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XLVIII.—On a species of Echinocardium from the Channel Islands

F. Jeffrey Bell M.A.^a

^a Zoological Department, British Museum
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surface, but more particularly by a comparatively thick layer of the same substance internally; continuous over one part and cribrated with large holes in another, opposite to corresponding holes in the cortex, rendered more or less polygonal by the intercrossing of the arms of the large radiates, and through which the cribriform areas of the surface can be seen. Spicules of two kinds, viz. triradiate and quadriradiate:—1, triradiates of different sizes, mostly regular in form and mostly large; ray 90 by 15-6000ths: 2, quadriradiates of two sizes, viz. very minute and very large; the former numerous, sagittal in shape, averaging only 10 by 1-6000th in the shaft, with arms respectively about half this length, and the latter, which tends more to a regular form and is scant, with arms 150 by 21-6000ths. No. 1 is chiefly confined to the cortex, the minute form of no. 2 to the sarcodic lining of the interior, with the large form here and there in the interior of the cortex. Size of specimen, which altogether is irregularly oblong, about $1\frac{1}{4} \times \frac{3}{4} \times \frac{1}{2}$ inch.

Obs. The structure of this species, if not abnormal, is very uncommon, on account of the general form in combination with such a thin wall; not less so the layer of sarcode over the inner surface, which is charged with the minute quadriradiates confusedly distributed throughout its substance, hence indicative of an abnormal condition. In general form, that is in outward appearance, it is very much like Poléjaeff's *Heteropegma nodus gordii* ('Challenger' Reports, 1883, Calcareo, p. 45, pl. i. fig. 7, and pl. iv. fig. 1), which also came from Australia, viz. from off "Cape York" at the N.E. angle, since that from the Bermudas appears to have been too much injured for illustration, but when anatomically examined proves to be totally different, as may be seen by the descriptions respectively.

[To be continued.]

XLVIII.—*On a Species of Echinocardium from the Channel Islands.* By F. JEFFREY BELL, M.A.

SOME weeks ago I received from Mr. Finlay of the Watt Museum at Greenock, an exceedingly fine specimen of *Echinocardium*, which he asked me to determine for that institution. A very superficial examination of the object showed me that it was altogether unlike any specimen in the British Museum, and that it could not be readily assigned to any described

species. As the specimen which belongs to the Greenock Museum had been purchased of Messrs. Sinel and Co., of Jersey, I entered into communication with those gentlemen, from whom I had already received valuable specimens of worms, and was able to obtain a specimen of *Echinocardium* covered with spines, and, at first, recalling *E. flavescens*; still later Messrs. Sinel have sent me a third specimen devoid of spines, which is larger than the others and deserves description.

No anterior ambulacral groove; test irregularly cordiform, at its widest the measurement is nearly as great as the length; anterior lateral ambulacra with eight and fifteen pores, the posterior with fourteen and twelve. Anus a little overhung by posterior interambulacrum; the granules in the anterior ambulacrum larger and much less closely packed than elsewhere on the dorsal surface of the disk.

Greatest length 74 millim., greatest width 71 millim.

A comparison of this description with that given by Mr. L. Barrett of what, with doubt, he calls *Amphidotus gibbosus*, Agass., shows that the specimens agreed in so far that his was as broad as long, had eight and fourteen pairs of pores in the anterior lateral ambulacrum, had the anus depressed, and the anterior ambulacrum flush with the surface of the test.

If the "Greenock" and our specimen be of the same species as Barrett's example, there is a further agreement in the thick coating with curved spines, and the spines of the post-oral space having slightly flattened tips.

On the whole I should be inclined to think that the three specimens now before me were of the same species as that seen by Mr. Barrett, were it not for the following considerations:—Mr. Alder and the Rev. Canon Norman agree in thinking that the specimen assigned by Barrett to Agassiz's species agrees rather with the *Echinocardium pennatifidum* of Dr. Norman; but this last has peculiar pedicellariæ of which I can find no trace, has but four pairs of pores in the anterior of the antero-lateral rows of ambulacral pores, and is not nearly so broad as long, having a greatest length of 60 and a greatest breadth of 50 millim.

The examination which I have been able to make of *Echinocardium cordatum* and *E. flavescens* have shown me that there is a considerable area of variability within this genus; but I cannot determine its range for *E. pennatifidum* or this apparently different species without material far larger than that which has already come to my hands. I shall be glad of any assistance which my fellow naturalists or those who are interested in British zoology are able to give me.

Zoological Department, British Museum.