hexasters were found in one of the numerous specimens, hence the
definition of Anaxylonx requires to be altered from "Oxyhexasters
absent" to "oxyhexasters absent or extremely rare"!
The genus is now included among the Rosellinidae.

*Chloeslanza lanuella chesmeoides* nov. subsp.

One specimen and several fragments of the new form were found,
but all were in a macerated condition. One nearly complete specimen
is funnel-shaped, and expanded cut on one side. Spicles occur among
the debris, and in one instance several autogastral pentactins which
are fused into the dictyonid network, are of the same character as
those of the typical form of *C. lanuella*. The autogastral and auto-
gastral pentactins have tangential rays with smooth under surface and
strongly developed spines on the distal surface as in the type. All
other species of *Chloeslanza* have hexactin autogastralia and auto-
gastralia. Accordingly there can be no doubt of the close relationship
of the "Gauss" specimens with *C. lanuella*.

Localities. From stations to North west of Gauss-station, from
depths of 2450—2507 metres.

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Preliminary notice on Hexactinellida of the Gauss-Expedition.

By F. E. Schulze and R. Kirkastrick.

There are seven new species and four new subspecies of Hexacti-
nellida in this collection. The following is a list:

1) *Hyalonema_ dreyfusii* n. sp.
2) *Gonionema thomastii* n. sp.
3) *Russella arctica_ geussi* nov. subsp.
4) *Russella arctica_ minoris* nov. subsp.
5) *Geussia_ n. sp.
6) *Hyelosiphora_ n. sp.
7) *Fibula_ n. sp.
8) *microb_ n. sp.
9) *Amphorella_ ramosa_ i* n. sp.
10) *Amphorella_ ramosa_ minoris* n. sp.
11) *Chloeslanza lanuella_ chesmeoides* nov. subsp.

Description. The unique specimen is oval in shape, 18 mm long
and 14 mm broad; the circular oscule, 2 mm in diameter, is surrounded
by a fine fringe of marginalia projecting 1 mm; a stiff root tuft extends
downwards about 11 mm.

The surface is very finely pilose and shows a regular square-shaped
pattern. The shallow gastric cavity is 3 mm deep, and has several large dorsal openings in its floor.

The skeleton. — The skeleton of the dematostom is mainly constructed of square meshes formed by the tangential rays of hypodermal pentactins, of pinnulae and amphidials; that of the gastrozoon, of dicactins with a central swelling, and arranged in longitudinal and transverse strands forming an obscurely square meshed reticulum; no auto-gastral pinnulae occur; the chaetaeform is supported by a cubic-meshed framework.

The spicules. — Parenchymal regular hexactins with smooth short pointed rays, straight or slightly curved, 300 x 16 µ in length and basal thickness respectively.

Parenchymal dicactins (rare) 450 x 8 µ, with central swelling.

Marginalis 598 µ long, 11 µ thick in centre, with four central knobs; with proximal end smooth, distal end with spines similar to those of the pinnulae, but larger.

Basalis, monocacti or with deccapitate spiral ridge; with pronged anchor at the lower end.

Auto-dermal pentactins pinulae with slender, rather finely spined, distal ray 480 µ long, with fine hair-like end. Pentactins hypodermalis, with smooth, sharp-pointed rays, the tangentials being 580 x 24 µ. Stauaginap acanthophores with rays 100 µ long, smooth in central part, spined at distal ends.

Auto-gastral dicactins, 1070 x 10 µ, curved, and with central swelling.

Macrophilids, unusually small, varying from 95 — 111 µ in length; with hemispherical — not bell-shaped — umbrellas 18.5 µ in diameter, and with 8 sloped shaped rays 30 µ long, 16 µ broad, with lance-shaped pointed ends.

Mesophilids of two kinds. [a] 60 µ long; with hemispherical umbrellas 18.8 µ long, 21.4 µ broad, with 12 teeth like those of the macrophils, but relatively narrower; (b) 87 µ long; with bell-shaped umbrellas 25.7 µ long, 21.4 µ broad, with 12 sharp-pointed ligulate rays.

Macrophilids from 8.5 — 22 µ in length. Micro-oxystanactina with smooth rays 82 µ long, and with a deep curve at junction of middle and outer third.

Thanks to the diagnostic tables of species of Hypothrix drawn up by F. E. Schulze, [Valdivia, Hexactinellids 1904, p 161, 163] it is possible to distinguish with ease the new form from the 45 already known species. *Hydroclasea drygitakia* belongs to the group of five species in which the umbrellas of the macrophils have sloped-shaped lance-pointed ends, and the micro-oxystanactina have strongly curved rays. In *H. aperius* F. E. Sch, the rays of the oxystanactina are rough. *H.

degus* F. E. Sch. and *H. gaeus* F. E. Sch. are distinguished by the possession of macrophils with half-egg-shaped umbrellas and long teeth. *H. maurus* has notocebral pinulae with pillar-tree-like pillar rays; and finally, *H. laevetta* F. E. Sch. has its macrophils scattered in the parenodians, whereas those of *H. drygitakia* are vertically orientated at the surface. Special features of the new species are: — the small size of the macrophils, and the total absence of auto-gastral pinulae.

Locality. Station 24 XI. 1905. 2725 m.

2. *Cantophora antarctica* n. sp.

The stems of 15 examples of an undescribed species of *Cantophora* were obtained from 2725—3397 m. Nothing of the sponge body remains; but in several of the hollow stems some dried mud was found containing spicules commonly occurring in species of *Cantophora*. The stems ranged in length from 4 mm to 23 cm. Most of them had a sharp curve above the basal disk, and several had one or two supplementary disks of attachment along the stem, giving the impression of a repeat habit of growth.

The spicules of the stem are long diactinol, which have become joined by innumerable bands of syncrinita. The outer fibres of the stem are longitudinal, the inner oblique and transverse. Most of the diactinol are swollen and rough at both ends, some only at one end.

The following spicules were found in the mud inside the stems: —

Pentactins. Pinula, probably auto-gastral, with pillar ray 214 µ long and 7.5 µ broad at base, and 26 µ broad (including spines) near the apex; smooth most of the way, with scattered short spines for more than half the length, and finally with thick incurved spines up to, or nearly as far as, the summit. Tangential rays, 83 x 7.8 µ, slightly bent away from the outer radial ray, with rough surface, especially at the ends, which may be pointed, or more or less rounded. With a smooth rounded knob in place of an inner radial ray. These spicules are probably auto-gastral and not auto-dermal, because in the seven known species of *Cantophora* and in the doubtful *C. virdiformis* F. E. Sch. the auto-dermal pinula are hexactins. Pentactin auto-gastral with a proximal knob are found in *C. agassizii* F. E. Sch. and *C. valdiviensis* F. E. Sch., and similar spicules without the knob, in *C. tenuis* F. E. Sch., but the pinula of the new species are at once distinguished from those of the three mentioned, by having a club-shaped outer radial ray in place of a slender tapering one. One example of a pinula was found with a radial ray 412 µ long, and finely spined at the end.

Pentactins hypodermal with smooth rough at the ends. Macrophilids 149 x 6.25 µ, rough only at ends.
in diameter; the microdiscochoanesta however do not attain the very large size (70 μ) of some of those found in the Belgica specimens.

Five specimens, which are placed in a new subspecies minima, have not only smaller microdiscochoanesta, but smaller calyces, varying from 160–250 μ in diameter. Three specimens of this species have no calyces, and are placed provisionally under the new subspecies.

A volum is present in all the specimens; i.e., a certain number of hypodermal pentactin project at different levels beyond the surface.

The species Rosella hexactinella Kirkp. [Discovery Report, Hexactinellida p.129] is found to be a subspecies of R. ruwivitanze Toepn., viz. subsp. hexactinella. It was supposed to differ from R. ruwivitanze ruwivitanze on account of the presence of a volum in the former, but this structure is now found to exist in R. ruwivitanze.

Localities. Specimens were obtained from Gauss Station, from depths of 880–905 m.*

Rosella ruwivitanze nausi, n. sp.

There are four specimens of this species. The largest example is globular, being 3.0 cm high, and 3.6 cm broad. The surface is covered with rounded wart-like hummocks. There is a usually well developed volum of hypodermal pentactin with mostly cruciate tangential with densely granular surface.

The prostalum plexura are strong, thick sharp-pointed dactyls.

The parapodial dactyls have rounded ends. The autodermal pentactina have a granular surface. The character that at once becomes obvious on examining sections is the great abundance of discochoanesta and the almost total absence of oxychoanesta.

These are the features which distinguish the new species from the nearly related R. ruwivitanze. The dactyline principalis, the autodermal and auto-gastralia are nearly similar in both species.

The calyces, which is in the type specimen are more abundant in the dermatosom than in the gastrosom, vary in size, the largest being 319 μ in diameter. In the type specimen heterodiscochoanesta (E. Sch.) see monodiscochoanesta (Kirkp.) are very common, but in discochoanesta and auto-gastralia are nearly similar in both species. In the type, the heterodiscochoanesta (E. Sch.) see monodiscochoanesta (Kirkp.) seem to replace to a great extent both calyces and microdiscochoanesta in the gastrosom. The species named R. ruwivitanze in the Discovery Report Hexactinellida p.14, belongs to this species. At the same time, it has no volum, and the tufts of plexura emerge from pointed conules; but the discochoanesta are abundant, and the oxychoanesta almost absent.

Localities. Gauss Station 350–385 m.

Rosella ruwivitanze nausi, n. subsp.

There are 15 examples of this species. Seven specimens vary only slightly from the typical form described by Toepn. in the Report on the Belgica Sponges p.33; they have very large calyces over 800 μ

* Heterodiscochoanesta (as heterodiscochoanesta, heterodiscochoanesta, heterodiscochoanesta etc., E. Sch. often name such elements of which the distal end are not show the continuation of the axial main, evident in the proximal support.
Rossella bimaculata n. sp.

The single specimen of this species is an oval sack 16 mm long and 11 mm broad. Rather thick discine prostasia pleuralia project mostly in an upward and downward direction. A fairly continuous volume projects about 3 mm beyond the surface.

The parenchymal discines have rounded ends.

The autodermalia (pentactins and stauractins) have a granular surface. The chief distinguishing character of the species is in the calycocomes. These spicules are very slender at the point of junction of the six main rays, so much so that the field in bestrawn with broken-off rays, the main rays and capitula having the shape of long beaked sperula of moss capsules. The central point of meeting of the axial canals is not a point but a spherical space, when the rays emanate (hence the specific name bimaculata).

The calycocomes 247 μ in diameter, have slender main rays tapering to the centre, 9.75 μ long, 1.5 μ thick at the central end, and 3.75 μ thick at the distal end where they join the capitula. The long slender capitulum in 16 μ long and 6 μ broad; the end-rays are 88 μ long, and diameter of the distal end of the tuft of end-rays only 10.5 μ. The rays vary in number from 2—7 but there are commonly 6. Sometimes the capitula are broader and the end-rays more divergent. This species is one of the "recorded" group.

Locality. The unique specimen came from Gauss Station 27. IX. 1902. 388 m.

Rosella filibusta n. sp.

The new species is represented only by three small fragments. The characteristic feature consists in the presence of heterostauractins, heterocactins and heterodicactins [P. E. Sch.] sea monostauractins, monodiactins and monodiactins (Kirkp.). The last kind are present in abundance and enable the species to be immediately recognised.

The typical form of heterodicactin sea monodiactins is a slender sharp pointed rod with four central tubercules; the smaller kind are about 160—200 μ in length and 7—8 μ in thickness, the larger kind attain a size of 600 μ in length and 26 μ in thickness. The largest forms closely resemble the hypodermal and hypogastral discine accessories, but the important point about the heterodicactins (P. E. Sch.) sea monodiactins (Kirkp.) is the abrupt termination of the axial canals a little beyond the centre of the spicule. The large heterodicactins (P. E. Sch.) sea monodiactins (Kirkp.) and the small hypodermal discines though alike externally have had a very different history; the former are derived from hexasters and the latter from hexactins. This constitutes interesting cases of convergence.

The autodermalia, calycocomes, hypodermal pentactins etc., show the species to be a Rosella and to be one of the "recorded" group.

Locality. Gauss Station 2. XII. 1902. 393 m.

Rosella wikita n. sp.

The unique specimen is oval and small being 7 mm long, 6 mm broad and deep, and with a wall thickness of 1.7 mm. Discine pleuralia extend 9 mm, and pentactins forming an obscurely marked velum about 3 mm beyond the surface.

Spicules. The discine principals are 2.5 mm long, 13.5 μ thick, with sharp-pointed sharpened ends.

The autodermal pentactins and stauractins have rays 130 μ long, 10 μ thick at the base and 3.25 μ thick near the ends, and have the surface beset with small spines (and not granular).

The hypodermal pentactins, mostly orthotropals, have rays 130 × 38 μ, smooth or with granular surface. The auto-gastral hexactins have slender rather sharp-pointed rays 140 μ long, 6 μ thick at the central end and 25 μ thick at the distal end; with finely and sparsely spinous surface. The calycocomes 172 μ in diameter, have main rays 15 μ long, 3 μ thick at the central end and 3.25 μ thick distally; without capitulum, with periastics-like tuft of end rays with a diameter of 36 μ.

Mesodiocactomast 87 μ in diameter, with short main rays and 2 or 3 end rays to each main ray.

Mesodiocactomast varying from 23—48 μ usually with two lengths of end rays, though some of the smaller kind have only one length.

Oxyhexasters 98 μ in diameter with main rays bifurcating into two slender end rays are common; rarely stouter forms with 3 end rays to each main ray are found.

Rosella wikita belongs to a group of species (Oxyhexasteria group) with slender sharp pointed discine principalia. The calycocomes are primitive, i.e. the end rays are attached separately to the main ray and not fused into a capitulum. The auto-hemaria have spinous rather than granular surface; the auto-gastria are slender, (thereby differing from R. podrogovae where they are thick).

R. wikita seems to be the starting point of a group which branches on the one hand to R. podrogovae Kirkp. and R. unka Topsent, and on the other to Antorosella raikeoffi arnathi n. subspp. and A. raikeoffi n. sp.

Locality. The specimen came from station 8. XI. 1902, 360 m.
Auberonella Kirkp.


The genus was established to include 9 species of Antarctic Rosellinidae, and was characterized by having 3 kinds of discoblastaxes, and oxytactinects hyperdistal with short prong-like rays making an acute angle with the shaft. Accordingly the dorsal surface is not supported by the tangential rays of pendent hyperdistal and there is no volval; a root-tuft is usually present, but never marginal; The Gauss collection includes several examples of a new species and subspecies of Auberonella.

In the typical form the hyperdistal pentacrinia and the tufts of discoblastaxes pleuralia have disappeared entirely; in the variety both kinds of spicles still persist. Accordingly the generic definition must be slightly emended as follows: "Rosellinidae..." with or without hyperdistal pentacrinia, these spicles when present having short smooth pronglike tangential rays making an acute angle with the radial ray.

**Auberonella ambloeofera** n. sp.

**Description.** The single specimen is in the form of an oval barrel-shaped thick-walled sack with a well developed root-tuft. The body is 11 cm long, and 5.0 cm in diameter; the wall attains a thickness of 2.2 mm; the basalia all end in four-pronged anchors. The colour is greyish buff in alcohol. The greater part of the surface is uniformly smooth, and entirely devoid of pleuralia, but at the lower end are conical tubercles whence tufts of basalia emerge. Beneath the dorsal surface is a network of bundles of hyperdistal discoblastaxes, the meshes of which network are spanned over by the tangential rays of the autodermal pentacrinia.

The gastric surface has a rough pustular aspect. A marked feature is the size of the hypogastral spaces supported by vertical bundles of discine autieinioria.

**Spicles.** The discine principaliae are slender flexible sharp-pointed discine; very large isolated discine occur also. The auto-dermalia have a thickly spined surface — a characteristic feature in Auberonella generally.

The auto-gastralia are hexactinia with thickly-spined blunt-ended rays. The calycocenem show a considerable range of variation, some having simple penant-like end rays without capitula, others having a central boss surrounded by end rays, and others again having a well-marked capitula. The total diameter varies from 140—150 μ. The mesodiscoblastaxes, 106 μ in diameter have short primary rays 6 μ long, and 2, 3, or 4 end rays. Microdiscoblastaxes 47 μ in diameter, have two lengths of end rays. Oxyhexasteria 140 μ in diameter have short main rays ending in 2, 3, or 4 end rays; hemideoxyhexasteria and heteroxyhexasteria are monoxyhexasteria rare.

**Auberonella ambloeofera atmos nov. subsp.**

There are several small specimens, the largest being in the form of an oval sack 3.1 cm long and 1.8 cm broad. The surface is smooth with several conical tubercles whence arise discine pleuralia. The hypogastral pentacrinia still persist, but the tangential rays are reduced to mere prongs bent down at an acute angle with the shaft.

In one example several transverse forms of hypogastral pentacrinia are present, i. e. one or two rays may be either long and nearly at right angles, and the other rays short and bent at an angle. The rough spicles auto-termite and calycocenem are the same or nearly the same as those in the typical form.

**Localities.** All specimens come from 380—386 fathoms from near "Gauss" Station.

**Diagnosis table of species of Auberonella.**

A. With shallow gastric cavity.
1. A. longispatha Kirkp.
B. With deep gastric cavity.
   a. With abundant oxyhexasteria with long main rays and 4 thorn-like end rays, among the auto-gastralia. A. paeon Kirkp.
   b. Without oxyhexasteria among the auto-gastralia.
1) With mostly pentacrinia auto-gastralia A. brevis Kirkp.
2) With only hexactinia auto-gastralia A. ambloeofera n. sp.

**Ameginda giiini Kirkp.**

The "Gauss" collection includes a large number of specimines of this species. Kirkpatrick (Discovery Hexactinellida p. 23.) put this form among the Lautinellidae, on account of its having strochlocomes; but the genuine strochlocomes are very minute hexasteria with vertices of rays without disks, whereas the so-called strochlocomes of A. giiini are macro-discoblastaxes from 140—255 μ in diameter. It is now proposed to call these spicles with strochloidal capitula and several vertices of disk-tipped end rays — macrostrochlocomes.

Further, the so-called graphocones of A. giiini require a new designation, and the term "pappocones" is proposed for these spicles with their very divergent tufts of slender rays.

The large macro-discoblastaxes are 120 μ in diameter, and not 60 μ as stated in the "Discovery" Report, the error being due to an emission to double the measurement of the half diameter. Lastly a few rare oxy-
hexasters were found in one of the numerous specimens, hence the
definition of Anoxyhexaster requires to be altered from "Oxyhexaster
absent" to "oxyhexaster absent or extremely rare".

The genus is now included among the Rosselliidae.

Choneclisana komeli komeloides n. subsp.

One specimen and several fragments of the new form were found,
but all were in a macerated condition. One nearly complete specimen
is funnel-shaped, and expanded out on one side. Spicles occur among
the dermis, and in one instance several autogastral pentactins which
are fused into the dicyonal network, are of the same character as
those of the typical form of C. komeli. The autogastral and auto-
gastral pentactins have tangential rays with smooth under surface and
strongly developed spicles on the distal surface as in the type. All
other species of Choneclisana have hexactin gasterramal and auto-
gastralia. Accordingly there can be no doubt of the close relationship
of the "Gauss" specimens with C. komeli.

Localities. From stations to North west of Gauss-station, from
depths of 2450—3357 metres.