupta & D. Dasgupta (1970).** On the marine fauna of the Gulf of Kutch. *Journal of the Bombay Natural History Society* 58(2): 475–494, pls. 1–10.
- Narayanan, K.R. (1968).** On three opisthobranchs from the south-west coast of India. *Journal of Madras Biological Association of India* 10(2): 377–380; figs. 1–2.
- Narayanan, K.R. (1969).** On the opisthobranchiate fauna of the Gulf of Kutch. Proceedings of the Symposium on Mollusca held at Cochin from January 12 to 16, 1968, Symposium Series 3, pt. 1, pp. 189–213; figs. 1–20. *Marine Biological Association of India*, Mandapam Camp, India.
- Narayanan, K.R. (1970).** On a species of the genus *Berthellina* (Opisthobranchia: Notaspidea) of the Gulf of Kutch. *Journal of the Marine Biological Association of India* 12: 210–213.
- Narayanan, K.R. (1971a).** On two doridacean nudibranchs (Mollusca: Gastropoda), from the Gulf of Kutch, new to the

- Indian coast. *Journal of Bombay Natural History Society* 68(1): 280–281.
- Narayanan, K.R. (1971b).** On a species of the genus *Berthellina* (Opisthobranchia: Notaspidea) of the Gulf of Kutch. *Journal Madras Biological Association of India* 12(1–2): 210–212.
- O'Donoghue, C.H. (1932).** Notes on Nudibranchata from southern India. *Proceedings of the Malacological Society of London* (20): 141–166.
- Raghunathan, C., C. Sivaperuman and Ramakrishna (2010).** An account of newly recorded five species of nudibranchs (Opisthobranchia, Gastropoda) in Andaman and Nicobar Islands, pp 283–288. In: Ramakrishna, C. Raghunathan & C. Sivaperuman (eds.). *Recent Trends in Biodiversity of Andaman and Nicobar Islands*, Zoological Survey of India, Kolkata, xxiv+542pp.
- Ramakrishna, C.R. Sreeraj, C. Raghunathan, C. Sivaperuman, J.S. Yogesh Kumar, R. Raghuraman, Titus Immanuel and P.T. Rajan (2010).** Guide to opisthobranchs of Andaman and Nicobar Islands, Zoological Survey of India, Kolkata, 196pp.
- Rao, K.V. (1936).** Morphology of the *Kalinga ornata* (Alder and Hancock). *Records of the Indian Museum* (38): 41–79.
- Rao, K.V. (1952).** *Cuthona adayarensis*, A new Nudibranch (Mollusca: Gastropoda) from Madras. *Journal of the Zoological Society of India, Calcutta* (3): 229–238.
- Rao, K.V. (1961).** On the two opisthobranchiate molluscs, *Placobranchus ocellatus* Hasselt and *Discodoris boholiensis* Bergh from Indian waters not hitherto been recorded. *Journal of the Marine Biological Association of India* 3(1&2): 253–259.
- Rao, K.V. & K. Alagarswami (1960).** An account and the structure of early development of a new species of nudibranchiate gastropod, *Eolidina (Eolidina) mannarensis*. *Journal of the Marine Biological Association of India* 2(1): 6–16.
- Rao, N.V. & K.V.S. Rao (1980).** On a rare nudibranch, *Thordisa crosslandi* Eliot (Mollusca: Dorididae) from the west coast of India. *Bulletin Zoological Survey of India* 2(2–3): 219, pl. IV.
- Rao, K.V., P. Sivadas & L.K. Kumary (1974).** On three rare doridiform nudibranch molluscs from Kavaratti Lagoon, Laccadive Islands. *Journal of the Marine Biological Association of India* 16(1): 113–125.
- Rudman, W.B. (1980).** Aeolid opisthobranch molluscs (Glaucidae) from the Indian Ocean and the south-west Pacific. *Zoological Journal of the Linnean Society* (68): 139–172.
- Satyamurthi, S.T. (1952).** The mollusca of Krusadai Island. 1. Amphineura and Gastropoda. *Bulletin of Madras Government Museum (Natural History)* 1(2): 216–251.
- Sreeraj, C.R., P.T. Rajan, R. Raghukumaran, C. Raghunathan, R. Rajkumar Rajan, Titus Immanuel and Ramakrishna (2010).** On some new records of sea slugs (Class Gastropoda, Sub Class Opisthobranchia) from Andaman and Nicobar Islands, pp. 289–298. In: Ramakrishna, C. Raghunathan & C. Sivaperuman (eds.). *Recent Trends in Biodiversity of Andaman and Nicobar Islands*, Zoological Survey of India, Kolkata, xxiv+542pp
- Valdés, A., E. Mollo & J.A. Ortea (1999).** Two new species of *Chromodoris* (Mollusca, Nudibranchia, Chromodorodidae) from southern India, with a re-description of *Chromodoris trimarginata* (Winckworth, 1946). *Proceedings of the California Academy of Sciences* 51(13): 461–472.

