bus basalibus æqualibus, reliquis subturbinatis; clava breviter ovata; prothorace utrinque usque ad medium gradatim latiore, deinde lateribus parallelis, apice producto, supra basin versus late leviter excavato; scutello semiorbiculari; elytris oblongo-cordatis, rude remote punctatis, humeris modice prominulis, apice rotundatis, singulis tuberculis fasciculatis sex biseriatim obsitis; corpore infra remote punctato, punctis in fundo squamam griseam gerentibus; pedibus squamis elongatis asperrime vestitis; tibiis minus elongatis, rude squamosis. Long. 4–5 lin.

Hab. Queensland.

Near the Ceram *N. porcatus*, which has also shorter tibiæ, but, *inter alia*, with scattered foveate punctures on the elytra, instead of their being sulcate-punctured. This species has a resemblance to some species of *Poropterus*, from which genus, however, *Nechyrus* is known by the pectoral canal open at the apex and extending to the posterior part of the intermediate coxæ; from *Cnemargus*, to which I think it is most nearly allied among the genera known to Lacordaire, it is at once differentiated by its straight tibiæ.

Idotasia æqualis.

I. elliptica, nigra, nitida; rostro arcuato, basi fronteque lineis longitudinalibus acute elevatis; antennis piceis; oculis tenui-granulatis; prothorace sat fortiter vage punctulato, punctis squama nivea instructis; elytris subtilissime striato-punctulatis; femoribus parum incrassatis, muticis, vage lineatim albo-squamulosis; tibiis sulcatis, rectis, posticis intus subflexuosis. Long. $1\frac{2}{3}$ lin.

Hab. Cape York; Rockhampton.

Near the Moluccan *I. elliptica*, but the prothorax less strongly and closely punctured, and the femora lineated but not toothed.

Idotasia evanida.

I. elliptica, nigra, nitida; rostro arcuato, basi fronteque lineis longitudinalibus elevatis; antennis piceis; oculis tenui-granulatis; prothorace sat tenuiter vage punctulato, punctis squamula minutissima instructis; elytris subtilissime striatis, vix punctulatis; femoribus haud incrassatis, sulcato-lineatis, muticis; tibiis sulcatis, rectis. Long. $1\frac{1}{2}$ lin.

Hab. Queensland (Wide Bay).

Prothorax and elytra less strongly punctured than in the preceding, the latter with the least possible vestiges of punctuation, and the femora nearly linear; the posterior femora in this and its congeners, as well as in allied genera, have the upper margin densely covered with snowy-white scales. A figure of *Idotasia nasuta* is given in this Magazine, ser. 4. vol. vii. pl. 16. fig. 2, which, the femora excepted, will give a good idea of the two species here described.

EXPLANATION OF PLATE I.

Fig. 1. *Sosytelus lobatus*; 1 *a*, side view of the head.
Fig. 2. *Agriochæta crinita*; 2 *a*, side view of the head.
Fig. 3. *Drassicus nigricornis*; 3 *a*, side view of the head.
Fig. 4. *Belus centralis.*
Fig. 5. *Acherres mamillatus*; 5 *a*, side view of the head.
Fig. 6. *Oditesus indutus*; 6 *a*, side view of the head.
Fig. 7. *Tragopus plagiatus.*
Fig. 8. *Ædriodes fastigiatus*; 8 *a*, side view of the head.
Fig. 9. *Nechyrus incomptus.*
Fig. 10. Side view of the head of *Misophrice hispida*; 10 *a*, tarsus of the same.
Fig. 11. Side view of the head of *Nechyrus incomptus* *.
Fig. 12. " " " *Oditesus buceros.*
Fig. 13. " " " *Amorphorhinus australis*, for comparison.
Fig. 14. " " " *Acantholophus Marshami*, ditto.
Fig. 15. " " " *Euomus insculptus*, ditto.
Fig. 16. Upper view of the head of *Phrenozemia lyproides.*
Fig. 17. Side view of the head of *Agenopus agricola.*
Fig. 18. Fore leg of *Œnochroma rubeta.*
Fig. 19. Tarsus of *Myrmacicelus exsertus*; 19 *a*, tarsus of *M. formicarius*, for comparison.
Fig. 20. Fore tarsus and part of tibia of *Sosytelus lobatus.*
Fig. 21. Fore tarsus and part of tibia of *Agenopus agricola* (unfortunately reversed).

XIII.—*Description, with Illustrations, of a new Species of* Aplysina *from the N. W. Coast of Spain.* By H. J. Carter, F.R.S. &c.

[Plate VII.]

There is a little family of purely horny sponges (that is, aspiculous, and without foreign objects in the core of the horny fibre) in which there are as yet only two genera mentioned, viz. *Aplysina* and *Luffaria*. For this family I propose the name of "Aplysinidæ," after Aristotle's term for certain sponges which he has described as follows :—

"There is also another species, called *Aplysia* (ἀπλυσία), because it cannot be washed. This has very large passages; but the other parts of the substance are quite compact. When cut open it is more compact and smooth than the sponge, and the whole is like a lung; of all the sponges this one is confessed to have the most sensation and to be the most enduring. They are plainly seen in the sea near the sponges; for the

* The lateral groove below the insertion of the scape, in a line with the scrobe, is made rather too much like the scrobe itself by the engraver.

other sponges are white as the mud settles down upon them, but these are always black." (Hist. An., trans. by R. Cresswell, Bk. V. chap. xiv., Arist. V. xvi. 10.)

How far Aristotle meant the sponges now called "*Aplysinæ*," or whether he included others among them under the general name of "*Aplysia*," it would be waste of time to discuss. Suffice it, therefore, to state that the description comes very near to the *Aplysinæ* of the Adriatic Sea at the present day, and that the name has thus been well chosen for such sponges.

On referring to Schmidt's invaluable work on the Sponges of the Adriatic Sea (1862, p. 25), we may there find that Nardo, in 1834 ('Isis'), first adopted the term "*Aplysinæ*" (originally named by him "*Aplysiæ*") for certain sponges, one of which he called *A. aërophoba*, and that Schmidt, in 1862, elucidated this species, in the publication to which I have just alluded, both by description and illustration—that is to say, that he added the *sine quâ non* for the identification of *Aplysina*, viz. the character of the fibre of which the skeleton is composed. So far, then, Schmidt has established *this* genus.

Now as regards that of *Luffaria*, which Schmidt has also accepted (Atlantisch. Spongienfauna, p. 30, 1870):—

In 1845 (Annals, vol. xvi. p. 403) Dr. Bowerbank described a sponge from the West Indies, which had been presented to him by Dr. Veronge, as follows: "This specimen is in the form of a cluster of cylindrical tubes about twelve inches in height and two in diameter, the thickness of the tube being about half an inch"—the skeleton of which is stated at the commencement of the description to be "composed of a network of keratose fibres inosculating in every direction without order. Fibre cylindrical, continuously fistular, without spicula. Cavity of the fibre simple."

No reference is made by Dr. Bowerbank to any previous authority—although one of the highest, viz. Esper, had figured this sponge in three plates successively in 1794 (Pflanzenthiere, tab. xx., xxi., and xxi. *a*), as confirmed by Dr. Ehlers in 1870 in his Synonymy of the Esperian Collection at the Museum of the University of Erlangen, wherein he identifies Esper's *Spongia fistularis* (that is, the one figured in the above mentioned plates) with the *Luffaria fistularis* of De Fonbressin and Michelotti, given in their descriptions and illustrations of the sponges of the Caribbean Sea (Natuurk. Verh. Holland. Maat. Wet. te Haarlem, vol. xxi. 1864); the latter authors having already, in their description and figure of this species (*op. cit.* p. 60, pl. 10. fig. 2), come to the same conclusion.

Dr. Bowerbank, it is true, named the species "*Verongia*,"

after Dr. Veronge, who gave him the specimen; and the fibre is well characterized by Lens Aldous's figure (Annals, pl. 13. fig. 7, *l. c.*), though much better, by the same artist, in Dr. Bowerbank's 'British Spongiadæ' (pl. 13. fig. 266, 1864); and so far the priority of "naming" is in favour of Dr. Bowerbank. But when we find Dr. Bowerbank in the following page identifying his "*Verongia*" in a fossilized state with the conferva-like glauconite "in the green agates, miscalled in commerce jaspers, from India" (which, to my certain knowledge, come from geodes in the decomposed trap of Western India), one cannot help being struck by the inferiority of mental power on the one hand and the sharp-sightedness on the other—much after the fable of the shoemaker who rose greatly in the estimation of the sculptor when he pointed out the absence of the shoe-string in his statue, but sunk lamentably in it afterwards when he made observations on the higher art.

So much for Dr. Bowerbank's part in the matter. Now let us direct our attention to the work of De Fonbressin and Michelotti (*op. cit.*), who collected the sponges of the Caribbean Sea *on the spot*, and described six species, with modest references to all those who seemed to have noticed the like before them—giving to the whole the generic name of "*Luffaria*," drawn from the great resemblance of the horny skeleton of these sponges to the fibrous mass of a species of the cucurbitacean genus *Luffa* which remains after the skin and soft parts have rotted away, and which they also state to be used in the "colonies" of the West Indies, where real sponges are not at hand. Further, we find that, recognizing the whole bearing of the family generally towards the rest of the Spongiadæ, elementarily (that is in the structure of the fibre) as well as *en masse*, they finally placed the genus in the third tribe of their second family of sponges, under the designation of "*Spongiæ homogenæ*."

Is it extraordinary, then, after contrasting thus the value of the contributions to our knowledge of this genus, respectively named by Dr. Bowerbank and the authors last mentioned, that we should find Schmidt (Atlantisch. Spongienfauna, p. 30) ignore the former altogether, and accept the name of "*Luffaria*," given to this genus by De Fonbressin and Michelotti? nor resting here, but also synonymizing Dr. Bowerbank's *Verongia zetlandica*, not with *Luffaria* (that is, Dr. Veronge's West-Indian sponge above quoted), but with his (Schmidt's) *Cacospongia*, which has a totally different fibre, the cavity of which, instead of being simple, is charged more or less with foreign objects, *i. e.* grains of sand and fragments of spicules.

I might here add too, as regards sponges hitherto considered to have a skeleton possessed of simple, solid fibre *only* (that is, without core of any kind), that I very much doubt if there be many such, since, in the softest officinal sponge, to say nothing of the coarser kind, it is hardly possible to pinch out the minute portion which is required for microscopic examination without finding in it a filament also possessed of an axis containing fragments of spicules and grains of sand. It is true that the solid fibre is greatly in excess of this, and that the softest sponges have most of it; but this does not release us from the necessity of grouping these sponges among the Hirciniadæ, wherein the character of the fibre is to possess an axis formed more or less of the fragments of spicules, minute grains of sand, and other foreign objects of the like nature.

While the *Aplysinæ* have as yet been chiefly found in and about the Mediterranean Sea, the *Luffariæ* appear to have come almost exclusively from the West Indies and their neighbouring seas.

In Dr. Schmidt's work on the Sponges of the Adriatic Sea, to which I have already referred, based on the examination of specimens which he himself dredged up, described with the power of a professor of zoology, and illustrated with great ability by skilful naturalists, two species of *Aplysinæ* are mentioned, viz. *A. aërophoba*, which is Nardo's name and form, and *A. carnosa*, which is Dr. Schmidt's new species. Good specimens of the former were sent to the British Museum by Dr. Schmidt, where they now represent the type specimen of this species; and the same species would appear to exist in the Gulf of Florida (Atlantisch. Spongienfauna, p. 30, pl. 3. fig. 16); while De Fonbressin and Michelotti, as before stated, give six species of *Luffaria* (*op. et loc. cit.*), of which there is also an abundance of very fine specimens in the British Museum.

It is, however, with the former genus, and not with the latter, that we are here chiefly concerned, as we have to add a new locality to *A. carnosa* and a new species to the genus, from specimens dredged up by W. Saville Kent, Esq., of the British Museum, in Vigo Bay, while on board the yacht 'Norna,' in 1870, and now handed over with the rest of his valuable collection to the British Museum.

To Mr. Kent, therefore, we are indebted for the new species of *Aplysina* which I am about to describe under the designation of "*corneostellata*," on account of the skeleton chiefly consisting of horny stellates; and the specimens have been so successfully preserved in spirit, that I shall not only be able to describe the ova with which they happen to be charged, but also the spongozoa which now and then appear in groups with portions of the sponge placed under the microscope for examination (as may be seen by reference to Pl. VII. fig. 12), pointing out the interesting fact that the keratacous sponges possess the same kind of spongozoon as the rest.

Aplysina corneostellata, n. sp. Pl. VII. fig. 1.

Sessile, spreading, massive, rising into short lobes terminated by mammiform conical extremities, each bearing a large vent (fig. 1, *b b*; 2, *b*). Colour pinkish violet or flesh-colour. Surface smooth, minutely aculeated, each aculeation (fig. 2, *a*) terminated by the projection of a single horny hair-like filament (fig. 3, *a*). Internal structure cancellous, fleshy, permeated by branched systems of excretory canals, which finally end in the large vents at the summits of the mammiform eminences respectively; the whole supported on a horny skeleton composed of 5–6-rayed stelliform structures (fig. 4, *c c c c c*), one arm of which, when near the surface, projects through an aculeation (fig. 3, *ac*), and the rest, where they are in contact with the rays of neighbouring stellates, united to the latter by a thin expansion of transparent horny matter (fig. 4, *d d d*), which thus, altogether, forms a continuous skeleton supported on a few stem-like filaments at the base, which are united to the object on which the sponge may be growing (fig. 4, *b b b*). Horny filament hollow, the core consisting of fine granular matter *only*, with here and there parabolical wave-like lines, whose convexities are directed towards the end of the filament (figs. 5 & 6); diameter of the core much exceeding the thickness of the horny tube (fig. 7).

Dermal structure consisting of a thin transparent layer of sarcode (fig. 3, *c*; 9, *a a*), in which the pores may be observed by the aid of a microscope to be situated in variable plurality over the interstices of a subjacent network (fig. 8, *a*, *b*; 9, *c*) composed of elongated fusiform granuliferous cells adhering together in a cord-like form (fig. 10, *b*), which contrasts strongly with the globular form of the granuliferous cell in the overlying dermal sarcode (fig. 11); both structures covering the whole of the sponge up to the brink of the vents, and by their transparency exposing the cavities of the cancellous structure beneath, whose dark round cavities thus appear like so many minor vents opening upon the surface generally.

Body charged with spherical ova (fig. 4, *g g g*) of a deeper colour than the rest of the substance, presenting on pressure under the microscope a homogeneous, transparent, capsular envelope, within which is a more delicate one filled with nucleated granuliferous cells suspended apparently in a grumous

dark brown-red coloured plasma (fig. 13), in which may also be observed a few colourless, semiopaque, albuminoid concretionary masses, each of which, too, seems to be in a cell.

The spongozoa may now and then be also observed in aggregated groups with the rostrum and cilium extended, together with two ear-like projections, one on each side of the cilium, indicative of the remains of the "collar" (fig. 12).

Size of specimen varying with that over which the sponge may be growing, the one figured about 1 inch long by half an inch thick; horny stellates about 1-15th, ova about 1-120th, and spongozoon about 1-3000th of an inch in diameter respectively.

Hab. Marine, growing over the shells of living mussels (*Modiola albicosta*?) and on the empty shells of *Solen*.

Loc. Cies Islands, Vigo Bay (W. S. Kent, Esq.).

Obs. The chief distinguishing character of this species is the stellate form assumed by the filaments of the horny skeleton. It also differs from the specimen of *A. carnosa* dredged up by Mr. Kent in the same locality in the following particulars. *A. carnosa* is more fleshy, solid, and smooth, has no part of the horny skeleton projecting through the aculeations or any other part of the surface; no appearance of holes or small vents on the surface, from the dermal sarcode being too thick and opaque to allow the cavities of the cancellous or areolated structure beneath to be seen through it; and, for the same reason, here and there, where the surface is reticulated, the reticulations are more like superficial rugæ; the mammiform projections are flattened, and the vents sunk in the centre instead of being at the end of conical eminences as in *A. corneostellata*. In short, altogether *A. carnosa* is a coarser form with a dark violet colour and opaque appearance.

I have not seen a portion of *Luffaria* that has been preserved in the wet state; but we learn from De Fonbressin and Michelotti (p. 58, *op. cit.*) that they are all black, brown, or yellow—and when dry *all* black, which is the case with those in the British Museum on which the sarcode still remains. The sarcode is black, or, rather, blue-black now, more like the colour of ink, and the colour of the horny fibre more or less brown or yellow. When the latter is transparent and held between the eye and the light, it presents an amber-like appearance with a whitish core in the interior, round like the fibre, but very much less in diameter than the thickness even of the wall of the fibre.

The opposite of the latter is the case with the *Aplysinæ* (see fig. 7); and herein, together with their sessile spreading growth and comparatively diminutive size, they contrast

greatly with the comparatively gigantic tubular forms of *Luffaria* (whence the original designation of "*fistularis*"), which, as yet, have only been found in the seas between the two Americas.

I have stated that the network (figs. 3 & 8) subjacent to the dermal sarcode in *A. corneostellata* "is composed of elongated fusiform granuliferous cells aggregated together in a cord-like form" (fig. 10, *b*); but this assertion, so far as the individuality of the cells is concerned, rests on the conjecture that each elongated group of granules represents a distinct sponge-cell. Whether, however, the cord-like form is produced by the mere contact of these cells, or they are thus united by an intervening sarcode, I know of no means to determine. Certain it is that, if they possess the same polymorphic power as the soft parts of the sponge generally, this network must afford considerable support to the whole structure, and thus also yield to that of the dermal sarcode about it, whose polymorphic power we know to be such in *Spongilla* that it can extemporize and close pores in its substance wherever and whenever requisite.

The ova, so far as my examination extended (and I examined many), did not appear to have gone beyond cell-multiplication; that is to say, none presented rudiments of the horny structure like unto the development of spicules in the ova of the spiculiferous sponges at this period. What the colourless albuminoid concretions may be which I have not figured I am not able even to conjecture.

The spongozoa presented nothing further than the passive form above described.

Sudden death, by immersion in a preservative fluid during active life, would seem more calculated to cause many polymorphic parts of the sponge to retain their active forms than gradual death. At the same time it cannot be ignored that the pores in the dermal sarcode, which is as polymorphic as any other part of the sponge, do appear to be retained under any circumstances, as if, instead of being merely extemporaneous, they had been *established* holes endowed with a sphinctral power of contraction or dilatation as required.

As regards increase of the horny element of the skeleton during the *general growth* of the sponge, a cell was often observed to be fixed to the side of a ray of one of the stellates by a transparent film of a horny nature, apparently extended over it from the surface of the ray itself (fig. 4, *e*; 5, *c*). In some instances this cell was observed to have undergone increase in size, elongation, and the addition of concentric horny layers to its circumference (fig. 5, *d*); while in others it was

observed to have put out several points or buds, as if about to grow into a stellate (*e*).

On the other hand, a ray was sometimes observed to present a young branch (fig. 6, *c*) whose medullary or central cavity was in continuation with that of the ray on which it was situated.

Occasionally a grain of sand (fig. 4, *f*) was seen to be attached to a horny filament after the manner of the cell, and some of the stem-like filaments towards their base of attachment had a grain or two of sand in their centre. But these must be regarded as accidental occurrences; for the structure generally is not only devoid of proper spicules (that is, of spicules formed by the sponge itself), but the cavity of the horny fibre is equally devoid of grains of sand, fragments of spicules, or any other of the minute objects which are so characteristic of that in the Hircinidæ.

The subdermal network appears to be common to most of the keratacous sponges, attaching to itself through the dermal sarcode, in some of the *Hircinidæ*, a number of minute objects, so as to present a white lacework between the aculeations, which is visible to the naked eye, and which, when mounted in Canada balsam and viewed with a microscope, resolves itself into an infinite variety of entire spicules, both siliceous and calcareous, together with fragments of the same and grains of sand—altogether forming a most inviting, instructive, and interesting study to the spongologist. This lacework is particularly well developed in many of the great *Hircinidæ* at the British Museum which have been collected from the West-Indian seas and the coast of Southern Australia, as well as in the little specimen of *H. variabilis* from the Adriatic Sea, presented by Dr. Schmidt. In some of the keratacous sponges the network is horny, in the spiculiferous sponges spiculiferous; in short, more or less modified in all, it supports the dermal sarcode, in which the pores, in variable plurality, find themselves conveniently placed opposite the interstices. Thus the two combined form the pore-structure, which is often as beautiful as it is characteristic of the species.

I would also here add, with reference to the parasites of sponges, that on one of the specimens of *Aplysina corneostellata* are a number of minute isolated Ascidians attached to the dermal sarcode, which, from their dark red colour, looking like so many blood-red points, appear to have derived this tint in some way from the colouring-matter of the *Aplysina* on which they were growing, as there is a portion of an *Esperia* in the same collection, and dredged up from the same locality, on which there is an equal amount of the same species of Ascidians similarly situated, but without any colour at all, or,

at all events, any more than that of the *Esperia* on which they were growing, which merely presents the grey tint of colourless sarcode. The granuliferous cells represented in the dermal sarcode of fig. 9 might also well stand for the appearance and relative size of these Ascidians.

EXPLANATION OF PLATE VII.

Fig. 1. *Aplysina corneostellata*, n. sp., nat. size, growing on the shell of a living mussel (*Modiola albicosta*?); colour pink-violet or flesh-colour: *a*, shell; *b b*, vents.

Fig. 2. The same, one of the mammiform eminences, magnified, to show the position of the vents and general character of the aculeated surface: *a*, rays of horny stellates projecting beyond the summits of the aculeations; *b*, vent, showing its division into smaller vents within.

Fig. 3. The same, single ray, still more magnified, to show the manner in which the dermal sarcode hanging upon it tent-like forms the aculeation: *a a*, ray; *b*, centre of horny stellate; *c c*, subdermal reticulated structure covered by the transparent dermal sarcode.

Fig. 4. The same, corneo-stellate fibre and ova, magnified 15 diameters: *a*, foreign object on which the stem-like filament (*b b b*) is growing; *c c c c c*, corneo-stellates; *d d d*, thin expansions of horny matter uniting the rays together; *e*, cell enclosed under an expansion of horny matter; *f*, grain of sand enclosed under an expansion of horny matter; *g g g*, ova.

Fig. 5. The same, portion of ray of stellate, much magnified: *a*, cortical or horny tube; *b b*, core or interior presenting parabolical wave-like lines, with their convexities directed towards the free extremity of the ray; *c*, cell enclosed under a thin expansion of horny matter; *d*, the same, enlarged and elongated, with the addition of concentric horny layers round the cell, which now becomes the core; *e*, the same, putting forth five buds, corresponding with the number of rays in the stellate. Diagrammatic.

Fig. 6. The same, extremity of ray, much magnified, to show the commencement of a branch whose core is connected with that of the ray: *a*, cortical or horny tube; *b*, core; *c*, branch; *d*, thin expansion of horny matter covering the branch.

Fig. 7. The same, piece of horny fibre, still more but proportionately magnified, to show the relative thicknesses of the core and cortical tube, also that the latter is formed of layers: *a*, cortical tube; *b*, core.

Fig. 8. The same, portion of the dermal surface, magnified, showing:—*a*, the subdermal reticular structure; *b*, the interstices in which the pores are situated.

Fig. 9. The same, a single interstice, much magnified, and partly covered by the dermal sarcode in which the pores are seen and situated: *a a*, dermal sarcode, apparently homogeneous, charged more or less with globular granuliferous cells, also bearing (*b b*) the pores; *c*, interstice or mesh of the subdermal reticulated structure or network.

Fig. 10. The same, portion of the subdermal reticulated structure, greatly magnified, to show that it is composed of elongated fusiform granuliferous cells united into the form of a cord: *a a*, cord; *b*, elongated groups of granules representing elongated fusiform sponge-cells.

Fig. 11. The same, form of the globular granuliferous cells of the dermal sarcode, to contrast with the elongated forms in fig. 10.

Fig. 12. The same, three spongozoa, much magnified, each about 1-3000th inch in diameter.

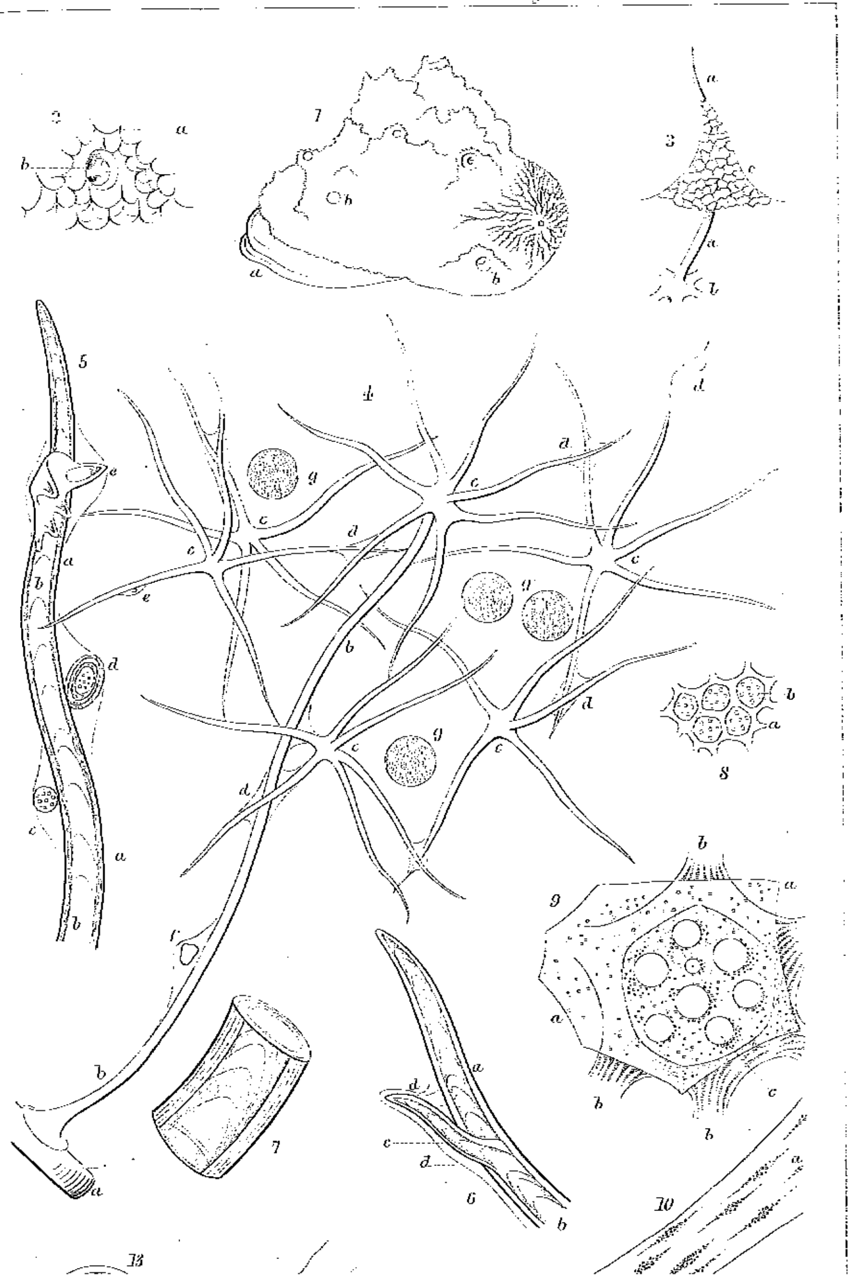
Fig. 13. The same, ovum much magnified, showing:—*a*, capsule; *b*, ovicell filled with nucleated granuliferous cellules suspended in a dark red grumous matter.

XIV.—*Descriptions of two new Sponges from the Philippine Islands.* By H. J. Carter, F.R.S. &c.

The two following Sponges, obtained at Cebu, one of the Philippine Islands, by Dr. A. B. Meyer, and now the property of the British Museum, are herewith described at the request of Dr. J. E. Gray, pending their further description and future illustration elsewhere.

1. *Meyerina* (nov. gen.) *claviformis*, Gray.

Specific character.—Sarco-spiculous. General form long, conical, cucumber-like, slightly bent upon itself. Colour now (that is in its dried state) light sponge-yellow. Cylindrical at the base, where the yellow colour ceases, and the structure is extended by bundles of long, colourless, glassy spicules, which were continued downwards for several inches into the sandy mud in which the sponge grew, while they pass upwards in an oblique network, longitudinally, to the middle of the body, whence they are continued on, by repetition, to terminate at the apex in short naked tufts round the cloacal orifice of the sponge, like those at the root, to which they thus bear a miniature resemblance. Surface even towards the base, becoming angular in the middle third by the projection of long ridges, which, uniting longitudinally, leave lozenge-shaped intervals as they gradually subside towards the apex. Vents chiefly on the ridges, in large *circular* network, and here and there in the intervals, which, on the other hand, are occupied by a small *rectangular* network, in the interstices of which are the pores. Internal structure rigid, reticulate, largely canalo-areolar, especially towards the surface, interwoven with the longitudinal spicules before mentioned, and surrounding a long, fusiform cloacal cavity, which commences about four inches from the base, and, increasing gradually in size to about the middle of the body of the sponge (where it is an inch in diameter), then diminishes again towards the apex, where it terminates in an orifice about one sixth of an inch wide; permeated on all sides by the canals of the areolar structure, which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