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ORIGINAL ARTICLE



A rare polyclad genus *Bulaceros* (Platyhelminthes: Polycladida: Pseudocerotidae): new species and new record from Indian coral atolls

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ABSTRACT

The genus *Bulaceros* (Polycladida: Pseudocerotidae) erected by Newman & Cannon (1996) is a rare genus found only in the Pacific Ocean and is known by only one species, *Bulaceros porcellanus* Newman & Cannon, 1996 so far. The present work, based on collection from the Lakshadweep Islands, which are the only coral atolls in India, describes a second species *Bulaceros newcannorum* sp. nov. under this genus and also reports the occurrence of *Bulaceros porcellanus* for the first time from the Indian Ocean. *Bulaceros newcannorum* sp. nov. is described based on external and internal morphology supported with histological studies and photographs of external and internal details. *Bulaceros newcannorum* sp. nov. is characterized by knobbed pseudotentacles with white tips, translucent background with brown gut diverticula, darker medially, irregular white spots on the dorsum, margin of white spots and submarginal band in a mixture of brown and black. This is the first report of the genus *Bulaceros* from the entire Indian Ocean region.

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Introduction

The order Polycladida under phylum Platyhelminthes consists of free living marine flatworms which are known for their extraordinary colours and patterns (especially members under suborder Cotylea). These worms are found from intertidal to greater depths in marine ecosystems such as coral reefs, mangroves and seagrass beds. The family Pseudocerotidae Lang, 1884 under the suborder Cotylea Lang, 1884 comprises eight valid genera, *Acanthozoon* Collingwood, 1876, *Bulaceros* Newman & Cannon, 1996, *Monobiceros* Faubel, 1984, *Nymphozoon* Hayman, 1959, *Phrikoceros* Newman & Cannon, 1996, *Pseudobiceros* Faubel, 1984, *Pseudoceros* Lang, 1994, *Thysanozoon* Grube, 1840 and *Yungia* Lang, 1884. Presently, 64 species of polyclads are reported from Indian waters (Dixit 2018; Dixit et al. 2019; Pitale and Apte 2019) out of which 51 species are under the family Pseudocerotidae, distributed in five genera, *Acanthozoon*, *Phrikoceros*, *Pseudobiceros*, *Pseudoceros* and *Thysanozoon*.

The genus *Bulaceros* which is reported for the first time from Indian waters in the present work was erected by Newman & Cannon (1996) under the family Pseudocerotidae for a species with knobbed pseudotentacles, cerebral eyespots in two clusters, small pharynx with simple folds and small penis

papilla with slightly sclerotized stylet. To this day, the type species, *Bulaceros porcellanus* Newman & Cannon, 1996 remains the only species known in this genus. The present work describes a second species of *Bulaceros*, which was partially described by Newman & Cannon (1996) based only on external morphology. As per the authors, the specimens were extremely fragile and difficult to fix intact, and therefore left undescribed at the time.

Difficulty in collection and preservation of polyclads still pose a great challenge for researchers, therefore in some studies, specimens have been photographed/ documented but not formally described (Newman & Cannon 1996; Newman et al. 2003; Cuadrado et al. 2017). Although many tropical polyclads are brightly coloured and draw scientific interest, they remain under-studied partly due to methodological limitations (Newman et al. 2003). The present work deals with one such case, where the specimen was collected but not completely described (Newman & Cannon 1996) due to methodological difficulties.

During our surveys for polyclads in the Lakshadweep Islands, three specimens of *Bulaceros* sp. were collected, out of which one was lost during fixation while other two remained intact enough to perform histology and to serve as a type specimen for the species. The

presently described species is the second species under the genus *Bulaceros* and is being described 24 years after its original description. *Bulaceros porcellanus* Newman & Cannon, 1996 is also reported for the first time from Indian waters. This study thus extends the distribution of the genus *Bulaceros* and both its species from the Pacific to the Indian Ocean.

Materials and methods

Specimens were collected from intertidal areas of Agatti and Kavaratti Islands (Figure 1) and were photographed by Olympus TG-5 with underwater housing. Animals were fixed in frozen 10% formalin buffered with seawater (modified methodology of Newman and Cannon 2003). Key external morphological characters like cerebral eyes, tentacular eyes, marginal eyes, pseudotentacles, dorsal and ventral surface were photographed under a stereomicroscope (LEICA M80 with MC170HD digital camera) and measurements (length mm × width mm) of fixed specimens (total length and width, distance between mouth, gonopores and sucker) were made. The portions with reproductive structures were dissected out, sectioned serially (7–8 µm), stained with haematoxylin & eosin and photographed under a LEICA DM750 compound microscope with ICC50 camera. All identified materials are deposited in the Referral Centre at Centre for Marine Living Resources and Ecology (CMLRE), Kochi, India. All measurements correspond to the holotype.

Comparative material examined

For *Bulaceros newcannorum* sp. nov.

Bulaceros sp. – QM G210734 (Whole Mount), QM G210735 (Longitudinal Sections) and QM G210736 (Whole Mount) lodged in Queensland Museum, Australia (Figure 2)

Taxonomy

Order Polycladida Lang, 1881

Suborder Cotylea Lang, 1884

Family Pseudocerotidae Lang, 1884

Genus *Bulaceros* Newman & Cannon, 1996

Bulaceros newcannorum sp. nov. Dixit (Figure 3–5)

Material examined

Holotype: One specimen (34 × 16 mm) as serial sections of reproductive region (16 slides) and remainder

of animal in 10% formalin. Collected by S. Dixit, 07.05.2019, from intertidal region opposite the solar power plant, Agatti Island (10°50'16"N, 72°11'06"E), Lakshadweep, India. (Voucher ID- IO/IT/POY/00026) Paratype: One specimen (14 × 10 mm) in 10% formalin. Collected by Sreeraj C.R., 22.02.2020, from cement tripods, near western jetty, Kavaratti Island (10°33'59"N, 72°38'04"E), Lakshadweep, India. (Voucher ID- IO/IT/POY/00027)

Diagnosis

Body translucent with visible brown gut diverticula, darker and raised medially with a faint thin black median line up to 3/4 of body and black mottling in centre region (Figure 3A, B). Irregular white spots of different sizes on dorsum. Margin composed of white spots and submarginal band is mix of brown and black. Pseudotentacles ear-like and small with white tipped knobs (Figure 3D). Cerebral eyes in two clusters.

Description

Live: Body oval and margin slightly ruffled. Body translucent with visible brown gut diverticula like fine meshwork, darker and raised medially with a faint thin black median line upto 3/4 of body and black mottling in centre region. Irregular white spots of different sizes which are not dense and present randomly on dorsum (Figure 3A, B). Margin composed of opaque white spots of variable sizes followed by a submarginal band mix of brown and black. Pseudotentacles brown with some black markings, small, ear-like and with knobbed white tips (Figure 3D). Tentacular eyes scattered on dorsal and ventral side of pseudotentacles (Figure 3D, E). Ventral surface translucent and light brown.

Preserved: Specimen brown (Figure 3C) to yellowish after fixation and very delicate to handle. Pharyngeal mouth, male pore, female pore and sucker are present in mid line on ventral side (Figure 3C). Gonopores are present after pharynx in anterior half of the body while sucker is present at the posterior half of the body. Male and female pores are 1 mm apart, while female pore and sucker are 2.5 mm apart. Pharynx ruffled and simple with six to seven pairs of folds and male pore is situated very near to pharynx. Pharynx is 3.4 mm long and distance between mouth and male pore is 2.6 mm. Female pore is slightly smaller than male pore. Cerebral eyes in two clusters with about 20–25 eyespots per cluster. Pseudotentacular eyes numerous and scattered on dorsal and ventral side. Dorsal epithelium about 40–55 µm while ventral epithelium is thinner than dorsal and

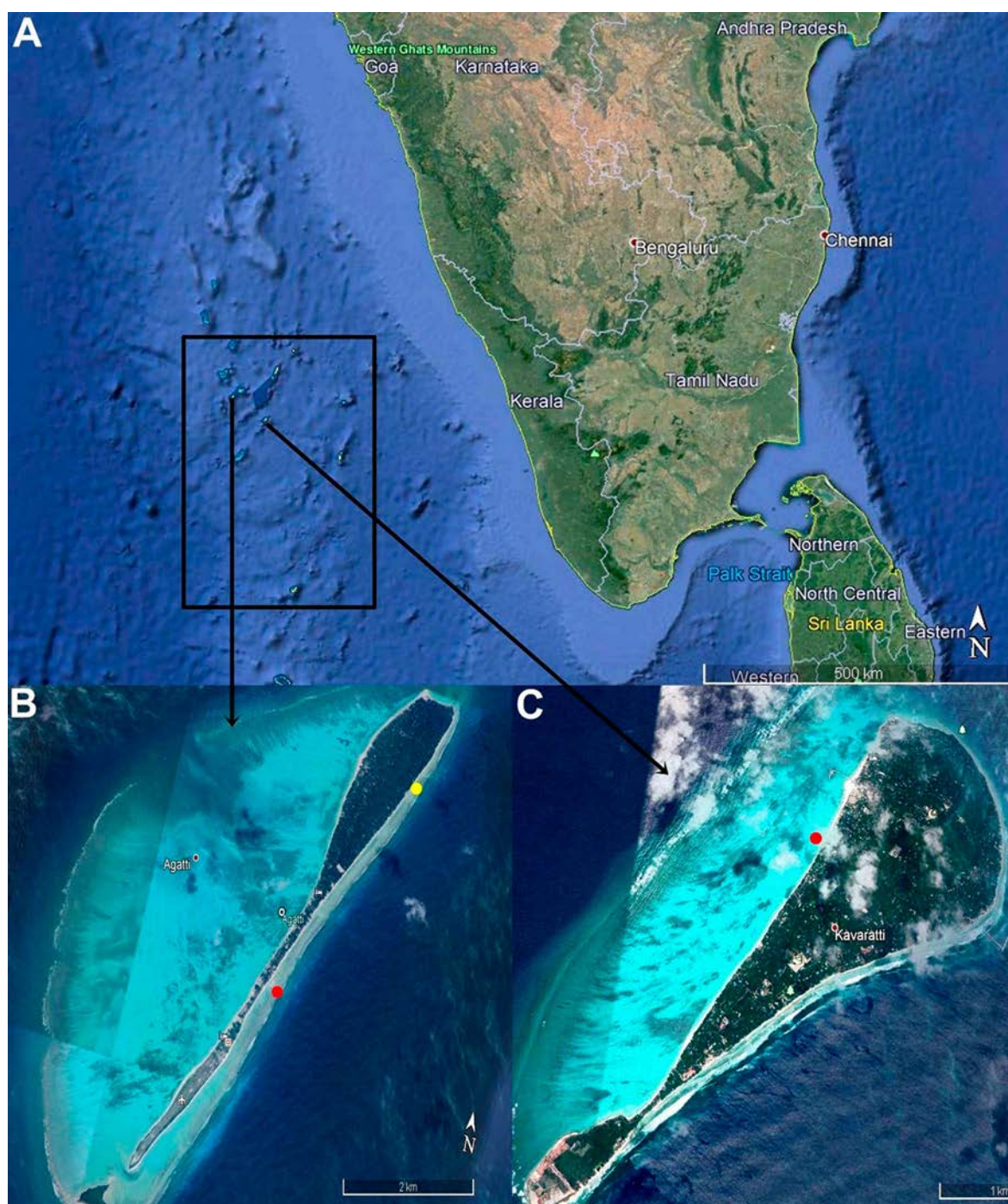


Figure 1. (A) Lakshadweep group of islands (black rectangle) near west coast of southern India; (B) Agatti Island; (C) Kavaratti Island. Collection sites of *Bulaceros newcannorum* sp. nov. – red dots; collection site of *Bulaceros porcellanus* – yellow dot. (Source: Google Earth.)

about 15–20 μm thick. Testes are oriented ventrally while ovaries are present in dorsal regions of the body.

Reproductive system: Male copulatory apparatus single, consists of seminal vesicle, free prostatic vesicle, penis stylet and penis papilla housed in folded male atrium which opens outside via male

pore (Figure 4A, B). An elongated seminal vesicle oriented ventro-posteriorly is present which is about 848 μm long and only 391 μm wide at widest point (Figure 4A). An oblong and thick-walled prostatic vesicle (210 $\times$ 94 μm) is present anterior to seminal vesicle (Figures 4B and 5). Prostatic vesicle has smooth granular epithelial lining which is 12–15 μm

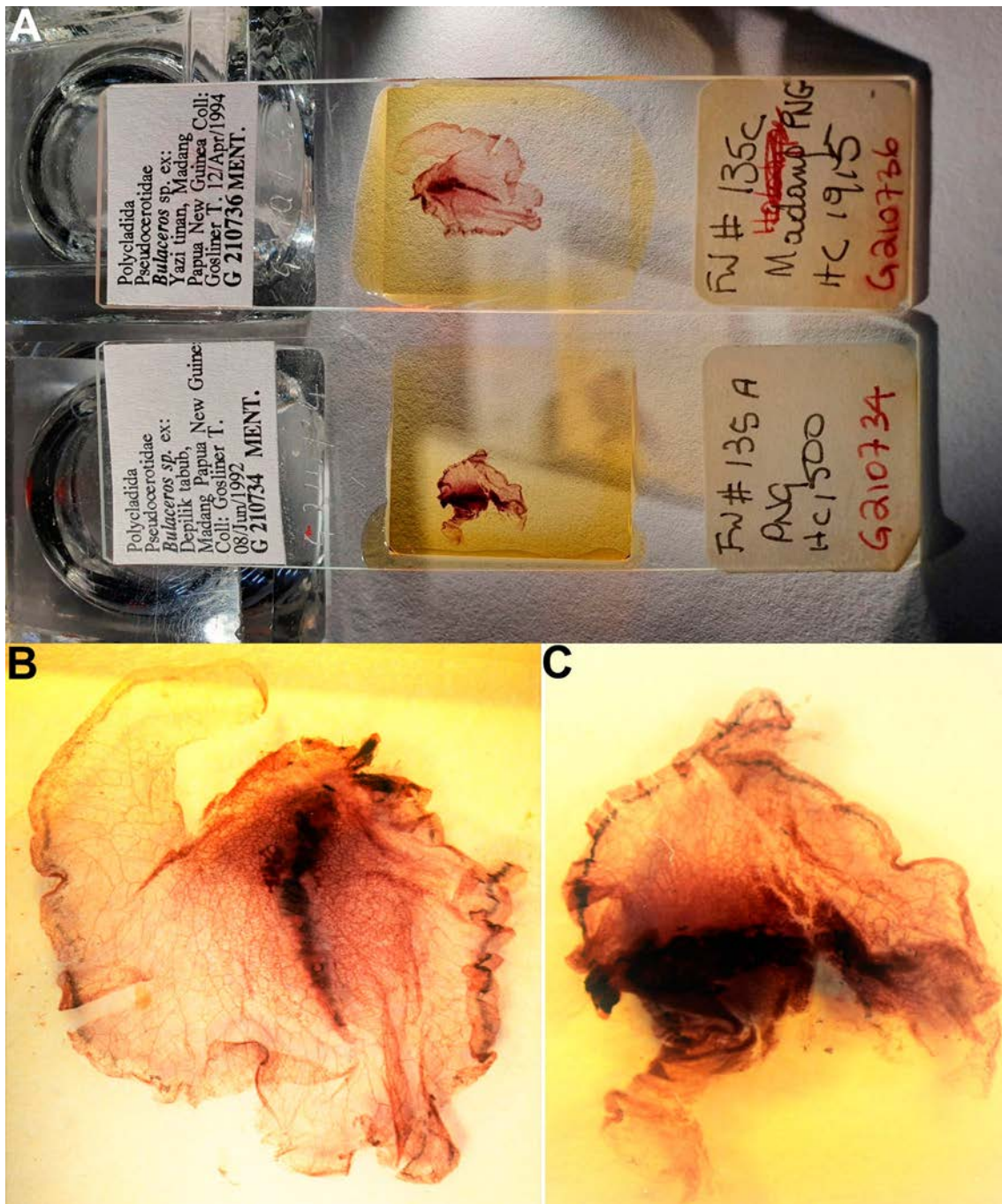


Figure 2. (A) Whole mounts of *Bulaceros* sp. collected from Papua New Guinea lodged in Queensland Museum – dorsal side; (B) QM G210736 – ventral side; (C) QM G210734 – dorsal side.

thick. Male atrium ciliated and wide with many folds (Figure 4A, B) housing a small conical penis papilla (326 μ m) with a short and narrow stylet (60 μ m long) (Figures 4A and 5). Male atrium opens to exterior via male gonopore (Figure 4C).

Female copulatory apparatus consists of oviducts, vagina, cement pouch surrounded by numerous cement glands and female atrium (Figure 4C). The vagina is oriented towards posterior region of

body connecting to oviducts. Vagina opens to a short female atrium via cement pouch which receives secretion from cement glands and female atrium opens to exterior via female pore (Figures 4C and 5).

Type locality

Agatti Island, Lakshadweep, India.

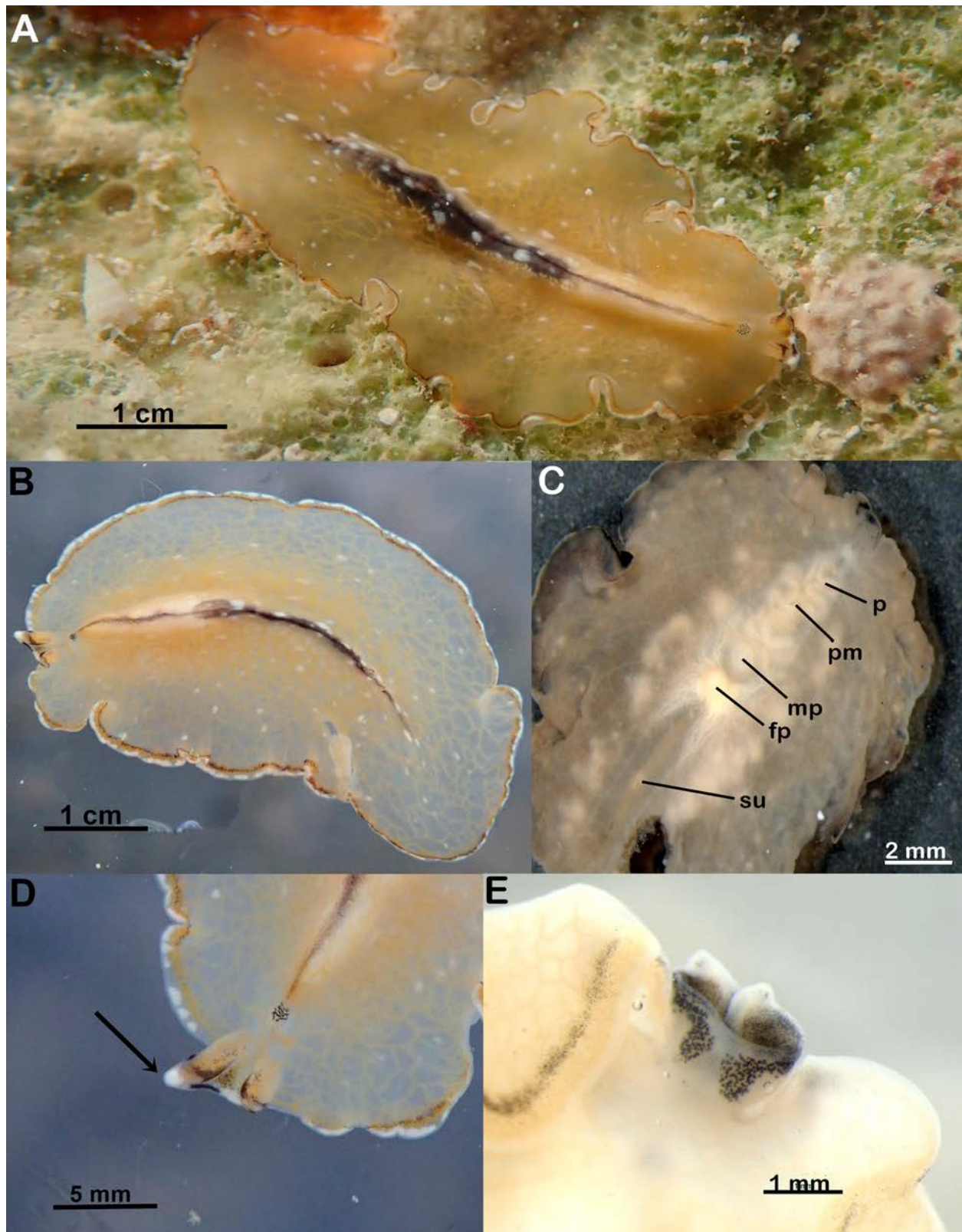


Figure 3. *Bulaceros newcannorum* sp. nov. Holotype (A) *in situ* from Agatti Island; (B) *ex situ* photograph; (C) ventral surface (paratype); (D) pseudotentacle distal knob (arrowhead); (E) scattered ventral pseudotentacular eyes. Abbreviations: fp, female gonopore; mp, male gonopore; p, pharynx; pm, pharyngeal mouth; su, sucker.

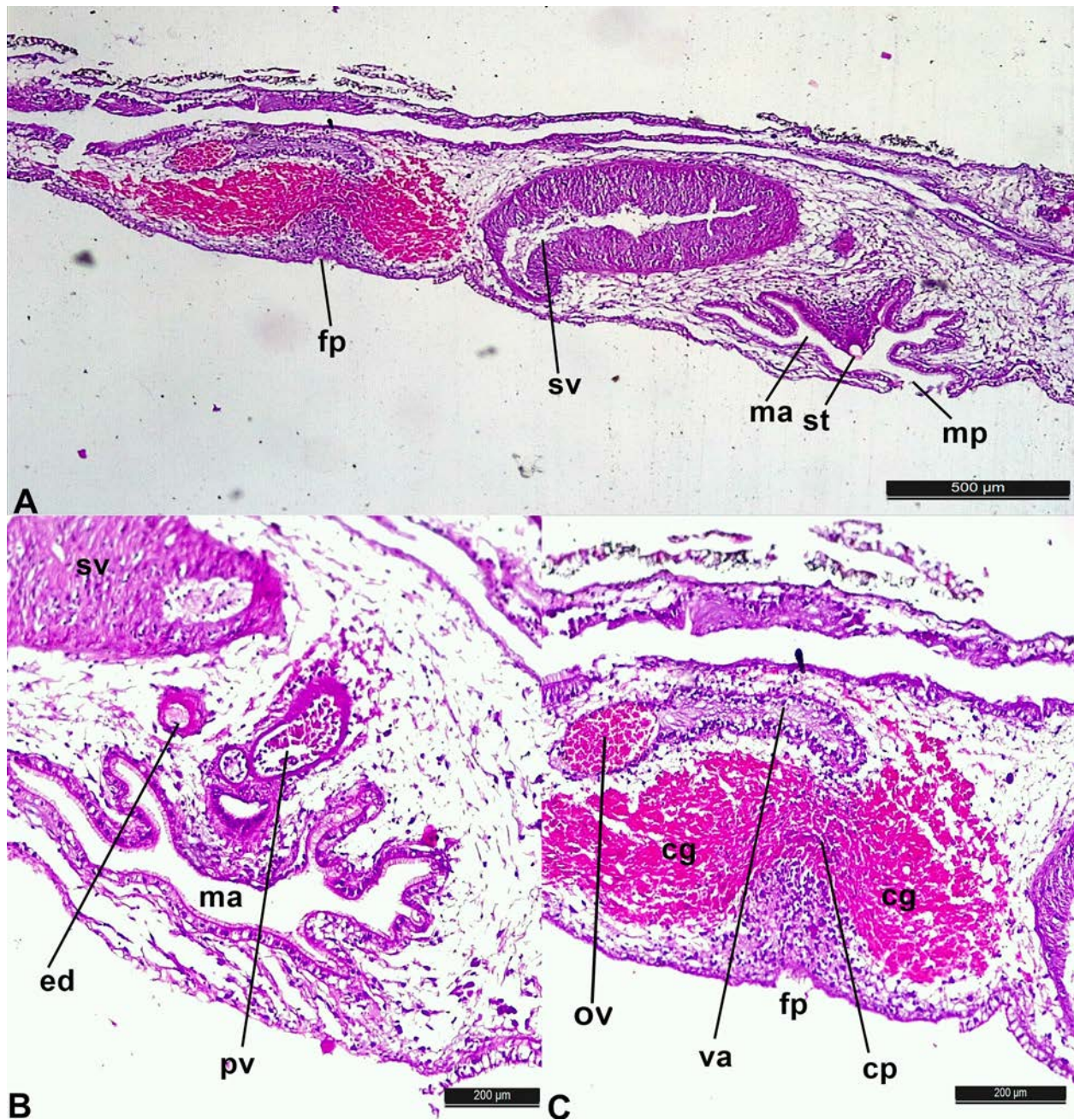


Figure 4. *Bulaceros newcannorum* sp. nov. Holotype (A) sagittal section through male and female reproductive regions; (B) male reproductive system showing prostatic vesicle (pv); (C) female reproductive system. Abbreviations: cg, cement glands; cp, cement pouch; ed, ejaculatory duct; fp, female gonopore; ma, male atrium; mp, male gonopore; ov, oviduct; pv, prostatic vesicle; st, stylet; sv, seminal vesicle; va, vagina. Anterior towards right.

Geographic distribution

Apart from the type locality, this species was also recorded from Madang, Papua New Guinea (Newman & Cannon 1996).

Etymology

The specific name refers to two eminent polycladologists, the late Dr Leslie J. Newman and Dr Lester

Robert Glen Cannon, in honour of their contributions to the taxonomy of Indo-Pacific polyclads, who also reported this species for the first time.

Taxonomic remarks

Presence of ruffled pharynx (with or without complex folds), male copulatory apparatus just behind pharyngeal cavity, free prostatic vesicle (Figure 3B), marginal

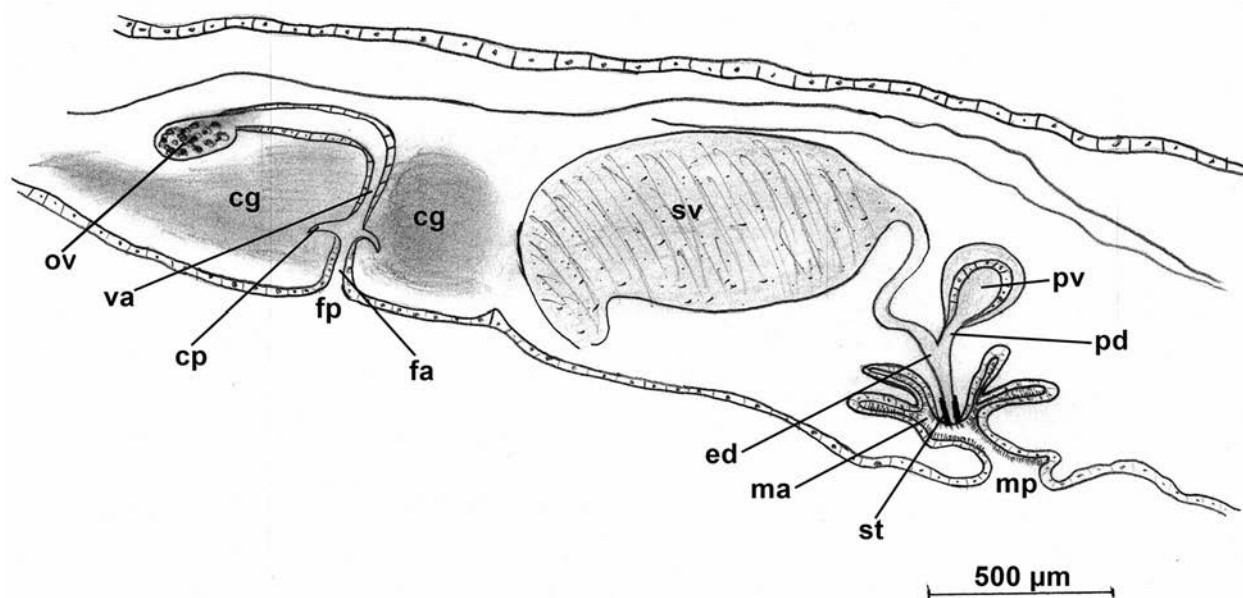


Figure 5. *Bulaceros newcannorum* sp. nov. (Holotype); diagrammatic reconstruction of male and female reproductive systems. Abbreviations: cg, cement glands; cp, cement pouch; ed, ejaculatory duct; fa, female antrium; fp, female gonopore; ma, male antrium; mp, male gonopore; ov, oviduct; pd, prostatic duct; pv, prostatic vesicle; st, stylet; sv, seminal vesicle; va, vagina. Anterior towards right.

tentacles formed by upfolding of anterior margin, centrally located sucker behind female pore (Faubel 1984) places *Bulaceros newcannorum* sp. nov. under family Pseudocerotidae.

Presence of characters such as ear-like pseudotentacles with distal knobs, cerebral eyespot in two clusters, pharynx with simple pharyngeal folds (not complex), scattered pseudotentacular eyes, mouth central, male pore posterior to pharynx, female pore small and sucker in mid-body, small penis papilla with small and slightly sclerotized stylet (Newman & Cannon 1996) place this newly described species under *Bulaceros* Newman & Cannon, 1996.

There is only one valid species reported so far under the genus *Bulaceros*, i.e. *Bulaceros porcellanus* Newman & Cannon, 1996. This species is characterized by white translucent background mottled with white spots and evenly spaced black dots. These characters are completely different from those of the newly described species. Apart from the type species, Newman & Canon (1996) had partially described one more species, designated *Bulaceros* sp. 1 [QM G210734 (WM), QM G210735 (LS) and QM G210736 (WM)], based on external characters alone. The specimens lodged in Queensland Museum as whole mounts appear to be damaged (Figure 2) and the longitudinal serial sections of one specimen were incomplete (Newman & Cannon 1996). The external characters of *Bulaceros newcannorum* sp. nov. match

exactly with *Bulaceros* sp. 1, as inferred from the description of external characters and photograph in Newman & Cannon (1996) and on recent photographs received from Dr Mal Bryant, Collection Manager, Queensland Museum. The species which remained undescribed at the time, due to lack of reproductive structures details, is now described here. As, the only other valid species under the genus *Bulaceros* is not comparable to the present specimens in terms of colouration and pattern, based on the above-mentioned characters and comparisons, we establish *Bulaceros newcannorum* sp. nov. as a new species to science.

***Bulaceros porcellanus* Newman & Cannon, 1996 (Figure 6)**

Material examined: One specimen (21 × 9 mm), 10% formalin. Collected by S. Dixit, 07.11.2018, near CMLRE field research station, Agatti Island (10° 50'73"N, 72°11'34"E), Lakshadweep, India (Voucher ID- IO/IT/POY/00025)

Description

Body small, oval and margin crenulated. Background translucent white with opaque white mottling and white microdots on dorsal surface. Some evenly spaced black spots of different sizes are present on dorsum but absent near margin. Marginal band



Figure 6. *Bulaceros porcellanus*, upper photograph (*in situ*); lower photograph (*ex situ*).

orange brown surrounded by translucent rim with white spots (Figure 6). A small orange coloured blotch is present above cerebral eye clusters. Pseudotentacles small, ear-like with distinct knobs. Ventral surface translucent white.

Geographic distribution

Lakshadweep Islands, India (present study); Australia and Marshall Islands (Newman & Cannon, 2005)

Remarks

Bulaceros porcellanus was first described from Lizard Island, Australia and since been reported from the Marshall Islands (photographic record) only. This is the second physical specimen record of this species since its first description.

Discussion

Three genera under the family Pseudocerotidae – *Pseudoceros*, *Bulaceros* and *Phrikoceros*, show close similarities in terms of internal organization. These genera are differentiated based on external features which require careful examination of the specimens.

The pseudotentacles in *Pseudoceros* are simple folds of the anterior margin while they are knobbed in *Bulaceros* and ruffled in *Phrikoceros*. The pharynx in *Pseudoceros* possesses complex folds (butterfly shaped) while it is simple and with less complex folds in *Bulaceros* and *Phrikoceros*. The cerebral eyespot is horseshoe shaped in *Pseudoceros*, rounded in *Phrikoceros* and in two clusters in *Bulaceros*. The pseudotentacular eyes are arranged in rows in *Pseudoceros*, scattered in *Bulaceros* and clustered in *Phrikoceros*. The remaining genera of Pseudocerotidae can be differentiated based on presence of dorsal papillae (*Acanthozoon* and *Thysaoozon*), presence of two male pores (*Pseudobicerros*), presence of multiple female pores (*Nymphozoon*), two male reproductive systems with common male pore (*Monobicerros*) and presence of intestinal pores opening to exterior (*Yungia*). The genus *Bulaceros* was, until now, reported only from a few locations in the Pacific Ocean, and only based on photographic records excepting the original description (Newman & Cannon 1996). With the present study the presence of this genus is confirmed in the Indian Ocean (Figure 7). Out of the eight genera under family Pseudocerotidae, all but three genera, *Monobicoeros*, *Nymphozoon* and *Yungia* are not reported from the Indian waters. *Monobicerros* and *Yungia* are only reported

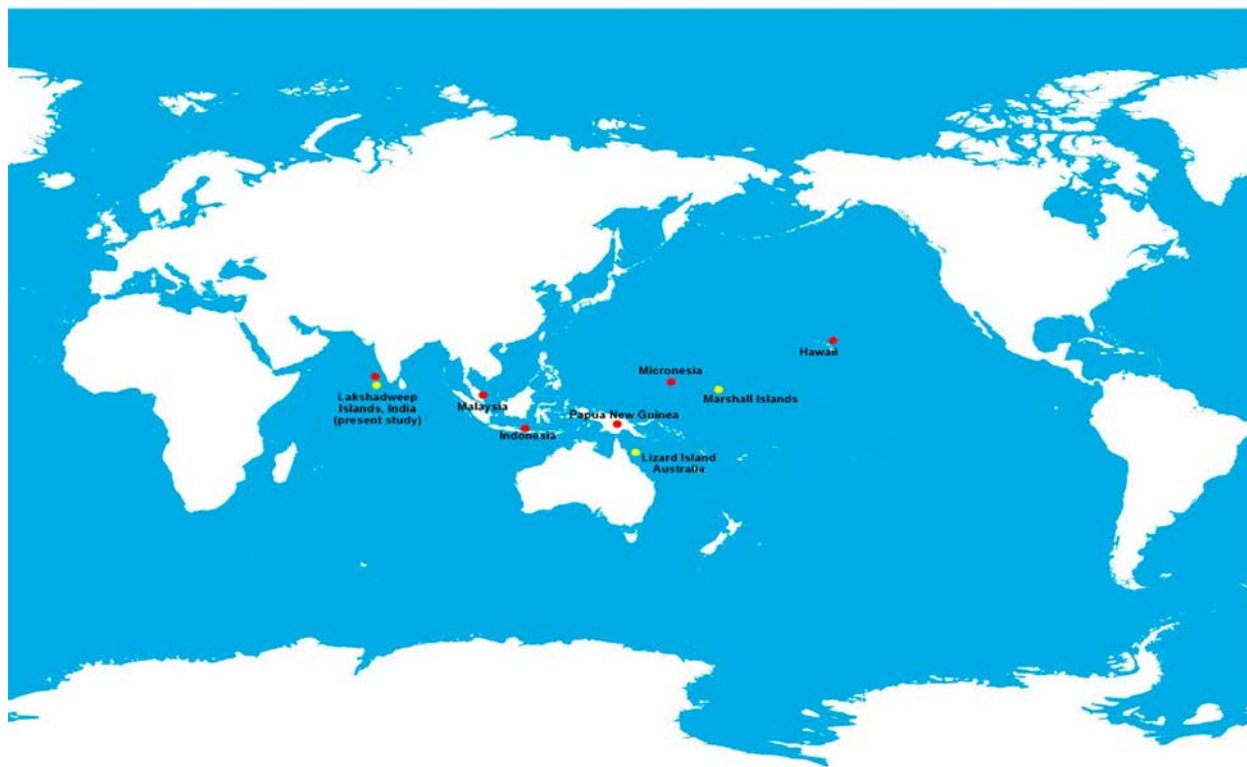


Figure 7. Distribution map of genus *Bulaceros* in Pacific Ocean and Indian Ocean (present study). Red dots – *Bulaceros newcanorum* sp. nov.; yellow dots – *Bulaceros porcellanus*.

from the Mediterranean region, while *Nymphozoon* is reported from Papua New Guinea, Micronesia and Singapore.

The genus *Pseudoceros* is the most populous in the family Pseudocerotidae, while genera like *Bulaceros* and *Monobiceros* are known only by one species so far. Polyclads are considered as one of the most challenging animals to work on, because of their small size, cryptic nature and difficulty in collection and preservation for further studies like microscopy and histology. Based on our experience working with Polyclads specimens from the Lakshadweep Islands for the past few years, we noticed that some species are quite hard to fix intact or flat, even with the existing methodology of using frozen 10% formalin (modified from Newman & Cannon, 2003). Especially, many acotyleans and cotyleans belonging to genera such as *Acanthozoon* and *Bulaceros* were quite hard to fix as they tended to dissolve/break/curl during the process of fixation (personal observation). These limitations in preservation protocols can be speculated as one of the reasons behind the low number of species under certain genera and why many species of polyclads remain undescribed. The importance of good quality photographs of a polyclad in its natural habitat and as well as in lab conditions cannot be neglected, as members of the family Pseudocerotidae are identified based on external characters, colour and colour patterns. Good quality photographs can be kept as records in case the specimens are damaged or lost during preservation. Many good quality photos of *Bulaceros newcannorum* sp. nov. which were mentioned as *Bulaceros* sp. 1 in literature (Newman & Cannon, 1996, 2003, 2005) were instrumental in matching characters of the present specimens and tentative identification up to genus level.

This paper is the result of continuous surveys being undertaken at the Lakshadweep Islands to assess biodiversity of polyclads. Apart from a recent study on polyclads (Dixit et al. 2019) from this archipelago, only two studies were carried out in the past (Laidlaw 1902; Apte and Pitale 2011). This clearly shows that despite being a hotspot of marine faunal biodiversity, these islands have received little attention so far as taxonomic studies on polyclads are concerned. However, serious efforts have been undertaken by the Centre for Marine Living Resources and Ecology (CMLRE) to conduct more studies in these islands, with an emphasis on unexplored atolls. The Lakshadweep are the only coral atolls of the country and need intensive biodiversity studies to reveal the resident reef-associated fauna.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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References

- Apte D, Pitale RD. 2011. New records of polyclad flatworms (Platyhelminthes: Turbellaria) from coral reefs of Lakshadweep Island, India. *Journal of the Bombay Natural History Society*. 108(2):109–113. <http://www.bnhsjournal.org/index.php/bnhs/article/view/156521>.
- Cuadrado D, Moro L, Noreña C. 2017. The polycladida (Platyhelminthes) of the Canary Islands. New genus, species and records. *Zootaxa*. 4312(1):38–68. doi:10.11646/zootaxa.4312.1.2
- Collingwood C. 1876. On thirty-one species of marine planarians, collected partly by the late Dr Kelaart, F.L.S. at Trincomalee, and partly by Dr Collingwood, F.L.S. in the eastern seas. *Transactions of the Linnean Society of London*. 2nd Series: Zoology. 1:83–98. doi:10.1111/j.1096-3642.1876.tb00435.x
- Dixit S. 2018. Taxonomy and distribution of family Pseudocerotidae (Platyhelminthes: Polycladida), Andaman and Nicobar Islands, India [PhD thesis]. Pondicherry University.
- Dixit S, Bayyana S, Manjebrayakat H, Saravanane N, Sudhakar M. 2019. Polyclad fauna of Agatti Island, Lakshadweep, India: new records and description of two new species. *Zootaxa*. 4657(2):246–260. doi:10.11646/zootaxa.4657.2.2

- Faubel A. 1984. The Polycladida, Turbellaria. Proposal and establishment of a new system. Part II. The Cotylea. Mitteilungen aus dem Hamburgischen Zoologischen Museum und Institut. 81:189–259. <https://www.marinespecies.org/aphia.php?p=sourcedetails&id=2053>.
- Grube AE. 1840. Actinien, Echinodermen und Würmer des adriatischen und Mittelmeers, nach eigenen Sammlungen beschrieben. Königsberg: Verlag von J. H. Bon. 92 pp.
- Lang A. 1881. Der Bau von Gunda segmentata und die Verwandtschaft der Plathelminthen mit Coelenteraten und Hirudineen. Mittheilungen aus der Zoologischen Station zu Neapel. 3:187–251. <https://www.biodiversitylibrary.org/page/9679580#page/197/mode/1up>.
- Lang A. 1884. Die Polycladen (Seeplanarien) des Golfes von Neapel und der angrenzenden Meeres-Abschnitte: eine Monographie. Leipzig: Wilhelm Engelmann. 688 pp.
- Laidlaw FF. 1902. The marine Turbellaria with an account of the anatomy of some species. In: Gardiner JS., editor. 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. 1. Cambridge: The University Press; p. 282–312.
- Newman LJ, Cannon LRG. 1996. *Bulaceros*, new genus and *Tytthosoceros*, new genus (Platyhelminthes, Polycladida, Pseudocerotidae) from the great barrier reef, Australia and eastern Papua New Guinea. Raffles Bulletin of Zoology. 44:479–492.
- Newman LJ, Cannon LRG. 2003. Marine flatworms. The world of polyclads. Clayton: CSIRO Publishing. 97 pp. doi:10.1071/9780643101197
- Newman LJ, Cannon LRG. 2005. Fabulous flatworms: a guide to marine polyclads. Version 1. Clayton: ABRS & CSIRO Publishing. CD-ROM.
- Newman LJ, Paulay G, Williams R. 2003. Checklist of polyclad flatworms (Platyhelminthes) from Micronesian coral reefs. Micronesica. 35-36:189–199. <https://micronesica.org/sites/default/files/10-flatworms.pdf>.
- Pitale R, Apte D. 2019. Intertidal Euryleptid polyclads and description of a new Stylostomum Lang, 1884 from Maharashtra, India. Zootaxa. 4652(2):317–339. doi:10.11646/zootaxa.4652.2.5