

Miscellaneous Publication

Occasional Paper No. 4

Records of the Zoological Survey of India

**CHECK-LIST OF INDIAN
FRESHWATER SPONGES**

by

S. KHERA

and

Y. CHATURVEDI

Issued by the Director
Zoological Survey of India, Calcutta

**RECORDS
OF THE
ZOOLOGICAL SURVEY OF INDIA**

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Checklist of Indian Freshwater Sponges, with a
Catalogue of Type-Specimens in the Collection of the
Zoological Survey of India (Porifera: Spongillidae)

BY

S. KHERA and Y. CHATURVEDI



Edited by the Director, Zoological Survey of India

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INTRODUCTION

Annandale (1911) in his volume in the Fauna of British India series on Freshwater Sponges, Hydroids and Polyzoa described 35 species, subspecies and varieties under seven genera of Spongillidae from what was then the British India and from Ceylon (now Sri Lanka) and Burma. He also recognised three subgenera under the genus *Spongilla*. Later on (up to 1919) he described a few more species. After Annandale very little work has been done on Indian Spongillidae. Penney and Racek (1968), while making a revision of the freshwater sponges of the world, synonymised many Indian species, subspecies and varieties reported/described by Annandale. This checklist is based on the present status of the different taxa.

This tentative list has been prepared to consolidate our knowledge of the freshwater sponges within Indian political boundaries and also with the idea that this may serve as a prelude to a revised volume in the Fauna of India series. It may, however, be stated that many areas of the country have yet to be surveyed for their spongillid fauna.

Opportunity has also been taken to include a catalogue of type specimens preserved in the National Zoological Collections of the Zoological Survey of India. Quite a few types were originally deposited with the Indian Museum; these were subsequently transferred to the Zoological Survey of India.

Arrangement:—The genera and their species are arranged alphabetically. The current name of the species is given first; this is followed by a list of synonyms. Species occurring in India are marked with an asterisk. The species whose “types” are present in the National Zoological Collections are marked with a cross (†). The type category is followed by registered number(s), the mode of preservation (dry, wet, mounted on a slide, etc.), locality, date of collection and the name of collector. Geographical distribution of each species has also been given.

Term schizotype has been used to indicate that the specimen is a part of the type specimen.

Phylum PORIFERA
Class DEMOSPONGIAE
Order HAPLOSCLERINA
Family SPONGILLIDAE

I. Genus **Cortispongilla** Annandale, 1913

1. **Cortispongilla barroisi** (Topsent, 1892)

†1892. *Potamolepis barroisi* Topsent, *Rev. biol. du Nord de la France*, **5** (3) : 85.

1913. *Cortispongilla barroisi*, Annandale, *J. Asiat. Soc. Bengal, Calcutta*, (n.s.), **9** : 66.

Schizotype: Unnumbered slide from syntype; Palestine: L. Tiberias; *N. Annandale* Coll.

Distribution: Palestine.

II. Genus **Corvospongilla** Annandale, 1911

2. **Corvospongilla bohmi** (Hilgendorf, 1883)

†1883. *Spongilla bohmi* Hilgendorf, *Sitz.-ber. Ges. Naturf. Freunde Berlin* : 87.

Syntypes: ZEV 3914/7; two examples dry and in spirit, and two slides (P 425/1 in type slide series; and P 430/1 in ordinary collection); E. Africa. River Ugalla; *Dr. Bohm* Coll. (Berlin Museum Exchange).

1913. *Corvospongilla bohmi*, Weltner, *Ergebn. Deutsch. Zentralaf. Exped.*, **4** : 475.

1932. *Corvospongilla bohmi* var. *elegans* Topsent, *Bull. Mus. Hist. nat.*, (2), **4** : 580.

Distribution: Found only in three localities of equatorial Africa.

*3. **Corvospongilla burmanica** (Kirkpatrick, 1908)

1908. *Spongilla loricata* var. *burmanica* Kirkpatrick, *Rec. Indian Mus.*, **2** : 97. (A piece of the Type deposited in the Indian Museum, no longer traceable. Available data-Lower Burma: Myitkyo, head of the Pegu - Sittang canal; collected in April, *E. W. Oates* Coll.)

1911. *Corvospongilla burmanica*, Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 123.

†1911. *Corvospongilla burmanica* subsp. *bombayensis* Annandale, *Rec. Indian Mus.*, **6** : 225.

Holotype: ZEV 4839/7; dry and one slide; India: Maharashtra: Dist. Poona: Khed: River Bhima; 1.v.1911; *S. P. Agharkar* Coll.

Distribution: India; Andhra Pradesh, Maharashtra, Gujarat; Burma.

*4. **Corvospongilla caunteri** Annandale, 1911

†1911. *Corvospongilla caunteri* Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 243.

Syntype: ZEV 4776/7; dry and in spirit and one slide; India: Uttar Pradesh: Lucknow (Hazratganj); 29–30.iv.1911; *J. Caunter* Coll.

Distribution: India: Uttar Pradesh: Lucknow; Maharashtra: Dist. Satara: Yenna Valley: pool of a stream at Medha.

*5. **Corvospongilla lapidosa** (Annandale, 1908)

†1908. *Spongilla lapidosa* Annandale, *Rec. Indian Mus.*, 2 : 24.

Syntype: ZEV 2592/7, 2593/7; dry and in spirit, and three slides (two numbered P 438/1 and one without number); India: Maharashtra: Igatpuri Lake (2593/7), and R. Godavari at Nasik (2592/7); *N. Annandale* Coll.

1911. *Corvospongilla lapidosa*, Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 124.

Distribution: India: Karnataka: Bangalore; Maharashtra, Bihar: Santhal Pargana, West Bengal: Barrackpore.

6. **Corvospongilla scabrispiculis** Annandale, 1913

†1913. *Corvospongilla scabrispiculis* Annandale, *Rec. Indian Mus.*, 9 (6) : 238.

Holotype: ZEV 5504/7; two slides; Tropical Africa, probably the Nile basin. Other data not available.

Distribution: Tropical Africa, probably the Nile basin.

*7. **Corvospongilla ultima** (Annandale, 1910)

†1910. *Spongilla ultima* Annandale, *Rec. Indian Mus.*, 5 : 31.

Syntype: ZEV 3667/7; in spirit and 3 slides from the syntype; India: Tamil Nadu: Tank near Kanniyakumari (formerly Cape Comorin); –iv.1909; *R. S. N. Pillay* Coll.

1912. *Corvospongilla ultima*, Annandale, *Rec. Indian Mus.*, 7 : 99.

†1912. *Corvospongilla ultima* var. *spinosa* Annandale, *Rec. Indian Mus.*, 7 : 390.

Holotype: ZEV 5106/7; in spirit; India: Maharashtra: Dist. Satara: Koyna Valley: Taloshi (alt. ca 610 m); 27–28.iv.1912; *F. H. Gravely* Coll.

Distribution: India: Maharashtra, Andhra Pradesh, Kerala, Tamil Nadu.

8. **Corvospongilla victoriae** Annandale, 1914

†1914. *Corvospongilla victoriae* Annandale, In “*Beitr. Kenntnis Land-u. Susswasserfauna Deutsch-Sudwestafrikas, herausgeg. von W. Michaelsen*,” Hamburg, Friedrichsen, 2 : 243.

Syntype: P 456/1; slide only (P 421/1 in spirit, and slide No. P 434/1 not traceable); Rhodesia: River Zambesi, near the Victoria Falls; 18.viii.1911; *W. Michaelsen* Coll.

Distribution: Rhodesia.

III. Genus **Dosilia** Gray, 18679. **Dosilia palmeri** (Potts, 1885)

†1885. *Meyenia plumosa* var. *palmeri* Potts, *Proc. U.S. natn. Mus.*, **8** : 587.

Syntype: ZEV 3068/7, two slides, (spirit specimen not traceable); Mexico: Banks of River Colorado nr. Lerido Sonora; U.S. National Museum (Exchange). Other data not available.

1911. *Dosilia palmeri*, Annandale, *Fauna Brit. India, Freshwater Sponges*, etc., 111.

Distribution: Central America

*10. **Dosilia plumosa** (Carter, 1849)

†1849. *Spongilla plumosa* Carter, *J. Bombay nat. Hist. Soc.*, **3** : 34, & *Ann. Mag. nat. Hist.*, **4** : 85.

Syntype: ZEV 2579/7; in spirit and one slide; India: Bombay; British Museum (Exchange). Other data not available.

1867. *Dosilia plumosa*, Gray, *Proc. zool. Soc. Lond.*, : 551.

1881. *Meyenia plumosa*, Carter, *Ann. Mag. nat. Hist.*, (5), **7** : 94.

1895. *Ephydatia plumosa*, Weltner, *Arch. Naturgesch.*, **61** (1) : 126.

Distribution: India: Maharashtra: Bombay; Orissa: Rambha. Asia: Philippines and probably in other parts of S.E. Asia.

IV Genus **Ephydatia** Lamouroux, 1816*11. **Ephydatia fluviatilis** (Linn., 1758)

1758. *Spongia fluviatilis* Linn., *Systema Naturae*, 10th ed., **1** : 1348.

1816. *Ephydatia fluviatilis*, Lamouroux, *Histoire des polypiers coralligenes flexibles, vulgairement nommes Zoophytes* : 6.

1842. *Spongilla fluviatilis*, Johnston, *History of the British Zoophytes*, London : 5.

1874. *Spongilla sceptrifera* Bowerbank, *A monograph of the British Spongidae*, **3** : 296.

1878. *Spongilla stagnalis* Dawson, *Canadian Nat.*, **8** : 1.

1881. *Meyenia fluviatilis*, Carter, *Ann. Mag. nat. Hist.*, **7** : 92.

1885. *Meyenia fluviatilis* var. *angustibirotulata* Carter, *Ann. Mag. nat. Hist.*, **15** : 454.

1885. *Meyenia fluviatilis* var. *gracilis* Carter, *Ann. Mag. nat. Hist.*, **16** : 180.

1887. *Meyenia fluviatilis* var. *mexicana* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 219.

1901. *Ephydatia gorjaevii* Swartschewsky, *Notizen Kiew Ges. Naturf.*, **14** : 344.

1907. *Ephydatia robusta*, Annandale (not Potts, 1887), *J. Asiat. Soc. Bengal*, (N.S.), **3** : 24.

1907. *Ephydatia fluviatilis* var. *capensis* Kirkpatrick, *Ann. Mag. nat. Hist.*, **20** (7) : 524.

1909. *Ephydatia fluviatilis* var. *syriaca* Topsent, *Rouen Bull. Soc. Sci. Nat.* : 1.
1912. *Ephydatia fluviatilis* subsp. *himalayensis* Annandale, *Rec. Indian Mus.*, **7** : 138.
- †1918. *Ephydatia fluviatilis* var. *intha* Annandale, *Rec. Indian Mus.*, **14** : 76.
Holotype: P 30/1; in spirit — large number of pieces; Burma: S. Shan State; Inle Lake among floating islands off Fort Stedman, -ii.1917; *N. Annandale Coll.*
Paratypes: P 26/1–P 29/1; in spirit; P 26/1 nr. Than-taung on west side of Inle Lake, P 27/1 off Kaung Daung in marshy edge of lake. Particulars of P 28/1–P 29/1, same as for holotype.
- †1926. *Ephydatia fluviatilis* var. *chui* Gee, *J. roy. Asiat. Soc. North China Branch*, **57** : 110.
Paratype: P 334/1; dry, in pieces; China: Chekiang, Chi Jao; *N. G. Gee Coll.*
1928. *Ephydatia fluviatilis* var. *teberdana* Rezvoj, *Zool. Anz.*, **84** : 228.
1930. *Ephydatia fluviatilis* var. *hastifera* Rezvoj; *Zool. Anz.*, **87** : 185.
1931. *Ephydatia fluviatilis* var. *mexicana* Gee, *Peking nat. Hist. Bull.*, **5** : 43.
Distribution: India: Kumaon Hills: Naukuchia Tal, Bhim Tal, Sat Tal, Naini Tal; Europe: Sweden, Finland, The Netherlands, Belgium, France, Switzerland, Germany, Austria, Hungary, Czechoslovakia, Poland, Yugoslavia, Italy, U.S.S.R.; N. America: U.S.A., Mexico; Asia: U.S.S.R., China, Japan, Malay Archipelago, Burma; Australia: New South Wales, Queensland; Africa: South Africa.

12. *Ephydatia facunda* Weltner, 1895

1895. *Ephydatia facunda* Weltner, *Arch. Naturgesch.*, **61** : 140.
- †1898. *Ephydatia ramsayi* var. *talaensis* Weltner *Bull. Mus. Torino*, **13** : 331.
Syntype: ZEV 3921/7; in spirit, a number of small pieces; Argentina: Tala; (Berlin Museum Exchange). Other data not available.
1960. *Meyenia facunda*, Penney, *Univ. South Carolina Pub.*, (3), **3** (1) : 48.
1960. *Meyenia ramsayi* var. *talaensis*, Penney, *Univ. South Carolina Pub.*, (3), **3** (1) : 53.

Distribution: Central and southern parts of South America.

*13. *Ephydatia meyeri* (Carter, 1849)

1849. *Spongilla meyeri* Carter, *Ann. Mag. nat. Hist.*, **4** : 84.
(Type material collected in Bombay) Type in British Museum. A fragment in the Indian Museum: no longer available.
1867. *Ephydatia meyeri*, Gray, *Proc. zool. Soc. Lond.*: 550.
1887. *Meyenia fluviatilis* var. *meyeri*, Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 221.
1895. *Ephydatia mulleri* Weltner, *Arch. Naturgesch.*, **61** (1) : 125.
1908. *Ephydatia mulleri* var. *meyeri*, Annandale, *Rec. Indian Mus.*, **2** : 307.
1932. *Ephydatia fluviatilis* var. *meyeri*, Gee, *Peking nat. Hist. Bull.*, **6** (3) : 30.

Distribution: India: West Bengal: Calcutta and neighbourhood; Maharashtra: Bombay and Poona, Tamil Nadu: Kanniyakumari; Kerala: Trivandrum, Uttar Pradesh: Kumaon Hills: Bhim Tal; China.

V. Genus **Eunapius** Gray, 1867

*14. **Eunapius calcuttanus** (Annandale, 1911)

†1911. *Spongilla fragilis* subsp. *calcuttana* Annandale, *Fauna Brit. India. Freshwater Sponges, etc.*, : 96.

Holotype: ZEV 3821/7; in spirit, 3 pieces and one slide; India: West Bengal: Calcutta: Indian Museum Tank; -.iii.1909; *N. Annandale Coll.*

1968. *Eunapius calcuttanus*, Penney and Racek, *Bull. U.S. natn. Mus.*, No. 272 : 28.

Remark: The slide I M No. P 43/1 mentioned as 'type' by Penney and Racek (1968) and even in the records of the Zoological Survey of India cannot be a type because entries in the "Register" indicate that the material for this slide was collected on 22.ii.1917 from Inle Lake, S. Shan State, Burma whereas the original description was based on the material from Calcutta. A re-examination of the status of this species is, therefore, necessary.

Distribution: India: Calcutta; Burma.

*15. **Eunapius carteri** (Bowerbank, 1863)

†1863. *Spongilla carteri* Bowerbank, *Proc. zool. Soc. Lond.*, : 469.

Syntype: ZEV 2575/7: dry and one slide; India: Bombay (British Museum Exchange).

1849. *Spongilla friabilis* Carter, (not Lamarck, 1816) *Ann. Mag. nat. Hist.*, 4 : 83.

1867. *Eunapius carteri*, Gray, *Proc. zool. Soc. London*, : 552.

†1911. *Spongilla carteri* var. *cava* Annandale, *Fauna Brit. India. Freshwater Sponges, etc.*, : 88.

Holotype: ZEV 2590/7; in spirit; many pieces and gemmules; India: Maharashtra: Bombay: Gwalior Tank; 24.xi.1907; *N. Annandale Coll.*

†1911. *Spongilla carteri* var. *mollis* Annandale, *Fauna Brit. India. Freshwater Sponges, etc.*, : 88.

Holotype: ZEV 3778/7: in spirit; a large number of pieces; India: W. Bengal: Calcutta: Indian Museum Tank; *Harihar Ram Coll.*

†1911. *Spongilla carteri* var. *lobosa* Annandale, *Fauna Brit. India. Freshwater Sponges, etc.*, : 89.

Holotype: ZEV 3775/7; in spirit; several pieces; India: Kerala: Trivandrum: in the tank of chief temple; 5.iii.1909. (Trivandrum Museum Exchange).

1912. *Spongilla carteri* subsp. *lobosa*, Annandale, *Rec. Indian Mus.*, **7** : 384.
- †1913. *Spongilla aetheriae* Annandale, *Rec. Indian Mus.*, **9** : 237.
Holotype: ZEV 6034/7; three slides (only two traceable); Africa: R. Nile: growing on shell of *Aetheria* sp. Other data not available.
1923. *Spongilla carteri* var. *balatonensis* Arndt., *Zool. Anz.*, **56** : 79.
1923. *Spongilla carteri* var. *melli* Arndt. *Zool. Anz.*, **56** : 80.
1925. *Spongilla rotundacuta* Rezvoj, *Ann. Mag. nat. Hist.*, **15** : 567.
1931. *Spongilla carteri* var. *rotundacuta*, Gee, *Peking nat. Hist. Bull.*, **5** : 48.
- Distribution**: India: West Bengal, Orissa, Bihar, Uttar Pradesh, Punjab, Madhya Pradesh, Kerala; eastward Bangladesh; Burma; Malaysia; Indonesia; Philippines; China and westward through Pakistan, Turkestan and southern U.S.S.R. to Hungary (Lake Balaton); Africa.

16. *Eunapius coniferus* Annandale, 1916

1916. *Spongilla (Eunapius) conifera* Annandale, *J. roy. Asiat. Soc., N. China Branch*, **47** : 51.
- Syntypes*: ZEV 7105/7 and 7106/7; two examples in spirit and four slides (two slides figured); China: Kiang-si Province: Tai Hu; Mouth of Moo-Too Creek; -xii.1915; *N. Annandale* Coll.
- Distribution**: China.

***17. *Eunapius crassissimus* (Annandale, 1907)**

- †1907. *Spongilla crassissima* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **3** : 17.
Holotype: ZEV 2372/7; three pieces in spirit and one slide; India: W. Bengal; Calcutta: Indian Museum Tank; -vii.1906; *N. Annandale* Coll.
- †1907. *Spongilla crassissima* var. *bigemmulata* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **3** : 18.
Holotype: ZEV 2370/7; six pieces in spirit and one slide; India: W. Bengal; Calcutta: Indian Museum Tank; 22.vii.1906. *N. Annandale* Coll.
- †1907. *Spongilla crassior* Annandale, *Rec. Indian Mus.*, **1** : 389.
Syntypes: ZEV 2427/7 and 2428/7; spirit and dry collection respectively; Bangladesh: Rajshahi (ZEV 2427/7), Rampur Bhoolia (ZEV 2428/7); 7.ii.1907; *N. Annandale* Coll.
1911. *Spongilla crassissima* var. *crassior*, Annandale, *Fauna Brit. India. Freshwater Sponges*; etc., : 98.
1968. *Eunapius crassissimus*, Penney & Racek, *Bull. U.S. natn. Mus.*, No. 272 : 30.
- Distribution**: India: West Bengal: Calcutta; Assam: Dist. Sibsagar: Mariani; Orissa: Puri; Bangladesh; tropical S.E. Asia; Australia.

18. **Eunapius geei** (Annandale, 1918)

†1918. *Spongilla geei* Annandale, *Mem. Asiat. Soc. Bengal*, **6** : 202.

Syntype: P 50/1; in spirit: China, Kiang-si Province: Loen-Mong; *N. Gist Gee* Coll.

1968. *Eunapius geei*, Penney & Racek, *Bull. U.S. natn. Mus.*, No. 272 : 34.
Distribution: China.

*19. **Eunapius geminus** (Annandale, 1911)

†1911. *Spongilla gemina* Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 97.

Syntypes: ZEV 4103/7 and 4104/7; in spirit and dry collection respectively and 3 slides; India: Karnataka, ca 16 km. from Bangalore, alt. 900 m; *M. Travers & N. Annandale* Coll.

1968. *Eunapius geminus*, Penney & Racek, *Bull. U.S. natn. Mus.*, No. 272 : 32.
Distribution: India: Karnataka: Bangalore (known only from the type locality).

20. **Eunapius michaelsoni** (Annandale, 1914)

†1914. *Spongilla michaelsoni* Annandale, In " *Beitrage zur Kenntnis der Land und Susswasserfauna Deutsch Sudwestafrikas* " : 239.

Schizotype: P 511/1; three slides; River Zambesi nr. Victoria Falls; 18.viii.1911; *W Michaelson* Coll. (Nat. Hist. Mus. Hamburg).

Distribution: Central Africa.

21. **Eunapius potamolepis** Annandale, 1918

†1918. *Spongilla (Eunapius) potamolepis* Annandale, *Mem. Asiat. Soc. Bengal*, **6** : 208.

Syntypes: ZEV 7164/7 and P 390/1; in spirit and dry collection respectively; Thailand: Tale Sap: Mouth of River Patalung at Lampam: *N. Annandale* Coll.

1932. *Spongilla potamolepis*, Gee, *J. Siam. Soc. nat. Hist.*, Suppl., **8** : 303.
Distribution: Thailand (known only from the type locality).

22. **Eunapius sinensis** (Annandale, 1910)

†1910. *Spongilla (Stratospongilla) sinensis* Annandale, 1910, *Proc. U.S. natn. Mus.*, **38** : 183.

Syntype: ZEV 3674/7; two dry pieces and two slides; China; Soochow nr. Shanghai: on the rock in the canal; *N. Gist Gee* Coll. (U.S. National Museum Exchange).

†1916. *Spongilla (Stratospongilla) stanleyi* Annandale, *J. roy. Asiat. Soc.*, *N. China Branch*, **47** : 50.

Holotype: ZEV 7107/7; in spirit and 3 slides; China: Kiang-si Province: Tai Hu; 3.xii.1915; *N. Annandale* Coll,

1960. *Spongilla sinensis*, Penney, *Univ. S. Carolina Pub.*, (3) **3** : 29.
 1960. *Spongilla stanleyi*, Penney, *Univ. S. Carolina Pub.*, (3) **3** : 29.
 1968. *Eunapius sinensis*, Penney & Racek, *Bull. U.S. natn. Mus.*, No. 272 : 36.
 Distribution: China north to Manchuria and U.S.S.R.

23. **Eunapius tinei** (Gee, 1923)

- †1923. *Spongilla tinei* Gee, *Philipp. J. Sci.*, **48** : 526.
Syntype: P. 777/1; dry: Philippines: River Passig nr. Manila; *N. Gist Gee Coll.*
 1968. *Eunapius tinei*, Penney & Racek, *Bull. U.S. natn. Mus.*, No. 272 : 34.
 Distribution: Philippines (known only from the type locality).

VI. Genus **Heteromeyenia** Potts, 1881

24. **Heteromeyenia stepanowii** (Dybowsky, 1884)

1884. *Dosilia stepanowii* Dybowsky, *Sitz.-ber. Naturf. Ges. Univ. Dorpat*, **6** : 507.
 1886. *Carterius stepanowii*, Petr, *Sitz.-ber k. Bohm. Ges. Wiss. Prague*, : 93.
 1886. *Ephydatia bohémica* Petr, *Sitz.-ber k. Bohm. Ges. Wiss. Prague*, : 102.
 1888. *Meyenia hungarica* Traxler, *Gyogysz Kozlony*, : 2.
 1899. *Carterius bohemicus*, Girod, *Bull. Soc. zool. France*, **24** : 54.
 1902. *Carterius stepanowii* forma *palatinus* Lauterborn, *Biol. Zentralbl.*, **22** : 519.
 1902. *Carterius stepanowii* forma *petri* Lauterborn, *Biol. Zentralbl.*, **22** : 519.
 1909. *Carterius stepanowii* var. *bohemicus*, Weltner, Spongillidae, Susswasserschwamme. In “ (August Brauer, *Die Susswasserfauna Deutschlands*),” **19** : 189.
 †1916. *Heteromeyenia kawamurae* Annandale and Kawamura, *J. College Sci Imp. Univ. Tokyo*, **39** : 14.
Holotype: ZEV 7184/7; in spirit; Japan: Lake Biwa; -.xi.1914; *N. Annandale Coll.*
 1927. *Heteromeyenia baileyi* var. *arndti* Schroder, *Zool. Anz.*, **70** : 75.
 1927. *Heteromeyenia baileyi* var. *bohémica*, Schroder, *Zool. Anz.*, **73** : 107.
 1927. *Heteromeyenia baileyi* var. *palatina*, Schroder, *Zool. Anz.*, **73** : 107.
 1927. *Heteromeyenia baileyi* var. *petri*, Schroder, *Zool. Anz.*, **73** : 107.
 1927. *Heteromeyenia baileyi* var. *stepanowii*, Schroder, *Zool. Anz.*, **73** : 107.
 Distribution: European U.S.S.R. to Czechoslovakia, Hungary, Germany, Italy, China, Japan, Australia.

VII. Genus **Heterorotula** Penney and Racek, 196825. **Heterorotula capewelli** (Bowerbank, 1863)

†1863. *Spongilla capewelli* Bowerbank, *Proc. zool. Soc. Lond.*, : 447.

Syntype: ZEV 2577/7; in spirit and two slides; Australia; Victoria: Lake Hindmarsh (British Museum Exchange).

1867. *Ephydatia capewelli*, Gray, *Proc. zool. Soc. Lond.*, : 550.

1881. *Meyenia capewelli*, Carter *Ann. Mag. nat. Hist.*, : 93.

1968. *Heterorotula capewelli*, Penney & Racek, *Bull. U.S. natn. Mus.*, No. 272 : 97.

Distribution: Central Australia east to the Dividing Range and north to Queensland.

26. **Heterorotula multidentata** (Weltner, 1895)

†1895. *Tubella multidentata* Weltner, *Arch. Naturgesch.*, **61** : 142.

Syntype: ZEV 3920/7; three pieces in spirit; Australia: River Burnett (Berlin Museum Exchange).

1887. *Spongilla lacustris* var. *sphaerica* Lendenfeld, *Zool. Jahrb.*, **2** : 90.

1896. *Ephydatia lendenfeldi* Traxler, *Foldtani Kozlony*, **26** : 97.

1900. *Ephydatia multidentata*, Weltner, *Denkschi. Med. Nature. Ges. Jena*, **8** : 519.

1960. *Meyenia multidentata*, Penney, *Univ. S. Carolina Publ.*, (3) **3** : 53.

1968. *Heterorotula multidentata*, Penney & Racek, *Bull. U.S. natn. Mus.*, No. 272 : 100.

Distribution: Eastern Australia.

VIII. Genus **Metania** Gray, 186727. **Metania reticulata** (Bowerbank, 1863)

†1863. *Spongilla reticulata* Bowerbank, *Proc. zool. Soc. Lond.*, : 455.

Syntype: ZEV 2580/7; dry and two slides; S. America: River Amazon. No other data. (British Museum Exchange).

1867. *Metania reticulata*, Gray, *Proc. zool. Soc. Lond.*, : 551.

1881. *Tubella reticulata*, Carter, *Ann. Mag. nat. Hist.*, **7** : 97.

1968. *Metania reticulata*, Penney and Racek, *Bull. U.S. natn. Mus.*, No. 272 : 148.

Distribution: S. America: River Amazon (known only from the type locality).

28. **Metania vesparia** (von Martens, 1868)

†1868. *Spongilla vesparium* von Martens, *Arch. Naturgesch.*, **34** : 61.

Syntype: ZEV 3927/7; dry and two slides; Borneo; (British Museum Exchange).

1895. *Tubella vesparium*, Weltner, *Arch. Naturgesch.*, **61** : 114.
 1895. *Tubella pottsi* Weltner, *Arch. Naturgesch.*, **61** : 143.
 1934. *Acalle pottsi*, Burton, *Rev. Zool. Bot. Afrique*, **24** : 412.
 1938. *Metania lissostrongyla* Burton, *Rev. Zool. Bot. Afrique*, **30** : 463.
 1968. *Metania vesparia*, Penney and Racek, *Bull. U.S. natn. Mus.*, No. 272 : 149.

Distribution: Indonesia: Borneo: Kalimantan; Central Africa.

Remark: Distribution apparently discontinuous.

29. **Metania vesparioides** (Annandale, 1908)

- †1908. *Tubella vesparioides* Annandale, *Rec. Indian Mus.*, **2** : 157

Syntype: ZEV 2672/7; dry; Burma: Tenasserim: Dist. Amherst nr. Moulmein: Mudon: edge of Kanghyi ("Great Pond"); -ii, iii.1908; *N. Annandale* Coll.

1968. *Metania vesparioides*, Penney and Racek, *Bull. U.S. natn. Mus.*, No. 272 : 151.

Distribution: Burma.

IX. Genus **Nudospongilla** Annandale, 1913

30. **Nudospongilla aster** Annandale, 1913

- †1913. *Nudospongilla aster* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **9** : 69.

Holotype: ZEV 5232/7; dry, not traceable; three slides of which one labelled as "Figured" — all in general collection; Palestine: Lake Tiberias (Sea of Galilee) channel of R. Jordan; -x.1912; *N. Annandale* Coll.

Distribution: Palestine.

31. **Nudospongilla coggini** (Annandale, 1910)

- †1910. *Spongilla (Stratospongilla) coggini* Annandale, *Rec. Indian Mus.*, **5** : 198.

Holotype: ZEV 3809/7; dry and three slides; China: Yunnan: South outlet of Lake Tali Fu (Erh-Hai) (alt. 2125 m); 1-7.iii.1910; *J. Coggin Brown* Coll.

1913. *Nudospongilla coggini*, Annandale, *J. & Proc. Asiat. Soc. Bengal*, **9** : 63.

Distribution: China.

32. **Nudospongilla mappa** Annandale, 1913

- †1913. *Nudospongilla mappa* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **9** : 64.

Holotype: ZEV 5224/7; dry pieces and one slide; Palestine: nr. Semakh (Tsemah) channel of R. Jordan, Lake Tiberias (Sea of Galilee); -x.1912; *N. Annandale* Coll.

Paratypes: ZEV 5225/7-5227/7; specimens in spirit; Palestine: Lake Tiberias (Sea of Galilee) ZEV 5228/7-5229/7; specimens in spirit;

Palestine: Lake Tiberias (Sea of Galilee) Wed-es-Semakh, ZEV 5230/7; dry; Palestine: Lake Tiberias (Sea of Galilee) exit of R. Jordan; -x.1912; *N. Annandale* Coll.

Distribution: Palestine.

33. **Nudospongilla reversa** Annandale, 1913

†1913. *Nudospongilla reversa* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **9** : 63.

Syntypes: ZEV 5222/7; in spirit; and ZEV 5223/7; two very small pieces in spirit, labelled as schizotype; Palestine: Lake Tiberias (Sea of Galilee), channel of R. Jordan, nr. Semakh (Tsemah); -x.1912; *N. Annandale* Coll.

Distribution: Palestine.

X. Genus **Pachydictyum** Weltner, 1901

34. **Pachydictyum globosum** Weltner, 1901

†1901. *Pachydictyum globosum* Weltner, *Arch. Naturgesch.*, **67** : 188.

Schizotype: ZEV 5274/7; in spirit; Indonesia: Celebes Island: Lake Posso; *W. Weltner* Coll. (Exchange)

Distribution: Indonesia: Celebes Island.

35. **Pachydictyum transversalis** Weltner, 1909

†1909. *Pachydictyum transversalis* Weltner, Spongillidae Susswasser-schwamme In "Susswasserfauna Deutschlands," Jena : 187.

Schizotype: dry.

Distribution: Palestine.

Remark: The specimen is labelled as Type and carries the label *Pachydictyum transversalis* n.sp. but with Annandale as collector. However, the Registration No. of the specimen is given as ZEV 5222/7 which, in the register, is shown as *Nudospongilla reversa* (for details see *Nudospongilla reversa*).

XI. Genus **Pectispongilla** Annandale, 1909

*36. **Pectispongilla aurea** Annandale, 1909

†1909. *Pectispongilla aurea* Annandale, *Rec. Indian Mus.*, **3** : 103.

Syntype: ZEV 3115/7; in spirit; India: Travancore, W. Ghats, pond near Tenmalai; -xi.1908; *N. Annandale* Coll.

Distribution: India: Kerala.

*37. **Pectispongilla stellifera** Annandale, 1915

†1915. *Pectispongilla stellifera* Annandale, *Rec. Indian Mus.*, **11** : 175.

Holotype: ZEV 3790/7; dry; India: Kerala: Trichur; G. Mathai Coll. (Madras Museum).

Distribution: India: Kerala.

*38. **Pectispongilla subspinosa** Annandale, 1911

†1911. *Pectispongilla aurea* var. *subspinosa* Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 107.

Syntype: ZEV 3789/7, dry and three slides of the same number in general collection. India: Kerala: Ernakulum; -.vii.1909; G. Mathai Coll.

†1915. *Pectispongilla subspinosa*, Annandale, *Rec. Indian Mus.*, **11** : 177.

Distribution: India: Kerala.

XII. Genus **Radiospongilla** Penney & Racek, 1968

39. **Radiospongilla cantonensis** (Gee, 1929)

†1929. *Ephydatia crateriformes* var. *cantonensis* Gee, *Peking nat. Hist. Bull.*, **3** (3) : 1.

Syntype: P 335/1; dry; China: Canton; N. Gist Gee Coll.

1960. *Meyenia crateriformes* var. *cantonensis*, Penney, *Univ. South Carolina Publ.*, (3), **3** (1) : 48.

1968. *Radiospongilla cantonensis*, Penney and Racek, *U.S. natn. Mus. Bull.* No. 272 : 72.

Distribution: China.

*40. **Radiospongilla cerebellata** (Bowerbank, 1863)

1863. *Spongilla cerebellata* Bowerbank, *Proc. zool. Soc. Lond.*, : 465.

1890. *Spongilla cinerea*, Weber (not *S. cinerea* of other authors), Spongillidae des Indischen Archipels. In "Zoologische Ergebnisse einer Reise nach Niderlandisch Ost-Indien." **1** : 35.

†1895. *Spongilla biseriata* Weltner, *Arch. Naturgesch.*, **61** : 138.

Syntype: ZEV 3915/7; dry, and two slides in general collection carrying same number. Egypt: nr. Cairo; no further data. (Berlin Museum Exchange).

†1907. *Spongilla reticulata* Annandale, *Rec. Indian Mus.*, **1** : 387.

Holotype: ZEV 2433/7; in spirit; Bangladesh: Rajshahi; 1-7.ii.1907.

†1907. *Spongilla proliferens* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **3** : 15.

Holotype: ZEV 2373/7; in spirit; India: Calcutta, Indian Museum Tank; 4.ix.1906; N. Annandale Coll.

1909. *Spongilla lacustris* subsp. *reticulata*, Annandale, *Proc. U.S. Mus.*, **37** : 401.

1909. *Ephydatia semispongilla* Annandale, *Annot. Zool. Japan*, **7** : 107.

Holotype: ZEV 3119/7; in spirit; Japan: Hidachi Province, Kasumiga Ura; Dr. Oka (Science College, Tokyo University) Coll.

1911. *Spongilla alba* var. *cerebellata*, Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 76.
1913. *Spongilla lacustris* var. *cerebellata*, Weltner, *Ergebn. Deutsch. Zentraalfr. Exped.*, **4** : 475.
1915. *Spongilla lacustris* var. *proliferens*, Annandale, *Mem. Indian Mus.*, **5** : 28.
1916. *Spongilla micron* Annandale, *J. roy. Asiat. Soc. North China Branch*, **47** : 49
Holotype: ZÈV 7103/7; in spirit: China: Kiang-si Province, Tai Hu, mouth of Moò-Too creek; -xii.1915; *N. Annandale* Coll.
Paratype: ZEV 7104/7; in spirit; other particulars as for holotype.
1916. *Spongilla semispongilla* Annandale and Kawamura, *J. College Sci. Imp. Univ. Tokyo*, **39** : 5.
1926. *Spongilla sectospina* Rezvoj, *Compts. Rend. Acad. Sci. U.S.S.R.*, : 108.
1968. *Radiospongilla cerebellata* Penney & Racek, *U.S. natn. Mus. Bull.*, No. 272 : 73.

Distribution: India: Assam, West Bengal, Orissa, Bihar, Uttar Pradesh, Himachal Pradesh, Punjab, Maharashtra, Karnataka, Tamil Nadu; Bangladesh; Burma; Indonesia; Philippines; New Guinea; China; Pakistan; U.S.S.R., Southern Europe and Tropical Africa.

***41. *Radiospongilla cinerea* (Carter, 1849)**

1849. *Spongilla cinerea* Carter, *Ann. Mag. nat. Hist.*, **4** : 82.
- †1919. *Spongilla (Euspongilla) periviridis* Annandale, *Rec. Indian Mus.*, **16** : 159.
Holotype: P 59/1; in spirit; India: Maharashtra; Dist. Satara, Yenna Valley, Medha, alt. ca 600 m; 27.ii.1918.
1960. *Spongilla periviridis* Penney, *Univ. South Carolina Publ.*, (3), **3** : 26.
1968. *Radiospongilla cinerea*, Penney & Racek, *U.S. natn. Mus. Bull.* No. 272 : 75.

Distribution: India: Maharashtra, West Bengal, Bihar, U.P. (Kumaon Hills).

***42. *Radiospongilla crateriformis* (Potts, 1882)**

1882. *Meyenia crateriformis* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 12.
1885. *Ephydatia crateriformis*, Weltner, *Arch. Naturgesch.*, **61** (1) : 114.
1911. *Spongilla crateriformis*, Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 85.
- ?1911. *Spongilla crateriformis* var. *insularis* Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 85 (footnote)
- ?1942. *Ephydatia crateriformis* var. *arndti* Carvalho, *Bol. Faculd. Filosof.*, **15** : 267.

Distribution: India: West Bengal, Maharashtra, Tamil Nadu, Karnataka, Kerala, Ross Island (Andaman Group); Burma; China; Japan; U.S.A., Mexico; record from Australia (Gee, 1935) a result of wrong identification.

***43. *Radiospongilla hemephydatia* (Annandale, 1909)**

†1909. *Spongilla hemephydatia* Annandale, *Rec. Indian Mus.*, **3** : 275.

Holotype: ZEV 3341/7; in spirit, four slides carrying same number in general collection; India: Orissa, Dist. Puri, Sur Lake; -x.1908; *N. Annandale Coll.*

1968. *Radiospongilla hemephydatia*, Penney & Racek, *U.S. natn. Mus. Bull.*, No. 272 : 69.

Distribution: India: Orissa, Maharashtra: New Guinea; Australia.

***44. *Radiospongilla indica* (Annandale, 1907)**

1907. *Ephydatia indica* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **3** : 20.

1909. *Ephydatia fluviatilis* var. *ramsayi* Annandale, *Nova Guinea*, **5** : 421.

1911. *Spongilla crateriformis*, Annandale, *Fauna Brit. India. Freshwater Sponges*, etc., : 83.

1932. *Ephydatia crateriformis*, Gee, *Philippine J. Sci.*, **48** : 533.

Distribution: India: West Bengal, Maharashtra, Tamil Nadu, Karnataka, Kerala; Burma; Indonesia; Philippines; New Guinea.

45. *Radiospongilla luzonensis* (Gee, 1932) n. comb.

†1932. *Spongilla luzonensis* Gee, *Philippine J. Sci.*, **48** : 530.

Syntype: P 779/1; dry; Philippines: River Passig nr. Manila; *N. Gist Gee Coll.*

Distribution: Philippines.

46. *Radiospongilla sceptroides* (Haswell, 1882)

1882. *Spongilla sceptroides* Haswell, *Proc. Linn. Soc. N.S.W.*, **7** : 209.

†1909. *Spongilla philippinensis* Annandale, *Proc. U.S. natn. Mus.*, **36** : 627.

Holotype: ZEV 3450/7; in spirit; Philippines: Lake Lanao; (U.S. natn. Mus. Exchange).

1933. *Spongilla multispinifera* Gee, *Rec. Australian Mus.*, **18** : 456.

1935. *Spongilla rotoitiensis* Schroder, *Zool. Anz.*, **109** : 98.

1935. *Ephydatia crateriformis* Gee, *Rec. Australian Mus.*, **19** : 263.

1968. *Radiospongilla sceptroides*, Penney & Racek, *U.S. natn. Mus. Bull.*, No. 272 : 64.

Distribution: Eastern Australia; New Zealand; New Guinea and New Caledonia.

XIII. Genus **Spongilla** Lamarck, 1816*47. **Spongilla alba** Carter, 1849

†1849. *Spongilla alba* Carter, *Ann. Mag. nat. Hist.*, **4** : 83.

Schizotype: ZEV 2576/7; dry; India: Maharashtra: Bombay; H. J. Carter Coll. (British Museum Exchange).

†1906. *Spongilla lacustris* var. *bengalensis* Annandale, *J. Asiat. Soc. Bengal*, **2** : 56.

Holotype: ZEV 2354/7; in spirit; India: West Bengal; Port Canning, in a brackish pool; 28-30.i.1906; N. Annandale Coll.

†1907. *Spongilla alba* var. *marina* Annandale, *Rec. Indian Mus.*, **1** : 389.

Holotype: ZEV 2415/7; on slide (specimens seem to have been lost); India: Orissa: Lake Chilka; 5.i.1907; Gopal Chandra Chatterji Coll.

†1909. *Spongilla microsclerifera* Annandale, *Proc. U.S. natn. Mus.*, **37** : 131.

Holotype: ZEV 3452/7; dry; Philippines: Luzon: Taal Island (East side of Taal Lake; 26.xii.1907; Dr. H.M. Smith Coll. (Albert Ross Exped.).

†1909. *Spongilla travancorica* Annandale, *Rec. Indian Mus.*, **3** : 101.

Holotype: ZEV 3116/7; dry; India: Kerala: Travancore: Shasthan Cottah (backwater); 7.xi.1908; N. Annandale Coll.

1911. *Spongilla alba* var. *bengalensis*, Annandale, *Fauna Brit. India, Freshwater Sponges, etc.*, : 77.

†1915. *Spongilla nana* Annandale, *Mem. Indian Mus.*, **5**(1) : 31.

Holotype: ZEV 6455/7; in spirit; India: Orissa: L. Chilka; In a small bay at the base of Patsahanipur promontory, off Balugaon; 26.i.1914; Chilka Survey Coll.

†1919. *Spongilla alba* var. *rhadinea* Annandale, *Rec. Indian Mus.*, **18** : 85.

Holotype: P 94/1; dry; Iran: Seistan: water channel, 8 miles south of Labi-Baring (Naizar or reed-country round the Hamun-i-Helmand, as stated in literature); 16.xii.1918; N. Annandale & S. W. Kemp Coll.

Distribution: India: Maharashtra, West Bengal, Orissa, Tamil Nadu; S.E. Asia; Africa; Australia; S. America.

48. **Spongilla arctica** Annandale, 1915

†1915. *Spongilla (Euspongilla) arctica* Annandale, *Mem. Acad. Imp. Sci. St. Petersbourg*. **28**(9) : 1.

Holotype: ZEV 4108/7; in spirit and one slide; U.S.S.R., N.W. Siberia: Tabalsk, small lakes in valley of River Pedart; Zool. Mus. Acad. Sci. St. Petersburg.

Distribution: Arctic circle to Central U.S.S.R.

49. **Spongilla helvetica** Annandale, 1909

†1909. *Spongilla (Euspongilla) helvetica* Annandale, *Rev. suisse Zool.* **17** : 367.

Holotype: ZEV 3084/7; in spirit and one slide; Switzerland: Lake Geneva: Morges; -x.1900; Mus. de thirst; Geneva (Exchange).

1916. *Spongilla helvetica* Arndt. *Arch. Hydrobiol.*, **17** : 342.

Distribution: Switzerland: Lake Geneva (known only from the type locality).

50. ***Spongilla inarmata*** Annandale, 1918

†1918. *Spongilla inarmata* Annandale, *Mem. Asiat. Soc. Bengal*, **6** : 200.

Holotype: P 49/1; dry and one type slide in ordinary collection; Japan: Biwa; *T Kawamura* Coll. (Exchange).

1916. *Spongilla aspinosa*, Annandale and Kawamura (nec. Potts) *J. Coll. Sci Imp. Univ. Tokyo*, **39** : 6.

Distribution: Japan.

*51. ***Spongilla lacustris*** (Linnaeus, 1758)

1758. *Spongia lacustris* Linn., *Systema Naturae*, 10th ed; **1** : 1348.

1816. *Spongilla ramosa* Lamarck, *Histoire naturelle des animaux sans vertebres*, **2** : 100.

1842. *Spongilla lacustris*, Johnston, *History of the British Zoophytes*, : 110.

1863. *Spongilla dawsoni* Bowerbank, *Proc. zool. Soc. London*, : 467.

1863. *Spongilla paupercula* Bowerbank, *Proc. zool. Soc. London*, : 470.

1867. *Eunapius paupercula*, Gray, *Proc. zool. Soc. London*, : 552.

1870. *Spongilla lieberkuhni* Noll, *Zool. Garten*, **11** : 173.

1877. *Spongilla jordanensis* Vejdovsky, *Vesmir*, **6** : 212.

1878. *Spongilla flexispina* Dawson *Canadian Nat.*, **8** : 1.

1880. *Spongilla abortiva* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 330.

1880. *Spongilla montana* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 330.

1881. *Spongilla multiforis* Carter, *Ann. Mag. nat. Hist.*, **7** : 88.

1883. *Euspongilla lacustris*, Vejdovsky, *Abh. k. Bohm. Ges. Wiss.*, **12**(5) : 15.

1883. *Euspongilla jordanensis*, Vejdovsky, *Abh. k. Bohm. Ges. Wiss.*, **12**(5) : 20.

1883. *Euspongilla jordanensis* var. *druliaeformis* Vejdovsky, *Abh. k. Bohm. Ges. Wiss.*, **12** (5) : 22.

1883. *Euspongilla lacustris* var. *macrotheca* Vejdovsky, *Abh. k. Bohm. Ges. Wiss.*, **12** (5) : 18.

1883. *Spongilla erinaceus* Retzer, *Inaug. Dissert. Univ. Tubingen*, : 24.

1883. *Spongilla mirabilis* Retzer, *Inaug. Dissert. Univ. Tubingen*, : 25.

1883. *Spongilla rhenana* Retzer, *Inaug. Dissert. Univ. Tubingen*, : 21.

1885. *Spongilla lacustris* var. *dawsoni*, Mackay, *Proc. Trans. Nova Scotia Inst. Nat. Sci.*, **6** : 233.

1885. *Spongilla lacustrioides* Mackay, *Proc. Trans. Nova Scotia Inst. Nat. Sci.*, **6** : 240.

1887. *Spongilla lacustris* var. *abortiva*, Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 191.

1887. *Spongilla lacustris* var. *montana*, Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 192.

1887. *Spongilla lacustris* var. *multiforis*, Potts, *Proc. Acad. nat. Sci. Philadelphia*,
: 192.
1887. *Spongilla lacustris* var. *lehighensis* Potts, *Proc. Acad. nat. Sci. Philadelphia*,
: 193.
1891. *Spongilla lacustris* var. *paupercula*, Kellicott, *Bull. Buffalo Soc. Nat. Sci.*,
5 : 101.
1901. *Euspongilla lacustris* var. *lieberkuhni*, Levander, *Fauna Flora Fennica*,
27 : 56.
1901. *Spongilla microgemmata* Swartschewsky, *Notizen Kiew Ges. Naturf.*,
14 : 346.
- †1919. *Spongilla lacustris* var. *ineptorum* Annandale, *Rec. Indian Mus.*, **18** : 86.
Holotype: P 93/1; dry; Iraq: Bagdad on the side of a small stream of R.
Tigirs; 7.xii.1918; R. Hodgart Coll.
1925. *Spongilla lacustroides* Kozhoff, *Bull. Int. Sci. Biol. Geogr. Univ. Irkoutsk*,
2 (2) : 45.
1925. *Spongilla fenestrata* Kozhoff *Bull. Int. Sci. Biol. Geogr. Univ. Irkoutsk*,
2 (2) : 50.
1925. *Spongilla crustacea* Kozhoff, *Bull. Int. Sci. Biol. Geogr. Univ. Irkoutsk*,
2 (2) : 52.
1926. *Spongilla lacustris* var. *rhenana*, Arndt, *Arch. Hydrobiol.*, **17** : 342.
1926. *Spongilla lacustris* var. *jordanensis*, Arndt, *Arch. Hydrobiol.*, **17** : 342.
1930. *Spongilla lacustroides corticea* Kozhoff, *Zool. Anz.*, **90** : 158.
1931. *Spongilla lacustris* var. *crustacea*, Gee, *Peking nat. Hist. Bull.*, **5** (1) : 38.
1931. *Spongilla lacustris* var. *fenestrata*, Gee, *Peking nat. Hist. Bull.*, **5** (1) : 40.
1931. *Spongilla lacustris* var. *lacustroides* Gee, *Peking nat. Hist. Bull.*, **5** (1) : 40.
- Distribution: India: Maharashtra; Sweden; Finland; Netherlands;
Belgium; France; Switzerland; Germany; Austria; Hungary;
Czechoslovakia; Poland; Yugoslavia; Italy; U.S.S.R.; U.S.A.;
Canada; China; Japan. Restricted to the Northern Hemisphere, with
its greatest expansion in cold temperate regions.

52. ***Spongilla macrospiculata*** Stephens, 1919

- †1919. *Spongilla (Euspongilla) macrospiculata* Stephens, *Ann. Mag. nat. Hist.*,
London, (9) **3** : 95.
- Schizotype*: P 87/1; one slide from "type"; Angola: Benguela. No other
data.
- Distribution : Angola.

XIV Genus ***Stratospongilla*** Annandale, 1909

53. ***Stratospongilla africana*** Annandale, 1914

- †1914. *Spongilla (Stratospongilla) africana* Annandale, In: *Beitrage Susswasser-
fauna Deutsch Sudwestafrikas*, herausgeg von W. Michaelsen, Ham-
burg (Friedrichsen), **2** : 240.

Schizotype: Unnumbered slide; Rhodesia: R. Zambesi nr. Victoria Falls; 18.viii.1911. *W Michaelsen* Coll.

Distribution : Rhodesia.

*54. **Stratospongilla bombayensis** (Carter, 1882)

†1882. *Spongilla bombayensis* Carter, *Ann. Mag. nat. Hist.*, **10** : 369.

Schizotype: ZEV 2575/7; dry; India: Maharashtra: Bombay; British Museum Exchange.

1911. *Spongilla (Stratospongilla) bombayensis*, Annandale, *Rec. Indian Mus.*, **6** : 225.

†1911. *Spongilla bombayensis* var. *pneumatica* Annandale, *Fauna Brit. India, Freshwater Sponges, etc.*, : 241.

Holotype: ZEV 4777/7; dry; India: U.P.: Naini Tal: Naukuchia Tal alt. ca 1250 m; 5.v.1911; *S.W Kemp* Coll.

Distribution: India: U.P., Bombay, W. Ghats, Karnataka; Central Africa.

55. **Stratospongilla clementis** (Annandale, 1909)

†1909. *Spongilla clementis* Annandale, *Proc. U.S. natn. Mus.*, **36** : 631.

Syntype: ZEV 3451/7; dry; Philippines: Lake Lanao: U.S. natn. Mus. Exchange.

†1910. *Spongilla yunnanensis* Annandale, *Rec. Indian Mus.*, **5** (3) : 197.

Holotype: ZEV 3807/7; dry and two slides; China: Yunnan: South outlet of Lake Ta-li Fu (Erh-hai); alt. ca 2000 m; -.iii.1910; *J. Coggin Brown* Coll.

1968. *Stratospongilla clementis*, Penney & Racek, *U.S. natn. Mus. Bull. No.* 272 : 49.

Distribution: Philippines; China; Japan; Tropical West Coast of Africa.

56. **Stratospongilla gilsoni** Topsent, 1912

†1912. *Spongilla (Stratospongilla) gilsoni* Topsent, *Ann. Biol. Lacustre*, **5** : 187.

Syntype: ZEV 6157/7; in spirit; Fiji Island: Viti Levu; *G. Gilson* Coll.

1960. *Spongilla gilsoni*, Penney, *Univ. South Carolina Publ.*, (3), **3** (1) : 19.

Distribution: Fiji Island: Viti Levu, River Waidin (known only from type locality).

*57. **Stratospongilla gravelyi** Annandale, 1912

†1912. *Spongilla (Stratospongilla) gravelyi* Annandale, *Rec. Indian Mus.*, **7** : 384.

Holotype: ZEV 5107/7; dry and one slide; India: Maharashtra: Dist. Satara: Koyna Valley: Taaloshi, Pool in R. Koyna; 27-28.v.1912; *F. H. Gravely* Coll.

1918. *Spongilla sumatrana* var. *gravelyi*, Annandale, *Mem. Asiat. Soc. Bengal*, **6** : 212.

Distribution: India: Maharashtra: Dist. Satara (known only from type locality).

*58. **Stratospongilla indica** (Annandale, 1908)

- †1908. *Spongilla indica* Annandale, *Rec. Indian Mus.*, **2** : 25.

Holotype: ZEV 2591/7; in spirit; India: Maharashtra: Nasik: R. Godavari; 27.xi.1907; *N. Annandale* Coll.

1918. *Spongilla sumatrana* var. *indica*, Annandale, *Mem. Asiat. Soc. Bengal*, **6** : 212.

- †1919. *Spongilla sumatrana* var. *centralis* Annandale, *Rec. Indian Mus.*, **16** : 161.

Holotype: P 71/1; India: Bihar: Chakradharpur; 8-10.ii.1918; *N. Annandale* Coll.

1932. *Spongilla sumatrana* var. *baiensis* Topsent, *Bull. Mus. Hist. Nat.*, (2) **4** : 578.

1932. *Spongilla sumatrana* var. *siamensis* Gee, *J. Siam Soc. Nat. Hist.*, **8** (4) : 305.

1968. *Stratospongilla indica*, Penney & Racek, *U.S. natn. Mus. Bull.*, No. 272 : 44.

Distribution : Apparently ranging from Thailand via India to Africa.

59. **Stratospongilla rousseletii** (Kirkpatrick, 1906)

- †1906. *Spongilla rousseletii* Kirkpatrick, *Proc. zool. Soc. London*, **1** : 223.

Schizotype: ZEV 2708/7; in spirit; Rhodesia: above Victoria Falls, River Zambesi; British Museum Exchange (through Kirkpatrick).

1968. *Stratospongilla rousseletii*, Penney & Racek, *U.S. natn. Mus. Bull.*, No. 272 : 46.

Distribution: Tropical Africa.

*60. **Stratospongilla sumatrana** (Weber, 1890)

- †1890. *Spongilla sumatrana* Weber, *Zoologische Ergebnisse einer Reise nach Niederlandisch Ost-Indien*, **1** : 38.

Syntype: No number; two slides: Sumatra: Lake Sinkara; *Prof. Max Weber* Coll.

1898. *Spongilla sumatrana* var. ∞ Weltner, *Mitt. Naturh. Mus. Hamburg*, **15** : 129.

1898. *Spongilla sumatrana* var. β Weltner, *Mitt. Naturh. Mus. Hamburg*, **15** : 130.

1911. *Spongilla* (*Stratospongilla*) *sumatrana*, Annandale, *Fauna Brit. India. Freshwater Sponges, etc.*, : 53.

- †1919. *Spongilla sumatrana* var. *rivularis* Annandale, *Rec. Indian Mus.*, **16** : 161.

Holotype: P 66/1; in spirit; India: Maharashtra, Dist. Satara; Yenna Valley, Medha; 4.iii.1918; *N. Annandale* Coll.

Distribution: India: Maharashtra; Indonesia; Africa,

XV Genus **Trochospongilla** Vejdovsky, 188361. **Trochospongilla horrida** Weltner, 1893

1856. *Spongilla erinaceus* Lieberkuhn, *Muller Archiv*, : 496. [declared an invalid name by Weltner (1893)].
1881. *Meyenia erinaceus*, Carter, *Ann. Mag. nat. Hist.*, **7** (5) : 90.
1883. *Trochospongilla erinaceus*, Vejdovsky, *Abh. k. Bohm. Ges. Wiss.*, **12** (5) : 31.
1893. *Trochospongilla horrida* Weltner, *Ber. Ges. Naturf. Freunde. Berlin*, : 12.
- †1918. *Trochospongilla sol* Annandale, *Mem. Asiat. Soc. Bengal*, **6** : 205.
Holotype: ZEV 7183/7; dry; China: Tai Hu, S.E. end of Si-Dong Ding, N. Annandale Coll.
1926. *Trochospongilla horrida* var. *ningopoensis* Gee, *China J. Sci. Arts.*, **4** (4) : 182.
1926. *Trochospongilla polysclera* Rezvoj, *Compts. Rend. Acad. Sci. U.S.S.R.*, : 109.
1931. *Trochospongilla horrida* var. *sol*, Gee, *Peking nat. Hist. Bull.*, **5** (1) : 49.
- Distribution: Europe: Germany; Poland; Czechoslovakia; U.S.S.R., U.S.A., China. Northern hemisphere with preference to cold temperate regions.

*62. **Trochospongilla latouchiana** Annandale, 1907

- †1907. *Trochospongilla latouchiana* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **3** : 21.
Syntype: ZEV 2374/7; two pieces in spirit; India: West Bengal; Calcutta: Indian Museum Tank; 4.ix.1906; N. Annandale Coll.
1909. *Trochospongilla leidyi*, Annandale (nec Bowerbank), *Rec. Indian Mus.*, **3** : 103.
- †1919. *Trochospongilla latouchiana sinensis* Annandale, *Rec. Indian Mus.*, **16** : 457.
Syntype: P 95/1; dry; China: Soochow; N. Gist Gee Coll.
- †1932. *Trochospongilla latouchiana* var. *pasigensis* Gee, *Peking nat. Hist. Bull.*, **6** (2) : 14.
Syntype: P 778/1; dry; Philippines: River Passig nr. Manila; N. Gist Gee Coll.
- Distribution: India: West Bengal; S.E. Asia; Burma; China; Australia.

*63. **Trochospongilla pennsylvanica** (Potts, 1882)

1882. *Tubella pennsylvanica* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 14.
1887. *Tubella pennsylvanica* var. *minima* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 252.
1887. *Tubella fanshawi* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 252.
1887. *Tubella intermedia* Potts, *Proc. Acad. nat. Sci. Philadelphia*, : 252.

1911. *Trochospongilla pennsylvanica*, Annandale, *Fauna Brit. India, Freshwater Sponges*, etc., : 118.
1931. *Trochospongilla pennsylvanica* var. *mackayi* Gee, *Peking nat. Hist. Bull.*, **5** : 42.
1931. *Trochospongilla pennsylvanica* var. *minima* Gee, *Peking nat. Hist. Bull.*, **5** : 43.

Distribution: India: Kerala: Quilon: Lake Shasthancottah (the only Indian locality where Annandale (1911) has recorded this sponge); North America (widely distributed); Ireland; Hebrides of Scotland (according to Penney and Racek (1968) its recorded occurrence in Ireland and Scotland needs confirmation).

*64. ***Trochospongilla philottiana*** Annandale, 1907

- †1907. *Trochospongilla philottiana* Annandale, *J. & Proc. Asiat. Soc. Bengal*, **3** : 22.

Syntype: ZEV 2375/7; in spirit—two specimens; India: West Bengal: Calcutta: Indian Museum Tank; *N. Annandale* Coll.

1926. *Trochospongilla tunghuensis* Gee, *China J. Sci. Arts*, **4** (4) : 181.
1930. *Trochospongilla philottiana* var. *tunghuensis* Gee, *Lingnan Sci. J.*, **9** (4) : 369.
1930. *Trochospongilla tunghuensis* var. *javanensis* Gee, *Treubia*, **12** (1) : 102.
1931. *Trochospongilla philottiana* var. *javanensis* Gee, *Peking nat. Hist. Bull.*, **5** (1) : 40.
1931. *Trochospongilla philottiana* var. *minima* Gee, *Rec. Indian Mus.*, **32** : 491.
1938. *Trochospongilla tanganyikae* Burton, *Rev. Zool. Bot. Afrique*, **30** : 460.

Distribution: India: West Bengal; China; S.E. Asia to Philippines; also in Africa.

XVI. Genus ***Umborotula*** Penney & Racek, 1968

65. ***Umborotula bogorensis*** (Weber, 1890)

1890. *Ephydatia bogorensis* Weber, in " *Zoologische Ergebnisse einer Reise nach Niederlandisch Ost-Indien*," **1** : 33.
- †1901. *Ephydatia blembingia* Evans, *Q. Jl. microsc. Sci.*, **44** : 71.

Schizotype: ?; two slides; Thailand-Malay States; no other data.

1931. *Ephydatia bogorensis* var. *blembingia*, Gee, *Philipp. J. Sci.*, **46** (1) : 34.
1960. *Meyenia bogorensis*, Penney, *Univ. South Carolina Publ.*, (3) **2** (1) : 46.
1960. *Meyenia bogorensis* var. *blembingia*, Penney, *Univ. south carolina Publ.*, (3) **2** (1) : 46.
1968. *Umborotula bogorensis*, Penney & Racek, *U.S. natn. Mus. Bull.*, No. 272 : 122.

Distribution: Malaysia, Indonesia, Thailand, China and Australia,

SUMMARY

Of the 65 recognised species included in this paper, 28 species have been reported from India. These are: *Corvospongilla burmanica* (Kirkpatrick), *C. caunteri* Annandale, *C. lapidosa* Annandale, *C. ultima* Annandale, *Dosilia plumosa* (Carter), *Ephydatia fluviatilis* (Linn.), *E. meyeri* (Carter), *Eunapius calcuttanus* (Annandale), *E. carteri* (Bowerbank), *E. crassissimus* (Annandale), *E. geminus* (Annandale), *Pectispongilla aurea* Annandale, *P. stellifera* Annandale, *P. subspinosa* Annandale, *Radiospongilla cerebellata* (Bowerbank), *R. cinerea* (Carter), *R. crateriformis* (Potts), *R. hemephydatia* (Annandale), *R. indica* (Annandale), *Spongilla alba* Carter, *S. lacustris* (Linn.), *Stratospongilla bombayensis* (Carter), *S. gravelyi* Annandale, *S. indica* (Annandale), *S. sumatrana* (Weber), *Trochospongilla latouchiana* Annandale, *T. pennsylvanica* (Potts) and *T. philottiana* Annandale.

It may, however, be stated that many areas of the country have yet to be surveyed for their spongillid fauna. As a matter of fact after Annandale very little work has been done on Indian Spongillidae.

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<i>fragilis</i> , <i>Spongilla</i>	6	<i>lacustrioides</i> , <i>spongilla</i>	17
<i>friabilis</i> , <i>Spongilla</i>	6	<i>lacustris</i> , <i>Euspongilla</i>	17
		<i>lacustris</i> , <i>Spongilla</i>	17
		<i>lacustris</i> , <i>Spongilla</i>	17
		<i>lacustroides</i> , <i>Spongilla</i>	18
<i>geei</i> , <i>Eunapius</i>	8	<i>lacustroides</i> , <i>Spongilla lacustris</i>	18
<i>geei</i> , <i>Spongilla</i>	8	<i>lapidosa</i> , <i>Corvospongilla</i>	3

- | | | | |
|--|--------|---|--------|
| <i>lapidosa</i> , <i>Spongilla</i> | 3 | <i>multiforis</i> , <i>Spongilla lacustris</i> | 18 |
| <i>latouchiana</i> , <i>Trochospongilla</i> | 21 | <i>multispinifera</i> , <i>Spongilla</i> | 15 |
| <i>lehighensis</i> , <i>Spongilla lacustris</i> | 18 | | |
| <i>leidy</i> , <i>Trochospongilla</i> | 21 | N | |
| <i>lendenfeldi</i> , <i>Ephydatia</i> | 10 | <i>nana</i> , <i>Spongilla</i> | 16 |
| <i>lieberkuhni</i> , <i>Euspongilla lacustris</i> | 18 | <i>ningopoensis</i> , <i>Trochospongilla horrida</i> | 21 |
| <i>lieberkuhni</i> , <i>Spongilla</i> | 17 | <i>Nudospongilla</i> | 11 |
| <i>lissostrongyla</i> , <i>Metania</i> | 11 | <i>Nudospongilla aster</i> | 11 |
| <i>lobosa</i> , <i>Spongilla carteri</i> | 6, 7 | <i>Nudospongilla coggini</i> | 11 |
| <i>loricata</i> , <i>Spongilla</i> | 2 | <i>Nudospongilla mappa</i> | 11 |
| <i>luzonensis</i> , <i>Radiospongilla</i> | 15 | <i>Nudospongilla reversa</i> | 12 |
| <i>luzonensis</i> , <i>Spongilla</i> | 15 | | |
| M | | P | |
| <i>mackayi</i> , <i>Trochospongilla pennsylvanica</i> | 22 | <i>Pachydictyum</i> | 12 |
| <i>macrospiculata</i> , <i>Spongilla</i> | 18 | <i>Pachydictyum globosum</i> | 12 |
| <i>macrotheca</i> , <i>Euspongilla lacustris</i> | 17 | <i>Pachydictyum transversalis</i> | 12 |
| <i>mappa</i> , <i>Nudospongilla</i> | 11 | <i>palatina</i> , <i>Heteromeyenia baileyi</i> | 9 |
| <i>marina</i> , <i>Spongilla alba</i> | 16 | <i>palatinus</i> , <i>Carterius stepanowii</i> | 9 |
| <i>melli</i> , <i>Spongilla carteri</i> | 7 | <i>palmeri</i> , <i>Dosilia</i> | 4 |
| <i>Metania</i> | 10 | <i>palmeri</i> , <i>Meyenia plumosa</i> | 4 |
| <i>Metania lissostrongyla</i> | 11 | <i>pasigensis</i> , <i>Trochospongilla latouchiana</i> | 21 |
| <i>Metania reticulata</i> | 10 | <i>paupercula</i> , <i>Eunapius</i> | 17 |
| <i>Metania vesparia</i> | 10, 11 | <i>paupercula</i> , <i>Spongilla</i> | 17 |
| <i>Metania vesparioides</i> | 11 | <i>paupercula</i> , <i>Spongilla lacustris</i> | 18 |
| <i>mexicana</i> , <i>Ephydatia fluviatilis</i> | 5 | <i>Pectispongilla</i> | 12 |
| <i>mexicana</i> , <i>Meyenia fluviatilis</i> | 4 | <i>Pectispongilla aurea</i> | 12 |
| <i>meyeni</i> , <i>Ephydatia</i> | 5 | <i>Pectispongilla aurea</i> var. <i>subspinosa</i> | 13 |
| <i>meyeni</i> , <i>Ephydatia fluviatilis</i> | 5 | <i>Pectispongilla stellifera</i> | 12 |
| <i>meyeni</i> , <i>Ephydatia mulleri</i> | 5 | <i>Pectispongilla subspinosa</i> | 13 |
| <i>meyeni</i> , <i>Meyenia fluviatilis</i> | 5 | <i>pennsylvanica</i> , <i>Trochospongilla</i> | 21, 22 |
| <i>meyeni</i> , <i>Spongilla</i> | 5 | <i>pennsylvanica</i> , <i>Tubella</i> | 21 |
| <i>Meyenia bogorensis</i> | 22 | <i>perviridis</i> , <i>Spongilla</i> | 14 |
| <i>Meyenia bogorensis blebbingia</i> | 22 | <i>perviridis</i> , <i>Spongilla</i> (<i>Euspongilla</i>) | 14 |
| <i>Meyenia capewelli</i> | 10 | <i>petri</i> , <i>Carterius stepanowii</i> | 9 |
| <i>Meyenia crateriformis</i> | 13, 14 | <i>petri</i> , <i>Heteromeyenia baileyi</i> | 9 |
| <i>Meyenia crateriformis</i> var. <i>cantonensis</i> | 13 | <i>philippinensis</i> , <i>Spongilla</i> | 15 |
| <i>Meyenia erinaceus</i> | 21 | <i>phillotiana</i> , <i>Trochospongilla</i> | 22 |
| <i>Meyenia facunda</i> | 5 | <i>plumosa</i> , <i>Dosilia</i> | 4 |
| <i>Meyenia fluviatilis</i> | 4 | <i>plumosa</i> , <i>Ephydatia</i> | 4 |
| <i>Meyenia fluviatilis</i> var. <i>angustibirotulata</i> | 4 | <i>plumosa</i> , <i>Meyenia</i> | 4 |
| <i>Meyenia fluviatilis</i> var. <i>gracilis</i> | 4 | <i>plumosa</i> , <i>Spongilla</i> | 4 |
| <i>Meyenia fluviatilis</i> var. <i>mexicana</i> | 4 | <i>pneumatica</i> , <i>Spongilla bombayensis</i> | 19 |
| <i>Meyenia fluviatilis</i> var. <i>meyeni</i> | 5 | <i>polysclera</i> , <i>Trochospongilla</i> | 21 |
| <i>Meyenia hungarica</i> | 9 | <i>Potamolepis barroisi</i> | 2 |
| <i>Meyenia multidentata</i> | 10 | <i>potamolepis</i> , <i>Eunapius</i> | 8 |
| <i>Meyenia plumosa</i> | 4 | <i>potamolepis</i> , <i>Spongilla</i> | 8 |
| <i>Meyenia plumosa</i> var. <i>palmeri</i> | 4 | <i>potamolepis</i> , <i>Spongilla</i> (<i>Eunapius</i>) | 8 |
| <i>Meyenia ramsayi</i> var. <i>talaensis</i> | 5 | <i>pottsi</i> , <i>Acalle</i> | 11 |
| <i>michaelseni</i> , <i>Eunapius</i> | 8 | <i>pottsi</i> , <i>Tubella</i> | 11 |
| <i>michaelseni</i> , <i>Spongilla</i> | 8 | <i>proliferans</i> , <i>Spongilla</i> | 13 |
| <i>microgemma</i> , <i>Spongilla</i> | 18 | <i>proliferens</i> , <i>Spongilla lacustris</i> | 14 |
| <i>micron</i> , <i>Spongilla</i> | 14 | | |
| <i>microsclerifera</i> , <i>Spongilla</i> | 16 | R | |
| <i>minima</i> , <i>Trochospongilla pennsylvanica</i> | 22 | <i>Radiospongilla</i> | 13 |
| <i>minima</i> , <i>Trochospongilla phillotiana</i> | 22 | <i>Radiospongilla cantonensis</i> | 13 |
| <i>minima</i> , <i>Tubella pennsylvanica</i> | 21 | <i>Radiospongilla cerebellata</i> | 13, 14 |
| <i>mirabilis</i> , <i>Spongilla</i> | 17 | <i>Radiospongilla cinerea</i> | 14 |
| <i>mollis</i> , <i>Spongilla carteri</i> | 6 | <i>Radiospongilla crateriformis</i> | 14 |
| <i>montana</i> , <i>Spongilla</i> | 17 | <i>Radiospongilla hemiphydatia</i> | 15 |
| <i>montana</i> , <i>Spongilla lacustris</i> | 17 | <i>Radiospongilla indica</i> | 15 |
| <i>mulleri</i> , <i>Ephydatia</i> | 5 | <i>Radiospongilla luzonensis</i> | 15 |
| <i>multidentata</i> , <i>Ephydatia</i> | 10 | <i>Radiospongilla szeptroides</i> | 15 |
| <i>multidentata</i> , <i>Heterorotula</i> | 10 | <i>ramosa</i> , <i>Spongilla</i> | 17 |
| <i>multidentata</i> , <i>Meyenia</i> | 10 | <i>ramsayi</i> , <i>Ephydatia</i> | 5 |
| <i>multidentata</i> , <i>Tubella</i> | 10 | <i>ramsayi</i> , <i>Ephydatia fluviatilis</i> | 15 |
| <i>multiforis</i> , <i>Spongilla</i> | 17 | | |

