the *Strix*, and perhaps by *Monarcha nitidus* being present (as in the Aroo Islands) instead of *M. chalybeocephalus*.

That the Tenimber group would possess a certain number of peculiar endemic forms was also to be expected, from their isolated situation and the deep channel around them. Altogether these are 17 in number, namely the 15 species above described as new, and two Parrots (*Eos reticulata* and *Eclectus riedeli*) previously known. To these must be added probably a "White Cockatoo" spoken of by Mr. Forbes in his report, but of which no specimen is in the collection. This species is in all probability *Cacatua citrinocristata*, well known as a cage-bird, but of which the true "habitat" has never been positively ascertained, though it has always been suspected to be from the Tenimber Islands[1].

2. Studies in the Holothuroidea.—II. Descriptions of new Species. By F. Jeffrey Bell, M.A., Sec. R.M.S., F.Z.S., Professor of Comparative Anatomy in King's College.

[Received February 19, 1883.]

(Plate XV.)

A survey of the British-Museum collection of Holothuroidea reveals the presence of a number of forms which have never yet been subjected to systematic examination or description.

It may be convenient, now that they are about to find a new home, to provide them, or some of them, with definite names, wherewith to enter the "Spirit-room" at South Kensington.

Caudina meridionalis. (Plate XV. fig. 1.)

It is interesting to find a third species of this curious genus so soon after the description by Marenzeller of *C. ransonnetti* from the Yellow Sea.

"Body" tending to be square; "tail" quite as long as or longer than the body. When the tentacles are retracted, the anterior end is blunter and squarer than in *C. arenata*. No sign of any genital papilla; but this may be due to the extreme corrugation of both the examples. The aboral prolongations of the radial pieces of the buccal skeleton are longer and narrower than in either of the already described species, and the intermediate cleft is consequently of considerable extent. The sides of the radial pieces are not deeply excavated as in *C. ransonnetti*. Connected with the ring are a number of long free ampullæ; it was not possible to make out the characters either of the Polian vesicles or of the tentacles.

The calcareous bodies in the integument are very different to those of *C. arenata*, the surface view presenting us with a kind of

[1] Cf. Wallace, P. Z. S. 1864, p. 280.

mulberry form, the bars not projecting out so far or so freely as they do in *C. ransonnetti*. The composing bars are exceedingly stout, and the spaces between them proportionately small. (Plate XV. fig. 1.)

Colour brownish yellow or yellowish white.

Length (skin much corrugated) :—"body" 35; 50; "tail" 37; 73. Breadth of "body" 15; 16 millim.

A specimen found on an anchor-cable at Wellington, New Zealand (presented by W. Wykeham Perry, Esq.), gives an exact locality for the species; another specimen was collected by the Antarctic Expedition.

Ocnus vicarius. (Plate XV. fig. 2.)

In associating this species with the genus *Ocnus* rather than *Cucumaria*, I have to point out that it appears to represent in the Southern Seas *Cucumaria culcigera*, and to raise the question as to whether, at present, we have drawn the best and most natural line of demarcation between these two genera.

Ten tentacles, of which two are shorter than the rest, not frequently divided; body elongated in form; integument thin but very firm, on account of the rich deposit of calcareous bodies in its substance. The ambulacral suckers in pairs, but the pairs so irregular, though confined to their own areas, that there is almost a zigzag arrangement; the costate arrangement at the anal extremity is only faintly indicated. The spicules, which are very richly developed in the skin, have, apparently typically, four central holes with at least one complete circlet of smaller holes; some attain to a great size. The supporting rods in the suckers are richly developed.

The retractors are slender and rather short; the component pieces of the buccal armature delicate. The other details of internal structure could not be made out in the specimen dissected.

Measurements in millim.:—

Length.. 41; 28; 18·5. Breadth.. 8; 6·5; 4·5.

Colour (after preservation in spirit for many years) white.

Locality: the Antarctic area is hinted at by the specimens having been collected by Sir E. Belcher.

Thyone meridionalis. (Plate XV. fig. 3.)

Body truncated in front when the tentacles (in the size of which there is no marked difference) are retracted, tapering very considerably at the hinder end; suckers absent from the greater part of the bivial surface, well enough developed above, and diminishing in number on either side as they approach the bivium. Integument thin, except in the more anterior region. No calcareous teeth to the anus.

Retractors of the proboscis inserted nearly as far back as the middle of the body, very wide at their insertion; each band divisible into three or four smaller bands. Polian vesicle single, nearly equal

to a third of the length of the body, much contracted at its free end.

The interradial pieces of the calcareous ring are not as much as half the width of the radial, nor are they quite so high. Both sets are elongated, their sides parallel, and without any prominent notch at their proximal end.

The only spicules appear to be the very sparsely distributed rods found in the walls of the suckers. I may point out that in another species of this genus lately examined by me I have noted a complete absence of calcareous spicules.

Length[1] 77 ; 52 millim. Greatest breadth 38 ; 25.

In the larger specimen the Polian vesicle is 25 millim. long, and the distance between the points of origin and insertion of the retractors is 45 millim.

Colour dark or lighter brown, anterior end white in parts.

Possession Bay, Straits of Magellan. Coll. Cunningham.

THYONE CUNNINGHAMI. (Plate XV. fig. 4.)

Body stout, narrowing suddenly at the hinder end ; tentacles subequal, yellowish cream-coloured ; suckers much better developed on the trivial than on the bivial surface. Skin thicker posteriorly than anteriorly ; quite thin in front. Anus without teeth, but fringed by papillæ.

Retractors stout, distinctly double, inserted very far back, behind the middle of the length of the body. Polian vesicle delicate, elongated in form and not very short. The distal end of the buccal skeleton is very stout ; the interradial is a little narrower than the radial piece, or, as the sides of both are not exactly parallel, they are rather narrower at their free end than at their base.

Spicules rather delicate rods, often pitchfork-shaped, or swollen and perforated at their ends, sometimes more irregular in form.

The single specimen is 50 millim. long, 17 wide ; Polian vesicle 10 long ; insertion of retractors 28 millim. from their origin.

Colour light grey.

Off Dungeness, Patagonia. Coll. Cunningham.

PHYLLOPHORUS DOBSONI. (Plate XV. figs. 5, 5 *a*, 5 *b*.)

Of the four species[2] of this genus already known, it would be with one only, *P. holothuroides* of Ludwig, that, even at first sight, we should feel inclined to associate this new form. The spicules, the buccal armature, and the arrangement of suckers on the trivium are, however, very different.

Rounded in form, about twice as long as broad, with a soft integument, with the suckers irregularly distributed, covering the bivium and both ends, but scarce or absent in the central portion of the trivium. The retracted gills appear to be 18 in number, of

[1] Owing to the shape of the bodies their length can only be approximately given.

[2] The name only of *P. tenuis* can be said to be known.

which 6 are internal to the rest; retractors fairly stout, very short. Polian vesicles two, rather short, irregular in shape. Genital tubes numerous, of some length, extending back as far as the middle of the body; the last division may have four terminal branches.

The calcareous ring is remarkably well developed, the radial pieces being very stout and broad, a little hollowed externally, with the backwardly directed processes short and feeble; the proximal end of the interradial piece is constricted (fig. 5 *b*).

The only calcareous bodies that were detected either in the skin, which is not remarkably thick, or in the walls of the suckers were stoutish discoidal bodies the perforations in which may be rare and small. They are present in large numbers.

Length 80 millim., breadth about 50, length of calcareous ring 14, Polian vesicle 10.

Colour—ground-colour white, the trivial surface with blotches of dark brown; lighter brown spots, lines, or patches may be seen on the bivium.

Hab. Bay of Honduras. Collected by G. E. Dobson, M.B., and presented by him to the British Museum.

I have the pleasure of associating with this species the name of its discoverer, a name well known to all zoologists.

STEREODERMA MURRAYI. (Plate XV. figs. 6, 6 *a*, 6 *b*.)

I have been for some time acquainted with a second species of this remarkably firm-bodied genus, an account of which will appear in the forthcoming report on the zoological collections made by H.M.S. 'Alert.' It has fortunately happened that that new species is particularly well represented; and the supply of specimens has enabled me to note that there are considerable variations in the arrangement of the suckers in the "double row," and that the regularity of this may become considerably obscured.

Fortified by these examples, I have less hesitation than I should otherwise have had in associating with this genus a single, rather small specimen from the seas of Kurrachee, which the British Museum owes to Mr. Murray. I venture to associate the name of this energetic curator with this interesting new species.

Tentacles small, dark; retractors exceedingly delicate, though with a broad base of origin; Polian vesicle very long and narrow; œsophagus covered with a calcareous plating, much as in *Thyone sacellus* (see Selenka, Zeitschr. f. wiss. Zool. xvii. pl. xx. fig. 115). (Plate XV. fig. 6 *b*.)

Integument very thick, and filled with strong-walled firm corpuscles, not so thick, however, as in *S. unisemita*, or so large as in *S. validum*.

Skin white in colour, the double row of the suckers only well developed in the anterior third of the body, but better developed behind than in the middle.

About 30 millim. long and 11 wide; of the same, or nearly the same, width along its whole extent.

Hab. Kurrachee. In exchange with the Kurrachee Museum.

STICHOPUS ASSIMILIS. (Plate XV. fig. 7.)

This species would appear to have a considerable resemblance to the form lately described by Prof. Greef[1] from Rolas (*S. maculatus*); but it is at once to be distinguished from it by the characters of its spicules.

Body elongated considerably, the suckers richly developed on the trivial surface; a shallow groove extends down the middle of the trivium from the mouth along the anterior two thirds of its length. The suckers are so numerous that the existence of three sets of rows is only faintly indicated. Papillæ and suckers of bivium richly and well developed.

The pieces of the calcareous ring are short, but very broad; the rest of the viscera have been largely ejected; but there is evidence in favour of the genital tubes having been few, simple, and, in proportion to the body, short.

The integument is pretty thick, and is very richly supplied with spicules; in addition to the turriform bodies there are flattened reticulated bars of very characteristic appearance; but I have detected none of the ordinary C-shaped bodies.

Length 116 millim.; breadth 28 millim.

Colour deep chocolate-brown (in spirit), but a patchwork of colour not unlike that of *S. maculatus* was, probably, to a certain extent developed in this species.

Hab. Angola. Purchased of Mr. Monteiro.

EXPLANATION OF PLATE XV.

Fig. 1. Spicule of *Caudina meridionalis*, p. 58. 1 *a*. Seen from the side.
2. „ *Ocnus vicarius*, p. 59. 2 *b*. Seen from the side.
3. „ *Thyone meridionalis*, p. 59.
4. „ *Thyone cunninghami*, p. 60.
5. „ *Phyllophorus dobsoni*, p. 60. 5 *a*. Seen from the side.
6. „ *Stereoderma murrayi*, p. 61.
7. „ *Stichopus assimilis*, p. 62.

All these are magnified 220 times.

5 *b*. Calcareous ring of *P. dobsoni*, multiplied twice nat. size.
6 *b*. Calcareous ring of *S. murrayi*, multiplied three times.

3. On the Suctorial Apparatus of the Tenuirostres.

By Dr. HANS GADOW.

[Received February 20, 1883.]

(Plate XVI.)

The following remarks are devoted to an explanation of the manner in which the sucking of the "Tenuirostres" is performed. This applies chiefly to the *Nectariniinæ* and *Meliphaginæ*. *Zosterops* and *Certhia*, although not suctorial birds, are treated of likewise, because they are closely allied to the Tubilingues. The Trochilidæ are mentioned

[1] Zool. Anzeiger, v. p. 158.