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## COMMUNICATION

### MAPPING OCTOCORAL (ANTHOZOA: OCTOCORALLIA) RESEARCH IN ASIA, WITH PARTICULAR REFERENCE TO THE INDIAN SUBCONTINENT: TRENDS, CHALLENGES, AND OPPORTUNITIES

Ghosh Ramvilas, Kannan Shalu, Rajeev Raghavan & Kutty Ranjeet

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## MAPPING OCTOCORAL (ANTHOZOA: OCTOCORALLIA) RESEARCH IN ASIA, WITH PARTICULAR REFERENCE TO THE INDIAN SUBCONTINENT: TRENDS, CHALLENGES, AND OPPORTUNITIES



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**Abstract:** Octocorallia (Cnidaria, Anthozoa) comprising over 3,600 nominal species within three orders, Alcyonacea, Helioporacea and Pennatulacea, is one of the most poorly known groups of marine invertebrates. Half of known octocoral species occur in the Indo-Pacific, but not much is understood about research efforts and outputs in this region, particularly in the Asian context. A review of the literature on Asian octocorals during a 40-year period from 1978 to 2018 revealed that most research was concentrated in particular regions/countries. An analysis of research originating from India indicated several issues, including low quality data and local taxonomic impediment. This paper examines the general trends and geographic disparity in Asian octocoral research over the past four decades, analyses the extent and source of such disparity by drawing parallels between India and the rest of Asia, and provides recommendations for improving octocoral studies in the region.

**Keywords:** India, Indian Ocean, marine invertebrates, sea fans, soft corals, taxonomy

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**Author contribution:** RG, RR and KR conceptualized and designed the work. RG and KS collected and analysed the data. RG, RR and KR wrote the manuscript.

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## INTRODUCTION

Ocean life has been explored for millennia, with Aristotle's work of the 3<sup>rd</sup> Century BC on European marine biota being one of the earliest (Coll et al. 2010). Nevertheless, a large proportion of the world's marine biodiversity remains unknown (Mora et al. 2011). Knowledge of the extent and magnitude of this biodiversity (particularly lower microscopic forms) has been hindered by uneven sampling efforts and a shortfall in taxonomic expertise required for documentation (Wilson 2017). Octocorals (Cnidaria, Anthozoa), characterized by the presence of eight tentacles surrounding the mouth of the polyp, comprise a diverse group of marine organisms which includes blue corals, soft corals, sea fans and sea whips (gorgonians) and sea pens (Fabricius & Alderslade 2001). They are conspicuous members of coral reefs, often forming the frontiers (Steiner et al. 2018). They are also distributed over a broad range of bathymetry ranging from intertidal to the deep waters, and in some regions octocorals rival hard corals in biomass, abundance and diversity (Perez et al. 2016).

Octocorallia currently comprises over 3,649 nominal species within three orders, Alcyonacea, Helioporacea, and Pennatulacea (Daly et al. 2007; WoRMS 2019). They are however, one of the most poorly known groups of marine invertebrates, whose taxonomy is in a flux as a result of insufficient taxonomic expertise, high levels of homoplasy and lack of distinct diagnostic characters (except colony morphology and sclerite characteristics) that makes identification a complex affair (Perez et al. 2016). Further, missing/lost 'type material', inadequate species descriptions from the 19<sup>th</sup> and 20<sup>th</sup> century, and the likelihood of hundreds of undescribed species necessitate the reinforcement and acceleration of octocoral research, especially extensive taxonomic revisions for many alcyonacean genera (Daly et al. 2007). Despite their prominent worldwide diversity, only forty species have been assessed for the IUCN Red List of Threatened Species (IUCN 2019), highlighting the need for expanding and improving efforts for global and regional conservation prioritization (see examples Bramanti et al. 2009; Maldonado et al. 2013; Althaus et al. 2017).

Seventy per cent of known octocoral species occur in the Indo-Pacific (Perez et al. 2016), yet the region has been classified as 'data-poor' for octocorals (Bayer 1981). Though knowledge on taxonomy, diversity and distribution of octocorals in the larger Indo-Pacific region has improved substantially, many areas, e.g.,

the Indo-West Pacific (which is included in Asia), are still considered problematic when compared to the Mediterranean and Atlantic waters (Bayer 2002).

Based on this affirmation, we undertook a systematic review of the published literature on diversity and taxonomy of Asian octocorals (i.e., publications on octocorals reported from Asia published by both Asian and non-Asians) during a 40-year period between 1978 and 2018, to better understand the trends, status and regional inclinations of such studies. For example, despite having high levels of marine diversity (Tittensor et al. 2010) and two centuries of marine diversity inventories, comprehensive data on octocorals in and around the Indian subcontinent is extremely poor when compared to other groups of cnidaria (e.g., scleractinian corals and siphonophores; Venkataraman & Wafar 2005). In this background, we: (i) examine the general trends and geographic unevenness (if any) in Asian octocoral research, (ii) analyze the extent and source of such biases in the octocoral research arena by drawing parallels between India and the rest of Asia, and (iii) provide recommendations for improving octocoral diversity and taxonomic studies in the Indian region.

## METHODS

Primary literature (concerning Asian octocorals) published during the period, 1978 to 2018 was extracted from Google Scholar™ using the following keywords: (octocorals OR Octocorallia OR Alcyonacea OR Helioporacea OR Gorgonacea OR Pennatulacea OR Stolonifera OR Telestacea OR Gorgonian OR Gorgoniden OR Alcyonarien OR Octcorallien OR Penatulaceen OR 'soft corals' OR gorgonian OR 'sea pen' OR 'sea fan' OR 'sea whip') AND (Asia OR Japan OR Israel OR Iran OR Indonesia OR Vietnam etc.) AND (diversity OR distribution OR 'species description' OR taxonomy OR 'new species' OR 'new genus' OR 'new family'). More than 2,000 search results were manually screened to extract papers on 'diversity and taxonomy'. Based on the degree of relevance, individual papers were then eliminated by 'title' or 'abstract' alone, or by accessing the entire paper.

Similar boolean operators were used to extract papers on octocoral research in India, substituting the second and third set of keywords with India AND diversity OR distribution OR 'species description' OR taxonomy OR 'new species' OR 'new genus' OR 'new family' OR bioactivity OR pharmaceutical OR 'bioactive compounds' OR policy OR conservation OR ecology OR 'animal

assemblage' OR 'animal association'; to understand the history and trend of Indian octocoral research. To ensure maximum inclusion of Indian papers, an explicit time scale was not specified, and careful cross-references were also made to consider unpublished proceedings, theses, library records etc. Only those publications supported by empirical field data (quantitative field surveys, voucher specimens, photographs) on any one of the following topics: diversity, distribution, taxonomic works such as revisions, species/generic description, nomenclatural acts and focused on Asia, or any study involving octocorals in the case of India, were included. Only peer-reviewed journal articles were considered, to maintain both consistency and quality of data. We recorded the year and country of publishing, author names (national and international separately), nationality of non-Indian authors and the type and name of the journal. In addition, we also assessed the octocoral 'diversity and taxonomic' publications from over 22 Asian maritime countries/islands excluding India for the past 40 years (1978–2018) to compare geographical trends.

For this paper, a 'taxonomic expert' is defined using a slight modification of the broader definition of Convention on Biological Diversity (CBD), as 'a person with good expertise and extensive knowledge on octocorals who is/was active for 10 years or more and/or has published more than one taxonomic paper during the last four decades' (Haas & Häuser 2005). A 'peer-reviewed publication' is defined as one published in a journal indexed in either the Web of Science™, SCOPUS, or Google Scholar™ but excluding 'predatory open-access journals' (Bohannon 2013).

## RESULTS AND DISCUSSION

### a. Forty years of octocoral studies (taxonomy and diversity) in Asia

The resulting list (n=205) indicates that nearly 40% (n=78) of the published literature on octocoral diversity in Asia originates from the Far East (Japan, Taiwan, Hong Kong, Russia, Korea, and China) (Figure 1), with Japan contributing the greatest share (n=29) of publications, and the highest number of newly described species (n=29; from 10 description papers). Nearly 85% of the new species descriptions were carried out by foreign researchers (non-Asians/researchers not from their home country; n=33) followed by the combination of national and foreign researchers (n=18). The top 10 scientists/taxonomic experts (Asian or otherwise)

together account for over 80% of the total number of species descriptions from the Asian waters (Figure 2). Thus, apart from Japan, Israel and Iran, the contribution of Asian researchers to octocoral taxonomy during a 40-year period (1978–2018) is proportionally low, indicating a shortfall of local taxonomic expertise in the region. Most species descriptions were made from countries along the Red Sea and in West Asia (n=77), followed by the Far East including the seas of Japan, Taiwan and Hong Kong (n=46). The least number of species were described from southeastern Asia (n=30) despite this being a region of high endemism and biodiversity, and from south Asia (n=11, including India n=8).

From 1978 to 2018, India recorded over 65 publications on octocoral diversity and distribution (including occurrence and distribution reports, taxonomy, and new records); of which only 28 appeared in peer-reviewed journals. The rest include books/book chapters/reports (n=23), posters/pre-prints/conference papers (n=4) and predatory or dubious publications (n=10). Though the higher number of papers is a result of many studies from Japan or other Asian countries with high numbers of octocoral studies (Taiwan, Singapore, and Indonesia), issues such as poor-quality publications and ambiguous diversity assessments have impeded the progress of octocoral studies in India (also see sections below). Also, despite the large number of publications, only five dealt with new species descriptions. Foreign authors were involved in all the (currently valid) species descriptions (n=8) from three publications, while those species described by Indian authors (n=57) from two publications show no records in either Zoobank or in WoRMS.

Costello et al. (2013a) noted an overall increase in the number of taxonomists (for all taxa) in Asia, but the data on octocorals do not reflect this. Nevertheless, discovering and naming new octocoral species alone will not solve the issue of biodiversity assessment and estimation for this group, since the majority of octocoral genera need extensive taxonomic studies (i.e., re-descriptions and revisions) (Daly et al. 2007). A positive trend of increasing numbers of young researchers working on taxonomy and systematics of octocorals points to an encouraging future for this field of research (Williams 2018).

### b. History and trends in Indian octocoral research

Octocoral research in India dates to the late 19<sup>th</sup> Century, followed by 100 years of mostly exploratory research that resulted in publications on taxonomy, diversity and distributions. A critical review of 193

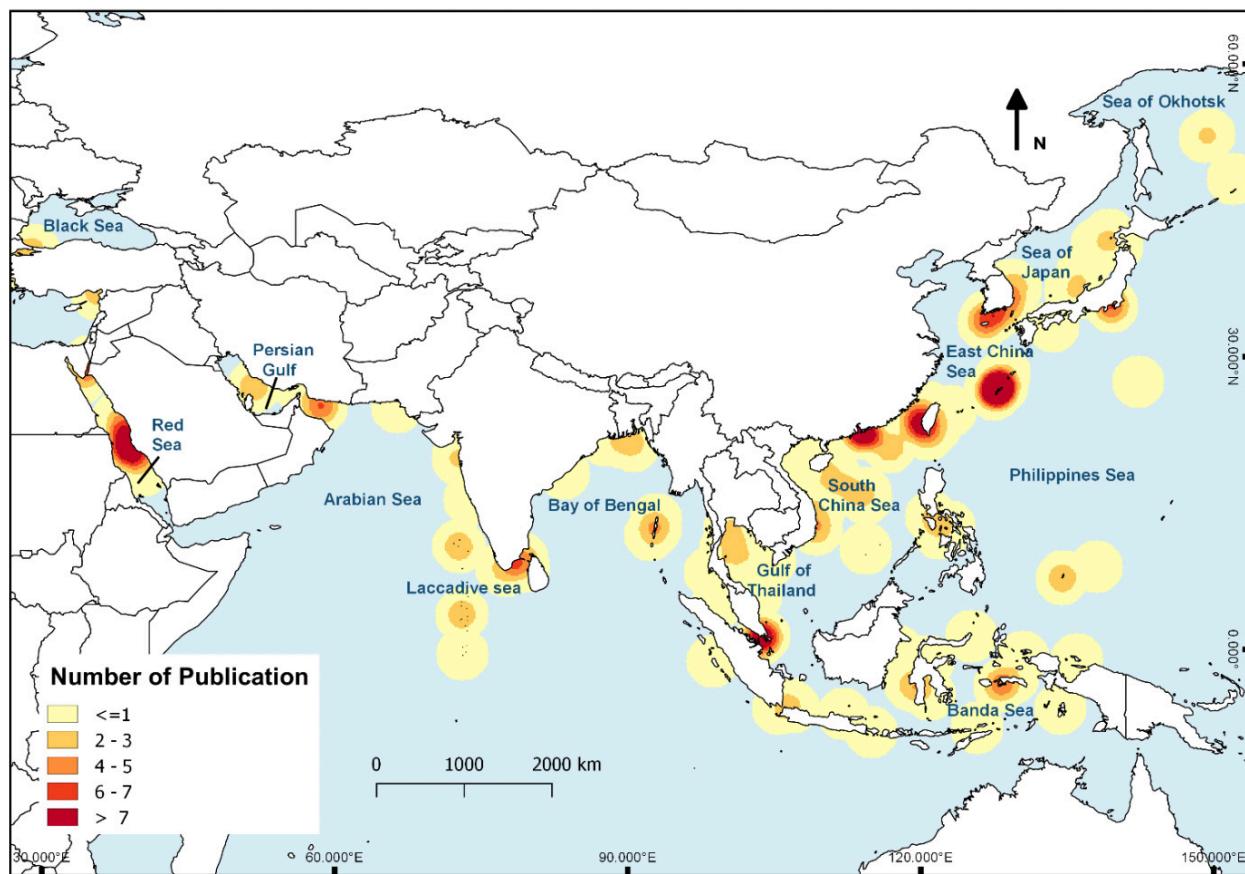


Figure 1. Geographical patterns of octocoral research in Asia from 1978 to 2018.

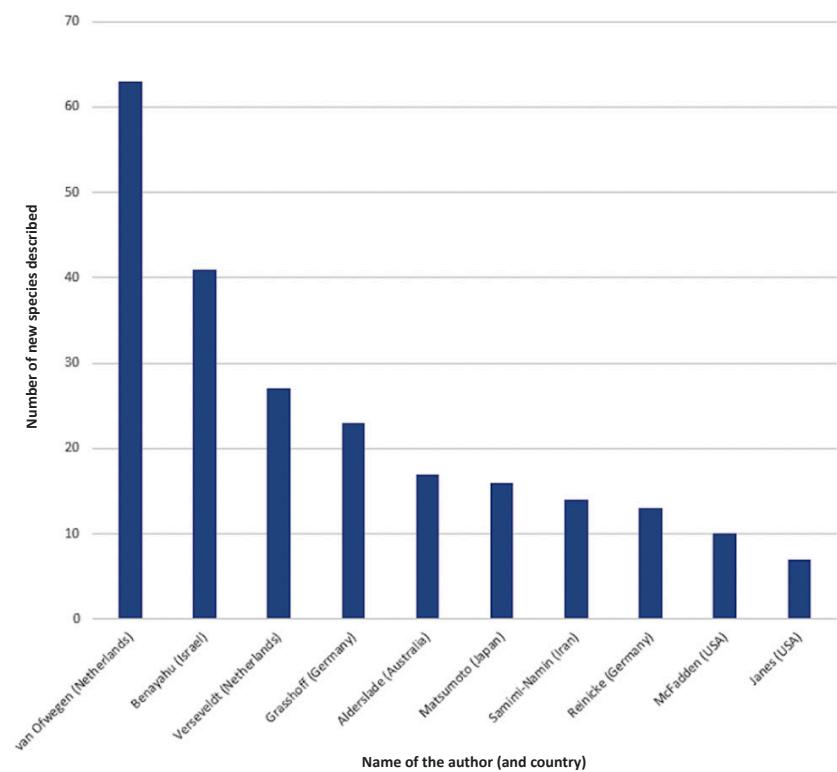


Figure 2. Contribution of top 10 authors in new species discoveries (Asian octocorals) from 1978 to 2018.

published and unpublished (e.g., theses, reports, newsletters, and posters) works on octocorals based on primary data/observations revealed that more than two-thirds have focused on ‘taxonomy and diversity’ and ‘bioactivity’ (Figure 3). Despite several publications on diversity and distribution of octocorals, taxonomic ambiguities and in several cases erroneous and unvalidated records of species have hampered the progress of octocoral research in India. Publications under the ‘taxonomy and diversity’ section are largely dominated by simple diversity and distribution (i.e., occurrence) studies, which in many cases are trivial and insignificant. Interestingly, the number of published ‘taxonomic papers’ (related to a taxonomic or nomenclatural act) is significantly less compared to those in ‘taxonomy and diversity,’ and the majority of such research from Indian waters was carried out by western researchers in the early 20<sup>th</sup> Century, as part of colonial natural history expeditions and investigations. Of this modest proportion of ‘taxonomic papers’, all but two involve foreign researchers, or a combination of both foreign and Indian researchers.

### c. Publication trends in octocoral research in India – Quality vs Mediocrity

Good quality, peer-reviewed and publicly accessible biodiversity data can influence the reliability of communicating management and conservation policies and improve societal benefits (Costello et al. 2013b). Octocoral research in India has been scattered in several publication domains. While the majority of octocoral related publications are peer-reviewed (including those in journals), an equal number of mediocre publications in the form of grey literature and papers in predatory

journals (as defined by Jeffrey Beall; see <https://beallslist.weebly.com/>) are a major concern for the advancement of octocoral research in India. The highest number of such publications have appeared recently (2000 to 2018), coinciding with the generally increased use of predatory journals by Indian scientists (see Raghavan et al. 2015). Since the year 2000, over 12 publications including those on diversity (checklist, distribution records), bioactivity and ecology have appeared in various predatory journals. Taxonomic research published after 1991 (except Williams & Vennam (2001)) has appeared mostly in predatory outlets or is in the form of mediocre publications circulated in single institutions/libraries, usually inaccessible to general public or academics, and in most cases containing invalid records. For instance, a monograph on gorgonians (Fernando 2011) has very limited circulation and most vouchers/specimens, including type material, is inaccessible to researchers (Ramvilas Ghosh pers. obs. 20.vii.2018), which contravenes the Recommendation 72F of the International Code of Zoological Nomenclature (ICZN). Similarly, a checklist on gorgonians by Kumar and Raghunathan in 2015, probably the only recent compilation of gorgonian fauna from India, has appeared in a predatory journal questioning the authenticity and quality of the data.

Scientific misconduct, in particular, plagiarism, has become a major menace in the Indian scientific and academic circles (see Raghavan et al. 2013; Amos 2014) and octocoral studies from the subcontinent are no different. “For example, it was noted that Rao & Devi’s (2003) paper on the soft corals of the Andaman Islands is a blatant example of plagiarism. The authors describe over 50 species and illustrate 47 of these, each with a figure containing numerous drawings of sclerites,

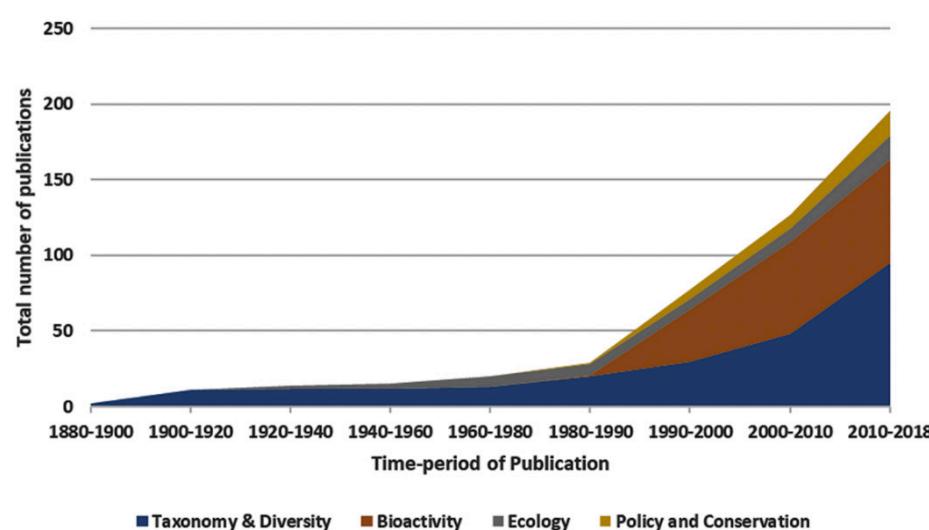


Figure 3. Historical shifts and bias associated with octocoral research in India.

with every single drawing hand-copied, with slight alterations, from the originals of Vereseveldt (1980, 1982, 1983), primarily focused on his revisions of *Lobophytum*, *Sarcophyton* and *Sinularia*. Similarly, Rao & Devi's figures of *Lobophytum variatum* on page 34 are overtly copied from Vereseveldt (1983)" (Phil Alderslade pers. comm. 09.i.2019).

#### **d. Publication trends in octocoral research in India – Regional biases**

Octocoral publications in India to date have been subject to regional inclinations, a trend that is similar to the whole of Asia. Much of the research focus has been on the southeastern coast (n=66), particularly in the Gulf of Mannar, and very little work has been carried out along the eastern coast of India (n=11). Between the island territories, higher numbers of publications have originated from the Andaman & Nicobar Islands (n=50), compared to Lakshadweep (n=16). The coastal and deeper waters off the southwestern, northwestern & eastern coasts, and the Lakshadweep Islands require extensive exploration and systematic taxonomic inventories to improve and contribute to the nation-wide understanding of octocoral diversity and distribution.

The absence of scientific institutions in some parts of the country (e.g., Lakshadweep) and the concentration of many institutions (both private and government) and museums in areas like the Gulf of Mannar could be the reason for the regional disparity in the studies of octocorals. But when considering cnidarian fauna in general, these regional disparities become very distinct for octocorals. For instance, comprehensive accounts on the cnidarian diversity are available for Scleractinia (Pillai 1991), Siphonophora (Daniel 1985), and Scyphomedusae (Chakrapany 1984). Also, inclusive data are available for hard corals (Scleractinia) from all major reef areas including mainland and the island territories (Venkataraman & Wafar 2005), so there must be another reason that octocorals have received less attention. Incidentally, scleractinian corals and coral dominated reefs receive much funding, and are considered of global significance due to their biodiversity and apparent vulnerability when compared to other marine ecosystems (Brooks et al. 2006).

We do not contend the fact that octocorals have never received scientific attention or research priority in India. In India, octocorals were heavily sought after for their bioactivity during the 1980s, however, most of the research was undertaken only to the level of extraction and chemical analysis, with no resulting industrial applications (Raveendran et al. 2011), which may have

contributed (among other factors) to the current lack of interest in this fauna.

Even though regional accounts on the diversity of octocorals are available, most of them tend to be unreliable in terms of data-quality. "For instance, a paper on the octocorals from the Andaman & Nicobar Islands (Kumar et al. 2014) bases virtually all of the identifications on Grasshoff's (1999) monograph on the gorgonians of New Caledonia, which is a very popular book among Indian octocoral workers, as it has colored underwater images. But in the paper (Kumar et al. 2014), it is obvious that numerous colony pictures they present do not look like the actual species figured by Grasshoff (1999), and moreover as sclerites are an essential taxonomic character, the lack of illustrations renders it impossible for the readers to judge, and the authors to prove that the species are as claimed. Interestingly, since the publication of Grasshoff's (1999) monograph, many species previously considered to be endemic to New Caledonia have been recorded from the Andaman & Nicobar Islands - mostly dubious claims" (Phil Alderslade pers. comm. 09.i.2019).

#### **e. The paradigm of species diversity, museums and specimens**

In the context of taxonomic uncertainty, there is a high likelihood of underestimations or overestimations of Indian octocoral diversity especially in the case of gorgonians. Most gorgonian genera, and in particular *Junceella* and *Acanthomuricea* (reported from the 'Investigator' expedition) need considerable revision using an integrative approach and using modern molecular tools. With a limited amount of taxonomic expertise and capacity in India, the identity of many gorgonian species has been restricted to the generic level (Mary & Sluka 2014).

Author and date misnomers are yet another problem creating confusions in octocoral taxonomic data. For example, *Trimuricea reticulata* Gordon, 1926 mentioned in WoRMS (2019) and Global Biodiversity Information Facility (2019) should actually be *Trimuricea reticulata* (Thomson & Simpson, 1909) (see Samimi-Namin & van Ofwegen 2016). This type of outdated and obsolete information on species can be seen in several Indian checklists pertaining to octocorals. For example, both Venkataraman et al. (2004) and Thomas (1996) have used names for ellisellid genera (e.g., *Gorgonella*, *Scirpearia*) that have not been used by taxonomists for many decades. It is notable that regional checklists of octocorals from India (except Tudu et al. 2018 for sea pens) that contain outdated or erroneous records, are

mostly published in poor-quality publications mostly without any rigorous peer-review, or in predatory journals.

Many specimens described from the Investigator expedition and currently housed in the invertebrate collections of the Zoological Survey of India (ZSI), Kolkata, "need re-examination and extensive re-evaluation (Phil Alderslade pers. comm. 09.i.2019). But there are enormous difficulties in accessing these specimens (see, for example, Samimi-Namin & van Ofwegen 2016), which reflects an appalling attitude of the regulating authorities. Issues regarding the difficulty, or even impossibility, of accessing these specimens has resonated around the global taxonomic community for numerous decades. "Indian biodiversity policies restrict the free exchange of specimens to overseas scientists and their institutions regardless of their reputation, and Indian scientists are also finding it increasingly difficult to access the museums of the Zoological Survey of India. Unless authorities change this dismaying situation and encourage international collaboration and allow Indian taxonomists the same kind of museum access that their overseas counterparts experience, genuine taxonomic research on Indian octocorals, and many other marine taxonomic groups, will continue to stagnate biodiversity documentation in India. This will also result in sub-standard and poorly compiled research reports as is occurring in the parallel case with scleractinian corals" (Phil Alderslade pers. comm. 09.i.2019).

Type material of many species collected from Indian waters by Indian and non-Indian expeditions (see examples in Vereseveldt 1980; van Ofwegen 1990) are housed in foreign museums and accessing these types via loans is a 'kafkaesque' situation due to the National Biodiversity Authority (NBA) restrictions under the pretext of Biological Diversity Act (2002) and Biological Diversity Rules (2004) (see NBA, 2004). Thus, the lack of adequate taxonomic expertise, inaccessible types and voucher specimens at Indian museums and institutions, and expenses associated with visiting foreign museums where many types are housed, further delays the opportunity to rectify the many erroneous records in the Indian octocoral literature.

#### **f. Opportunities and challenges**

To a considerable extent, the issues pertaining to octocoral research discussed here can be solved through international and inter-institutional collaborations, a key strategy followed by countries like the United States of America which is a leader in global biodiversity documentation and research (Liu et al. 2011). As an

example, in the case of octocoral-related taxonomic publications from Japan, Taiwan, Indonesia, and Israel (the largest contributors to such studies on Asian octocorals), international collaboration has not only enabled research results to be published in reputed journals, but also helped develop in-country capacity and taxonomic expertise supporting local researchers to document their octocoral diversity and independently publish their research results. Another critical impediment in many biodiversity-rich countries including India are the national regulations formulated under the pretext of the Convention on Biological Diversity (CBD), restricting biodiversity research of native scientists and discouraging international collaborations (Prathapan et al. 2018). As argued by Prathapan et al. (2018), there is no monopolistic situation in which a single country can identify all taxa, and none of the aims envisaged by CBD can be met unless scientists have access to the resources they wish to study and share with and involve the expertise of other countries. Similarly, Madhusudan et al. (2006) points out a distressing trend across India where researchers and scientists are refused entry into wildlife reserves (marine protected areas in this context), denying them opportunity to conduct scientific research that would actually inform the authorities what organisms inhabit these areas. Coupled with this, legislation like the Indian Wildlife Protection Act, 1972 (WPA 1972), prompts a poignant rhetoric in octocoral research. For example, in the case of gorgonians (protected under Schedule 1 of the Indian Wildlife Protection Act), the legislation has resulted in the restriction of sample collections and most exasperatingly the delay in getting research permissions to work on these taxa.

#### **OPPORTUNITIES AND RECOMMENDATIONS**

Given the above-mentioned issues and complexities in advancing the field of octocoral research in India, we suggest the following recommendations.

##### **Convention on Biological Diversity (CBD), National legislations, and Research**

Convention on Biological Diversity's Access and Benefit Sharing rules and the Nagoya Protocol (NP) obliges all committed parties including India, to develop necessary policies to foster equitable sharing of genetic resource and benefits arising from them (Buck & Hamilton 2011). But, despite several advancement in policies and management strategies, it is highly unlikely

that the 'Aichi Biodiversity Targets' approved under the patronage of CBD can achieve much of an improvement in the state of biodiversity knowledge by 2020, particularly in the marine realm (Tittensor et al. 2014; Global Biodiversity Outlook 4 2014). The research community, undeniably the stakeholder most affected by the Nagoya Protocol, and CBD's Access and Benefit Sharing rules, are concerned by this state of affairs because Article 8(a) of Nagoya Protocol was formulated to 'promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries' (Buck & Hamilton 2011; CBD 2011). Therefore, to foster octocoral research in India, the restriction to the exchange of specimens for non-commercial, taxonomic and biodiversity research, arising due to national regimes under the misguided interpretation of CBD, should be objectively and urgently addressed. Perhaps placing a separate clause in the CBD accord to give special status to fundamental and non-commercial science, like taxonomy, for mutual exchange of data/specimens between institutions would allay the concerns of other stakeholders and reduce the complexity in undertaking biodiversity research (Prathapan et al. 2018). Similarly, national legislation like the Indian Wildlife Protection Act, 1972, and added amendments, which are meant to protect wild animals, should be made far less restrictive for octocorals as there is no viable commercial exploitation and the current situation hinders what little research is associated with them (e.g., all gorgonians). At present, the restriction limits sample collection and prohibits the exchange of specimens with foreign institutions and museums for the sake of taxonomic identification and archiving (WPA, 1972). We suggest, therefore, that the scheduled status of some octocorals especially in the case of gorgonians should be reconsidered, and improved conservation strategies like marine protected areas and 'no-take' zones be developed to protect this fauna, once research has been undertaken to determine where such areas would be best located.

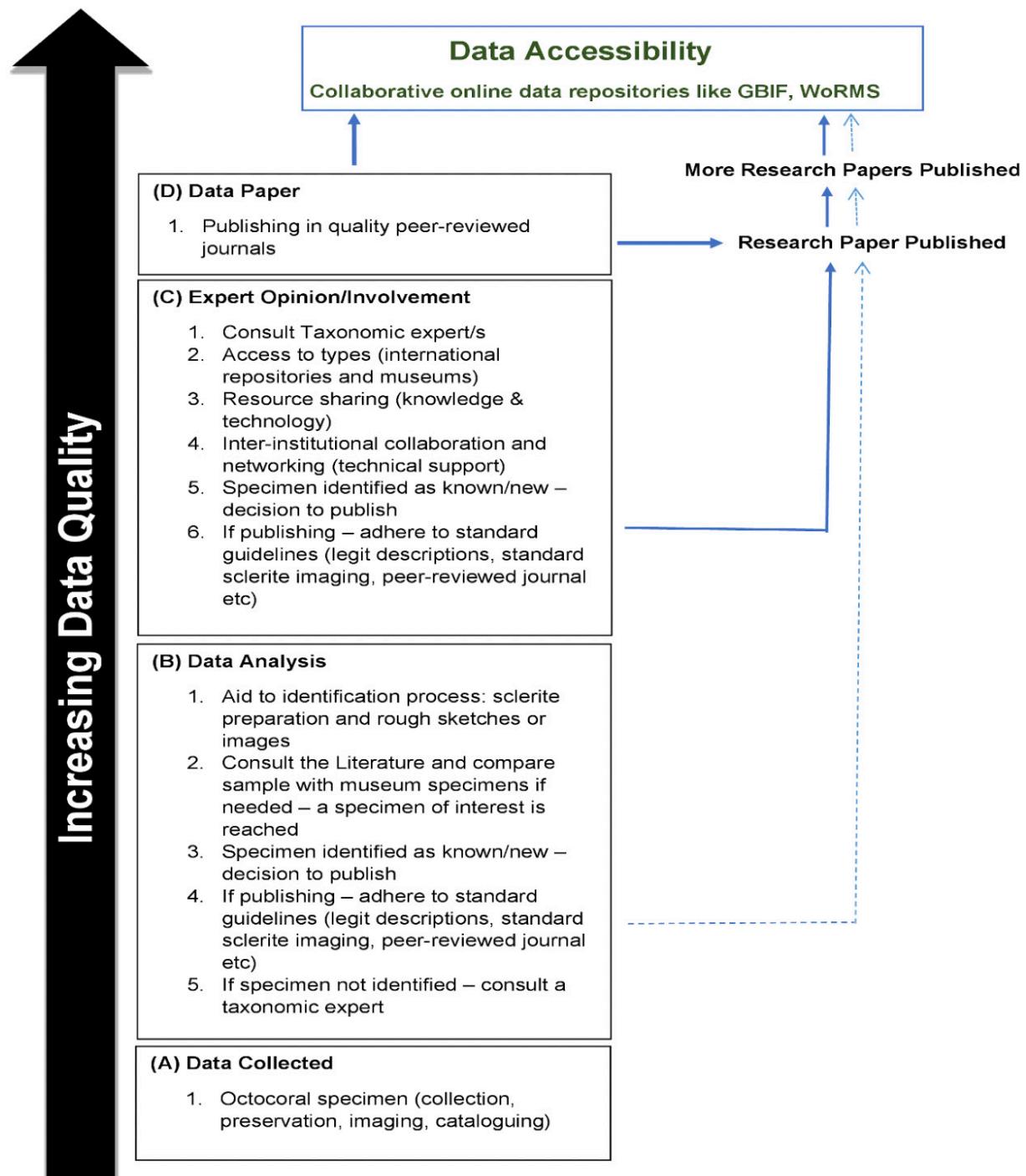
#### Taxonomy and Quality Publication

As discussed in the relevant sections of this paper, octocoral research in India is beset by many mediocre publications which include works published in predatory journals. For instance, a recent checklist of octocorals in India (Kumar and others in 2018) was published in an outlet widely regarded as predatory, which perpetuates the trend of such unethical publishing practice among Indian researchers (see Raghavan et al. 2015; Patwardhan et al. 2018). These publishing companies masquerading

under the pretext of an open access model continue to threaten science and science communication by narrowing the line between science and pseudoscience (Beall 2016). Since taxonomy and diversity research impacts national policies and influences other allied basic and applied research (Raghavan et al. 2014), flawed and mediocre publications pose serious impediment to India's international commitments like CBD's Aichi Targets. Because many mediocre publications in octocorals are from leading national research institutes like the Zoological Survey of India (ZSI), they reflect a bad image internationally which might result in blacklisting Indian taxonomists in general instead of just those deserving such a reputation. Scrapping Academic Performance Index (API) (Raghavan et al. 2015) and replacing traditional 'bibliometrics' with 'almetrics' to assess researcher's impact (Brown 2014) would render more popularity to science and reduce the unhealthy competition among researchers to publish more, causing some to resort to predatory or other sub-standard levels of publishing which lack peer review. Also, researchers and journals must avoid citing such dubious publications and thereby disavow unethical practice and unreliable research data. We also insist future octocoral taxonomist follow the modern trends in describing octocorals (Figure 4) and adhere to the rules of International Commission on Zoological Nomenclature (ICZN) (see Benayahu et al. 2017; Breedy & Guzman 2018).

#### Museums

Museums play a pivotal role in fundamental science like taxonomy and systematics through archiving and documenting specimens and manifesting a vast and irreplaceable resource for such studies (Brooke 2000). Many octocorals recorded as occurring in India have their type material housed in foreign museums. Physically accessing museum materials spread across the globe is not feasible in terms of money and time for a country like India. A realistic solution to overcome this issue is encouraging foreign collaboration, whereby researchers can gain experience and knowledge from international octocoral experts, benefitting both the researchers and octocoral science in India. At the same time, museums in India which house octocoral types (e.g., Zoological Survey of India) should change from being obstructive to acting as good advocates encouraging genuine requests to access specimens for verification and study. We also encourage these museums to digitally document and catalogue their octocoral specimens, both voucher specimens and types, and allow the information to be open to fair use for research nationally and internationally.



**Figure 4.** Conceptual model explaining the best practices to improve quality of octocoral diversity data and its accessibility. Adapted and modified from Costello et al. (2013b).

#### Bridging the biodiversity shortfalls

Based on available data it is evident that there exist huge gaps in data on octocorals, particularly related to the Linnaean (species diversity), Wallacean (geographic distribution) and Darwinian (evolution) shortfalls (see Hortal et al. 2015 for general discussion on biodiversity

shortfalls). A consensus on the exact diversity and distribution range of many octocorals has not yet been reached as numerous records and data either remain incomplete or unreliable, particularly for the central Indian Ocean. Published literature also indicates that studies on evolution, phylogeny, biogeography,

population genetics and abiotic tolerances of octocorals have not been undertaken as yet in countries such as India. For instance, the impasse in the case of the 'invasive snowflake coral' (*Carijoa riisei* Duchassaing & Michelotti, 1860) as a true invasive soft coral or a reestablished native species could be put to rest through genetic profiling (Patro et al. 2015). Such a study is currently being carried out by the authors of the present communication. Considering the expanse of the Indian subcontinent including the chains of islands and coral reefs, integrative taxonomic studies using morphology and molecular data (see Benayahu et al. 2018), research on evolution and phylogeny (see McFadden et al. 2017), including population genetics to study gene flow and connectivity (see Yesson et al. 2018) hold enormous potential. Not only are such studies inconspicuous in India, they are virtually non-existent because much of the basic biodiversity data (species diversity, abundance, and distribution) is unfortunately wanting, and will continue to be so unless there are significant changes to the culture and policies that are holding us back.

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## Appendix 1.

	List of octocoral publications from Asia (1978–2018).
1	<b>Topcu, N.E. (2017).</b> Demographic structure of Gorgonian (Anthozoa, Octocorallia, Holaxonia) assemblages in the Bay of Saros. <i>KSÜ Journal of Natural Sciences</i> 20: 368–377.
2	<b>Aguilar-Hurtado, C., M. Nonaka &amp; J.D. Reimer (2012).</b> The Melithaeidae (Cnidaria: Octocorallia) of the Ryukyu Archipelago: molecular and morphological examinations. <i>Molecular Phylogenetics and Evolution</i> 64: 56–65.
3	<b>Agustiadi, T. &amp; O.M. Lutfi (2017).</b> Diversity of Stoloniferan Coral (Stolonifera) at Lirang Island, Southwest Maluku (Moluccas), Indonesia. <i>International Journal of Oceans and Oceanography</i> 11: 21–30.
4	<b>Alderslade, P. &amp; C.S. McFadden (2007).</b> Pinnule-less polyps: a new genus and new species of Indo-Pacific Clavulariidae and validation of the soft coral genus <i>Acrossota</i> and the family <i>Acrossotidae</i> (Coelenterata: Octocorallia). <i>Zootaxa</i> 1400: 27–44.
5	<b>Alderslade, P. (2000).</b> Four new genera of soft corals (Coelentrata: Octocorallia), with notes on the classification of some established taxa. <i>Zoologische Mededelingen Leiden</i> 74: 237–249.
6	<b>Alderslade, P. (2001).</b> Six new genera and six new species of soft coral, and some proposed familial and subfamilial changes within the Alcyonacea (Coelenterata: Octocorallia). <i>Bulletin of the Biological Society of Washington</i> 10: 15–65.
7	<b>Alderslade, P. (2002).</b> A new soft coral genus (Coelenterata: Octocorallia) from Palau. <i>The Beagle, Records of the Museums and Art Galleries of the Northern Territory</i> 18: 1–8.
8	<b>Altermatt, R.U. (1993).</b> A diving expedition around Macclesfield (South Chinese Sea)-coral reefs are in danger. <i>Nature und Museum (Germany)</i> . 123: 275–281.
9	<b>Antonius, A.A., G. Scheer &amp; C. Bouchon (1990).</b> Corals of the eastern Red Sea. <i>Atoll Research Bulletin</i> 334: 1–22.
10	<b>Aratake, S., T. Tomura, S. Saitoh, R. Yokokura, Y. Kawanishi, R. Shinjo, J.D. Reimer, J. Tanaka &amp; H. Maekawa (2012).</b> Soft coral <i>Sarcophyton</i> (Cnidaria: Anthozoa: Octocorallia) species diversity and chemotypes. <i>PLoS ONE</i> 7: e30410.
11	<b>Baum, G., I. Januar, S.C. Ferse, C. Wild &amp; A. Kunzmann (2016).</b> Abundance and physiology of dominant soft corals linked to water quality in Jakarta Bay, Indonesia. <i>PeerJ</i> 4: e2625.
12	<b>Bayer, F.M. &amp; L.P. van Ofwegen (2016).</b> The type specimens of <i>Bebryce</i> (Cnidaria, Octocorallia, Plexauridae) re-examined, with emphasis on the sclerites. <i>Zootaxa</i> , 4083(3): 301–358
13	<b>Bayer, F.M. &amp; S.D. Cairns (2003).</b> A new genus of the scleraxonian family Coralliidae (Octocorallia: Gorgonacea). <i>Proceedings of the Biological Society of Washington</i> 116(1): 222–228.
14	<b>Bayer, F.M. (1993).</b> Two new species of the gorgonean genus <i>Paragorgia</i> (Coelentrata: Octocorallia). <i>Precious Corals &amp; Octocoral Research</i> . 2: 1–10.
15	<b>Ben, H.X. &amp; T.N. Dautova (2010).</b> Diversity of soft corals (Alcyonacea) in Vietnam. Proceedings of International Conference: Marine biodiversity of East Asia seas: Status, challenges and sustainable development pp 82–87.
16	<b>Bèn, H.X. &amp; T.N. Dautova (2010).</b> Soft corals (Octocorallia: Alcyonacea) in Ly Son islands, the central of Vietnam. <i>Journal of Marine Science and Technology</i> 10: 39–49.
17	<b>Benayahu, Y. &amp; L.P. van Ofwegen (2011).</b> New species of the genus <i>Sinularia</i> (Octocorallia: Alcyonacea) from Singapore, with notes on the occurrence of other species of the genus. <i>Raffles Bulletin of Zoology</i> 59: 117–125.
18	<b>Benayahu, Y. &amp; K. Fabricius (2010).</b> On some Octocorallia (Alcyonacea) from Hong Kong, with description of a new species, <i>Paraminabea rubeusa</i> . <i>Pacific Science</i> 64: 285–296.
19	<b>Benayahu, Y. &amp; L.P. van Ofwegen (2009).</b> New species of <i>Sarcophyton</i> and <i>Lobophytum</i> (Octocorallia: Alcyonacea) from Hong Kong. <i>Zoologische Mededelingen</i> 83: 8638–76.
20	<b>Benayahu, Y. &amp; S. Perkol-Finkel (2004).</b> Soft Corals (Octocorallia: Alcyonacea) from southern Taiwan: I. <i>Sarcophyton nanwanensis</i> sp. nov.(Octocorallia: Alcyonacea). <i>Zoological Studies</i> 43:537–547.
21	<b>Benayahu, Y. &amp; L.M. Chou (2010).</b> On some Octocorallia (Cnidaria: Anthozoa: Alcyonacea) from Singapore, with a description of a new <i>Cladiella</i> Species. <i>Raffles Bulletin of Zoology</i> 58: 1–13.
22	<b>Benayahu, Y. (1982).</b> A new species of <i>Metalcyonium</i> (Octocorallia, Alcyonacea) from the Red Sea. <i>Zoologische Mededelingen</i> 56: 197–201.
23	<b>Benayahu, Y. (1990).</b> Xeniidae (Cnidaria: Octocorallia) from the Red Sea with description of a new species. <i>Zoologische Mededelingen</i> 64: 113–120.
24	<b>Benayahu, Y. (1995).</b> Species composition of soft corals (Octocorallia, Alcyonacea) on the coral reefs of Sesoko Island, Ryukyu Archipelago, Japan. <i>Galaxea (Tokyo)</i> 12: 103–124.
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List of relevant Indian publications on octocorals (1978–2018).	
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2	Bhagirathan, U., S.K. Panda, V.R. Madhu & B. Meenakumari (2008). Occurrence of live Octocorals in the Trawling Grounds of Veraval Coast of Gujarat, Arabian Sea. <i>Turkish Journal of Fisheries and Aquatic Sciences</i> 8:369–372.
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11	Mary A.G. & S. Lazarus (2004). Gorgonids off the southwest Coast of India. <i>Journal of the Marine Biological Association of India</i> 46: 32–43.
12	Mary, A.G. & R.D. Sluka (2014). Biodiversity and distribution of octocorals of Minicoy atoll, Lakshadweep. <i>Atoll Research Bulletin</i> 6: 1–17.
13	Mary, A.G., R.D. Sluka & S. Lazarus (2011). Octocoral diversity and distribution on the south-west Indian coast. <i>Marine Biodiversity Records</i> 4: 1–11.
14	Rajendra, S., C. Raghunathan & K. Chandra (2017). New record of <i>Sarcophyton cornispiculatum</i> Vereseveldt, 1971 (Octocorallia: Alcyonacea: Alcyoniidae) in India, from the Andaman Islands. <i>European Journal of Zoological Research</i> 84: 167–171.
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19	Thomas, P.A., R.M. George & S. Lazarus (1995). Distribution of gorgonids in the northeast coast of India with particular reference to <i>Heterogorgia flabellum</i> (Pallas). <i>Journal of the Marine Biological Association of India</i> 37: 134–142.
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22	Tudu, P.C., D. Ray & A. Mohapatra (2018). A Checklist of Indian Sea pen (Cnidaria: Anthozoa: Pennatulacea). <i>Indian Journal of Geo-Marine Sciences</i> 47: 1014–1017.
23	van Ofwegen L.P. & J. Vennam (1991). Notes on Octocorallia from the laccadives (SW India). <i>Zoologische Mededelingen Leiden</i> 65: 143–154.
24	Veena, S. & P. Kaladharan (2012). First record of <i>Cavernularia orientalis</i> (Thomson & Simpson, 1909) (Octocorallia: Pennatulacea: Veretillidae) from the Bay coast of Visakhapatnam, Andhra Pradesh. <i>Zootaxa</i> , 3204: 61–64.
25	Veena, S. & P. Kaladharan (2013). <i>Cavernularia obesa</i> from the bay coast of Visakhapatnam, Andhra Pradesh, India. <i>Marine Biodiversity Records</i> 6: e54.
26	Vennam, J. & L.P. van Ofwegen (1996). Soft corals (Coelenterata: Octocorallia: Alcyonacea) from the Laccadives (SW India), with a re-examination of <i>Sinularia gravis</i> Tixier-Durivault, 1970. <i>Zoologische Mededelingen</i> , Leiden 70:437–452
27	Vibha, V.U., P.M. Mohan, M. Muruganantham & P. Nagarjuna (2015). New record of <i>Cladiella pachyclados</i> (Klunzinger, 1877) at Port Blair, South Andaman, Andaman and Nicobar Islands, India. <i>Indian Journal of Geo-Marine Sciences</i> 44: 1787–1789.
28	Williams, G.C. & J.S. Vennam (2001). A revision of the Indo-West Pacific taxa of the gorgonian genus <i>Pseudopterogorgia</i> (Octocorallia: Gorgoniidae), with the description of a new species from western India. <i>Bulletin of the Biological Society of Washington</i> 10: 71–95.

## Appendix 2.

	List of octocoral publications from India
1	Kumaraguru, A.K., V.E. Joseph, M. Rajee & T. Blasubramanian (2008). Palk Bay—Information and Bibliography, CAS in Marine Biology, Annamalai University, Parangipettai and Centre for Marine and Coastal Studies, Madurai Kamaraj University, Madurai, 227pp.
2	Alderslade, P. & P. Shirwaiker (1991). New species of soft corals (Coelenterata: Octocorallia) from the Laccadive Archipelago. <i>Beagle: Records of the Museums and Art Galleries of the Northern Territory</i> 8: 189–233.
3	Anjaneyulu ASR, Gowri PM, Murthy MVRK (1999). New sesquiterpenoids from the soft coral <i>Sinularia intacta</i> of the Indian Ocean. <i>Journal of Natural Products</i> 62: 1600–1604.
4	Anjaneyulu, A.S., V.L. Rao, V.G. Sastry & D.V. Rao (2008). Trocheliophorin: A novel rearranged sesquiterpenoid from the Indian Ocean soft coral <i>Sarcophyton trocheliophorum</i> . <i>Journal of Asian Natural Products Research</i> 10: 597–601.
5	Anjaneyulu, A.S.R. & K.V.S. Raju (1995). Bioactive compounds of a new soft coral of the genus <i>Sinularia</i> of the Mandapam Coast. <i>Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry</i> 34: 463–465.
6	Anjaneyulu, A.S.R. & K.V.S. Raju (1995). Secondary metabolites of a new soft coral of the genus <i>Sinularia</i> of the Mandapam coast. <i>Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry</i> 34: 463–465.
7	Anjaneyulu, A.S.R. & C.V.S. Prakash (1994). Long chain Gamma-Lactone and Cyclopentanone derivatives from a sea pen of <i>Virgularia</i> genus of Indian Coast. <i>Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry</i> 33: 55–58.
8	Anjaneyulu, A.S.R. & C.V.S. Prakash (1995). New sesqui and diterpenoids from the soft coral <i>Nephthea chabrolle</i> of Indian coast. <i>Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry</i> 34: 32–39.
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11	Anjaneyulu, A.S.R., K.S. Sagar & G.V. Rao (1997). New Cembranoid lactones from the Indian Ocean soft coral <i>Sinularia flexibilis</i> . <i>Journal of Natural Products</i> 60: 9–12.
12	Anjaneyulu, A.S.R., C.V.S Prakash, U.V. Mallavadhani & K.V.S. Raju (1992). Two new Sterols form a sea pen of <i>Virgularia</i> species of Indian Coast. <i>Journal of the Indian Chemical Society</i> 69: 150–152.
13	Anjaneyulu, A.S.R., P.M. Gowri & M.V.R.K. Murthy (1998). Dehydrosarcophytin, a new diterpenoid from the soft coral <i>Sacrophyton elegans</i> of the Indian Ocean. <i>Indian Journal of Chemistry - Section B Organic and Medicinal Chemistry</i> 38: 357–360.
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15	Arthur, R. (2000). Coral bleaching and mortality in three Indian reef regions during an El Niño southern oscillation event. <i>Current Science</i> 79: 1723–1729.
16	Bhagirathan, U., S.K. Panda, V.R. Madhu & B. Meenakumari (2008). Occurrence of live Octocorals in the Trawling Grounds of Veraval Coast of Gujarat, Arabian Sea. <i>Turkish Journal of Fisheries and Aquatic Sciences</i> 8: 369–372.
17	Bhagirathan, U., S.K. Panda, B. Meenakumari, V.R. Madhu & D.T. Vaghela (2012). Effects of bottom trawling on the ecological integrity of macrobenthos off Veraval, Gujarat. <i>Journal of the Marine Biological Association of India</i> 54: 5–12.
18	Bhosale, S.H., V.L. Nagle & T.G. Jagtap (2002). Antifouling potential of some marine organisms from India against species of <i>Bacillus</i> and <i>Pseudomonas</i> . <i>Marine biotechnology</i> 4(2): 111–118.
19	Central Marine Fisheries Research Institute (1995). Research Highlights 1994–95. Director (eds.). CMFRI, Kochi, 24pp.
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## Appendix 3. Annotated list of gorgonians reported from Indian waters.

	Systematic position	Type locality	Current status as per WoRMS	Current distribution	EI	WI	A&N	LK
1	<i>Acanthogorgia breviflora</i> Whitelegge, 1897	Funafuti	Accepted	French Polynesia, Australia, New Caledonia, Tuvalu	0	0	1	0
2	<i>Acanthogorgia ceylonensis</i> Thomson & Henderson, 1905	Trincomalee	Accepted	Thailand, Oman, Indonesia, Sri Lanka	0	1	0	0
3	<i>Acanthogorgia muricata</i> Verriell, 1883	Barbados	Accepted	Indonesia, Barbados, Myanmar, Bahamas, Sri Lanka, Cape Guardafui	1	0	1	0
4	<i>Acanthogorgia spinosa</i> Hiles, 1899	Blanche bay (New Britain)	Accepted	New Caledonia, Indonesia, Myanmar, Australia, New Britain	0	0	1	0
5	<i>Acanthogorgia turgida</i> Nutting, 1911	Malay archipelago	Accepted	Indonesia	0	1	0	0
6	<i>Acanthomuricea arborea</i> (Thomson and Simson, 1909)	Arakan coast	No Records		1	0	0	0
7	<i>Annella mollis</i> (Nutting, 1910)	D'Aross	Accepted	Egypt, Japan, Palau, Philippines, Saudi Arabia, New Caledonia, Micronesia, Madagascar, Indonesia, Malaysia, Mauritius, Guam, Papua New Guinea, India, Northern Mariana Islands, Thailand, Fiji, El Salvador, Mayotte, Australia, Chinese Taipei, Marshall islands, American Samoa, Singapore	1	0	1	0
8	<i>Annella reticulata</i> (Ellis & Solander, 1786)	Philippines	Accepted	Philippines, New Caledonia, Australia, Saudi Arabia, Micronesia, Solomon Islands, Northern Mariana Islands, Palau, Indonesia, Mauritius, Papua New Guinea, Comoros, Tonga, Guam, Japan, Madagascar, Mayotte, Fiji, Thailand, Panama, Singapore, India	1	0	1	0
9	<i>Anthogorgia glomerata</i> Thomson & Simpson, 1909	Andamans	Accepted	Philippines, India	1	0	1	0
10	<i>Anthogorgia ochracea</i> Grasshoff, 1999	New Caledonia	Accepted	Vanuatu, New Caledonia	0	0	1	0
11	<i>Anthogorgia racemosa</i> Thomson & Simpson, 1909	Andamans	Accepted	India	1	0	1	0
12	<i>Anthogorgia verrilli</i> Thomson & Henderson, 1906	Andamans	Accepted	India	1	0	1	0
13	<i>Briareum hamrum</i> (Gohar, 1948)	Tumbatu, Zanzibar	Accepted	Israel, Oman, India	0	0	1	0
14	<i>Bebryce indica</i> Thomson, 1905	Gulf of Mannar	Accepted	Palau, Australia, Indonesia, Chinese Taipei, Sri Lanka,	1	0	0	0
15	<i>Bebryce sirene</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
16	<i>Bebryce studeri</i> Whitelegge, 1897	Funafuti	Accepted	French Polynesia, New Caledonia, Portugal, Indonesia, Philippines	1	0	1	0
17	<i>Bebryce thomsoni</i> Nutting, 1910	Kei islands (Indonesia)	Accepted	Indonesia	1	0	0	0
18	<i>Callogorgia versluysi</i> (Thomson, 1905)	Ceylon seas	Accepted	Palau, Sri Lanka, India	1	0	1	0
19	<i>Dichotella gemmacea</i> (Milne Edwards & Haime, 1857)	Red sea	Accepted	Australia, Philipines, Japan, New Caledonia, Fiji, Indonesia	0	0	1	0
20	<i>Discogorgia campanulifera</i> (Nutting, 1910)	Nusa Tenggara	Accepted	Indonesia	1	0	0	0
21	<i>Discogorgia squamata</i> (Nutting, 1910)	Indonesia?? <i>Placogorgia squamata</i> ??	No records		1	0	0	0
22	<i>Echinogorgia complexa</i> Nutting, 1910	Papua	Accepted	Indonesia, India	1	0	0	0
23	<i>Echinogorgia macrospiculata</i> Thomson & Simpson, 1909	Andamans	Accepted	India	1	0	1	0
24	<i>Echinogorgia reticulata</i> (Esper, 1791)	Misrepresen-tation of date???	Accepted	Chinese Taipei, Australia, Japan, Pakistan, Indonesia, India, Mauritius, Amsterdam, Penguin channel	1	0	1	0
25	<i>Echinogorgia toombo</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	1	0	1	0
26	<i>Echinomuricea indica</i> Thomson & Simpson, 1909	Arakan coast	Accepted	Thailand, India	1	0	1	0
27	<i>Echinomuricea indomalaccensis</i> Ridley, 1884	Torres strait	Accepted	Australia, New Caledonia, Madagascar, Japan, Indonesia	1	0	1	0

	<b>Systematic position</b>	<b>Type locality</b>	<b>Current status as per WoRMS</b>	<b>Current distribution</b>	<b>EI</b>	<b>WI</b>	<b>A&amp;N</b>	<b>LK</b>
28	<i>Ellisella andamanensis</i> (Nutting, 1910)	Maluku (Indonesia)	Accepted	Japan, New Caledonia, Fiji, Indonesia, India	1	0	1	0
29	<i>Ellisella azilia</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
30	<i>Ellisella cercidia</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
31	<i>Ellisella ceylonensis</i> (Simpson, 1910)	Galle (Sri Lanka)	Accepted	Sri Lanka, Indonesia, Japan, Papua New Guinea, Australia	1`	0	0	0
32	<i>Ellisella eustala</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
33	<i>Ellisella filiformis</i> (Toepeltz, 1889)	Probable misrepresentation of author	Accepted		1	0	0	0
34	<i>Ellisella maculata</i> (Studer, 1878)	Australia	Accepted	Australia, India, Indonesia	1	0	0	0
35	<i>Ellisella marisrubri</i> (Stiasny, 1938)	Red Sea	Accepted	Gulf of Suez (Red Sea)	0	0	1	0
36	<i>Ellisella nocturnea</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
37	<i>Euplexaura albida</i> Kükenthal, 1908	Australia	Accepted	Papua New Guinea, Australia	1	0	0	0
38	<i>Euplexaura amerea</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
39	<i>Euplexaura rhipidialis</i> Studer, 1895	Bintang Island	Accepted	New Caledonia, Japan, Indonesia, Caribbean sea, Burma	0	0	1	0
40	<i>Euplexaura thomsoni</i> Kükenthal, 1924		Accepted		1	0	0	0
41	<i>Guaiagorgia anas</i> Grasshoff & Alderslade, 1997	New Caledonia	Accepted	Australia, Papua New Guinea, New Caledonia, Indonesia	1	0	0	0
42	<i>Heliania spinescens</i> (Gray, 1859)	Philippines	Accepted	New Caledonia, Philippines, Fiji, Palau, Papua New Guinea, Vanuatu	1	0	0	0
43	<i>Heterogorgia flabellum</i> (Pallas, 1766)/ <i>Psammogorgia flabellum</i> (Pallas, 1766)	Indian Ocean	Not Accepted	India	1	0	0	0
44	<i>Hicksonella princeps</i> Nutting, 1910	Sailus Besar	Accepted	Phillipines, Australia, Vanuatu, Malaysia, Japan, New Caledonia, Fiji, Indonesia,	0	0	1	0
45	<i>Isis hippuris</i> Linnaeus, 1758	North Sea	Accepted	Australia, Philippines, Papua New Guinea, Chinese Taipei, Malaysia, Japan, New Caledonia, Palau, Sri Lanka, Indonesia, India	0	0	1	0
46	<i>Junceella delicata</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
47	<i>Junceella eunicelloides</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
48	<i>Junceella juncea</i> (Pallas, 1766)	Indian Ocean	Accepted	Philippines, Australia, India, Micronesia, Northern Mariana Islands, Mauritius, Palau, Papua New Guinea, Vanuatu, Saudi Arabia, Comoros, Kiribati, Maldives, Singapore, China, New Caledonia, Japan, Myanmar, Madagascar, Indonesia, Vietnam, Sri Lanka, Taiwan	1	0	1	1
49	<i>Junceella miniacea</i> (Thompson & Henderson, 1906)	Andamans	No Records	Andamans	1	0	1	0
50	<i>Keroeides gracilis</i> Whitelegge, 1897	Funafuti	Accepted	New Caledonia, Australia, Nothern Mariana Islands, Philippines, Indonesia, India, Tuvalu, India	1	0	1	0
51	<i>Keroeides koreni</i> Wright & Studer, 1889	Japan	Accepted	Australia, Japan, Mayotte, Nothern Mariana Islands, Kenya, Somalia, Marshall islands, Philippines, Indonesia, India, Japan, Sri Lanka	1	0	1	0
52	<i>Melithaea andamanensis</i> (van Ofwegen, 1987)	South Thailand	Accepted	Thailand, Andaman Sea	1	0	0	0
53	<i>Melithaea biserialis</i> (Kükenthal, 1908)	Red Sea	Accepted	Kenya, Madagascar	1	0	0	0
54	<i>Melithaea braueri</i> (Kükenthal, 1919)	Seychelles??	Accepted	Seychelles, Madagascar, India	0	0	1	0

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55	<i>Melithaea caledonica</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
56	<i>Melithaea cinquemiglia</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
57	<i>Melithaea ochracea</i> (Linnaeus, 1758)		Accepted	New Caledonia, Papua New Guinea, Australia, Indonesia, Fiji, Japan, Palau, Philippines, Singapore, Malaysia, Sri Lanka, Vanuatu	0	0	1	0
58	<i>Melithaea ouvea</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
59	<i>Melithaea rubeola</i> (Wright & Studer, 1889)	Arafura Sea	Accepted	Philippines, Australia, Singapore, China, Malaysia, USA	1	0	1	0
60	<i>Melithaea squamata</i> (Nutting, 1911)	Timor	Accepted	Australia, Indonesia, Palau, Philippines	1	0	0	0
61	<i>Melithaea variabilis</i> (Hickson, 1905)	Maldives	Accepted	India, Mayotte, Marshall islands, French Southern Territories, British Indian Ocean Territories, Seychelles, Indonesia	0	0	1	1
62	<i>Menella flora</i> (Nutting, 1910)	Papua	Accepted	Indonesia, Egypt, India, China, New Guinea	1	0	1	0
63	<i>Menella indica</i> Gray, 1870	Back Bay (Bombay)	Accepted	Japan, India	0	0	1	0
64	<i>Menella kanisa</i> Grasshoff, 2000	Red Sea	Accepted	Eilat, Strait of Gubal, Sinai	0	0	1	0
65	<i>Menella kouare</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
66	<i>Menella praelonga</i> (Ridley, 1884)	Port Curtis	Accepted	Japan, Malaysia, Australia, Fiji	0	0	1	0
67	<i>Menella woodin</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
68	<i>Muricella complanata</i> Wright & Studer, 1889	Hyalonema Ground, Japan	Accepted	United States, Mosambique, Sri Lanka, Myanmar, India	1	0	1	0
69	<i>Muricella dubia</i> Nutting, 1910	Nusa Tenggara (Indonesia)	Accepted	Indonesia	0	1	0	0
70	<i>Muricella nitida</i> (Verrill, 1868)	Ebon island	Accepted	Japan	1	0	0	0
71	<i>Muricella paraplectana</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
72	<i>Muricella ramosa</i> Thomson & Henderson, 1905	Deep waters, GoM	Accepted	Australia, Thailand, South Africa, Japan, Oman, Indonesia, Sri Lanka, India	1	0	1	0
73	<i>Muricella rubra</i> Thomson, 1905	Ceylon seas	Accepted	Madagascar, Marshall islands, Mauritius, Sri Lanka, India	0	0	1	0
74	<i>Muricella umbraticoides</i> (Studer, 1878)	Gazelle (Australia)	Accepted	Indonesia, India	1	0	0	0
75	<i>Nicella carinata</i> Nutting, 1910	Duroa strait, Kei islands	Accepted	Australia, Palau, Japan, Philippines, Indonesia, Mauritius,	1	0	0	0
76	<i>Nicella dichotoma</i> (Gray, 1860)	Bombay	Accepted	Japan, Indonesia, Thailand, British Indian Ocean territory, India	1	0	1	0
77	<i>Nicella flabellata</i> (Whitelegge, 1897)	Funafuti	Accepted	New Caledonia, Thailand, India	1	0	1	0
78	<i>Nicella gemmacea</i> (Valenciennes, 1855)	Red Sea	No Records		1	0	0	0
79	<i>Nicella laevis</i> (Nutting, 1910)	Timer Island	No Records		1	0	0	0
80	<i>Nicella laxa</i> Whitelegge, 1897	Funafuti	Accepted	New Caledonia, Tuvalu	0	0	1	0
81	<i>Nicella magna</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia, Vanuatu	1	0	0	0
82	<i>Nicella rubra</i> (Nutting, 1910)	Halonema Ground, Japan	No Records		1	0	0	0
83	<i>Paracis ceylonensis</i> (Thomson & Henderson, 1905)	Deep waters of Galle	Accepted	Thailand, Oman	1	0	0	0
84	<i>Paracis rigida</i> (Thomson & Simpson, 1909)	Andamans	Accepted		1	0	0	0
85	<i>Paracis spinosa</i> (Thomson & Henderson, 1906)	Andamans	Accepted		1	0	0	0
86	<i>Parisis fruticosa</i> Verrill, 1864	Sulu sea	Accepted	Australia, Palau, New Caledonia, India, Somalia, Thailand, Japan, Philippines, Niue, Madagascar, Indonesia, Mauritius, New Zealand, India	1	0	1	0

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87	<i>Pseudopterogorgia australiensis</i> (Ridley, 1884)	Torres strait	Accepted	Australia	1	0	0	0
88	<i>Pseudopterogorgia formosa</i> (Nutting, 1910)	Nusa Tenggara (Indonesia)	Accepted	Indonesia	1	0	0	0
89	<i>Pseudopterogorgia fredericki</i> Williams & Vennam, 2001	St. Mary Isles, Bellikery, India	Accepted	India	1	0	0	0
90	<i>Pseudopterogorgia oppositipinna</i> (Ridley, 1888)	Mergui archipelago	Accepted	Australia	1	0	0	0
91	<i>Pseudopterogorgia rubrotincta</i> (Thomson & Henderson, 1905)	Indian Ocean	Accepted		1	0	0	0
92	<i>Pseudopterogorgia thomassini</i> (Tixier-Durivault, 1972)	Madagascar	Accepted	Madagascar	1	0	0	0
93	<i>Pterostenella plumatilis</i> (Milne Edwards and Haime, 1857)	Ceylon	Accepted	Philippines, Japan, Australia	1	0	0	0
94	<i>Rumphella aggregata</i> (Nutting, 1910)	Kei islands (Indonesia)	Accepted	Australia, Egypt, New Caledonia, Papua New Guinea, Vanuatu, Guam, Micronesia, Palau, Thailand, Indonesia, Yemen	0	0	1	0
95	<i>Rumphella torta</i> (Klunzinger, 1877)	Red Sea	No Records	India. Red sea	0	0	1	0
96	<i>Solenocaulon sterroclonium</i> Germanos, 1895	Ternate (Maluku)	Accepted	Australia, Indonesia	1	0	0	0
97	<i>Solenocaulon tortuosum</i> Gray, 1862	North Australia	Accepted	Australia, Singapore, Madagascar, Somalia, Maldives, India	1	0	0	0
98	<i>Subergorgia rubra</i> (Thomson, 1905)	Ceylon seas	Accepted	Thailand, Chinese Taipei, New Caledonia, Sri Lanka	1	0	1	0
99	<i>Subergorgia suberosa</i> (Pallas, 1766)	Sea of South Africa	Accepted	Philippines, Australia, Saudi Arabia, Chinese Taipei, Japan, Madagascar, Reunion, Micronesia, India, Palau, Japan, China, Malaysia, Mauritius, Papua New Guinea, Guam, Vanuatu, UAE, Indonesia, Thailand, Singapore, Marshall Islands, Fiji, New Caledonia, Tanzania, Christmas Islands	1	0	1	0
100	<i>Thesea flava</i> Nutting, 1910	Aru Islands	Accepted	Philippines, Indonesia, India	1	0	0	0
101	<i>Trimuricea caledonica</i> Grasshoff, 1999	New Caledonia	Accepted	New Caledonia	0	0	1	0
102	<i>Trimuricea reticulata</i> (Thomson & Simpson, 1909)	Trimuricea reticulata Gordon, 1926 - discrepancy in the author. GBIF shows both results but 0 occurrence for Trimuricea reticulata (Thomson & Simpson, 1909) - Refer Namin & Ofwegen 2016	Accepted	Myanmar, India	1	0	1	0
103	<i>Verrucella cerasina</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
104	<i>Verrucella corona</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
105	<i>Verrucella diadema</i> (Grasshoff, 1999)	New Caledonia	Accepted	New Caledonia	1	0	1	0
106	<i>Verrucella flexuosa</i> (Klunzinger, 1877)	Red Sea	Accepted	Japan, India	1	0	1	0
107	<i>Verrucella gubalensis</i> Grasshoff, 2000	Red Sea	Accepted		1	0	1	0
108	<i>Verrucella klunzingeri</i> Grasshoff, 2000	Eilat	Accepted	Red Sea	0	0	1	0
109	<i>Verrucella umbella</i> (Esper, 1798)	Foreign language..cant derive the type locality- Bay of Bengal??	Accepted	South Africa, Somalia, Thailand , Iran	1	0	1	0

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110	<i>Verrucella umbraculum</i> (Ellis & Solander, 1786)	Batavia	Accepted	Papua New Guinea, Thailand, Singapore, Japan, Tanzania, Somalia, Pakistan, Philippines, South Africa, India	1	0	1	0
111	<i>Villogorgia ceylonensis</i> (Thomson & Henderson, 1905)	Deep waters of Galle	Accepted	Sri Lanka	1	0	1	0
112	<i>Villogorgia tenuis</i> (Nutting, 1908)	Hawaii	Accepted	United States of America, Somalia, Thailand	1	0	1	0
113	<i>Viminella crassa</i> (Grashoff, 1999)	New Caledonia	Accepted	New Caledonia	0	0	1	0
114	<i>Viminella juncelloides</i> (Stiasny, 1938)	Red Sea	Accepted	India, Red Sea	0	0	1	0
115	<i>Acanthomuricea nagapatinamensis</i> Antony Fernando, 2011	Nagapattinam	No records	India	1	0	0	0
116	<i>Acanthogorgia cuddalorensis</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
117	<i>Acanthogorgia cylindricus</i> Antony Fernando, 2011	Cuddalore fish landing centre	No records	India	1	0	0	0
118	<i>Acanthogorgia delicata</i> Antony Fernando, 2011	Cuddalore fish landing centre	No records	India	1	0	0	0
119	<i>Acanthogorgia macroscopiculata</i> Antony Fernando, 2011	Yerwadi beach	No records	India	1	0	0	0
120	<i>Acanthomuricea tuticorinensis</i> Antony Fernando, 2011	Tuticorin	No records	India	1	0	0	0
121	<i>Anthogorgia ramamoorthii</i> Antony Fernando, 2011	Cuddalore fish landing centre	No records	India	1	0	0	0
122	<i>Astrogorgia anastomosan</i> Antony Fernando, 2011	Pondicherry	No records	India	1	0	0	0
123	<i>Astrogorgia bicolor</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
124	<i>Astrogorgia cuddalorensis</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
125	<i>Astrogorgia krusadaiensis</i> Antony Fernando, 2011	Vedalai	No records	India	1	0	0	0
126	<i>Astrogorgia macrosclera</i> Antony Fernando, 2011	Pondichery	No records	India	1	0	0	0
127	<i>Astrogorgia nagapainamensis</i> Antony Fernando, 2011	Nagapatina-mensis	No records	India	1	0	0	0
128	<i>Astrogorgia seshaiyaii</i> Antony Fernando, 2011	Vedalai	No records	India	1	0	0	0
129	<i>Astrogorgia sinensis</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
130	<i>Astrogorgia uvarensis</i> Antony Fernando, 2011	Uvari	No records	India	1	0	0	0
131	<i>Echinogorgia disimilis</i> Antony Fernando, 2011	Nagapatinam	No records	India	1	0	0	0
132	<i>Echinogorgia longispinosa</i> Antony Fernando, 2011	Pondicherry	No records	India	1	0	0	0
133	<i>Echinogorgia seshaiyaii</i> Antony Fernando, 2011	Pamban	No records	India	1	0	0	0
134	<i>Echinomuricea cuddalorensis</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
135	<i>Ellisella bayeri</i> Antony Fernando, 2011	Kanyakumari	No records	India	1	0	0	0
136	<i>Ellisella grasshoffi</i> Antony Fernando, 2011	Thiruchendur	No records	India	1	0	0	0
137	<i>Erythropodium pambanensis</i> Antony Fernando, 2011	Pamban	No records	India	1	0	0	0
138	<i>Euplexaura koothankuliensis</i> Antony Fernando, 2011	Koothankuli	No records	India	1	0	0	0
139	<i>Menella idinthakaraiensis</i> Antony Fernando, 2011	Idinthakarai	No records	India	1	0	0	0
140	<i>Nicella cuddalorensis</i> Antony Fernando, 2011		No records	India	1	0	0	0
141	<i>Nicella gracilis</i> Antony Fernando, 2011	Koothankuli	<i>Nicella gracilis</i> Cairns, 2007		1	0	0	0

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142	<i>Nicella rarus</i> Antony Fernando, 2011	bw Nagapattinam and Palayar	No records	India	1	0	0	0
143	<i>Paraplexaura munnarensis</i> Antony Fernando, 2011	Vedalai	No records	India	1	0	0	0
144	<i>Paraplexaura maxima</i> Antony Fernando, 2011	Pondicherry	No records	India	1	0	0	0
145	<i>Paraplexaura multiplanar</i> Antony Fernando, 2011	Vedalai	No records	India	1	0	0	0
146	<i>Paraplexaura platysclera</i> Antony Fernando, 2011		No records	India	1	0	0	0
147	<i>Pseudopterogorgia anastomosan</i> Antony Fernando, 2011	Vedalai, GoM	No records	India	1	0	0	0
148	<i>Pseudopterogorgia balasubramanii</i> Antony Fernando, 2011	Kothapatnam, Andhra	No records	India	1	0	0	0
149	<i>Pseudopterogorgia filiformis</i> Antony Fernando, 2011	Kodiakkarai, Palk Bay	No records	India	1	0	0	0
150	<i>Pseudopterogorgia flexibilis</i> Antony Fernando, 2011	Kodiakkarai, Palk Bay	No records	India	1	0	0	0
151	<i>Pseudopterogorgia kodiakaraiensis</i> Antony Fernando, 2011	Kodiakkarai, Palk Bay	No records	India	1	0	0	0
152	<i>Pseudopterogorgia kotaptnamensis</i> Antony Fernando, 2011	Kodiakkarai, Palk Bay	No records	India	1	0	0	0
153	<i>Pseudopterogorgia mandabamenensis</i> Antony Fernando, 2011	Mandapam	No records	India	1	0	0	0
154	<i>Pseudopterogorgia mangalorensis</i> Antony Fernando, 2011	Surathkal	No records	India	0	1	0	0
155	<i>Pseudopterogorgia oliviae</i> Antony Fernando, 2011	Vedalai, GoM	No records	India	1	0	0	0
156	<i>Pseudopterogorgia pandiani</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
157	<i>Pseudopterogorgia philippi</i> Antony Fernando, 2011	Kodiakkarai, Palk Bay	No records	India	1	0	0	0
158	<i>Pseudopterogorgia rubra</i> Antony Fernando, 2011	Kodiakkarai, Palk Bay	No records	India	1	0	0	0
159	<i>Pseudopterogorgia undulata</i> Antony Fernando, 2011	Vedalai, GoM	No records	India	1	0	0	0
160	<i>Pseudopterogorgia vedalaiensis</i> Antony Fernando, 2011	Vedalai, GoM	No records	India	1	0	0	0
161	<i>Pseudopterogorgia williamsi</i> Antony Fernando, 2011	Vedalai, GoM	No records	India	1	0	0	0
162	<i>Trimuricea cuddalorensis</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
163	<i>Trimuricea indica</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
164	<i>Trimuricea longispinosa</i> Antony Fernando, 2011	Pondicherry	No records	India	1	0	0	0
165	<i>Trimuricea robusta</i> Antony Fernando, 2011	Uvari	No records	India	1	0	0	0
166	<i>Verrucella balasubramaniana</i> Antony Fernando, 2011	bw Cuddalore and Pondicherry	No records	India	1	0	0	0
167	<i>Verrucella bicolor</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
168	<i>Verrucella ixoboloides</i> Antony Fernando, 2011	bw Cuddalore and Pondicherry	No records	India	1	0	0	0
169	<i>Verrucella pambanensis</i> Antony Fernando, 2011	Pamban	No records	India	1	0	0	0
170	<i>Verrucella pinnata</i> Antony Fernando, 2011	Nagapattinam	No records	India	1	0	0	0
171	<i>Verrucella pondicheriensis</i> Antony Fernando, 2011	Pondicherry	No records	India	1	0	0	0

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172	<i>Viminella dissimilis</i> Antony Fernando, 2011	Cuddalore	No records	India	1	0	0	0
173	<i>Acabaria cinquemiglia</i> Grasshoff, 1999 / <i>Melithaea cinquemiglia</i> (Grasshoff, 1999)	New Caledonia	Not accepted	New Caledonia, India	0	0	1	0
174	<i>Acabaria ouvea</i> Grasshoff, 1999 / <i>Melithaea ouvea</i> (Grasshoff, 1999)	New Caledonia	Not accepted	New Caledonia, India	0	0	1	0
175	<i>Acanella robusta</i> Thomson & Henderson, 1906	Indian Ocean	Accepted	India, Australia	0	0	1	0
176	<i>Astromuricea stellifera</i> Thomson & Crane, 1909	Kiu, Beyt Harbour	Accepted	India	0	0	1	0
177	<i>Bebryce mollis</i> Phillipi, 1842	Mediterranean Sea	Accepted	Italy, Morocco, Portugal, Spain, India, Maldives, Tunisia, Japan	0	0	1	0
178	<i>Cactogorgia alciformis</i> Thomson & Simpson, 1909	Andamans	No records	India, Andamans, Indonesia	0	0	0	1
179	<i>Calicogorgia tenuis</i> Thomson & Simpson, 1909	Andamans	Accepted	India	0	0	1	0
180	<i>Callogorgia indica</i> Versluys, 1906		Accepted	India	0	0	1	0
181	<i>Clathraria maldivensis</i> van Ofwegen, 1987 / <i>Melithaea maldivensis</i> (van Ofwegen, 1987)	Imma Island, Maldives	Not accepted	Maldives, India	0	0	0	1
182	<i>Echinogorgia flabellum</i> (Esper, 1791)	Maluku island	Accepted	Australia, Papua New Guinea, India	0	0	1	1
183	<i>Echinogorgia flora</i> (Nutting, 1910) / <i>Menella flora</i> (Nutting, 1910)				0	0	1	0
184	<i>Echinogorgia longispinosa</i>		No records		1	0	0	0
185	<i>Echinogorgia multispinosa</i> Thomson & Henderson, 1905	Ceylon seas	Accepted	Sri Lanka, India	0	0	1	0
186	<i>Echinogorgia ramulosa</i> (Gray, 1870)	Philippines	Accepted	Pakistan, India	0	0	1	0
187	<i>Echinomuricea andamanensis</i> Thomson & Simpson, 1909	Andamans	Accepted	India	0	0	1	0
188	<i>Echinomuricea indica</i> Thomson & Simpson, 1909	Arakan coast	Accepted	Thailand, India	0	0	1	0
189	<i>Echinomuricea ochracea</i> Thomson & Simpson, 1909	Indian Ocean	Accepted	India	0	0	1	0
190	<i>Echinomuricea splendens</i> Thomson & Simpson, 1909	Indian Ocean	Accepted	India	0	0	1	0
191	<i>Echinomuricea uliginosa</i> Thomson & Simpson, 1909	Lakshadweep	Accepted	Myanmar, India	0	0	1	0
192	<i>Echinomuricea uliginosa</i> Thomson & Simpson, 1909	Kalpeni Bank, Laccadives.	Accepted	India, Myanmar	0	0	1	1
193	<i>Echinomuricea uliginosa</i> var. <i>tenerior</i> Thomson & Simpson, 1909		No records		0	0	1	0
194	<i>Elasmogorgia flexilis</i> Hickson, 1905	Suvadiva	Accepted	Maldives, India	0	0	1	0
195	<i>Fanellia fraseri</i> (Hickson, 1915)	Gulf of Alaska	Accepted	United States, India	0	0	1	0
196	<i>Gorgonella rubra</i> (Thomson and Henderson, 1905)	Gulf of Mannar	No records	Indo-Australian	1	0	0	0
197	<i>Gorgonella umbella</i> (Esper, 1798) / <i>Verrucella umbella</i> (Esper, 1798)	Bay of Bengal	No records		1	0	0	0
198	<i>Gorgonella umbraculum</i> Ellis & Solander, 1786 / <i>Verrucella umbraculum</i> (Ellis & Solander, 1786)	Batavia	Not Accepted		1	0	1	0
199	<i>Keratoisis gracilis</i> (Thomson & Henderson, 1906)	Andamans	Accepted	Indo-Pacific	0	0	1	0
200	<i>Leptogorgia australiensis</i> (Ridley, 1884) / <i>Pseudopterogorgia australiensis</i> (Ridley, 1884)				1	0	0	0

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201	<i>Lophogorgia lutkeni</i> Wright & Studer / <i>Leptogorgia lütkeni</i> (Wright & Studer, 1889)	Prince Edward Island	Not accepted	Prince Edward Island, Zanzibar, India	1	0	1	0
202	<i>Melithaea ornata</i> (Thomson & Simpson, 1909)	Andaman Sea	Accepted	No occurrence in GBIF	0	0	1	0
203	<i>Melithaea philippinensis</i> (Wright & Studer, 1889)	Samboangan	Accepted	Indonesia, India	0	0	1	0
204	<i>Menacella gracilis</i> Thomson & Simpson, 1909	Andamans	Accepted	India	0	0	1	0
205	<i>Mopsella rubeola</i> (Wright & Studer, 1889)/ <i>Melithaea rubeola</i> (Wright & Studer, 1889)	Arafura Sea	Not accepted	Australia, Philippines, Singapore, China, Indonesia, Malaysia, United States, India	1	0	1	0
206	<i>Muricella bengalensis</i> Thomson & Henderson, 1906	Bay of Bengal, Andamans	Accepted	India	0	0	1	0
207	<i>Muricella robusta</i> Thomson & Simpson, 1909	Andamans	Accepted	India	0	0	1	0
208	<i>Nicella pustulosa</i> (Thomson & Simpson, 1909)	Andamans	Accepted	India	0	0	1	0
209	<i>Nicella reticulata</i> Thomson & Simpson, 1909/ <i>Verrucella reticulata</i> (Thomson & Simpson, 1909)	Indian Ocean	Not Accepted		0	0	0	1
210	<i>Paramuricea indica</i> Thomson & Henderson, 1906	Andamans	Accepted	India	0	0	1	0
211	<i>Perisceles ceylonensis</i> (Thomson and Henderson)		No records	Indian Ocean	1	0	0	0
212	<i>Placogorgia indica</i> Thomson & Henderson, 1906	Andamans	Accepted	India	0	0	1	0
213	<i>Placogorgia orientalis</i> Thomson & Henderson, 1906	Andamans	Accepted	India	0	0	1	0
214	<i>Plexauroides praelonga</i> (Ridley)		No records		1	0	0	0
215	<i>Plexauroides praelonga</i> (Ridley)		No records	Indo-Australian	1	0	0	0
216	<i>Plexauroides praelonga</i> var. <i>cinerea</i> (Ridley)		No records	Indo-Australian	1	0	0	0
217	<i>Scirpearia filliformia</i> Toeplitz		No records	Andamans, Australia	1	0	0	0
218	<i>Solenocaulon tortuosum</i> Gray, 1862	North Australia	Accepted	Singapore, Madagascar, Somalia, Australia, Maldives, India	1	0	1	0
219	<i>Subergorgia ornata</i> Whitelegge ??/ <i>Subergorgia ornata</i> Thomson and Simpson, 1909	Indian Ocean	Not accepted		0	0	0	1
220	<i>Subergorgia reticulata</i> Ellis & Solander, 1786/ <i>Annella reticulata</i> (Ellis & Solander, 1786)	Philippines	Not accepted	Papua New Guinea, Comoros, Madagascar, Australia, Palau, Indonesia, Mauritius, Singapore, Guam, India, Northern Mariana Island	1	0	1	1
221	<i>Villogorgia rubra</i> Hiles, 1899	Ceylon seas	Accepted	Thailand, Indonesia, New Caledonia	0	0	1	0
222	<i>Wrightella braueri</i> Küenthal, 1919 / <i>Melithaea braueri</i> (Küenthal, 1919)	Seychelles??	Not accepted	Seychelles, Madagascar, India	0	0	1	0
223	<i>Pseudopterogorgia lutkeni</i> (Wright & Studer, 1889)		No records		1	0	0	0

EI—East coast of India | WI—West coast of India | A&N—Andaman & Nicobar Islands | LK—Lakshadweep Islands.





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