

Füssen), and here and there still higher—Spitzingsee, Seealpsee, Campfer (1793 metres).

Among the Protozoa *Ceratium hirundinella* is widely and very generally distributed up to 1993 metres (Palü), *Peridinium* up to 2222 (Nero). Species of the genus *Dinobryon* (especially *D. divergens*) exist in very many lakes up to an elevation of 1740 metres (Upper Arosa lake). From still more elevated lakes within a limited geographical region we have to note a variety, *alpinum*, of *D. sertularia* ([Poschiavo, 962], Viola, Nero, Bianco, Crocetta, and Tempesta, 2500 metres), colonies of which were captured in the above-mentioned lakes, sometimes in considerable numbers.

Finally, we have to note among the Copepoda the remarkable occurrence of *Heterocope robusta* in the lakes Marsch, Nair, and Furtschellas (2680 metres), all three in the Upper Engadine.

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XXXV.—Description of *Chondrosia spurca*, n. sp., from the South Coast of Australia. By H. J. CARTER, F.R.S. &c.

*Chondrosia spurca*, n. sp.

Specimen massive, irregularly cuboidal and nodular; broadly sessile where it appears to have been cut off by the dredge; nodules or round projecting parts of the surface covered with a smooth skin, followed inwardly by more or less fleshy substance, which, on becoming attenuated, traverses in all directions a mass of coarse detritus composed of fragments of shells, corals, gravel, sand, &c., that give it general solidity. Texture fleshy and homogeneous where devoid of foreign bodies; gritty in the rest of its composition. Colour yellowish drab. Surface sleek, smooth, slippery, uneven, more or less puckered in growth here and there; apparently without any opening at all in some parts, poriferous in others, pierced by vents here and there. Pores in tracts here and there, simple, or in the interstices of a well-pronounced fibroreticulation. Vents of different sizes, on a level with the surface, scattered irregularly more or less in groups. Structure, commencing from without inwards, consisting of fine fibrillous tissue, so homogeneous in appearance throughout as to present no distinction in colour or composition between the surface and the interior beyond increasing compactness, which



ends in giving to the former its characteristic smoothness—that is, not corticate; charged internally with ampullaceous sacs (more or less indistinct now from defective preservation), varying in shape from circular to pyriform, probably according to their position, accompanied everywhere by globular, light-refracting, transparent, fatty-looking bodies in great abundance, especially towards the surface, but with no separate groups of pigment-bearing granules, as seen in *Chondrosia reniformis* &c.; traversed throughout by the water-vascular system, which, towards the surface, presents the usual inflations or *lacunæ* that, in a smaller form and in line just under the skin, in some parts, represent the so-called “subdermal cavities,” into which the pores immediately over them empty themselves by short canals. The glary, light-refracting, cell-like bodies may be single and spherical or grouped in different degrees of duplicate subdivision, regular or irregular in size, altered from their globular form only by becoming flattened where in contact with each other; they are all more or less filled with daughter-cells, which from the transparency of the mother-cells can easily be seen within them; thus the glary bodies appear to increase by fissuration as well as by endogenous development; the daughter-cells also vary in size, but for the most part present themselves under the form of minute granules which, by reflected light, appear to be of the same composition as the mother-cells, but by transmitted light assume a dark brown colour, under which circumstances they present the appearance of the brown pigment granules of *Chondrosia reniformis* &c.; thus it is the surface of these granules in the latter case which becomes brown. The glary bodies are the most striking elements in the composition of the internal structure from their great abundance, being incomparably more numerous than in *Chondrosia reniformis* and almost indistructible, since, with the exception of iodine, which gives them a light amber tint, they are not only unaffected by acids or alkalies but, short of actual burning or putrefactive decomposition, appear to remain almost unaltered, as drying and mounting a thin microscopic fragment in balsam, accompanied by much heat, testifies. They have been faithfully described and illustrated by Schultze in *Chondrosia reniformis* (‘*Zeitschrift f. wiss. Zoologie*,’ Bd. xxix. pp. 20, 21, Taf. viii. figs. 9, 10), to which I must refer the reader for further observations on them. Of course there are no spicules but those which are of *foreign* origin. Size of specimen 3 inches high by 5 × 5 inches horizontally.

*Hab.* Marine; growing over, in, and amongst marine detritus.



*Loc.* Port Phillip Heads, south coast of Australia.

*Obs.* This specimen I omitted to notice in my "Supplement" to the descriptions of Mr. Wilson's sponges ('Annals,' 1886, vol. xviii. p. 271 &c.), as I had not time then to examine it before sending it with the rest of these sponges to the British Museum, so left it in an undetermined state, suggesting that it might be a "Synascidian." On going over the specimens at the museum, however, Mr. Ridley noticed that it was not a Synascidian but a sponge, and therefore sent it back to me for further examination, whence the above description, in which it is shown to be one of my order "Carnosa," or fleshy sponges, viz. a *Chondrosia*.

It differs from Schmidt's *Ch. plebeja* ('Spongien Küste von Algier,' p. 1) notwithstanding the presence of foreign material, and from Dr. Lendenfeld's *Ch. Ramsayi* (Proc. Linn. Soc. N. S. Wales, vol. x. pt. 1, p. 147, pl. iii.), as may be seen by comparing the descriptions respectively. At the same time all these species appear to me to be so nearly allied that it is difficult to say how far their differences are of any real specific value. It has been designated "*spurca*" on account of its uncleanly habit of enclosing marine detritus of every kind in its way, and to such an extent as to amount to much more in the present instance than half the bulk of the specimen itself. If I might be allowed to compare the "glary bodies" in this species to anything in the vegetable kingdom it would be to the chlorophyll-cells in plants.

P.S.—I have just found out from a preparation mounted in glycerine that the specimen to which I have alluded in my description of "*Halisarca reticulata*" ("Supplement," l. c. p. 274) as being charged towards the base with "small ova" is also charged throughout with the "glary bodies" undergoing multiplication, similar to those of *Chondrosia spurca*, and that they are so thickly congregated around the interstices of the fibro-reticulation of the surface as to constitute a distinctive character, which is continued inwardly along the surface of the canals opening through these interstices respectively; hence it becomes still more evident that this form will have to be made the type of a new species or genus, as I suggested in the concluding part of the description of "*Halisarca reticulata*" to which I have referred.



Carter, H. J. 1887. "Description of *Chondrosia spurca*, n. sp., from the south coast of Australia." *The Annals and magazine of natural history; zoology, botany, and geology* 19, 286–288.

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