Introduction

Sponge is one of the oldest groups of multicellular animal found on the earth [1]. They are one of the highly diverse and successful group of marine benthic communities around the world [2]. Sponge is one of the dominant associated species in coral reef ecosystem [3] and they help to bind the live corals to the reef frames, also helps to regeneration of broken reefs, sheltering microbial symbionts of nitrifying and photosynthesizing activities and protecting from erosion processes [4-6].

The spongiology in India started with freshwater sponges by Carter [7-9] and followed by Bowerbank [10] with marine sponges. Even though India has rich history of sponge studies, from the Lakshadweep Island group, studies are very meagre. Burton [11] studied off Kilien Island sponges and latter Thomas [12-19] studied the Lakshadweep Islands sponges in detail. These studies reported 91 species of sponges from 10 islands of this location. The next detailed study was carried out by George et al. [20] after three decades. The studies after Thomas [19], most of the work of these Islands were sponge metabolites and associated microbial studies along with that few distribution studies as an extension of the earlier studies were reported. Feby and Nair [21] studied sponge associated Dysidea granulosa Bergquist, 1965 and Sigmadocia (Haliclona) fibulata Schmidt, 1862 bacterial distribution in the Kavaratti Island. Gopi and Ajithkumar [22] reported 21 species of sponges from Agatti Island, of which 19, were new report. Prabhakaran et al., [23] reported 22 species of sponges from seagrass meadows of Minicoy Island and Rocktim et al., [24] reported a new record of sponges from Bangaram and Thinnakara island.

Since, the long gap in the studies of the sponges of Lakshadweep Islands and its inconsistency in terminology makes a perplexing situation for the upcoming researchers. This may be due to not available of updates checklist, some species name change because of the revised classification of sponges by Morrow and Cárdenas [25] as well as differences of opinion are available on about the number of sponge species recorded from Lakshadweep offshore regions. An attempt was initiated to compile the literature on sponge species and its distribution for Lakshadweep Islands waters and prepared a checklist to update the sponge taxonomy status in these Islands.

Materials and Methods

The existing published literatures were compiled and extracted the status of sponge studies in the waters of Lakshadweep Islands marine environments. The collected results were interpreted and brought out as a checklist of sponges of Lakshadweep. The taxon identified in these texts were verified with World Porifera Data Base [26] and the World Register of Marine Species [27]. The taxonomy of the reported taxon was updated based on the revised porifera classification proposed by Morrow and Cardenas [25].

Result

As on date 19 sponges related papers were published relating to Lakshadweep Islands marine environments. The published report suggested that 145 taxon of sponges belongs to 86 Genera, 49 Family and 18 Orders among 5 Subclasses and 3 Classes reported from Lakshadweep Islands. Among the 145 taxon 126 identified up to the species level and remaining 19 were identified only up to genus level. Out of 19 sponge related papers, only 6 were taxonomy paper [11,12,14-17], 6 were associated microbial and metabolites studies of sponges [28-32,21], 4 were distribution studies [18,19,22,23], along with one catalogue [13], one checklist paper [20] and a short communication by Rocktim et al., [24].
| Sl. No. | ACCEPTED NAME | Synonymous representation from Lakshadweep papers. | Recorded Locations | REFERENCE |
|--------|---------------|--------------------------------------------------|-------------------|-----------|
| 1.     | *Theonella cupola* (Burton, 1928) | | KLT & MCY | Burton (1928) [11]; Thomas (1989) [19] |
| 2.     | *Jaspis penetrans* (Carter, 1880) | | SUH & KPL | Thomas (1989) [19] |
| 3.     | *Jaspis diastra* (Vacelet & Vasseur, 1965) | *Zaplethea digonoxea spp. diastra* (Vacelet & Vasseur, 1965) | SUH | Thomas (1989) [19] |
| 4.     | *Ecionemia acervus* (Bowerbank, 1862) | | MCY & AGT | Thomas (1969, 1980, 1989) [13,16,19]; Gopi and Ajith Kumar (2012) [22] |
| 5.     | *Ecionemia thielei* (Thomas, 1986) | | MCY & KDM | Thomas (1980, 1989) [16,19] |
| 6.     | *Rhabdastrella rowi* (Dendy, 1916) | *Aurora rowi* (Dendy, 1916) | AMN | Thomas (1989) [19] |
| 7.     | *Rhabdastrella globostellata* (Carter, 1883) | *Aurora globostellata* (Carter, 1883) | SUH & MCY | Thomas (1989) [19]; Parbhakar et al., (2013) [23] |
| 8.     | *Stelleta tethyopsis* (Carter, 1880) | | KVT | Thomas (1989) [19] |
| No. | Species | Author(s) | Family | Suborder | Notes |
|-----|---------|-----------|--------|----------|-------|
| 9   | Stelleta sp | AGT | Geodiidae |   | Gopi and Ajith kumar (2012) [22] |
| 10  | *Asteropus simplex* (Carter 1879) | MCY | Geodiidae |   | Thomas (1969a) [13] |
| 11  | *Dercitus (Stoeba) plicatus* (Schmidt, 1868) | KVT, SUH, KLP, MCY, KDM & AMN | Geodiidae |   | Thomas (1989) [19] |
|     | *Stellettinopsis simplex* (Carter 1879) |   | Geodiidae |   | |
| 12  | *Geodia lindgreni* (Lendenfeld, 1903) | MCY | Geodiidae |   | Thomas (1980, 1989) [16,19] |
|     |   |   | Suborder: Spirophorina |   | |
| 13  | *Cinachyrella cavernosa* (Lamarck, 1815) | KVT | Geodiidae |   | Thomas (1989) [19] |
|     | *Cynachyra cavernosa* (Lamarck, 1815) |   | Geodiidae |   | |
| 14  | *Paratetilla bacca* (Selenka, 1867) | MCY | Tetillidae |   | Thomas (1980, 1989) [16,19] |
|     |   |   |   |   | |
| 15  | *Samus anonymus* (Gray, 1867) | KVT, SUH, KPL, AND, MCY, KDM | Thoosidae |   | Thomas (1989) [19] |
|     |   |   |   |   | |

Family: Geodiidae

Suborder: Spirophorina

Family: Tetillidae

Family: Samidae

Family: Thoosidae
| No. | Species and Subspecies | Order/Family | References |
|-----|------------------------|--------------|------------|
| 16. | *Thoosa armata* (Topsent, 1888) | Order: Haplosclerida, Family: Chalinidae | Thomas (1989) [19] |
| 17. | *Haliclona (Gellius) fibulata* (Schmidt, 1862) | Order: Haplosclerida, Family: Chalinidae | Thomas (1979, 1989) [15, 19]; Parbhakar et al., (2013) [23]; Feby and Nair (2010) [21]; Gopi and Ajithkumar (2012) [22] |
| 18. | *Haliclona (Gellius) cellaria* (Rao, 1941) | Order: Haplosclerida, Family: Chalinidae | Thomas (1989) [19]; Parbhakar et al. (2013) [23] |
| 19. | *Haliclona* (Gellius) aff. Cymaeformis (nov) George et al., 2020 | Order: Haplosclerida, Family: Chalinidae | George et al. (2020) [20] |
| 20. | *Haliclona (Haliclona) oculata* (Linnaeus, 1759) | Order: Haplosclerida, Family: Chalinidae | Thomas (1989) [19] |
| 21. | *Haliclona tenuiramosa* (Burton, 1930) | Order: Haplosclerida, Family: Chalinidae | Thomas (1989) [19]; Parbhakar et al. (2013) [23] |
| 22. | *Haliclona pigmentifera* (Dandy, 1905) | Order: Haplosclerida, Family: Chalinidae | Parbhakar et al. (2013) [21] |
| 23. | *Chalinula nematifera* (de Laubenfels, 1954) | Order: Haplosclerida, Family: Chalinidae | Gopi and Ajithkumar (2012) [23] |
| 24. | *Neopetrosia chaliniformis* (Thiele, 1899) | Order: Haplosclerida, Family: Chalinidae | Thomas (1989) [19] |

Family: Niphatidae
|   | Name                                      | Taxonomic Notes                        | Authors          | Year       |
|---|------------------------------------------|----------------------------------------|------------------|------------|
|25.| *Gelliodes fibulata* (Carter, 1881)      | *Gelliodes fibulata* sensu (Ridley, 1884) | KVT              | Thomas (1989) [19] |
|26.| *Gelliodes pumila* (Lendenfeld, 1887)    | *Sigmadocia pumila* (Lendenfeld, 1887) | MCY              | Thomas, (1979, 1989) [15,19] |
|   | Family: Phloeodictyidae                   |                                        |                  |            |
|27.| *Oceanapia sagittaria* (Sollas, 1902)    | *Orina sagittaria* (Sollas, 1902)      | KVT              | Thomas (1989) [19] |
|28.| *Siphonodictyon minutum* (Thomas, 1972)  | *Aka minuta* (Thomas, 1972)            | KVT, SUH, KPL, AND, MCY | Thomas (1989) [19] |
|   | Family: Callyspongiidae                  |                                        |                  |            |
|29.| *Callyspongia* (Cladochalina) *diffusa* (Ridley, 1884) | *Callyspongia diffusa* (Ridley, 1884) | MCY              | Thomas (1979, 1989) [15,19] |
|30.| *Callyspongia* (Cladochalina) *fibrosa* (Ridley & Dendy, 1886) | *Callyspongia fibrosa* (Ridley & Dendy, 1886) | AND,MCY & AMN | Thomas (1989) [19] |
|31.| *Callyspongia* (Callyspongia) *tubulosa* (Linnaeus, 1759) | *Callyspongia tubulosa* (de Laubenfels, 1936) | AGT              | Gopi and Ajithkumar, (2012) [22] |
|32.| *Callyspongia* (Euplacella) *retiarumata* comb (nov) George et al., 2020 |                                      | MCY,KDM, AGT & KVT | George et al. (2020) [20] |
|33.| *Callyspongia* (Euplacella) *mannaarensis* comb (nov) George et al., 2020 |                                      | MCY              | George et al. (2020) [20] |
|34.| *Callyspongia* *crassifibra* (Dendy, 1889) |                                      | KVT              | George et al. (2020) [20] |
| No. | Species Name                                      | Genus                        | Authors         |
|-----|--------------------------------------------------|------------------------------|-----------------|
| 35. | *Callyspongia* sp                                 |                              |                 |
|     | Order: Poecilosclerida                            |                              |                 |
|     | Family: Iotrochotida                              |                              |                 |
| 35. | *Iotrochota baculifera* (Ridley, 1884)            |                              | KVT & KLP       |
|     | Family: Isodictyida                               |                              | Thomas (1989) [19]|
| 36. | *Coelocarteria singaporensis* (Carter, 1883)      | *Cornulum vesiculatum* (Dendy, 1905) | KLP             |
|     | Family: Acarnidae                                 |                              | Thomas (1989) [19]|
| 37. | *Zyzya fuliginosa* (Carter, 1879)                 | *Damirina laccadivensis* (Thomas, 1989) and *Aka laccadivensis* (Thomas 1989) | KLP & MCY       |
|     | Family: Coelosphaerida                            |                              | Thomas (1989) [19]|
| 38. | *Acarnus souriei* (Lévi, 1952)                    | *Acanthacarnus souriei* (Lévi, 1952) | KVT & KLP       |
|     | Family: Coelosphaerida                            |                              | Thomas (1989) [19]|
| 39. | *Lissodendoryx (Waldoschmittia)* slchmidt (Ridley, 1884) | *Damiriana schmidtii* (Ridley, 1884) | KVT, SHU, KLP, MCY |
|     | Family: Myxillida                                 |                              | Thomas (1980, 1989) [16,19]|
| 40. | *Myxilla (Ectomyxilla) arenaria* (Dendy, 1905)    | *Myxilla arenaria* (Dendy, 1905) | KLP             |
|     | Family: Myxillida                                 |                              | Thomas (1989) [19]|

**References:**
- Parbhakar et al. (2013) [23]
- Thomas (1989) [19]
|   | Species                          | Family               | Authors                  | Year(s) |
|---|----------------------------------|----------------------|--------------------------|---------|
| 41. | *Myxilla sp.*                     |                      | MCY                      |         |
| 42. | *Tedania (Tedania) anhelans* (Vio in Olivi, 1792) | *Tedania anhelans* (lieberkuhn ?) | KVT, SUH, KPL, AND, MCY, KDM, & AMN |         |
| 43. | *Plocamilla manaarensis* (Carter, 1880) |                      | MCY                      | Thomas (1980, 1989) [16,19] |
| 44. | *Ophlitaspongia rimosa* (Ridley, 1884) |                      | AGT                      | Thomas (1980, 1989) [16,19] |
| 45. | *Microciona aceratoobtusa* (Carter, 1887) |                      | KVT & SUH                | Thomas (1989) [19] |
| 46. | *Microciona rhopalophora* (Hentschel, 1912) |                      | SUH                      | Thomas (1989) [19] |
| 47. | *Clathria (Thalysias) reinwardti* (Vosmaer, 1880) | *Clathria reinwardti* (Vosmaer, 1880) | MCY                      | Thomas (1980, 1989) [16,19] |
| 48. | *Clathria (Thalysias) procera* (Ridley, 1884) | *Clathira procera* (Schmidt, 1862) | AGT                      | Gopi and Ajithkumar, (2012) [22] |
| 49. | *Clathria (Thalysias) vulpina* (Lamarck, 1814) | Clathria procera     | KVT                      | George et al. (2020) [20] |
|   | Species Description                                      | Reference          | Authors | Year |
|---|----------------------------------------------------------|---------------------|---------|------|
| 50. | *Clathria (Clathria) indica* (Dendy, 1889)              | KDM & KVT          |         |      |
| 51. | Clathira spp.                                            | AGT                |         |      |
|     | Family: Mycalidae                                        |                     |         |      |
| 52. | *Mycal grandis* (Gray, 1867)                            | MCY                |         |      |
|     | Thomas (1980, 1989) [16,19]                             |                     |         |      |
| 53. | *Mycal (Zygomycale) parishii* (Bowerbank, 1875)          | MCY                |         |      |
|     | *Zygomycale parishii* (Bowerbank, 1875)               |                     |         |      |
|     | Thomas (1980, 1989) [16,19]; George et al. (2020)      |                     |         |      |
|     | Order: Clionaida                                        |                     |         |      |
|     | Family: Spirastrellidae                                 |                     |         |      |
| 54. | *Spirastrella coccinea* (Duchassaing & Michelotti, 1864) | KVT, AND & MCY     |         |      |
|     | Thomas (1989)                                            |                     |         |      |
|     | Family: Clionaidae                                      |                     |         |      |
| 55. | *Cervicornia cuspidifera* (Lamarck, 1815)                | SUH & MCY          |         |      |
|     | *Spirastrella cuspidifera* (Lamarck, 1815)              |                     |         |      |
|     | Thomas (1969,1980, 1989) [13,16,19]                     |                     |         |      |
| 56. | *Cervicornia inconstans* comb (nov)                     | AGT                |         |      |
|     | George et al., 2020                                     |                     |         |      |
| 57. | *Spheciospongia inconstans* (Dendy, 1887)               | KVT, SUH, MCY, AND, AMN, KLT, AGT, KLP & KDM | Thomas (1969,1980, 1989) [13,1619]; Parbhakar et al. (2013) [23] |
|     | *Spirastrella inconstans* (Dendy, 1887)                |                     |         |      |
| 58. | *Spheciospongia vagabunda* (Ridley, 1884)               | MCY,KDM & KVT      |         |      |
|     | George et al. (2020)                                    |                     |         |      |
| No. | Taxon                                      | Author(s) | Reference(s) |
|-----|--------------------------------------------|------------|---------------|
| 59  | *Spheciospongia* sp.                       | AGT, KDM & KVT | George et al. (2020) [20] |
| 60  | *Cliona celata* (Grant, 1826)              | KVT, SUH, MCY, AND, AMN | Thomas (1980, 1989) [16,19]; Gopi and Ajithkumar (2012) [22] |
| 61  | *Cliona viridis* (Schmidt, 1862)           | KVT, KPL   | Thomas (1989) [19] |
| 62  | *Cliona ensifera* (Sollas, 1878)           | KVT, SUH, KLP, AND, MCY & KDM | Thomas (1989) [19] |
| 63  | *Cliona mucronata* (Sollas, 1878)          | SUH, AND & MCY | Thomas (1989) [19] |
| 64  | *Cliona sp*                                | MCY        | Parbhakar et al. (2013) [23] |
| 65  | *Pione vastifica* (Hancock, 1849)          | KVT, SUH & KLP | Thomas (1980, 1989) [16,19] |
| 66  | *Pione carpenteri* (Hancock, 1867)         | KVT, SUH, KPL, AND, MCY & KDM | Thomas (1989) [19] |

**Family: Placospongiidae**

| No. | Taxon                                      | Author(s) | Reference(s) |
|-----|--------------------------------------------|------------|---------------|
| 67  | *Placospongia carinata* (Bowerbank, 1858)  | MCY        | Thomas (1969, 198a, 1989) [13,16,19] |

**Order: Suberitida**

**Family: Halichondriidae**
| 69. | Halichondria (Halichondria) panacea (Pallas, 1766) | Halichondria panacea (Pallas 1766) | KLP | Thomas (1989) [19] |
| 70. | Halichondria sp | | MCY | Parbhakar et al. (2013) [23] |
| 71. | Amorphinopsis excavans (Carter, 1887) | | KVT, SUH, KLP, AND, MCY & KDM | Thomas (1989) [19], Gopi and Ajithkumar (2012) [23] |
| 72. | Amorphinopsis foetida (Dendy, 1889) | Prostylissa foetida (Dendy, 1889) | MCY | Thomas (1969, 1980, 1989) [13,16,19] |
| 73. | Ciocalypta polymastia (Lendenfeld, 1888) | | MCY | Thomas (1973, 1980, 1989) [14,16,19] |
| 74. | Ciocalypta digitata (Dendy, 1905) | | KDM | George et al. (2020) [20] |
| 75. | Spongiosorites topsenti (Dendy, 1905) | | KVT. | George et al. (2020) [20] |

Family: Suberitidae

| 76. | Suberites carnosus (Johnston, 1842) | | MCY | Thomas (1980, 1989) [16,19] |
| 77. | Suberites sp | | MCY | Parbhakar et al. (2013) [23] |
| 78. | Térpios cruciatus (Dendy, 1905) | Laxosuberites cruciatus (Dendy, 1905) | MCY, SUH, KDM, AGT & KVT. | Thomas (1980, 1989) [16,19]; George et al. (2020) [20] |
| 79. | Pseodosuberites sp. | | KPL & MCY | Thomas (1989) [19] |
| No. | Species | Authors and References | Order | Family |
|-----|---------|------------------------|-------|--------|
| 80. | *Aaptos aaptos* (Schmidt, 1864) | MCY | | |
| 81. | *Terpios hoshinota* (Rützler & Muzik, 1993) | BNG, TNK | Bubarida | Bubaridae |
|     | **Order: Bubarida**<br>**Family: Bubaridae** | | | |
| 82. | *Bubaris sp.* | MCY | | |
|     | **Family: Dictyonellidae** | | | |
| 83. | *Acanthella cavernosa* (Dendy, 1922) | MCY | | |
|     | **Family: Desmanthidae** | | | |
| 84. | *Desmanthus rhabdophorus* (Hentschel, 1912)<br>*Lophacanthus rhabdophorus* (Hentschel, 1912) | MCY | Tethyida | Timeidae |
|     | **Order: Tethyida**<br>**Family: Timeidae** | | | |
| 85. | *Timea stellivarians* (Carter, 1880) | MCY | | |
|     | **Family: Tethyidae** | | | |
| 86. | *Timea stellata* (Bowerbank, 1866) | AMN | | |
|     | **Family: Tethyidae** | | | |
|   | Species                        | Authors (Year) | Cited in                           |
|---|--------------------------------|----------------|------------------------------------|
| 87 | *Tethya robusta* (Bowerbank, 1873) | SUH, MCY, KDM | Thomas (1969, 1980, 1989) [13,16,19] |
| 89 | *Tethya japonica* (Sollas, 1888) | MCY & KDM | Thomas (1980, 1989) [16,19] |
| 90 | *Tethya diploderma* (Schmidt, 1870) | SUH & MCY | Thomas (1989) [19] Parbhakar et al., (2013) [23] |
| 91 | *Stellitethya repens* (Schmidt, 1870) | MCY | Thomas (1980, 1989) [16,19] |
| 92 | *Xenospongia sp.* | MCY | Parbhakar et al. (2013) [23] |
|   | **Order: Biemnida** <br>**Family: Rhabderemiidae** | | |
| 93 | *Rhabderemia prolifera* (Annandale, 1915) | KVT, SHU, KLP, AND & MCY | Thomas (1989) [19] |
|   | **Family: Biemnidae** | | |
| 94 | *Biemna fortis* (Topsent, 1897) | MCY | Thomas (1980, 1989) [16,19] |
| 95 | *Biemna ehrenbergi* (Keller, 1889) | KDM, AGT & KVT | George et al. (2020) [20] |
| 96 | *Sigmaxinella flabellata* (Carter, 1885) | AGT | Gopi and Ajithkumar (2012) [22] |
|   | **Order: Agelasida** <br>**Family: Agelasidae** | | |
| #  | Species                                | Author(s)            | References          |
|----|----------------------------------------|----------------------|---------------------|
| 97 | *Agelas mauritiana* (Carter, 1883)      |                      | Thomas (1980, 1989) [16,19] |
| 98 | *Agelas ceylonica* (Dendy, 1905)        |                      | Thomas (1980, 1989) [16,19] |
| 99 | *Agelas sp.*                            |                      | Thomas (1980, 1989) [16,19] |
|    | Order: Axinellida                       |                      |                     |
|    | Family: Raspailiida                     |                      |                     |
|    | Subfamily: Echinodictyinae              |                      |                     |
| 100| *Echinodictyum longistylum* (Thomas, 1968) |                      | Thomas (1969,1980, 1989) [13,16,19] |
|    | Family: Heteroxyida                     |                      |                     |
| 101| *Myrmekioderma granulatum* (Esper, 1794) | *Myrmekioderma granulata* (Esper, 1794) | Thomas (1969,1980, 1989) [13,16,19] |
|    | Family: Axinellida                      |                      |                     |
| 102| *Axinella donnani* (Bowerbank, 1873)    |                      | George et al. (2020) [20] |
| 103| *Axinella manus* (Dendy, 1905)          |                      | George et al. (2020) [20] |
| 104| *Axinella tenuidigitata* (Dendy, 1905)  |                      | George et al. (2020) [20] |
| 105| *Dragmacidon agariciforme* (Dendy, 1905) |                      | George et al. (2020) [20] |
| No. | Species                                      | Author and Year | Reference                                                                 |
|-----|---------------------------------------------|-----------------|---------------------------------------------------------------------------|
| 106 | *Auletta aurantiaca* Dendy, 1889             | MCY             | George et al. (2020) [20]                                                 |
| 107 | *Phycopsis* sp1                             | AGT             | Thomas (1989) [19]                                                        |
| 108 | *Phycopsis* sp2                             | MCY             | Thomas (1989) [19]                                                        |
|     |                                             |                 | Order: Scopalinida                                                        |
|     |                                             |                 | Family: Scopalinitida                                                     |
| 109 | *Stylissa carteri* (Dendy,1889)             | *MCY & KDM*     | George et al. (2020) [20]                                                 |
| 110 | *Stylissa petrosioides* comb (nov) George et al., 2020 | *AGT & KVT.*    | George et al. (2020) [20]                                                 |
|     |                                             |                 | Subclass: Keratosa                                                        |
|     |                                             |                 | Order: Dictyoceratida                                                     |
|     |                                             |                 | Family: Dysideida                                                        |
| 111 | *Dysidea fragilis* (Montagu, 1814)          | KLP, MCY, KLT & AGT | Thomas (1979, 1989) [15,19]; Gopi and Ajithkumar (2012) [22]; Parbhakar et al (2013) [23] |
| 112 | *Dysidea granulosa* (Bergquist, 1965)       | KVT & AGT       | Feby and Nair (2010) [21]; Gopi and Ajithkumar (2012) [23]; George et al. (2020) [20] |
| 113 | *Lamellodysidea herbacea* (Keller, 1889)    | *Dysidea herbacea* (Keller, 1889) | KLP,MCY,KLT & AGT | Thomas (1979, 1989) [15,19]; Gopi and Ajithkumar (2012) [22] |
|     |                                             |                 | Family: Spongiida                                                        |
| 114 | *Spongia (Spongia) ceylonensis* (Dendy, 1905) | *Spongia officinalis var. ceylonensis* (Dendy, 1905) | MCY, KVT, SUH, AND, AMN, KLT, AGT, KLP KPT | Thomas (1979, 1989) [15,19]; Gopi and Ajithkumar (2012) [22]; Prabhakar et al. (2013) [23]; George et al. (2020) [20] |
|   | **Species** | **Authors** | **References** |
|---|-------------|-------------|---------------|
| 115. | *Spongia aff. Ceylonensis (nov)* George et al., 2020 | MCY & KVT | George et al. (2020) [20] |
| 116. | *Spongia (Spongia) sp.* | KDM | George et al. (2020) [20] |
| 117. | *Hippiospongia sp.* | KVT, SUH, KLP, AND, MCY, KDM, AMN, KPT | Thomas (1989) [19] |
| 118. | *Hyattella cribriformis* (Hyatt, 1877) | KVT, MCY, AMN, KLP & AGT | Thomas (1979, 1989) [15,19]; Parbhakar et al. (2013) [23]; Gopi and Ajithkumar (2012) [22] |
| 119. | *Hyattella intestinalis* (Lamarck, 1814) | KDM | George et al. (2020) [20] |
| 120. | *Hyattella aff. Intestinalis (nov)* George et al., 2020 | KDM | George et al. (2020) [20] |
| 121. | *Hyattella tubaria* Lendenfeld, 1889 | KDM & KVT | George et al. (2020) [20] |
| 122. | *Hyattella cavernosa* (Pallas, 1766) | KVT | George et al. (2020) [20] |
| 123. | *Hyattella aff. cavernosa (nov)* George et al., 2020 | MCY & KVT | George et al. (2020) [20] |
| 124. | *Hyrtios erectus* (Keller, 1889) | KLP & AGT | Thomas (1989) [19]; Gopi and Ajithkumar (2012) [22] |
| 125. | *Phyllospongia foliascens* (Pallas, 1766) | SUH, MCY, KLT | Thomas (1979, 1989) [15,19] |

**Family**: Thorectidae  
**Subfamily**: Thorectinae
| 126. | Fasciospongia cavernosa (Schmidt, 1862) | KLP, AND, KDM, MCY & AMN | Thomas (1989) [19]; Parbhakar et al. (2013) [23] |
| 127. | Thorectopsamma sp. | KLP | Thomas (1989) [19] |
| 128. | Fasciospongia anomala (Dendy, 1905) | KDM, AGT & KVT | George et al. (2020) [20] |
| 129. | Hyrtios reticulatus (Thiele, 1899) | MCY, KDM & KVT | George et al. (2020) [20] |
| 130. | Hyrtios sp. | AGT & KVT | George et al. (2020) [20] |
| 131. | Luffariella herdmani (Dendy, 1905) | KDM, AGT & KVT | George et al. (2020) [20] |

**Subfamily: Phyllospongiinae**

| 132. | Lendenfeldia dendyi (Lendenfeld, 1889) Phyllospongia dendyi (Lendenfeld, 1889) | MCY | Thomas (1973, 1979, 1989) [14, 15, 19] |

**Order: Dendroceratida**

**Family: Darwinellidae**

| 133. | Dendrilla cactos (Selenka, 1867) | KVT, SHU, KLP | Thomas (1989) [19] |

**Family: Irciniidae**

| 134. | Ircinia ramose (Keller 1889) | BNG | Parameswaren et al. (1989) [28] |
| No. | Taxonomic Name | Species | Authors | Reference |
|-----|----------------|---------|---------|-----------|
| 135. | *Ircinia compana* (Lamark, 1814) | *Ircinia compana* | MCY | Parbhakar et al. (2013) [23] |
| 136. | *Ircinia vallata* (Dendy, 1887) | | *MCY, KDM & KVT* | George et al. (2020) [20] |
| | **Family: Dictyodendrillidae** | | | |
| 137. | *Spongionella nigra* (Dendy 1889) | | AGT & KVT | George et al. (2020) [20] |
| | **Subclass: Verongimorpha** | | | |
| | **Order: Verongiida** | | | |
| | **Family: Pseudoceratinidae** | | | |
| 138. | *Pseudoceratina purpurea* (Carter, 1880) | *Psammaplysilla purpurea* (Carter, 1880) | KVT, SUH, MCY, AND, AMN, KDM & AGT | Thomas (1989) [19]; Gopi and Ajithkumar (2012) [22]; Parbhakar et al. (2013) [23]; George et al. (2020) [20] |
| | **Family: Ianthellidae** | | | |
| 139. | *Ianthella flabelliformis* (Linnaeus, 1759) | | AGT | Gopi and Ajithkumar (2012) [22] |
| | **Order: Chondrillida** | | | |
| | **Family: Chondrillidae** | | | |
| 140. | *Chondrilla sacciformis* (Carter, 1879) | | SUH | Thomas (1989) [19] |
| | **Class: Homoscleromorpha** | | | |
| | **Order: Homosclerophorida** | | | |
| | **Family: Plakinidae** | | | |
| 141. | *Plakinastrella minor* (Dendy, 1916) | *Dercitopsis minor* (Dendy, 1916) | SUH | Thomas (1989) [19] |
Class: Calcarea  
Subclass: Calcinea  
Order: Clathrinida  
Family: Leucettidae  

142. *Pericharax heteroraphis* (Polejajeff, 1883)  
AGT  
Gopi and Ajithkumar (2012) [22]

143. *Leucetta chagosensis* (Dendy, 1913)  
MCY, KDM, AGT & KVT  
Gopi and Ajithkumar (2012) [22]; Van Soest (2018) [33]; George et al. (2020) [20]

Family: Clathrinidae

144. *Clathrina sp.*  
AGT, MCY  
Gopi and Ajithkumar (2012) [22]; Parbhakar et al. (2013) [23]

Subclass: Calcaronea  
Order: Leucosolenida  
Family: Sycettidae

145. *Sycon ciliatum* (Fabricius, 1780)  
*Scypha ciliata*  
MCY  
Parbhakar et al. (2013) [23]

Location code and Names: MCY- Minicoy, KVT- Kavaratti, AND- Androth, AGT- Agatti, KDM- Kadmat, AMN- Amini, KLT- Kiltan, SUH-Suhali, KPT- Kalpitti, BNG- Bangarum, TNK- Thinnakara.

**Table 1:** The List of Sponge reported from Lakshadweep Islands.

**Discussion**

Off the cost of Kiltan Island, the first sponge report from Lakshadweep islands was made [11]. This sponge species were the collections of R.I.M.S. “Investigator” expedition. After that, it took about 40 years to get an attention to the sponge fauna of these Island ecosystems by Thomas [12]. This work was a Ph.D. thesis and it’s an unpublished data. However, Central Marine Fisheries Research Institutes (CMFRI) reference sponge specimens catalogue mentioned only 10 species from Lakshadweep, which was published by Thomas [13]. A subsequent study by Thomas [19] mentioned that 11 sponge species were identified from the Minicoy Island of Lakshadweep. So, the 11th specimen mentioned by Thomas [12,19] was not clear from these literatures.

Subsequently, a series of publications from Thomas [14-17] described about 41 species of sponges exclusively from Minicoy Islands of Lakshadweep. Among the 41 species, 3 identified up to genus and 20 species are remaining in the same name as he mentioned, and the rest of the 18 species have got synonym or transferred to new names.

The sponge availability from different Islands of Lakshadweep other than Kiltan and Minicoy was established by Thomas [18]. This article has not a systematic paper, but he reported distribution and diversity of boring sponges from nine islands of Lakshadweep, namely- Kavaratti, Kalpeni, Suhali, Androth, Minicoy, Amini, Kiltan, Agatti and Kadmat. A total of 18 boring sponges from 9 different genus (*Rhabdermia, amorphinopsis, Aka, Cliona, Spirastrella, Thoosa, Jaspis, Halina, Samus*) were identified and 6 sponges like *Cliona celata, Cliona ensifera, Cliona mucurnata, Cliona vastifica, Spirastrella inconstans* and *Spirastrella cuspidfera* are mentioning for its abundance in different Islands of Lakshadweep.

The most acknowledged research article on the sponge of Lakshadweep was published by Thomas [19] with a compiled report of 91 sponges from 10 islands of Lakshadweep, including
his previous studies from these Islands. But this paper has not provided any detailed systematic account of the sponge species for these 91 sponges. At present, 44 species out of 91 sponges mentioned in this paper got their synonym or transferred to new names.

Furthermore, from the 91 sponges of Lakshadweep 8 sponges identified only up to genus level, namely Myxilla sp, Pseudosuberties sp, Phycopsis sp1, Phycosis sp2, Agelas sp, Bubaris sp, Hippospongia sp, Thorectopsamma sp and 2 got the same name according to the current systematics, i.e, Aka laccadivensis and Damirrina laccadivensis are accepted as Zyzzya fuliginosa. This is the reason in many papers, a number of the sponge species available from these Islands became 82. While going through the distribution table of Thomas [19] suggested that they identified 21 species, of which 14 species were new to Agatti Island and 3 were identified only to genus level and remaining 4 species were reported by Thomas [19]. Furthermore, from their identification, 12 specimens mentioned the species name with wrong author or year. This information leads to confusion among the researchers on sponges. The lists of the species mention with a wrong author name or year are mentioned in the Table 2:

| Sl.No. | Name Mentioned in the Reviewed Literature | Accepted Name |
|-------|------------------------------------------|---------------|
| 1     | Callyspongia tubulosa de Laubenfels, 1936 | Callyspongia (Callyspongia) tubulosa (Linnaeus, 1759) |
| 2     | Clathria procera Schmidt, 1862            | Clathria (Thalysias) procera (Ridley, 1884) |
| 3     | Dysidea fragilis Gray, 1867              | Dysidea fragilis (Montagu, 1814) |
| 4     | Dysidea granulosa Gray, 1867             | Dysidea granulosa Bergquist, 1965 |
| 5     | Ecionemia acervus Bowerbank, 1864        | Ecionemia acervus Bowerbank, 1862 |
| 6     | Haliclona nematifera Grant, 1836         | Haliclona nematifera (De Laubenfels, 1954) now accepted as Chalinula nematifera (de Laubenfels, 1954) |
| 7     | Hyattella cribriformis Lendenfeld, 1888  | Hyattella cribriformis (Hyatt, 1877) |
| 8     | Lanthella flabelliformis Schmidt, 1862   | Lanthella flabelliformis (Linnaeus, 1759) |
| 9     | Leucetta chagosensis Haecke, 1872        | Leucetta chagosensis (Dendy, 1913) |
| 10    | Psammaplysilla purpurea Keller, 1889     | Psammaplysilla purpurea (Carter, 1880) now accepted as Pseudoceratina purpurea (Carter, 1880) |
| 11    | Sigmadosia fibulata de Laubenfels, 1936  | Sigmadosia fibulata (Schmidt, 1862) accepted as Haliclona (Gellius) fibulata (Schmidt, 1862) |
| 12    | Sigmatinella flabellata Dendy, 1867      | Sigmatinella flabellata (Carter, 1885) |

**Table 2**: Name Mentioned in the Reviewed Literature and Accepted in Database.

Prabhakar et al. [23] reported 22 species of sponges from the seagrass associated environment of Minicoy Island, Lakshadweep. Among them, 16 was identified to species level and the remaining 6 identified only to genus level. Of the 16 species, 5 species, namely, Haliclona pigmentifera, Gelliodes cellaria, Trinia comana, Sypha ciliata and Xenospongia sp. were not identified from Lakshadweep Island before this study and three more species, namely, Haliclona tenrmosa, Rhavdastrella globostella and Tethya diploderma were the first report of Minicoy Island. However, the detailed taxonomy was not presented for the above species mentioned in this article. Gopi and Ajithkumar [22] and Prabhakar et al. [23] reported four species of calcareous sponges *Pericharax heteroraphis* (Poléjaeff, 1883), *Leucetta chagosensis* (Dendy, 1913), *Clathrina sp.*, and *Sycon ciliatum* (Fabricius, 1780). However, they did not mention any description of this species. But, latter the species *Leucetta chagosensis* (Dendy, 1913) was described by van Soest and de Voogd [33] from Minicoy and Kavarati Islands.
A recent short communication of Rocktim et al., [24] reported coral killing sponges outbreak, *Terpios hoshinota* (Rützler and Muzik, 1993) from Bangaram and Thinnakara Islands, which was also a first report of the Lakshadweep Islands.

George et al. [20] reported 101 species of sponges from the Indian nearshore waters. Among them, 38 sponges were reported from Lakshadweep Islands. Out of reported species from Lakshadweep 24 species were first reports. However, the cursory analysis of data in this article suggested that, 25 species were new to Lakshadweep Island, 6 species were reported in previous works of these Islands and the remaining 3 species were identified up to genus and the last 4 species are aff. species.

**Conclusion**

This study concluded that, a total of 145 species of sponges is recorded in 19 published papers from Lakshadweep Islands. Except Heteractinellida all the three remaining Classes are recorded from these Islands. Demosponges has the most predominant Class followed by 4 records of Calcarea from these locations and a single record off Class Homoscleromorphia was observed. The major contributions of these records were contributed by Thomas. It is interesting to note that every author got one or more new records from these islands proves that the diversity of the sponges in this location are enormous and the detailed and intensive study is needed to reveal the sponge diversity of these Islands.

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