

THE KIRK COLLECTION OF SPONGES (PORIFERA)

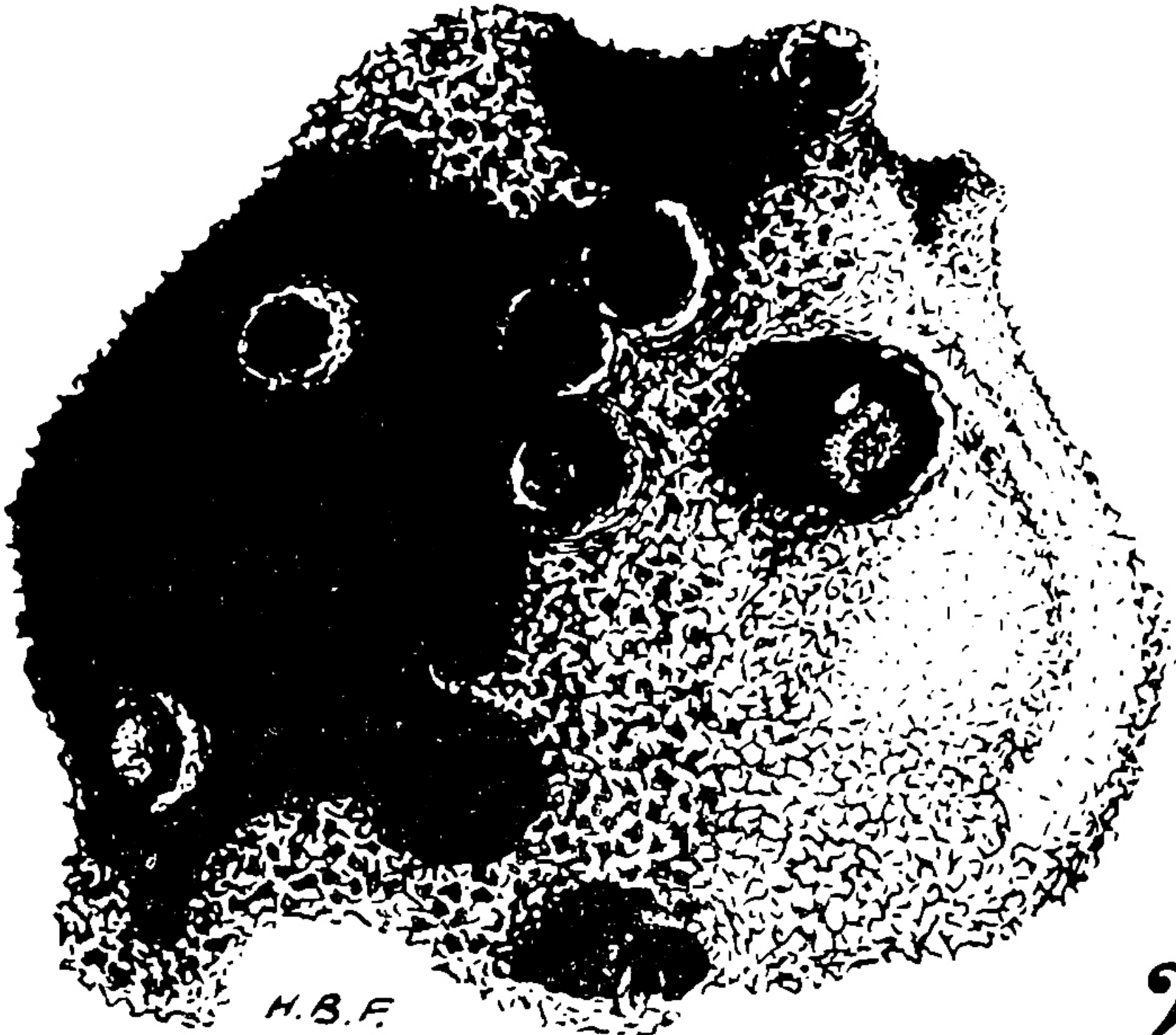
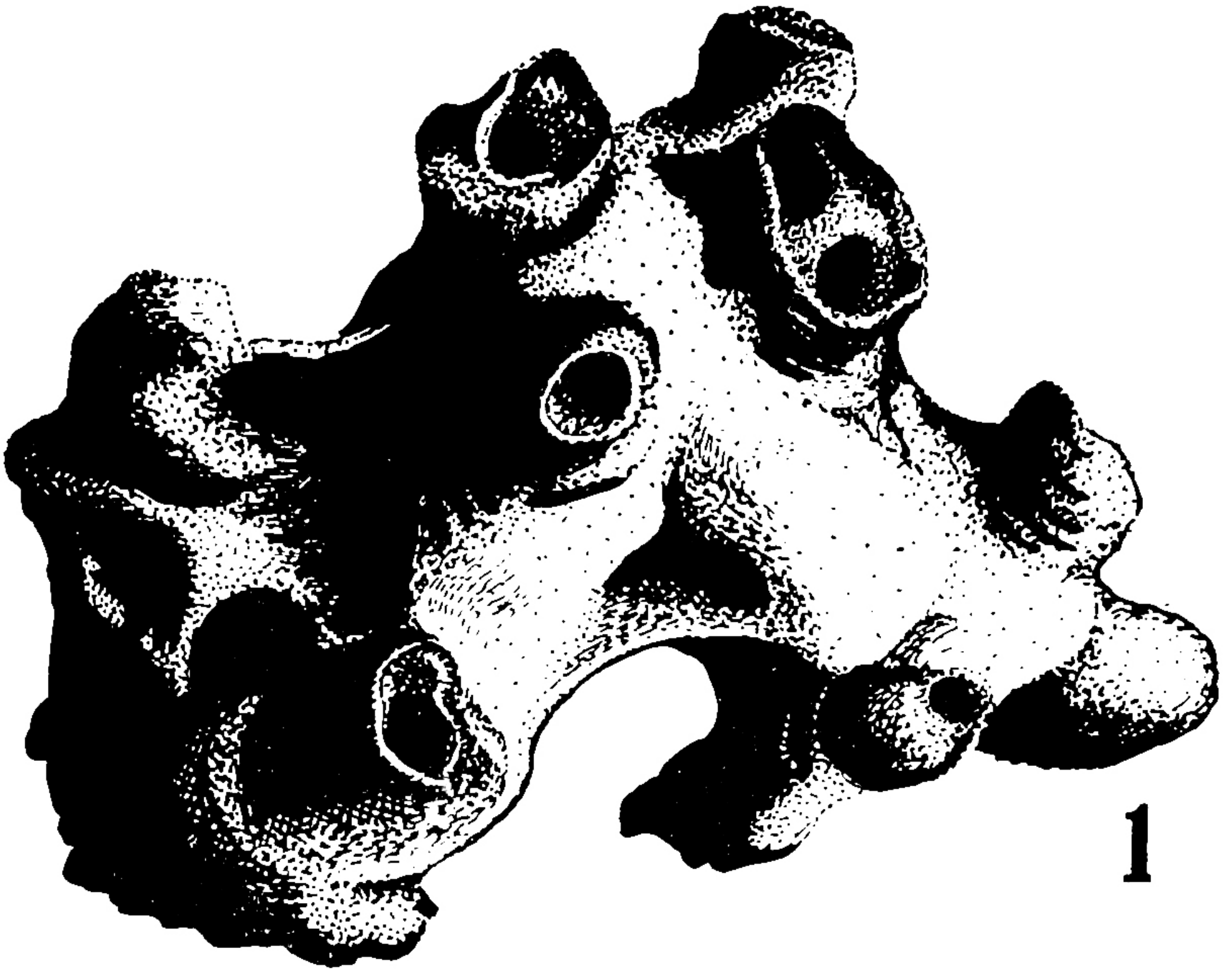
in the Zoology Museum.

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Abstract

The collection of New Zealand and foreign Porifera assembled by the late Professor H. B. Kirk is catalogued. Type material is designated for fourteen of the sixteen species which were described by him. Hitherto unpublished locality and other collection data are given. The holotype specimens of *Chalina fistulosa* and *Clathria intermedia* are illustrated. The collection includes merotypes of some of the Challenger Expedition material, and other specimens obtained by Dendy.

When the late Professor H. B. Kirk retired in 1945 he left in the Zoology Department of Victoria University College a collection of microscopic and macroscopic preparations of sponges, including a large proportion of New Zealand specimens. Although it was suspected that some of these were his original types, the point could not be verified as most of the slides carried only serial numbers. Kirk's sudden death in 1948 had seemed to remove any hope of determining the matter until recently when, by a fortunate discovery, the key to the serial numbers was pieced together. Nearly all his type specimens have now been recognized, as well as other interesting material, so that it is possible formally to record the types as such. Prior to his death, Professor Kirk, as a personal memento, had given me a package of his early pencil sketches of anatomical features of calcareous sponges; that they had any further significance was not at the time clear. Since then, by a devious line of inquiry which it is not necessary to detail here, it has proved possible to demonstrate beyond all doubt that most of the sketches are the original rough diagrams he made directly from his microscopic preparations of the type material, while others are revised versions submitted to the lithographer G. N. Sturtevant (whose initials appear on the illustrative plates in the published accounts). The importance of the rough sketches has proved to be the fact that they happen to carry the serial numbers corresponding to the numbers on the slides, together with other useful data. In this manner all but one of the types have been located for the species Kirk described between 1893 and 1897. In regard to his later species, the types of all the specimens collected by Dr. W. R. B. Oliver in the Kermadec Islands in 1908, and described by Kirk in 1911, have also been recovered; only one other, a Campbell Island species, still remains unaccounted for.



Explanation of Plate: Fig. 1. *Chalina fistulosa* Kirk, holotype specimen, magnification X 3.

Fig. 2. *Clathria intermedia* Kirk, holotype specimen, magnification X 3.

The collection, however, also contains exotic material, including Challenger Expedition specimens. The fact that some of this is also of type status, can be demonstrated by the following citations, taken in conjunction with information given on the slides themselves. We know that Kirk worked in conjunction with Dendy. Kirk (1894) has recorded the help he received from Dendy, and mentions that ". . . this help took the concrete form of a number of European and Australian types of sponges, including a large number of the blocks from which Dr. Dendy had cut his own sections." Elsewhere in the same paper Kirk specifically refers to ". . . a specimen of *L. lucasi* that Dr. Dendy has kindly sent me from St. Vincent's Gully." A sketch by Kirk exists so labelled, agreeing even to the *lapsus calami* of "Gully" for "Gulf." Now Dendy in turn has stated (1893) "I have also a number of fragments of type specimens generously forwarded to me by the authorities of the British Museum" . . . (for which) . . . "my warmest thanks are due to . . . Dr. Guenther." Thus we have the explanation for the presence of Challenger material in the collection, as well as an indication that this material is of type (merotype) status. Certain other specimens, of Australian sponges, are similarly accounted for, having come directly from Dendy, as Kirk records.

In the following catalogue, the terminology employed for the types is that recommended by Frizzell (1933). For convenience, the sense of the terms may be noted here. *Holotype* is used for the single original type specimen on which a species is based. It can thus be applied to Kirk's material only where we know he had no more than one specimen. Any of the original material, where more than one specimen exists, is termed a *syntype*. Where none of the syntypes is designated a holotype by the original author (as is the case with Kirk's material), no holotype can exist, but it is replaced by *lectotype*, nominated in this paper. The term *merotype* is applicable to a portion of a type in the case of Porifera, Bryozoa and similar animals, and hence is the term applicable to the Challenger specimens in this instance.

The Kirk Collection, though small, is unparalleled in any other institution, and for this reason it has been felt advisable to publish the catalogue as now determined; students of the group may thus be informed for the first time of the existence of these primary types. It is surely a tribute to the systematic sense of Kirk that his nomenclature has suffered only the minimum of name-changes since his diagnoses first appeared towards the close of the last century. My intention in preparing the catalogue has not been to pretend to any knowledge of the group which able students have already explored, but rather to carry out what must have been Kirk's intentions before he died.

PHYLUM PORIFERA

Order Calcarea

Genus *LEUCOSOLENIA* Bowerbank 1861

Leucosolenia rosea Kirk

H. B. Kirk *Trans.N.Z.Inst.*, 28, 209, Plate 3 (1896)

The syntypes comprise microtome sections and spicule preparations. As Kirk's published figures agree with the spicule preparation, the latter is accordingly designated as the lectotype. Localities—Happy Valley, Wellington (lectotype); Island Bay (syntypes). Kirk did not publish any locality with his description, but the information is given on the slide-labels.

Leucosolenia laxa Kirk

H. B. Kirk *Trans.N.Z.Inst.*, 28, 208, Plate 4, Figs. 1a-i (1896)

The syntypes comprise one spicule preparation, and two slides of sectioned colonies. As the former corresponds to Plate 4, it is designated the lectotype. All the slides bear the locality and date, Ohiro Bay, Wellington, coll. H. B. Kirk August 1895. Kirk gave no locality with his published description.

Leucosolenia intermedia Kirk

H. B. Kirk *Trans.N.Z.Inst.*, 28, 208, Plate 4, Figs. 2a-j (1896)

The syntypes comprise fourteen microtome sections mounted on two slides. Kirk's figures show only spicules, but as the sections correspond to his description, one slide is accordingly designated as the lectotype. The published locality was "Cook Strait." The types are labelled Lyall Bay, Wellington, coll. H. B. Kirk June 20 1892. Brøndsted (1926) reported the species from Island Bay.

Leucosolenia echinata Kirk

H. B. Kirk *Trans.N.Z.Inst.*, 26, 175, Plate 22 (1894)

The syntypes comprise three whole-mounts on one slide, and two slides of spicules. The former preparation is designated as the lectotype. Kirk's published localities were "Cook Strait, Poverty Bay, Kawakawa (near East Cape)." The specimens are labelled: Wellington Heads (lectotype), coll. H. B. Kirk, 1893; Happy Valley, H. B. Kirk, 25-9-1893; Stewart Island. Brøndsted (1926) reported the species from Halfmoon Bay, Stewart Island.

Leucosolenia clathrus (O. Schmidt)

O. Schmidt *Suppl.Spong.Adriat.Mcer.*, (1864)

H. B. Kirk *Trans.N.Z.Inst.*, 28 (1896)

Happy Valley, 31-3-1893, H.B.K.; Stewart Island, Nov. 1892, H.B.K.; Island Bay, 1-4-1893, H.B.K.; Budleigh, Salterton, Devon, (England), coll. H. J. Carter. The latter specimen was received through Dendy, see Kirk (1896), p. 206.

Leucosolenia challengeri Polejaeff

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24) (1883)

H. B. Kirk *Trans.N.Z.Inst.*, 28 (1896)

Island Bay, coll. H.B.K., Sept. 1895

Leucosolenia lucasi Dendy

A. Dendy *Trans.Roy.Soc.Victoria*, 3 (1), 45 (1891)

H. B. Kirk *Trans.N.Z.Inst.*, 26, 178 (1894)

Happy Valley, Wellington, coll. H.B.K., 25-9-1893. Kirk (1894) recorded the species from "Cook Strait," but there is little doubt that he did not intend this to mean anything other than the littoral zone. Brondsted (1926) has reported the species from Pegasus Bay, Stewart Island.

Leucosolenia cerebrum (Haeckel)

E. Haeckel *Kalkschwaeme*, 2, 54 (1872)

H. B. Kirk *Trans.N.Z.Inst.*, 28 (1896)

Makara, Wellington coll. H.B.K., 22-8-1892, 17-3-1893.

Leucosolenia ventricosa (Carter)

H. J. Carter *Ann.Mag.Nat.Hist.* (1886)

No locality. The specimen may be from Dendy who (1891) reported the species from near Port Phillip Heads, Australia.

Leucosolenia protogenes (Haeckel)

E. Haeckel *Kalkschwaeme*, 2, 17 (1872)

No locality. Brondsted (1926) reported this species from Moko Hinau Island, Island Bay and (1923) Auckland and Campbell Islands. The specimen may have come from Dendy who (1891) reported the species from Port Phillip Heads, Australia, coll. J. B. Wilson.

Leucosolenia proxima Dendy

A. Dendy *Trans.Roy.Soc.Victoria* 3 (1), 62 (1891)

H. B. Kirk *Trans.Roy.Soc.N.Z.*, 28 (1896)

No locality; but Kirk (1896) reported the species from "Cook Strait."

Leucosolenia tripodifera (Carter)

H. J. Carter *Ann.Mag.Nat.Hist.*, 505, (1896)

No locality. Dendy reported the species from near Port Phillip Heads, Australia, Westernport (Victoria), and Kent Islands (Bass Strait), and the specimen may have reached Kirk from Dendy.

Genus **LEUCASCUS** Dendy 1893***Leucascus simplex*** Dendy

A. Dendy *Proc.Roy.Soc.Victoria*, 5 (N.S.), 69 (1893)

Syntype (merotype), from Port Phillip Heads, Dendy's register number RN226. Also a specimen from Makara, Wellington, coll. H.B.K.

Genus SYCON Risso 1826

***Sycon pedicellatum* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 30, 313, Plates 21, 22 (1898)

The material comprises three syntypes, one slide of transverse sections, the two others of longitudinal sections. As the former corresponds with Kirk's published figure, Plate 21, Fig. 1b, it is designated the lectotype. The locality is not stated on the material, but Kirk (1898) gave "Whangaruru, and adjacent coast of North Auckland, between tidemarks." He later found "a much finer form at Plimmerton, in Cook Strait."

***Sycon carteri* Dendy**

A. Dendy *Proc.Roy.Soc.Victoria*, 5 (N.S.), 77 (1893)

No locality. Probably one of Dendy's syntypes from St. Vincent's Gulf, South Australia.

***Sycon raphanus* O. Schmidt**

O. Schmidt *Spong.Adria.Meer.*, 14 (1862)

No locality. Probably one of Dendy's specimens from near Port Phillip Heads, Australia (see Dendy, 1893).

***Sycon ramsayi* (von Lendenfeld)**

Von Lendenfeld *Proc.Linn.Soc.N.S.W.*, 9, 1097 (1885)

No locality. Probably one of the specimens reported by Dendy (1893) from Port Jackson, Australia.

***Sycon giganteum* Dendy**

A. Dendy *Proc.Roy.Soc.Victoria*, 5 (N.S.), 84 (1893)

No locality. Probably one of Dendy's syntypes (merotype) from St. Vincent's Gulf, South Australia.

***Sycon ornatum* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 30, 314, Plates 21 and 22 (1898)

No trace of any type material of this species has so far been discovered. The slides, if ever they are recovered, may be recognized by the fact that they should carry Kirk's serial number 43. The original pencil sketches on which Kirk's plates are based are extant, and indicate that the type or types were prepared as both transverse sections and spicule preparations.

Genus GRANTIA Fleming 1828

***Grantia labyrinthica* (Carter)**

H. J. Carter *Ann.Mag.Nat.Hist.*, p. 37. (1878)

From near Port Phillip Heads, Australia, ex Dendy collection, Dendy's registration number RN62.

Genus GRANTIOPSIS Dendy 1893

Grantiopsis cylindrica Dendy

A. Dendy *Proc.Roy.Soc.Victoria*, 5 (N.S.), 90 (1893)

Syntype (merotype) from near Port Phillip Heads, Australia, coll. J. B. Wilson.

Genus UTE O. Schmidt 1862

Ute spiculosa Dendy

A. Dendy *Proc.Roy.Soc.Victoria*, 5 (N.S.), 92 (1893)

Syntype (merotype) from Watson's Bay, Port Jackson, Australia, coll. T. Whitelegge, Dendy's registration number RN84.

Ute syconoides (Carter)

H. J. Carter *Ann.Mag.Nat.Hist.*, p. 135 (1886)

No locality. Dendy (1893) reported the species from near Port Phillip Heads and Port Jackson, Australia; and also (1924) from Terra Nova Station 96, seven miles east of North Cape, New Zealand, in 70 fathoms. Brondsted (1926) also has reported it from two miles east of North Cape, in 55 fathoms.

Genus SYNUTE Dendy 1892

Synute pulchella Dendy

A. Dendy *Proc.Roy.Soc.Victoria*, 4 (N.S.), 1, (1892)

Holotype (merotype) from near Port Phillip Heads, Australia, coll. J. B. Wilson. Dendy states that only a single specimen was obtained.

Synute dendyi (Kirk)

H. B. Kirk *Trans.N.Z.Inst.*, 27, 287, (1895) (*Sycon dendyi*)

The syntypes comprise longitudinal, transverse, and sagittal sections and also a spicule preparation. One slide is designated as the lectotype. The locality is not precisely known. Kirk (1895) gave "Cook Strait; Hokianga Heads," in that order. The species falls in *Synute*.

Genus ANAMIXILLA Polejaeff 1883

Anamixilla torresi Polejaeff

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24), 50 (1883)

Holotype (merotype) from the Challenger collection, Torres Strait, September 7, 1874, 3-11 fathoms, British Museum serial number BM37. Polejaeff states that only one specimen was taken.

Genus LAMONTIA Kirk 1895

Lamontia zona Kirk

H. B. Kirk *Trans.N.Z.Inst.*, 27 289, Plate 26, Figs. 4 and 5, a-c (1895)

This is the genotype species. Only two slides have been located, one bearing badly broken transverse sections, the other a spicule preparation from the region of the peristome. The latter, which might be treated as the lectotype, shows the very characteristic triradiates, and the oxea, illustrated in Kirk's figures. It is obvious, however, that Kirk had much better material at his disposal when his

drawings were prepared, and therefore the principal syntype remains undiscovered. Should it be found, it may be recognized by having Kirk's serial number 29. The locality is not precisely known; Kirk gave "Cook Strait."

Genus *LEUCANDRA* Haeckel 1872

Leucandra gladiator Dendy

A. Dendy *Proc. Roy. Soc. Victoria*, 5 (N.S.), 101 (1893)

Holotype (merotype) from outside Port Phillip Heads, coll. J. B. Wilson. Dendy states that only a single specimen was taken.

Leucandra phillipensis Dendy

A. Dendy *Proc. Roy. Soc. Victoria*, 5 (N.S.), 100 (1893)

Holotype (merotype) from near Port Phillip Heads, coll. J. B. Wilson. Dendy states that only a single specimen was taken.

Leucandra microraphis (Haeckel)

E. Haeckel *Kalkschwaemm*, 2, 119 (1872)

From near Port Phillip Heads, coll. J. B. Wilson. Dendy (1893, p. 105) states that a number of specimens were taken from this, and other Australian localities.

Leucandra australiensis (Carter)

H. J. Carter *Ann. Mag. Nat. Hist.*, p. 127 (1886)

From Port Phillip Heads, Station 14, coll. J. B. Wilson, Dendy's registration number RN150. Brondsted (1926) has since reported this species from Little Barrier Island, New Zealand, in 30 fathoms.

Leucandra hispida (Carter)

H. J. Carter *Ann. Mag. Nat. Hist.*, p. 128 (1886)

From near Port Phillip Heads, coll. J. B. Wilson. See Dendy (1893) p. 99 for fuller details.

Genus *LELAPIA* Gray 1867

Lelapia australis Carter

H. J. Carter *Ann. Mag. Nat. Hist.*, pp. 138, 148 (1886)

Syntype (merotype), ex Dendy collection, ex Carter collection. The slide, which is evidently of considerable historical interest, carries Dendy's own label which reads "Port Phillip Heads, from Mr. Carter's specimen, Transverse section, Borax Carmine—ARTHUR DENDY." It was evidently prepared subsequently to Dendy's (1893, p. 105) statement that he had never had an opportunity of examining the species.

Genus *GRANTESSA* von Lendenfeld 1885

Grantessa intusarticulata (Carter)

H. J. Carter *Ann. Mag. Nat. Hist.*, p. 45 (1886)

Happy Valley; Stewart Island; Lyall Bay—all coll. H. B. Kirk, no date. Kirk does not seem ever to have recorded any of these occurrences, but Brondsted (1926) has reported the species from Island Bay. Brondsted's material was collected by Th. Mortensen, whom Kirk conducted to various Wellington collecting localities during the former's visit to New Zealand.

Grantessa hirsuta Carter

H. J. Carter *Ann.Mag.Nat.Hist.*, p. 41 (1886)

Port Phillip Heads. This material is probably part of that mentioned by Dendy (1893, p. 106) as having been collected by J. B. Wilson.

Grantessa poculum (Polejaeff)

N. Polejaeff, *Challenger Rpts., Zoology*, 8 (24), 46 (1883)

Port Phillip Heads, S. Coast, Australia, coll. J. B. Wilson, B.M.1.

Genus *VOSMAEROPSIS* Dendy 1893***Vosmaeropsis macera*** (Carter)

H. J. Carter *Ann.Mag.Nat.Hist.*, p. 50, (1886)

Lyall Bay, Wellington, coll. H. B. Kirk; also a specimen from near Port Phillip Heads, probably part of the material listed by Dendy (1893, p. 110) as collected by J. B. Wilson. Kirk did not, so far as I can discover, report his New Zealand occurrence.

Vosmaeropsis wilsoni Dendy

A. Dendy *Proc.Roy.Soc.Victoria*, 5 (N.S.), 111 (1893)

Syntype (merotype) from outside Port Phillip Heads, coll. J. B. Wilson. Material received evidently from Dendy.

Genus *HETEROPEGMA* Polejaeff 1883***Heteropegma nodus-gordii*** Polejaeff

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24), 45 (1883)

Syntype (merotype), from Torres Straits, Challenger Station 186, Sept. 8 1874, eight fathoms, coral sand, B.M.27. The slide is a section evidently cut from a block made by Dendy of "a portion of Polejaeff's type specimen in the British Museum" (*vide* Dendy, 1893, p. 113). This species is the genotype.

Genus *LEUCILLA* Haeckel 1872***Leucilla uter*** Polejaeff

N. Polejaeff *Challenger Reports, Zoology*, 8 (24), 53 (1883)

Syntype (merotype) from Challenger Station 209, January 22, 1875, Philippine Islands, 95-100 fathoms, B.M.32.

Leucilla australiensis (Carter)

H. J. Carter *Ann.Mag.Nat.Hist.*, p. 133 (1886)

From near Port Phillip Heads, Dendy's registration number RN96.

Leucilla saccharata (Haeckel)

E. Haeckel *Kalkschwaeme*, 2, 228 (1872)

From Port Jackson, Australia, Dendy's registration numbers RN207 and RN209,

***Leucilla vera* (Polejaeff)**

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24), 68 (1883)

Holotype (merotype), Challenger Station off Kerguelen, January 1874, 10–100 fathoms, B.M.33. Only the holotype was found, as Polejaeff indicates.

***Leucilla haeckliana* (Polejaeff)**

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24), 69 (1883)

Syntype (merotype), Challenger Station 163A, June 3, 1874, off Port Jackson, Australia, 30–35 fathoms, rock.

***Leucilla multiformis* (Pol.) var. *goliath* (Polejaeff)**

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24), 54 (1883)

Syntype (merotype), Challenger Station 36, April 23, 1873, off Bermudas, 32 fathoms; B.M.35.

***Leucilla levis* (Polejaeff)**

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24), 59 (1883)

Syntype (merotype), Challenger Station 145, December 27, 1873, off Prince Edward Islands, 150 fathoms; B.M.53.

GENUS PERICHARAX Polejaeff 1883

***Pericharax carteri* Polejaeff**

N. Polejaeff *Challenger Rpts., Zoology*, 8 (24), 66 (1883)

Two slides, one of each of the varieties recognized by Polejaeff.

Syntype (merotype), of var. *homoraphis* Pol., Challenger Station 135, October 1873, Tristan da Cunha, 60 fathoms; B.M. 36.

Syntype (merotype), of var. *heteroraphis* Pol., Challenger Station 135; B.M.35.

Order Tetraxonida

GENUS TETHYA Lamarck 1814

***Tethya lyncurium* Lam. var. *australis* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 43, 575, Fig. 1 (1911)

The solitary holotype is now divided into merotypes comprising one slide (carrying two sections), and the remainder of the paraffin block from which the sections were cut. From Meyer Island, near Sunday Island (Kermadecs), in rock-pools, coll. W. R. B. Oliver, April 24, 1908.

GENUS TOXOCHALINA Ridley 1884

***Toxochalina oliveri* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 43, 577, Fig. 4 and Plate 27 (Fig. 2) (1911)

The solitary holotype comprises a dried specimen. Kirk's illustration of it (1911, Plate 27) is reduced to one-half natural size, a fact which is omitted from the description. The only specimen obtained was cast up in Coral Bay, Sunday Island (Kermadecs), coll. W. R. B. Oliver, May 2, 1908.

Genus *RENIERA* Nardo 1847***Reniera reversa* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 43, 575, Fig. 2 (1911)

The syntypes comprise a dried specimen, which is selected as the lectotype, and three microscope slides. Taken in rock-pools, Meyer Island, near Sunday Island (Kermadecs), coll. W. R. B. Oliver, February 29, 1908.

Genus *CHALINA* Grant 1861***Chalina fistulosa* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 43, 576 Fig. 3 (1911)

The solitary holotype is a dried specimen, and three merotype slide preparations also exist. Kirk illustrated only the microscopic anatomy, and so a figure of the macroscopic appearance of the holotype is given herewith; it shows the fistular processes of the upper surface to which Kirk referred when naming the species. The only specimen taken was cast up on Denham Bay Beach, Sunday Island (Kermadecs), coll. W. R. B. Oliver, July 27, 1908.

Genus *STYLOHALINA* Kirk 1909***Stylohalina conica* Kirk**

H. B. Kirk *Subantarctic Is. of N.Z.*, 539, Pl. 25 (1909)

No material has so far been located for this species, which Kirk described from Perseverance Harbour, Campbell I., between tide-marks. Brondsted (1923) considers *Stylohalina* to be *Hymeniacidon* Bwk., 1861.

Genus *CLATHRIODENDRON* von Ledenfeld 1888***Clathriodendron rubrum* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 43, 580, Fig. 6 and Plate 27 (Fig. 1) (1911)

The material so far discovered is of syntype status, and comprises two paraffin blocks, together with three slides cut from these; two slides of spicules; and two other slides of hand-cut sections. Although Kirk did not designate types, the photographic illustration on the Plate 27 cited above would normally be treated now as adequate indication of the holotype, which could easily be recognized if it still survives. As there is still a chance that the specimen may be discovered, I refrain from nominating a lectotype at present.

Cast up on Denham Bay beach, Sunday Island, coll. W. R. B. Oliver, August 29, 1908.

Genus *CLATHRIA* Schmidt 1862***Clathria intermedia* Kirk**

H. B. Kirk *Trans.N.Z.Inst.*, 43, 579, Fig. 5 (1911)

As only one specimen was found, the dried specimen which carries Kirk's identification is of course the holotype. As its macroscopic characters have not hitherto been illustrated, the specimen is shown in Fig. 2 of this paper. In addition, two merotype slides exist, one a spicule preparation, the other a section.

Cast up on Denham Bay beach, Sunday Island, coll. W. R. B. Oliver, July 27, 1908.

Postscript added in proof: Since the above catalogue was prepared, an interesting discovery has been made, which now provides the material of *Lamontia zona* on which Kirk based his description. I stated above that the principal syntype was apparently missing, and that should it ever be found it would carry the serial number 29. During a recent overhaul of old specimens in this department a jar of sponges was found bearing, in Kirk's handwriting, the label "29. *Lamontia zona* K. Wellington." The find is of double interest, for not only does it provide the material which must now become the lectotype, as well as a satisfactory locality, but also the conjunction of the predicted serial number with Kirk's own handwritten identification is welcome confirmation that his serial numbering system has been correctly interpreted.

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