

2. *Selaginopsis Allmani*.

1876. *Selaginopsis fusca*, Allman, Linn. Soc. Journ. vol. xii. p. 272, pl. xii. fig. 1, and pl. xix. figs. 1, 2.

This Japanese species has similarly the hydrothecæ arranged in double file on each *side* (as opposed to the face) of the branchlets; but they are here distinctly in two lines at their bases as well as at their apices, the arrangement of cells being, as it were, that of a double *Sertularia* (e. g. *S. abietina*); instead of a double *Sertularella* as in the last case.

3. *Selaginopsis mirabilis* (Verrill).

1873. *Diphasia mirabilis*, Verrill, Amer. Journ. Science, ser. 3, vol. v. p. 9 (note).

1876. *Diphasia mirabilis*, S. F. Clark, in Scientific Results of Exploration of Alaska, vol. i. p. 15, pl. vii. fig. 36.

1877. *Polyserias Hincksii*, Mereschkowsky, Ann. Nat. Hist. ser. 4, vol. xx. p. 228, pl. vi. figs. 15, 16.

Hab. New-England coast (*Verrill*), Alaska (*Clark*), White Sea (*Mereschkowsky*).

Here we find the process of multiplication of cells carried still further, and what was in the former instances comparable to a double Sertularian, is here equivalent to a triplicate Sertularian, an extra pair of hydrothecæ being introduced.

The general aspect of the hydrophyton, as represented in fig. 15 ('Annals'), reminds us strikingly of that of *S. fusca*, Johnston, in mode of ramification, in general aspect of the branchlets, and in their great slenderness at the point of attachment to the main stem.

XXIV.—*Descriptions of new Species of Heterocera from Japan.*—Part II. *Noctuites*. By ARTHUR G. BUTLER, F.L.S., F.Z.S., &c.

[Continued from p. 169.]

Cosmiidæ.

105. *Cosmia distincta*, n. sp.

Primaries grey, crossed by two blackish-edged white lines, much as in *C. affinis*; an abbreviated basal white litura; central area more or less clouded with ferruginous, with a central brown angulated belt; external area dusky, limited internally by an irregular whitish streak; a semicircular whitish-bordered costal brownish spot, much like that of *C.*

pyralina; secondaries as in *C. affinis*: under surface intermediate in colouring and marking between *C. pyralina* and *C. affinis*. Expanse, ♂ 1 inch 5 lines, ♀ 1 inch 7 lines.

Yokohama (*Jonas*).

C. affinis occurs also at Yokohama, but is slightly larger than European examples.

Hadenidæ.

106. *Raphia fasciata*, n. sp.

Silvery greyish, rather darker than *R. viminalis*, with the ground-colour of the central band and base of costal area in primaries dark brown, spotted with black, the interno-basal area silvery white. Expanse 1 inch 3-4 lines.

Yokohama (*Jonas*).

Very close to *R. viminalis*, but having a very distinct aspect, owing to the blackish band and the large pale silvery interno-basal patch.

107. *Phlogophora beatrix*, n. sp.

Closely allied to *P. iris*, larger; more stramineous; the wings broader in proportion; primaries with the darker markings more olivaceous; the outer border not reddish; the margin distinctly dentate-sinuate; the fringe tawny; a marginal series of black lunules, the discal streaks nearest to the margin slender and dentate-sinuate; the two inner discal lines more slender, wider apart, and less angular; the central patch with convex (not angular) front margin; the discoidal spots less oblique, the secondaries clearer, yellower, the lines on the disk abbreviated and fainter: under surface clear straw-yellow, with an abbreviated discal line halfway between the cell and apex; fringe of primaries tipped with blackish. Expanse 2 inches.

Hakodaté (*Whitely*).

Intermediate in form and marking between *P. iris* and *P. periculosa*.

APLECTOIDES, n. gen.

Allied to *Aplecta* of Guénéée (*Mamestra*, Ochs., Grote), but differing in its shorter and broader primaries, with straighter costal margin; secondaries with the discocellulars more strongly angulated, the radial nervure emitted further from the median branches: body shorter; palpi more erect, the terminal joint on a level with the top of the head. Type *A. condita* of Guénéée.

108. *Aplectoides nitida*, n. sp.

Allied to *A. condita*, much larger; primaries shining silver-grey, with black lines and white spots; lines towards the base nearly straight below the median vein; orbicular spot small, clouded, distinctly black-bordered; reniform spot clouded, indistinct in front, because immediately followed by a patch of white, through which the sinuated portion of the discal black line passes; the latter followed by a less-distinct parallel line from the costa to the third median branch; externo-discal white limitation of the outer border much less defined than in *A. condita*, partly black-bordered; a longitudinal black dash, just above the third median branch, from the reniform spot to the outer border; fringe and apical costa brown; secondaries smoky brown, fringe greyish; thorax white, collar with a broad blackish band in front; metathorax and tegulæ crossed by two black belts; frons black; palpi black, whitish inside; abdomen fuliginous: under surface fuliginous, paler towards the base of the wings; a dusky transverse discal stripe, angulated in primaries; marginal line black; apical costa and fringe of primaries tinted with tawny, the rest of the fringe alternately sordid white and blackish; legs black, femora and tibiæ clothed with greyish hairs, tibiæ and tarsi banded with white. Expanse 2 inches 1 line.

Yokohama (*Jonas*).

In most examples the primaries above have the interno-median area whitish to just beyond the sinuous discal line.

109. *Eurois virens*, n. sp.

♂. Primaries bright sap-green, with the usual spots; internal border, veins, and fringe brown; costal border irrorated and spotted with black, the spots arranged in pairs, with paler green between them; discoidal spots margined with whitish and black, the reniform spot varied with red, deeply angularly excised in front, the inner ("orbicular") spot quadrate; two black lunules below the last-mentioned spot and crossing the interno-median area; an angular discal series of black-edged, pale green lunules; a submarginal series of black and green spots; the area between these two rows of spots olivaceous; a marginal series of conical black spots; fringe pinky white at the base; secondaries grey, becoming smoky brown towards the outer margin, fringe pure white; head, collar, and tegulæ sap-green, black-spotted; remainder of body greyish, with testaceous anal tuft: under surface greyish brown; wings sericeous with a dark transverse discal stripe; primaries with

pale-yellowish costa, internal area silvery grey; secondaries with white fringe. Expanse 2 inches 4 lines.

Hakodaté (*Whitely*).

Allied to *E. herbida*, much larger and brighter in colouring, and with no trace of the white patch beyond the reniform spot.

PLATAPLECTA, n. gen.

General aspect of *Aplecta nebulosa* (*Mamestra* of Grote), but with much shorter and broader wings, shorter body, and longer and less densely clothed palpi. Type *P. soluta* (*Polia soluta*, Walker).

110. *Plataplecta subviridis*, n. sp.

Primaries silvery grey (or white densely irrorated with grey), with blackish and white markings, nearly as in *Aplecta nimbosa*; the whole wing, but especially the basal area, indistinctly blotched with pale green; costal margin blackish, spotted with white near the apex; reniform spot subquadrate, black-edged; two transverse black-edged white stripes across the base of the interno-median area, a third connecting the first median branch with the inner margin, and followed by a large black spot; a very irregular greenish and white submarginal stripe bounded internally by conical black spots; apex blackish; a marginal series of black spots; fringe brown; secondaries pale brown, with darker outer border, blackish marginal line, and whitish fringe; body corresponding in colour with the wings: under surface shining pale brown; costa of primaries white-spotted near apex; secondaries whitish, with the discocellulars and outer border dusky; venter whitish. Expanse 1 inch 6-7 lines.

Yokohama (*Jonas*).

The male is lighter in colour than the female.

111. *Hadena gnoma*, n. sp.

Close to *H. atriplicis*, but much larger and darker, the primaries of a slaty-grey colour, varied with black and brown and *bright green* markings, arranged as in *H. atriplicis*, the bifid white spot less pure in colour and rather larger: secondaries, abdomen, and under surface altogether darker than in *H. atriplicis*. Expanse, ♂ 1 inch 10 lines, ♀ 2 inches 2 lines.

Yokohama (*Jonas*).

112. *Hadena lucia*, n. sp.

Allied to *H. atriplicis*, but differing as follows:—primaries above with an abbreviated white band from the costa to

the middle of the interno-median interspace (instead of the bifid white spot at base of first median branch); greenish markings paler and clearer; the apical border white, the black marginal spots less depressed and less distinct from the brown spots on the fringe; the other dark markings less sharply defined; secondaries more sericeous, with the basal half decidedly whiter; abdomen paler. Expanse 1 inch 11 lines.

Hakodaté (*Whitely*).

Xylinidæ.

113. *Auchmis intermedia* (*Cloantha intermedia*, Bremer).

Allied to *A. perspicillaris* and *A. sikkimensis*, pattern of the latter, but rather larger and paler, the basicostal and discoidal region of the primaries lilacine greyish, and the internal area tinted with the same colour: wings below paler, the costal margin of primaries and the ground-colour of secondaries white, the red-streaked areas of a duller tint. Expanse 1 inch 7 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

This is doubtless the Japanese representative of *A. perspicillaris*, just as *A. sikkimensis* is the Darjeeling representative; a fourth species of the same type occurs at Natal.

114. *Calocampa fumosa*, n. sp.

Closely allied to *C. exoleta*, but altogether of a more smoky tint, the markings less distinct, the discoidal spots of primaries more quadrate, the two hastate black spots more elongated; the secondaries dark grey, the base pale brown, the fringe pale grey; head and collar whity brown, broadly bordered with piceous; thorax blackish; shoulders sordid white; abdomen whity brown, with confused dorsal and transverse dusky stripes. Expanse 2 inches 8 lines.

Yokohama (*Jonas*).

The primaries are rather more elongated than in the European species.

115. *Calocampa formosa*, n. sp.

Primaries shining grey, the costal area, outer half of disk, external border, and fringe suffused with laky brown; discoidal spots outlined in black, the reniform dark grey, with a central rounded spot, both edged with reddish and black; two central transverse undulated black lines, the outer one bordered externally by brown spots, which fill the sinuations; inner part of discal area whitish, followed by a sinuous series of black dots; external area cut off abruptly by an oblique

line from the costa near apex, continuous with a broad transverse plum-coloured streak, intersected by a pale line; submarginal area whitish; a series of black marginal spots; costal margin (almost to apex) black, white-spotted beyond the cell: secondaries brown, with dusky outer border; fringe sordid white, intersected by a dusky line: body nearly as in the preceding species. Wings below darker than in the other species of the genus, with well-defined blackish undulated marginal lines on a narrow pale border; secondaries with a broad regular dusky discal belt. Expanse 2 inches 2 lines.

Yokohama (*Pryer and Jonas*).

116. *Xylina pruinosa*, n. sp.

Primaries above shining silvery grey, with indications of a paler irregular transverse discal band; the base of the cell, three blackish-edged discoidal spots, an oval patch near the base on the interno-median interspace, and a small round spot (black-edged externally) paler grey; a submarginal row of black dots, a marginal undulated dark line; fringe irrorated with white: secondaries sordid white, the apical area and outer border broadly grey; fringe testaceous at the base, tipped with white, grey in the centre: thorax grey, speckled with testaceous and white; abdomen pale greyish or sordid white, with a darker dorsal line and a rosy brownish fringe. Wings below shining silvery whitish, with opaque brown-speckled costal borders to all the wings and outer border to primaries; secondaries with a dusky dot at the end of the cell; body rosy brownish. Expanse 1 inch 5 lines.

Yokohama (*Pryer and Jonas*).

Nearly allied to *X. rhizolitha*, but greyer, with much paler secondaries.

In my opinion the genus *Aporophylla* ought to be placed either with or close to *Xylina*; so far as I have been able to discover, it agrees in structure with *X. rhizolitha*. The main differences which Stainton gives to distinguish the Apamidæ from the Xylinidæ are that the imagines of the first family have the wings "in repose roof-shaped," and those of the second family "folded in repose;" the genera *Aporophylla* and *Xylina* are distinguished by the larvæ of the first feeding "on low plants," and those of the second "on trees." Characters such as these, which can be ascertained only by the field-naturalist, should surely not weigh so heavily as to separate two insects so similar as *Aporophylla australis* and *Xylina rhizolitha* by 81 pages. I presume that, notwithstanding the rarity of *A. australis*, it is known to close its wings like an *Apamea*.

117. *Xylina arctipennis*, n. sp.

Primaries silvery grey, the base, a central irregular black-edged band, a transverse discal stripe, and the outer border rather paler and greyer than the rest of the wing; a black dot at the base, a second at the inferior angle of the cell, a disco-submarginal series, a series of marginal black lituræ, and a short oblique black apical line; fringe intersected by a slightly darker line: secondaries shining sordid white, with a broad, pale brown external border; fringe white: thorax greyish brown, antennæ ferruginous; abdomen paler, whitish at base, with a black dorsal tuft. Primaries below pale shining brown, becoming silvery whitish towards the inner margin; costa beyond the cell dotted with black and whitish: secondaries silvery white, with a whity brown costal spot and a discal stripe of the same colour; pectus creamy white, changing to smoky brown in front; venter testaceous. Expanse 1 inch 7 lines.

Yokohama (*Jonas*).

118. *Lithophane saga*, n. sp.

Primaries grey, with a number of black and brown dashes, four in the centre of the costa, oblique, two near external angle also oblique, but slanting upwards, the remainder longitudinal; a dusky oblique streak from the outer margin near the apex to the external third of the inner margin; reniform spot barely distinguishable; an acutely undulated oblique discal line arched towards the costa, the external undulations filled in at the end by black spots: secondaries with the basal half sordid white, crossed by brown veins, external half occupied by a very broad smoky brown border, upon which the veins look black; fringe sordid white: head grey, with black spots behind the eyes; collar brown, with a central transverse black-edged grey belt; thorax grey, brownish and crested down the centre; tegulæ grey, with a brown streak on each side; abdomen whity brown, with dark brown dorsal tufts. Primaries below smoky brown, the basal area and apical border pale; secondaries white, the costal area and outer margin sordid; a broad brown external band, a black spot at the end of the cell, and a discal series of black dots on the veins; pectus pale greyish; venter sordid white. Expanse, ♂ 2 inches 4 lines, ♀ 1 inch 11 lines.

Yokohama (*Jonas*).

L. saga is allied to the "*Xylina indicatura*" of Walker.

119. *Cucullia fraterna*, n. sp.

Nearly allied to *C. lucifuga*, but the primaries duller, with

the spot in the cell black, compressed and elongated; secondaries pure white (with the veins and outer border brown, and the costal area brownish, as in *C. lucifuga*). Expanse 2 inches 1 line.

Hakodaté (*Whitely*).

Heliothidæ.

120. *Heliothis adaucta*, n. sp.

Close to *H. dipsacea*, but much larger, the primaries and thorax of a more sandy whitish tint, with the markings rather darker; the secondaries whiter with blacker markings, the spot closing the cell broader: body less reddish in tint; under surface with all the markings much more distinct. Expanse 1 inch 5-6 lines.

Yokohama (*Jonas*); Hakodaté (*Whitely*).

The largest examples of *H. dipsacea* measure about 1 inch 3 lines in expanse.

Erastridæ.

121. *Erastria stygia*, n. sp.

Allied to *E. fuscula*: primaries black in the male, brown in the female, with darker bands and lines as in *E. fuscula*, the orbicular and reniform spots more or less strongly outlined in white; costa white-spotted, most strongly beyond the middle, a more or less strongly defined squamose patch of yellowish scales just beyond the reniform spot; a transverse bracket-like white line followed by a yellowish streak near the external angle; a 3-shaped pale line, bordered outwardly with deep black, near the base; fringe of all the wings white-spotted and with basal and central pale lines: secondaries shining greyish brown. Wings below much as in *E. fuscula*, but darker. Expanse 1 inch 1 line.

Yokohama (*Jonas*).

Although allied to *E. fuscula*, this species has more nearly the aspect of *E. africana* of Felder: excepting in the form of the margin of the secondaries, it nearly approaches *Eriopus Latreillii* of Duponchel.

Anthophilidæ.

122. *Anthophila paradisea*, n. sp.

Allied to *A. purpurata*: primaries with the basal half pale lemon-yellow, white at base of inner margin; disk bright rose-colour, whitish on the costa near apex, and indistinctly blotched with pale bronzy brown (barely visible without a

lens); outer border bronzy brown, bounded internally by a series of white dots; fringe bright rose-colour: secondaries pale brown; fringe white, tipped with rose-colour: head and thorax lemon-yellow, abdomen white. Primaries below pale greyish brown, with whitish borders; base of costa and outer half of fringe rose-colour; secondaries white, fringe tipped with pink; pectus white; legs and palpi rose-coloured externally; venter greyish. Expanse 1 inch 2 lines.

Yokohama (*Jonas*).

Eriopidæ.

123. *Callopietria obscura*, n. sp.

Allied to *C. pteridis*, but the ground-colour of the primaries sepia-brown, more or less irrorated with tawny, the transverse lines wider apart and bordered by sericeous grey (not rosy lilacine), the veins whiter, the marginal spots narrower and blackish; secondaries rather paler than the primaries, with whitish costal area and outer border; body altogether duller and greyer than in *C. pteridis*: primaries below grey, with sandy whitish borders; secondaries sericeous whitish, with greyish subapical patch or spot, discal line, and discocellular spot; body below sandy whitish. Expanse 1 inch 5 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

Altogether darker and less red than *C. pteridis*.

124. *Callopietria æthiops*, n. sp.

Allied to *C. exotica* from Java, but the primaries almost black, crossed by silvery white lines, the oblique white-edged dash at the end of the cell tapering downwards to a point and almost uniting with the interno-median band, which is oblique, the band across the cell also well-marked and oblique, so that the three markings together make a γ ; the white apical dash represented by three decreasing oblique white lines, the lowermost of which joins a Σ -shaped white figure (replacing the lanceolate mark of *C. exotica*); outer border narrow, black, edged with white: secondaries silvery whitish, the veins, an indistinct abbreviated discal line, and a broad diffused outer border greyish: body whitish, collar banded with black; base of tegulæ testaceous, anal tuft ochraceous. Wings below silvery whitish; primaries with the discoidal area, and two white-bordered discal streaks greyish; secondaries with the discocellulars and two apical streaks parallel to the outer margin greyish brown; body whitish. Expanse 1 inch 1 line.

Yokohama (*Jonas*).

Walker confounded two distinct species from Java and a third from Canara under *C. exotica*. *C. æthiops* is close to "*Plusia duplicilinea*" from Borneo.

Placodidæ.

SCEDOPLA, n. gen.

Nearly allied to *Placodes*, but differing in its distinctly pectinated antennæ, the shorter terminal joint of the palpi, and the subcostal branches of secondaries emitted from a rather long footstalk. Type *S. regalis*.

125. *Scedopla regalis*, n. sp.

Primaries with the basal two thirds dark brown, shot with purple, external third of a dead golden or deep sandy yellowish colour; a broad subcentral transverse band indicated by marginal sinuated limiting lines of black; a black litura at the end of the cell; the disk slightly darker than the outer border, its limit barely visible excepting at costa, sinuated; a submarginal series of minute black dots: secondaries stone-colour; costa white; outer margin and fringe sandy whitish; a series of dusky marginal lituræ: body brown, abdomen greyish. Under surface sandy yellowish; wings with a grey discal line; primaries greyish, excepting at the borders. Expanse 1 inch 3 lines.

Yokohama (*Jonas*).

Plusiidæ.

126. *Plusia typinota*, n. sp.

Allied to *P. gamma*, but the γ -mark more elongated, three other silvery characters, somewhat resembling *I*, *J*, *K*, but with the *J* sloping backwards, across the costal and discoidal areas; the margins of the central band rather silvery than golden; outer border of secondaries and borders of all the wings below ill-defined. Expanse 1 inch 9 lines.

Yokohama (*Jonas*).

127. *Plusia jessica*, n. sp.

Allied to *P. ni*, but the primaries darker and more sericeous; instead of the central silvery markings a brassy γ ; the discal line rather less irregular; the edge of the outer border rather more irregular, more uniform in tint; a marginal series of pale-edged triangular black spots instead of the marginal lines; fringe almost rubbed away in the type; secondaries greyer, without the abruptly darker border; thorax darker: wings

below greyer, without the paler border. Expanse 1 inch 4 lines.

Yokohama (*Jonas*).

128. *Plusia purissima*, n. sp.

Allied to *P. parilis*, but larger, greyer, more sharply defined, more sericeous; primaries more acuminate; the lower half of the external area and a broad oblique streak from the apex to the end of the cell silvery whitish; transverse band much more oblique, the limiting lines sharply defined, black, with pinkish white external edge; the silvery γ replaced by two silvery spots; the submarginal line straight to the third median branch and then gently angulated, terminating before the apex; a marginal piceous and white streak, not reaching the external angle: secondaries pale brown, becoming darker towards the outer margin; two ill-defined dusky discal lines: head, collar, and thorax grey, with red-brown posterior transverse bands; abdomen brownish grey, with a red-brown dorsal tuft near the base. Under surface sericeous grey, with two parallel discal darker lines; secondaries with the basal half whitish. Expanse 1 inch 5 lines.

Yokohama (*Jonas*).

129. *Plusia mikadina*, n. sp.

Nearly allied to *P. concha*, but rather paler, the golden C-shaped marking of primaries replaced by a larger brassy ; the outer or discal line more deeply sinuated, and the golden patch bounded by it on the inner margin of double the width, all the golden patches paler; the discoidal spots narrower and more angular: wings below much paler, the discal streaks wider apart, the outer one of primaries more strongly angulated. Expanse 1 inch 7 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

Calpidæ.

130. *Calpe excavata*, n. sp.

Form of *C. thalictri*, excepting that the inner margin of the primaries is more deeply excavated and more widely lobate. More nearly allied to *C. rectistria*, but the primaries of a richer reddish brown, the golden patch from the external angle upwards is wanting, the double oblique line from the apex separates more widely and becomes more irregular near the inner margin, outer margin subangulated below the middle; the secondaries differ in their dull sandy-brown colour, with broad diffused fuliginous external border; head and thorax

orange and red-brown, tinted with lilacine, as in *C. rectistria*; abdomen fuliginous: primaries below rather redder; secondaries yellower, with black discocellular lunate marking, a dusky discal streak; discal area from the streak greyish, excepting at apex. Expanse 2 inches 1 line.

Yokohama (*Jonas*).

C. rectistria is erroneously referred by Guénée to his genus *Oræsia*.

131. *Calpe sodalis*, n. sp.

Closely allied to *C. thalictri*, but differing in its paler colouring and the colour and shortness of the fringe, which is uniform with the ground-colour of the wings instead of being dusky; primaries below with darker discal streaks, secondaries with the discocellular litura and discal streak paler. Expanse 1 inch 10 lines.

Hakodaté (*Whitely*); Yokohama (*Jonas*).

132. *Deva splendida*, n. sp.

Aspect of *Oræsia emarginata*, but with the palpi longer, more slender, and recurved over the head; in coloration more like *O. provocans*; primaries above greyish brown, speckled here and there with black, streaked with shining lilac; central area ferruginous, shading into ochraceous, and thus resembling a bright cupreous lustre, with which the external area is shot; a bisinuated basal litura, a &-shaped marking above the median vein, a discal streak, the outer margin, the inner edge of the outer border at apex, and the outer border of external angle lilacine; a line from below the cell and irregular discal line silvery; a bright silvery marking (somewhat resembling a *v* in writing) at the base of the first median branch; reniform spot constricted, feebly outlined with lilacine: secondaries shining brown, with two darker central streaks; fringe tipped with whitish: head and collar testaceous, banded with lilac; thorax darker, also banded with lilac; abdomen greyish, whitish at base, with a lilac-tipped black and ochraceous dorsal tuft. Under surface not unlike that of *Oræsia emarginata*, but the primaries and the disk of secondaries darker; the latter wings also with a well-marked arched discal stripe; legs greyish; tarsi blackish, banded with whitish. Expanse 1 inch 7 lines.

Hakodaté (*Whitely*).

Gonopteridæ.

133. *Gonitis commoda*, n. sp.

Most nearly allied to *G. fulvida*, but larger and darker, the

primaries redder, the lines darker and less strongly undulated, the central line straight, the fringe less deeply white-tipped; secondaries with much less white on the fringe: wings below darker, the lines darker, the discal line of secondaries carried across the wing; as in *G. combinans*. Expanse 1 inch 10 lines.

Yokohama (*Jonas*).

G. fulvida (*Anomis fulvida* of Guénée) is a native of Java and the Andamans; we have also an example labelled "North India." Walker confounded a larger Indian species with it; but the latter is scarcely distinguishable from his own *Gonitis revocans* from Australia.

[To be continued.]

XXV.—*Further Notes on the Structure of Peripatus novæ-zealandiæ*. By F. W. HUTTON, Professor of Zoology in the University of Otago.

DURING the last three months I have dissected several more specimens of *Peripatus novæ-zealandiæ*, with the advantage of Mr. Moseley's paper before me; and I hasten to communicate the results, because I wish to correct several errors into which I have fallen, and to confirm, as soon as possible, Mr. Moseley's statement of the existence of male individuals.

Integumentary System.—The last joint of the legs consists of a short subcylindrical joint, on the upper and outer margin of which are three large papillæ, and below two large curved simple claws. On the fourth and fifth pairs of ambulatory legs there is a circular opening in the centre of the inner side of the first, or inner, tarsal ring—that is, on the fifth ring from the end. I am, however, doubtful whether the tarsi should not be considered four-ringed only.

Muscular System.—My supposed "salivary bags" (see *Ann. & Mag. Nat. Hist.* 1876, xviii. p. 364) are the same as Mr. Moseley's "retractor muscles of the head" (see *Phil. Trans.* vol. 164, pl. lxxii. fig. 1, *rm*). Mr. Moseley is right in calling them muscles; my mistake arose from believing the tracheæ on them to be internal instead of external. They are, however, the flexor or adductor muscles of the teeth. The pairs of teeth are not moved simultaneously. Generally their movements are alternate, but often one pair is moved several times, while the other is stationary; there is also a movement by which the two teeth of a pair are separated and approximated. The two pairs of teeth, when in use, sometimes touch each other at the tips; but they never cross.



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