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spawn of some fish float on the surface of the water, and the viscous matter in which the ova are enveloped would in that case inevitably cause some of them to adhere to the feathers of a bird swimming on the surface. I have observed too that after a heavy fall of rain following a dry season, wild ducks of all kinds will in one night entirely desert the rivers and lagoons to which they have been for months confined, and seek "fresh fields and pastures new" in the newly filled ponds, dams, and lakes of the back country. It is a matter of almost certainty then, that, if it be the spawning season of any species of fish whose spawn floats on the surface of the water, ducks or other waterfowl will carry the ova with them, and if the distance be not too great the transfer will take place without desiccation or destruction of vitality.

The three specimens sent me by Mr. Campbell are evidently young fish (about 4 inches long), and are I have no doubt of the same species as is found in the waters of the Gwydir, and of several others of the northern rivers of New South Wales, and of southern Queensland—*Therapon unicolor* Gunther, Catalogue of Fishes, Brit. Mus., Vol I., page 277.

The Rev. J. E. Tenison-Woods observed that the sudden appearance of fish in surface water derived from rain was a matter well worth the attention of naturalists. In the south eastern district of S. Australia there is a small fish named *lap-lap* by the natives, which does not appear to have been described. It abounds in the swamps of that extensive district, where there are no watercourses properly speaking, but where the swamps drain from one to another in very wet seasons as the country is a dead level and in no place more than 300 feet above the sea. In this district there are extensive tracts of desert, with here and there grassy patches and swamps of water to which the sheep are taken to depasture in the winter. In summer these swamps are dried and the sheep are withdrawn to the home stations often 20 to 40 miles away. He remembered in 1861 having crossed one of the desert places with a companion at the close of summer. They had ventured to make a short cut overland by the aid of some very heavy rains which had fallen during the same week. In crossing by an

abandoned hut where there was an extensive system of troughs by the side of a swamp, they found the troughs one-third full and literally swarming with *lap-lap* fish about an inch or an inch and a half in length. The troughs had not probably been used for two or three months previously, and they could hardly doubt that they had been filled by the rain for there were no traces of any sheep having been there recently or of any visitors at all. He supposed that the ova of this fish would bear desiccation without perishing and that they had remained in the troughs until hatched by the rain. He had often observed also that when the immense flats of the Mosquito Plains, and the Muddy Creek heaths were inundated in winter, that dray tracks or any little indentation of the surface would become a channel along which the water slowly ran. These were always stocked with *lap-lap*, though in this case of course the ova or fry may have come from the swamps. He had come to the conclusion that the ova of these fishes would bear desiccation without perishing, and that they were often blown about and carried considerable distances by the wind, in dust storms, &c.

On a new species of Desmophyllum (*D. quinarium*) and a young stage of Cycloseris sinensis.

By Rev. J. E. Tenison-Woods, F.L.S., F.G.S., Cor. Memb. Linn. Soc.

Desmophyllum is a genus of Turbinolinæ, which is specially distinguished by the presence of an epitheca and the absence of a columella; the corallum is simple, generally fixed by a large base; the fosette is very deep, and the septa are very much exserted, and stretch out like huge wings; the last cycle is more developed than that which precedes, and are often united to their neighbours, of the higher orders, from which they slightly diverge as they approach the centre; the wall is bare, smooth below, and presents some little crests in the neighbourhood of the calice. The genus was originally established by Ehrenberg for a species

of *Madrepora* of Esper. There are six species enumerated by Messrs. Ed. and Haime, viz., *D. cristagalli*, Ehenb., *D. Cumingi*, E. and H., *D. costatum*, *D. dianthus*, Esper., *D ? Stokesii*, E. and H., and *D. taurinense*, Michelin. The latter is fossil. Prof. Duncan has reduced the four first to mere varieties of one species, for which he retains the name of *D. cristagalli*, though it seems as if Esper's name (*D. dianthus*) should be the one selected, as it has long priority (1797). The same author regards *D. Stokesii* as an immature form of the other varieties. He says (*Madreporaria of the deep sea*; *Trans. Zool. Soc. vol.* 8, 1873, *p.* 321). "If the variations of the typical form of this species are studied, it will be noticed that there are great difference in the position, size, and continuance of the costæ, in the exsertness and granulation of the septa, in the height, compressedness, and size of the base of the corallum, and in the granular ornamentation of the outside of the wall in different specimens. The size, costal developement and granular condition of the ornamentation of the septa, and outside of the corallum, depend upon the age and nutrition of the specimen. Very thin septa are not so granular superiorly as those of corals, which have very thick walls, and dense septa, and the costæ of the latter kind are usually most prominent. At great depths, and where the Madreporaria appear to be very abundant, the specimens of *Desmophyllum* are usually very granular externally, moreover they become attached to compound forms of corals, and both have the same ornamentation, so that it is difficult not to believe in the *Desmophyllum* being part and parcel of the growing mass. One specimen is attached partly to broken specimens of dwarfed variety, with a small calice, and without costæ. Other forms are finely pedunculate" (*loc. cit*).

I bring this character of variability prominently forward, so that it may be seen what claims the present species has to be regarded as distinct.

DESMOPHYLLUM QUINARIUM, N.S.

Corallum much depressed, narrowed very slightly at the base, and twisted; epitheca, coarse and irregular, with the costæ

appearing like somewhat sharp keels or ridges; but in the only specimen seen by me, the base is so incrusted with calareous algæ in thin lamellæ, that very little can be seen below the edge of the calicular margin; calice, subpentagonal, but irregular; septa, very high and falcate, concentrically undulately striate, in five systems of three cycles, with the rudiments of a fourth; secondaries, thin in long arched lobes, which very much overhang the edge of the calice; primaries, tall and straight, not exsert, but reaching more towards the centre of the fossa than any others; tertiaries, small, thin, nearly as much exsert as the secondaries, and inclined or curved towards each other outside the wall; fourth order present in two systems only as thin short exsert lamellæ; tubercles representing a fifth order in one system; fossa deep and narrow; wall thick and indented inwards by the side of the primaries. Alt. 10, width from the extreme ends of the secondary septal lobes 15 mill. Fiji 20 fathoms, from a bay near Levuka, Dr. Rayner. In the Macleayan Museum.

From the incomplete character of the septa, on which few or no granules are visible, it is evident that this is only a young specimen. There is, however, nothing in the coral to give rise to the suspicion that the quinary arrangement is due to abortion. The form is peculiar and exceedingly interesting, and no doubt when other specimens are found, the characters of the adult will modify some of the characters which are now described.

Family FUNGIDÆ, Sub. Fam. LOPHOSERINÆ. *Genus* CYCLOSERIS.

This genus, which in addition to living species, extends as far as the cretaceous rocks as a fossil, is represented at present by *C. cyclolites*, and *C. hexagonalis*, and *C. sinensis* on the Barrier reef of north eastern Australia. Only the first has hitherto been regarded as Australian. They are small corals, like mushrooms, distinguished from *Fungia* by the wall being neither perforate nor hispid. In *Cycloseris* there is no epitheca. In *C. cyclolites* the disk is very high in proportion to its diameter; in *C. hexagonalis* it is extremely thin, larger than the last, and hexagonal in the young stage. *C. sinensis* is three times as thick as the last, though nearly as large. I doubt very much whether the two species can be separated. They have both from 7 to 8

cycles, and are common on the coral rocks, and in sandy places at from 10 to 20 fathoms. So little is known of the young stages of any of these corals that I think it worth the notice of naturalists to describe a young *C. sinensis*.

Corallum very small, quite circular, somewhat raised or thick, base not quite flat but sloping very slightly to a circular flattened disk, about half the diameter of the whole; costæ very distinct, prominent, in cycles corresponding to the septa, and agreeing in point of size, all very granular, and becoming a mere set of detached granules in the central disk; septa rather thick, projecting beyond the margin, increasing in height to the edge of the fossa, all closely and very prominently granular, and the edges dentate in six systems of *five* cyles; primaries free to the fossa, and much thicker than the others; tertiaries united to the secondaries at the fossa; fourth and fifth order uniting with the tertiaries about half way; all the orders of the fifth cycle present, but the two last much smaller, and all much serrated at the edge; fossa small, columella represented by a few papillæ. Diam. 6, alt. 2 mil. Princess Charlotte's Bay, 10 to 20 fathoms Chevert Expedition.

The flattened disk at the base of the corallum would seem almost like a point of attachment. If the young stage of *C. sinensis* is pedicellate, it hardly leaves any traces of its existence in the adult state. The specimens under notice were found free, so that the fixed state must belong to a still earlier stage.

Cycloseris sinensis is said by Messrs. Ed. and H. to be a native of the Chinese seas, and there is no mention made of any central disk, which however is found on the lower part of every Australian specimen. I have not been able to compare with any type specimen, so that our Australian examples may after all be a different species. But the similarity is so close in every other respect that I can hardly think this is the case.

EXHIBITS.

The Rev. J. E. Tenison-Woods, F.L.S., etc., exhibited seeds of various kinds of Eucalyptus, and directed attention to the fact

that Eucalyptus seed had frequently been sold under fictitious names, the seeds of common and inferior kinds having been substituted for the more valuable descriptions.

Mr. Brazier exhibited a collection of sternums of Fowls displaying the effect of different kinds of perches in modifying the shape and curvature of the ridge. Mr. Brazier showed that where the fowls roosted on a round perch the breast bone was normal; but those that roosted on flat battens had the breast bone distorted.

Mr. Masters exhibited a *Majaqueus Parkinsoni* or New Zealand Petrel shot near Sydney Heads, and remarked that it was the first recorded instance of this bird visiting the Australian Coast.

MONDAY, MAY 27TH, 1878.

W. J. STEPHENS, ESQ., President, in the Chair.

MEMBERS ELECTED.

CHARLES JENKINS, Esq., L.S., Yass, and T. TENISON-WOODS, Esq., Sydney.

DONATIONS.

From La Societé Entomologique de Belgique: Compte Rendu, Series II., No. 49.

PAPERS READ.

ON THE GEOLOGY OF YASS PLAINS.

By CHARLES JENKINS, ESQ., L.S., Yass.

Plate VI.

In offering an account of some years' labor in the fossiliferous strata around Yass, I must apologize for not giving at present all the detail that may be desired. I find it impossible to accompany this paper with the necessary plans and sections, the result of surveys I have made, without which minute description would be unsatisfactory. I hope, however, in a future paper to supply the information I am now compelled to omit, accompanied by drawings of as many of the principal fossils as possible.