

what resembles *Callidula*; in structure, however, it agrees with *Cleis*. I believe the *Agonis lycænoides* of Felder to be a slightly aberrant form of *Cleosiris*, to which genus the following species are referable—*C. erycinoides* (of Walker), *C. anchora*, *C. Felderi*, and *C. catamita*.

10. *Cleis posticalis*.

Cleis posticalis, Guérin, Voy. Duperrey, Atlas, Ins. pl. 18. f. 5.

Damias melaxanthe, Boisduval, Voy. de l'Astrolabe, p. 260. n. 2 (1832-5).

Duke-of-York Island (*Rev. G. Brown*).

B.M.

Our example was recently presented to the collection by F. Du Cane Godman, Esq. The allied genus *Callidula* contains four species, *C. petavius*, *C. abisara*, *C. sakuni*, and *C. jucunda*; the genus *Tyndaris*, *T. erycinata* (the male of which is figured by Felder as that sex of his *T. lætifica*) and *T. lætifica*.

The *Damias elegans* of Boisduval is probably congeneric with the *Nyctemera subaspersa* of Walker, for which, therefore, I shall provisionally retain the name. *N. subaspersa*, although coloured somewhat like *Secusio annulata*, has long, slender, filiform antennæ, and is more nearly allied to *Cleis*.

XXXIX.—On the Elateridæ of New Zealand. By D. SHARP.

IN this paper I have put together descriptions of all the beetles belonging to the family Elateridæ I have been able to procure from New Zealand, and have indicated their structural characters in a manner which, although very imperfect, will, I believe, allow the names and affinities of most of the species to be determined without much difficulty.

I have included under the Elateridæ four or five species of Eucnemidæ; for though several able entomologists consider the Eucnemidæ to be a distinct family, I am unable myself to consider them such so long as the present extension is granted to the Elateridæ. The Eucnemidæ, in fact, possess no point of real distinction from the Elateridæ: the form of the head (which is usually relied on to separate the two families) is not a sufficient character; for it undergoes various modifications in both the Eucnemidæ and Elateridæ, and in some species of Eucnemidæ its structure is more different from that of the typical members of the family than it is from that of the Elateridæ. Taking the term Elateridæ, then, in this wide sense, I have been able to distinguish about sixty-two

species (one of these species, however, is from the Chatham Islands). This must be considered a large number; for in Great Britain we have only sixty-six species; moreover the number of New-Zealand species will probably be greatly increased. Indeed there exist already two species which I have not been able to procure, viz. *Drasterius nigellus*, White (which is a Eucnemid), and *Elater lateristrigatus* of the same author. I have satisfied myself as to the names of the previously described species by an examination of the type specimens in the collections of the British Museum and E. W. Janson, Esq.

These sixty-two species may, it appears to me, be arranged in twenty-one groups or genera; and though I have wished very much to avoid making new generic names, I have unfortunately been obliged to propose such in the case of eleven of the groups; these names are *Thoramus*, *Amphiplatys*, *Panspæus*, *Aglophus*, *Lomemus*, *Mecastrus*, *Parinus*, *Geranus*, *Protelater*, *Neocharis*, *Talerax*.

I must give an explanation of the terms I have used in describing the structure of the head. By the term forehead I mean all the upper surface of the head except the anterior part, and this latter I call the clypeus. It is this anterior part that undergoes so much variation in the family: sometimes it is abruptly deflexed so as to be placed quite at right angles to the forehead, and is sometimes even more or less bent inwards under the forehead, while in other cases this clypeus appears to be merely an extension forwards of the forehead in quite the same plane as it; and in such cases it is often not easy to trace the line of demarcation between the two. By antennal spaces I allude to the depressions in which the cavities or points of insertion of the antennæ are placed. These antennal spaces are situated in the outer portion of the clypeus; and when they extend inwards they occupy more or less of its space and so alter its form. Lacordaire called these spaces in the Buprestidæ "antennary cavities;" but that term ought, I consider, to be used for the actual depression or cavity in which the basal joint of the antenna is inserted. He considered these "antennary cavities" to be of great importance for the classification of the Buprestidæ, but to be unimportant in the Elateridæ. In this latter point I think he was mistaken; the antennal spaces appear to me to be of much importance in the Elateridæ as well as in the Buprestidæ.

As points of general interest, it may be remarked that these sixty-two species of New-Zealand Elateridæ show great variety of structure, and yet that they indicate a very isolated fauna. All the species are peculiar to these islands, except one

or two that have probably been introduced from Australia by means of the commercial communications between the two countries ; but, as a whole, I am inclined at present to the opinion that the relationship of the fauna (I speak here only of the Elateridæ) is nearer to that of Chili than to that of any other country, and that after Chili Australia must be ranked as offering the next greatest affinity.

The forms I have described under the generic name of *Protelater* are of great interest from the peculiar structure of their head, which is of so unspecialized a character, that with but little modification it might be transformed into the head of a Throscid or Eucnemid; while at the same time it is satisfactorily connected with the other Elateridæ, I consider, by another series of New-Zealand species here described under the generic name of *Geranus*.

Now, as the modifications in the formation of the head offer the most important basis for a classification of these insects (Elateridæ, Eucnemidæ, Throscidæ), we might seem entitled to come to the conclusion that *Protelater* is a primitive form or synthetic type. If we do so, however, we are met with this striking fact, that this *Protelater* does not show any near approach in the structure of its head to the ordinary Coleoptera, but, on the contrary, is more different from them in that respect than are many other members of the family (e. g. *Corymbites*, *Lacon*, and their allies). If, then, we were to allow ourselves to suppose that *Corymbites* and *Lacon* were descended from such a form as *Protelater*, we should be obliged to admit that the process of evolution of their head has been one of convergence to the average Coleopterous type, rather than one of divergence from it. Interesting as this result would be, I do not think we are justified in attaching much importance to it; for the homologies of the parts of the head in different groups of Coleoptera is a question that has scarcely been touched; and if, as it is supposed, the head of an insect consists of three or more coalesced segments, each of which segments is itself composed of numerous parts, it is clear that the interpretation of the structure of the head in any one selected coleopterous form must be a very difficult one; and with so many parts to begin with, it would be very hazardous to conclude that two heads which should appear to be similar have been arrived at by a similar series of modifications.

My thanks are due to Captain Broun, of Tairua, and C. M. Wakefield, Esq., now of Uxbridge, for the most important contributions to the material from which I have drawn up this paper.

1. *Thoramus Wakefieldi*, n. sp.

T. niger, sat nitidus, breviter et æqualiter fusco pubescens; prothorace crebre punctato, angulis posterioribus haud divergentibus; elytris subtiliter striatis, interstitiis æqualibus, subtiliter punctatis, apice subrotundatis; antennis articulis secundo et tertio brevibus, sed hoc quam illo paulo longiore; sutura intercoxali profunda. Long. $21\frac{1}{2}$ –29 m. m.

This species is characterized by its comparatively large size, uniform and even pubescence and punctuation, by the short but yet not extremely abbreviated 3rd joint of the antennæ, and by the front anterior angle of each of joints 4–10 of the antennæ being acute but not prolonged.

Oxford, Feb. 1873; Dry bush; Christchurch; Hokitika; Rangiora; Akaroa, Dec. 19, 1874. The species varies considerably in size; one small specimen is marked in Mr. Wakefield's collection as found on a hill-top at Akaroa by Mr. Fereday. The species also occurs in the Northern Island, as some portions of a specimen have been received by Mr. Lawson from his brother at Auckland.

Mr. Wakefield has brought back, in spirit, specimens of the larvæ and pupæ of this species; these I describe below:—

Larva 38 m. m. long., 8 m. m. lat. (on 9th and 10th segments), of thirteen segments, including the head; of these the head is fuscous or pitchy, and the two following segments are more or less infusate, the other segments whitish; the 2nd segment as large as the 3rd and 4th together, the 8th to 10th segments are the broadest. Front of head deeply emarginate in the middle, the emargination furnished in front with a band of cilia, and in the middle with a horny prominence, terminating in three short teeth, one of which is placed above the other two. Antennæ three-jointed*, and with a membranous probably retractile support, the apical joint very slender. Mandibles rather long, acuminate, simple; upper surface of head with coarse but not very numerous punctures. Maxilla elongate, and furnished at the apex with a four-jointed palpus; labial palpi two-jointed. Dorsal segments, especially 4–8, more or less punctured, the punctures bearing short hairs. The 13th dorsal segment small, furnished towards the apex with rough, coarse, hard, brown tubercles, each of which bears several hairs; the apex is prominent on each side, the prominence being surmounted by a robust double tubercle; thirteenth ventral segment swollen at its

* The antennæ of the Elaterid larvæ are described by Perris and Lacordaire as 4-jointed; but it seems to me that the supposed basal joint is merely a membranous projection or support, and shows no trace of an articulation at its base.

base into a very large fleshy tubercle or false foot: the position of this foot and the form of the ventral segment cause the apical segment to be directed upwards in the two specimens of this larva before me.

This larva in its general characters agrees with those of the Elateridæ described by Perris in the "*Insectes du Pin maritime*" (Ann. Soc. Ent. France, 1854); but the dorsal plate of the last ventral segment appears to be less divergent in its structure from the other plates than is usual.

Pupa about 26 m. m. long, showing twelve dorsal segments besides the head, the first of which is quite of the form of the prothorax of the perfect insect, but bears on each side of the front a long slender tentacle; the scutellum of mesothorax very distinctly developed, the metanotum also largely developed. The dorsal plates of the hind body are distinctly differentiated, the hind angles of the 3rd, 4th, 5th, and 6th segments being very prominent and hard; the membrane between the dorsal and ventral plates of the 6th segment is elevated at its hind margin so as to form a kind of ear-like cavity, which forms the anterior wall or protection of a very deep depression at the outer side and base of the 7th segment, this depression being limited behind by a strong elevation of the dorsal plate of the 7th segment; the terminal (9th abdominal) dorsal plate bears at its apex on each side two slender spines, the upper one of which is short and simple, while the lower one is very elongate, and bears one or two short spines. On the under surface the trophi, antennæ, legs, elytra, and wings are very prominent. The hind body shows ten ventral plates; of these the seven basal ones correspond with the dorsal plates, the 7th differing, however, considerably in form from the others, it being much less transverse and greatly rounded behind; the 8th plate is not so largely developed as the corresponding dorsal plate, while the 9th and 10th plates are small and protected by the projecting sides and apex of the 9th dorsal plate.

The peculiarities of this pupa seem to be the peculiar structural fossa on each side of the base of the 7th abdominal segment, and the presence of an exposed supernumerary ventral plate. In the perfect insect only five ventral segments are to be seen: a comparison of the pupa with the perfect insect renders it evident that the 7th ventral plate of the pupa is the 5th or apical segment of the perfect insect; thus the diminution in the number of ventral segments has occurred at both extremities of the hind body—the first and second plates having disappeared at the base, while the 8th, 9th, and 10th at the extremity have become internal.

Mr. Wakefield informs me that these larvæ and pupæ "were taken from a fallen log of matai or black pine, near Christchurch. The larvæ were abundant in the log. I cut several perfect insects out of the same tree. The larva is very fierce; and one which I took home in the same box with a larva of *Prionoplus reticularis* made short work of the latter."

2. *Ochosternus Parryi*, Cand.

O. niger, sat nitidus, breviter et æqualiter, fere sparsim fusco pubescens; prothorace crebre fortiter punctato, angulis posterioribus vix divergentibus; elytris subtiliter striatis, interstitiis æqualibus, subtiliter punctatis, apice subrotundatis; antennis articulis secundo et tertio brevibus, sed hoc quam illo paulo longiore; interstitio meso-coxali angusto, sutura minus distincta. Long. 17–21 m. m.

This species, though closely allied to *Thoramus Wakefieldi*, is smaller and much narrower in proportion; this difference in form is accompanied by a greater approximation of the intermediate coxæ, and a more complete suture between the middle processes of the meso- and metasternum. The structure of the antennæ is similar in the two species.

Christchurch, found by Mr. Wakefield, but only three specimens; a fourth very small individual has been discovered by Mr. Fereday in the same neighbourhood.

Obs. Several specimens of this species are in Mr. Janson's collection, named by M. Candèze "*Ochosternus Parryi* ♀;" but I have seen no specimen which would enable me to form an opinion as to what form M. Candèze considered to be the male of *O. Parryi*.

3. *Thoramus obscurus*, n. sp.

T. niger, sat nitidus, breviter et æqualiter fusco pubescens; prothorace crebre punctato; elytris subtiliter striatis, interstitiis æqualibus, crebrius punctatis, apice subrotundatis; antennis articulis secundo et tertio brevissimis, hoc quam illo paulo brevior, articulis 4–10. angulo apicali interno leviter producto; interstitio meso-coxali lato. Long. 19–21 m. m.

This species is rather closely allied to *Thoramus Wakefieldi*, but is smaller and less elongate in form; this, in conjunction with the rather broad intercoxal space, the very abbreviated third joint of the antennæ, and the evenly distributed pubescence, will readily distinguish it from the other allied forms; the false joint at the apex of the antennæ is rather elongate, and very distinctly marked off.

Found by Mr. Wakefield near Christchurch (three specimens), and at Akaroa, Dec. 19, 1874 (one specimen).

It is possible that this species may prove to be the male of *Thoramus Wakefieldi*.

4. *Thoramus Feredayi*, n. sp.

T. angustulus, niger, minus nitidus, fusco pubescens; prothorace crebre fortiter punctato; elytris subtiliter striatis, interstitiis æqualibus et fere æqualiter pubescentibus, parcius punctatis, apice subrotundatis; antennis articulis secundo et tertio brevissimis, articulis 4-10. angulo apicali interno longius producto; interstitio meso-coxali sat lato, sutura profunda. Long. 18 m. m.

This species will be pretty certainly distinguished by the above characters. The pubescence of the upper surface is rather longer and more scanty on the thorax than it is on the elytra; and when the 2nd, 4th, and 6th interstices on the latter are carefully examined, it is seen that near the apex their pubescence and punctuation are slightly more scanty than on the adjoining ones.

Also found at Christchurch by Mr. Wakefield, but only two individuals.

At Mr. Wakefield's request I have named this species in honour of R. W. Fereday, Esq., of Christchurch, N. Z., by whom several of the Elateridæ communicated to me by Mr. Wakefield were captured.

5. *Elater lævithorax*, White.

E. niger, nitidus, parce pubescens; prothorace parce fortiter punctato; elytris subtiliter striatis, striis ad apicem obsoletis, interstitiis parce punctatis, inæqualiter pubescentibus; interstitio meso-coxali prominulo, sutura oblitterata. Long. 15-19 m. m.

Mas antennis elongatis, articulis secundo et tertio brevissimis, 4-10. apicibus internis longe productis.

Fem. antennis sat brevibus, articulis secundo et tertio brevibus, 4-10. apicibus internis acutis sed vix productis.

The prominent intercoxal space and the complete amalgamation of the middle meso- and metasternal processes, readily distinguish this species from its allies; the structure of the apex of the elytra, which are not acuminate, will at a glance prevent its being mistaken for *Elater acutipennis* and its allies.

Found at Wellington by Messrs. Fereday and Wakefield, in Feb. 1868 and Feb. 1875, and sent by Mr. Edwards under the number 1338, but without special locality.

Obs. *Elater punctithorax*, White, is to be sunk as a synonym of this species, according to my notes made when examining the types in the British Museum.

Group 1.—The following are the structural characters by which species Nos. 1, 2, 3, 4, and 5 may be identified:—

Forehead quite straight in front, slightly overhanging the perpendicular clypeus, so that a very distinct step exists between the forehead and the labrum; antennal spaces very small, broadly separated; antennæ with joints 2 and 3 but little developed, 4–10 always at least serrate internally, sometimes with anterior internal angle much prolonged, 11th joint with a more or less distinct terminal appendage or false joint. Mesosternal cavity and its suture with the metasternum variable. Tarsi simple and linear, the 4th joint rather long, though a good deal shorter than any of the others; coxal plate of hind coxæ well-developed throughout, its trochanteral portion quite twice as long as its femoral. Elytra not acuminate. Species of large size.

The nearest ally I can point out for these species is the Chilian *Diacantha nigra*, Solier. Candèze locates this Chilian insect in his subtribe Elatérites. Only one of the five New-Zealand species I am alluding to was known to this writer, viz. the *Ochosternus Parryi*; and in his work it is placed in the subtribe Ludiites, being associated with the *Elater zealandicus* to form the genus *Ochosternus*. This, however, is certainly erroneous; for the form of the front of the head of *Ochosternus Parryi* will not allow it to be either correctly associated in one genus with *Elater zealandicus* or located in the Ludiites. On the contrary the species appears to me to be, as I have said, allied to *Diacantha nigra*, from which it differs by the more largely developed antennæ, by the more elongate clypeus, and by the more raised borders of the mesosternal cavity. The five New-Zealand species agree in most respects; but *Elater lævithorax* departs considerably from the other four species by its much-raised mesosternal cavity, and by the nearly obliterated intercoxal suture.

6. *Metablax Brouni*, n. sp.

M. colore variabilis, elongatus, nitidus, inæqualiter albido pubescens; prothorace angulis posterioribus divergentibus, intra latera depresso, dense punctato, et evidenter sparsim pubescente, medio nitido fere impunctato; elytris apice acutis, obsolete striatis, interstitiis alternis magis pubescentibus, tertio ad basin leviter prominulo; sutura intercoxali omnino carens; tarsis articulis 2–4. subtus apicibus membranaceis sed vix prolongatis. Long. 23–25 m. m.

The acuminate elytra and the entire absence of any suture between the middle coxæ at the junction of the meso- and

metasternal processes, taken together, readily distinguish this species from all the others yet known from New Zealand. The pubescence is very easily removed, and specimens are sometimes nearly completely denuded. The colour varies greatly, from nearly black to nearly red.

This species is apparently confined to the North Island; and the only exact locality I can mention is Tairua, whence two specimens have been sent me by Captain Broun.

Obs. The specimens I have seen in the collections of the British Museum and Mr. Janson show that both White and Candèze mixed this species with the following one under the names of *Elater acutipennis* and *Blax acutipennis* respectively; but, forming my opinion from White's description and figure, I have applied his name to the following species.

7. *Elater acutipennis*, White.

E. colore variabilis, elongatus, sat nitidus, evidenter et inæqualiter albido pubescens; prothorace angulis posterioribus divergentibus, intra latera depresso, dense punctato et evidenter pubescente, medio sublævi, crebre subtiliter punctato; elytris apice acutis, leviter sulcatis, sulcis pubescentibus, interstitio tertio ad basin prominulo; sutura intercoxali distincta; tarsis articulis secundo et tertio subtus apicibus breviter membranaceo-lobatis. Long. 18-23 m. m.

This species greatly resembles *Metablax Brouni*, but is very readily distinguished by the junction between the meso- and metasternum being still represented by a distinct suture; the alternate interstices are in this species very distinctly depressed and densely pubescent; and in fresh specimens these pubescent furrows offer a striking contrast to the shining and impunctate interstices between. The pubescence, however, is very readily removed. The colour in this species is also very variable. The sexual distinctions are apparently slight.

The species is widely distributed in New Zealand, but apparently rare. Tairua (*Broun*); Riccarton; Akaroa, Jan. 1873 (*Wakefield*); Rockwood (*Powell*).

8. *Elater approximans*, White.

E. niger vel nigro-piceus, angustulus, sat nitidus, sparsim brevissime albido pubescens; prothorace angulis posterioribus divergentibus, ad latera crebre subtiliter punctato et magis evidenter pubescente; elytris apice acutis, evidenter striatis, striis (præsertim externis) latis, crebre irregulariter punctatis; sutura intercoxali bene distincta. Long. 13-15 m. m.

Mes thorace paulo angustiore, mesosterni foveæ lateribus minus elevatis, angustis.

Fem. mesosterni foveæ lateribus crassis, fortiter elevatis, fere horizontalibus.

This species is a very distinct one, not likely to be confounded with any other. The sexual disparity in the structure of the mesothoracic cavity is highly interesting, and is such as in other cases is considered characteristic of distinct genera; in the female the tarsi also are stouter than in the male and their lobes more distinct, the antennæ also are less elongate.

A pair of this species has been sent me from Tairua by Captain Broun as No. 190.

9. *Elater cinctiger*, White.

E. ferrugineus, prothorace elytrisque versus latera vitta lata testacea; parce brevissimeque pubescens; elytris ad apicem acutis, evidenter æqualiterque striatis, striis fortiter punctatis, interstitiis sparsim punctatis; subtus crebre punctatus, mesosterni foveæ lateribus haud elevatis, obliquis, nullo modo horizontalibus.

Mas angustulus, thorace elytris angustiore, angulis posterioribus divergentibus, medio nitido. Long. 10–13 m.m., lat. fere $2\frac{1}{2}$ m.m.

Fem. latior, thorace elytris latiore, angulis posterioribus vix divergentibus, medio fortiter punctato. Long. 13–14 $\frac{1}{2}$ m.m., lat. fere 3 m.m.

The sexual discrepancies are here again very remarkable; the greatly developed thorax of the female gives it the aspect of a minute *Chalcolepidius*.

Sent from Auckland and Tairua by Messrs. Lawson and Broun, but rare; the female especially rare. The species is probably confined to the Northern Island.

Group 2.—The species nos. 6, 7, 8, and 9 exhibit the following structural characters:—

Forehead curved in front, very distinctly separated from the clypeus, which is slightly unfolded, but still subperpendicular; antennal spaces more or less extended inwards, but their boundaries ill defined, the labrum only attached at the sides to the clypeus, so that in the middle there appears to be a kind of space or gap over the labrum: the limits between the forehead and clypeus in the middle ill-defined. Joints 2 and 3 of antennæ not much developed; joints 4–10 not serrate; appendicular extremity of 11th joint short and but little marked. Prosternal sutures duplicate. Mesosternal cavity and its suture with the metasternum variable. Coxal plate of hind coxa short, and gradually and slightly longer towards the trochanter, so that there is no limit between the trochanteral

and femoral portions. Tarsi with the 4th joint short but quite distinct, the apices of the 1st to 4th joints beneath more or less membranous and prolonged. Elytra acuminate. Species of large or moderate size.

This group in New Zealand is abruptly marked off from group 1 (*Thoramus*) by the form of the head, tarsi, and coxæ, and by the acuminate elytra; its affinities are undoubtedly with the South-American *Semiotus*; and one of the species, *Metablax Brouni*, must be considered specially allied to that genus. It is a remarkable fact, however, that the elevation and horizontality of the mesosternal cavity, which forms one of the most pronounced features of *Semiotus*, is in the New-Zealand species *Elater approximans* the subject of sexual disparity; while the disappearance of the suture behind this cavity is subject to difference in closely allied species; and yet Candèze considered this latter character of such importance that he used it as the essential character of his subtribe Chalcolépidiides.

10. *Amphiplatys Lawsoni*, Janson, in litt.

A. brevis, latiusculus, brunnescens vel fuscescens, prothorace sæpe nigricante, tenuiter pubescens, indistincte punctatus, sat nitidus; antennis pedibusque testaceis; prothorace parcius punctato, angulis posterioribus elongatis sed vix divergentibus; elytris brevibus, fere estriatis, obsolete punctatis. Long. 3 m. m., lat. $1\frac{1}{4}$ – $1\frac{1}{2}$ m. m.

This species may readily be distinguished from the other known small New-Zealand Elateridæ by its short broad form and the peculiar structure of its antennæ; these are rather short and stout, and a good deal thicker towards the apex, and are bilaterally symmetrical; that is to say, a line drawn along the middle of the antennæ would pass through the articulations from joints 4–11.

I first received this species from Mr. Lawson, who appears to have found a few specimens near Auckland; lately Captain Broun has sent me a specimen with the No. 20 attached, and the information "Only found amongst decaying vegetable refuse and rubbish in the domain at Auckland; inactive."

Group 3.—This species, No. 10, besides the peculiar antennæ, shows the following structural characters:—

Forehead broadly rounded in front, and limited by a very well-marked, though not much raised carina, which is quite even throughout, not being at all more raised at the sides or

depressed in the middle; clypeus inflexed-perpendicular, much overhung by the edge of the forehead; antennæ widely separated, without antennal spaces; last joint of maxillary palpi securiform. Prosternal sutures deeply duplicate; chin-piece well developed, prosternal process nearly straight; mesosternal cavity oblique-perpendicular, its sides not raised; side wings of metasternum very short. Tarsi rather short, but basal joint of the posterior ones as long as the three following together; 3rd and 4th joints very short, but furnished beneath with rather long membranes; claws very small. Coxal plate consisting of a rather large trochanteral portion, but with the femoral portion entirely wanting; so that the trochanteral portion covers the trochanter, but the femur is entirely exposed.

The genus is allied to *Cryptohypnus*.

11. *Betarmon gracilipes*, n. sp.

B. niger, angustulus, pedibus tenuibus fusco-testaceis; oculis fortiter prominulis; prothorace elongato, elytris angustiore, subtiliter sat crebre punctato, subtiliter pubescente; elytris fere opacis, leviter striatis, sed striis perspicue punctatis, brevissime pubescentibus; antennis articulo tertio quam secundus fere minore. Long. $4-4\frac{1}{2}$ m. m.

The black colour, slender legs, and peculiar form of the thorax are quite sufficient characters to distinguish this little species.

This insect was sent from Auckland by Mr. Lawson; and I have recently received an individual taken at Tairua, and with No. 40 attached, from Captain Broun.

12. *Betarmon frontalis*, n. sp.

B. colore variabilis, rufescens, plus minusve infuscatus, elytris indistincte fusco-vittatis, abdomine nigricante, antennis fuscis, basi testacea; angustulus, minus nitidus, evidenter pubescens; thorace, crebre minus subtiliter punctato, angulis posterioribus elongatis, acutis, bene divergentibus; elytris sat profunde striatis; antennis articulis secundo et tertio vix abbreviatis. Long. $4\frac{1}{4}$ m. m.

This little species has much the appearance of a small *Betarmon picipes*, the sculpture, pubescence, general form, and colour being all somewhat similar.

Found at Tairua by Captain Broun.

13. *Betarmon lætus*, n. sp.

B. læte rufo-testaceus, elytris testaceis, plus minusve fusco-vittatis, antennis extrorsum fuscis; sat angustus, subnitidus, evidenter

pubescens; thorace crebre punctato; elytris sat profunde striatis; antennis articulis secundo et tertio haud abbreviatis; corpore subtus rufo-testaceo, concolori. Long. 5 m. m.

This is very similar to *Betarmon frontalis*, and may perhaps be only an extreme form of it, for that species is evidently very variable; but the bright colour of the two individuals before me seems to distinguish it pretty distinctly.

Tairua (Captain Broun).

14. *Betarmon obscurus*, n. sp.

B. fusco-testaceus, antennis fuscis, basi testacea, pedibus pallidis, abdomine nigricante; opacus, evidenter pubescens; prothorace dense subtiliter punctato denseque pubescente; elytris profunde striatis; antennis articulis secundo et tertio vix abbreviatis. Long. $4\frac{1}{2}$ – $5\frac{1}{2}$ m. m.

This species varies somewhat in colour; the thorax is generally darker than the elytra, the breast is reddish, and the ventral segments nearly black except at the base and extremity: though very similar to *Betarmon frontalis*, it may always be distinguished by its finely, densely, and evenly punctured thorax.

“On various shrubs at Tairua; active; not uncommon.”—
Captain Broun.

Group 4.—Species 11, 12, 13, and 14 show the following characters:—

Antennæ slender, subfiliform, 2nd and 3rd joints moderately or well developed. Forehead rounded in front, and limited by a raised carina, which is distinct throughout its whole width; clypeus inflexed-perpendicular, short and overhung by the forehead, antennal spaces not marked. Prosternal sutures simple; prosternal process horizontal. Mesosternal cavity oblique-perpendicular, its sides not in the least raised. Metasternum elongate. Tarsi slender, with their joints simple; 4th joint small, but not minute. In *Betarmon gracilipes* the coxal plates are short throughout their whole breadth, the trochanteral portion being not twice as long as the very short femoral portion; in the other three species the trochanteral portion is broader, and the femoral nearly completely absent.

I think there is no doubt about the affinity of these species, their nearest recorded ally being apparently the European *Betarmon*, from which they differ only in some details of structure.

15. *Panspæus guttatus*, n. sp.

P. minutus, angustulus, nigricans, prothoracis angulis posterioribus maculisque quatuor in elytris, antennis pedibusque testaceis, antennis extrorsum fuscis; prothorace minus elongato, obsolete punctato, nitido sed evidenter pubescente; elytris striatis, striis internis sat profundis, externis obsoletis; macula testacea humerali elongata, altera anteapicali magna. Long. 2 m. m.

This very minute insect is one of the smallest of the Elateridæ, it being rather longer and narrower than the European *Cryptohypnus minutissimus*.

Sent from Tairua by Captain Broun, who says that it is evidently very rare, and that he has only found three individuals.

Group 5.—The two specimens of this minute insect are in bad condition, and I cannot ascertain thoroughly all their characters; but they show one peculiarity which in itself is sufficient to mark them off as a distinct genus, viz. that along the underside of the thorax, close to and parallel with its border, is a longitudinal furrow, such as is seen in many *Eucnemides*; besides this I can say that the forehead is rounded in front and limited by a raised line, the clypeus is extremely reduced and concealed, the femoral portion of the coxal plate pretty well developed, the trochanteral portion short and only a little longer than the femoral portion. The tarsi are small, simple, and slender. The relationship appears to be with *Betarmon*.

16. *Aglophus modestus*, n. sp.

A. angustulus, sat nitidus, evidenter pubescens, fulvo-castaneus, pedibus testaceis; antennis elongatis, tenuibus, articulis secundo et tertio conjunctim quarto fere æquali; prothorace brevi, parcius punctato, angulis posterioribus haud divergentibus, subuncatis; elytris regulariter striatis, striis evidenter punctatis, interstitiis obsolete punctatis. Long. 6–7 m. m.

The male is more slender than the female. The species has much the appearance of our European *Adrasti* and *Dolopii*.

I have seen but few specimens of this species; they have been sent me by Captain Broun from Tairua, with No. 13 attached, and the information that it is an autumnal species and inactive.

Group 6.—This species presents a combination of structu-

ral characters such as to require its isolation from the other New-Zealand allies. The forehead is much curved in front, so as to be somewhat produced in the middle, it is sharply defined by a scarcely elevated line, which overhangs the clypeus, so that there is an abrupt step between the front and the labrum; the antennal spaces are very obscure; the antennæ are slender, with 2nd and 3rd joints only moderately developed. The prosternal sutures are not distinctly duplicate, and are not open in front, but show there a peculiar sinuation. The prosternal process is short, and is abruptly and greatly bent upwards immediately behind the coxæ. The middle coxæ are only narrowly separated; the mesosternal cavity shows no distinct lateral edge, and is quite depressed; its opening behind is narrow and ill-defined, and does not reach the intercoxal suture; the posterior portion, however, is prolonged backwards as a broad shallow depression on the hind part of the mesosternal process. The femoral portion of the coxal plate is excessively short, in fact linear; the trochanteral portion is moderately large. The tarsi are moderately short, and all the joints are simple; the 4th is small but not minute.

I think the genus should be placed near *Betarmon*, from which it differs strikingly by the prosternal process and mesosternal cavity.

17. *Lomemus pilicornis*, n. sp.

L. angustulus, minus nitidus, evidenter pubescens, niger, prothoracis angulis posterioribus pedibusque testaceis, tibiis versus apicem fuscis; antennis elongatis, tenuibus, sed intus serratis, longius pilosellis, articulis secundo et tertio brevissimis, quam quartus conjunctim multo brevioribus; prothorace antrorsum angustato, crebre fortiter punctato, sat elongato, angulis posterioribus subuncatis; elytris striatis, striis punctatis, apice summo obsoletis, interstitiis punctatis. Long. 5 m. m.

The pilose antennæ, the black colour, with yellow legs and hind angles of the thorax very readily distinguish this species.

Three specimens have been cut out of a tree-stump at Tairua by Captain Broun; one of them he sent me with the No. 13 attached.

18. *Lomemus pictus*, n. sp.

L. angustulus, evidenter pubescens, sat nitidus; antennis tenuibus, fuscis, basi testacea, articulis secundo et tertio sat brevibus, conjunctim quarto æqualibus; capite nigro, fortiter profundeque punctato; thorace sat elongato, antrorsum leviter angustato,

fortiter punctato, rufo, macula magna discoidali nigricante; elytris testaceis, sutura margineque externo nigris, striatis, striis punctatis; corpore subtus fusco-rufescente, prothoracis lateribus testaceis; pedibus pallide testaceis. Long. 5 m. m.

Allied pretty closely to *Lomemus pilicornis*, but readily distinguished by the less pilose antennæ and the colour, and presenting some slight structural differences: the antennæ are differently formed; but I have not sufficient specimens to enable me to decide whether this is more than a sexual character.

I have received two very damaged specimens from Captain Broun as No. 32, but without any information as to habits.

19. *Lomemus suffusus*, n. sp.

L. angustulus, fere parallelus, sat nitidus, evidenter sed breviter pubescens, niger, antennis fuscis, pedibus fusco-testaceis; elytris sordide testaceis, sutura margineque externo vage nigricantibus; antennis intus subserratis, articulis secundo et tertio conjunctim quarto vix æqualibus; capite fortiter punctato; prothorace elongato, minus fortiter et crebre punctato, nitido, angulis posterioribus nullo modo divergentibus, angustius testaceis; elytris evidenter striatis, striis punctatis. Long. $5\frac{1}{2}$ m. m.

This species, though closely allied to *L. pilicornis* and *L. pictus*, can be readily distinguished by the considerably less developed punctuation of the thorax; this part is also longer in proportion.

Captain Broun has sent a single specimen from Tairua as No. 31.

20. *Lomemus flavipes*, n. sp.

L. angustulus, subparallelus, sat nitidus, niger, evidenter fusco-pubescens, pedibus testaceis; antennis tenuibus, fere filiformibus, articulis secundo et tertio minus abbreviatis, conjunctim quarto æqualibus; prothorace elongato, crebre subtiliter punctato; elytris subtiliter striatis, striis evidenter punctatis, interstitiis crebrius rugulosis. Long. 7 m. m.

This species may be readily distinguished from *L. obscuripes* by its considerably more elongate form and its more finely punctured thorax and paler pubescence; it has extremely the appearance of our small European *Limonii*, *parvulus* and *minutus*.

I have seen but a single individual, which was sent from Auckland by Mr. Lawson.

21. *Lomemus similis*, n. sp.

L. angustulus, sat nitidus, evidenter pubescens, niger, pedibus fusco-rufis; antennis elongatis, crassiusculis, intus serratis, articulis

secundo et tertio perbrevis quam quartus conjunctim duplo brevioribus; prothorace elongato, crebre sat fortiter punctato; elytris evidenter striatis, striis ad apicem distinctis, interstitiis crebre rugulosis. Long. $4\frac{1}{2}$ m. m.

This species may be readily distinguished from the following as well as from the preceding species by the fact that the forehead is slightly more prolonged in the middle, so that its front margin, instead of forming an even curve, is slightly sinuate on each side: in colour and appearance it is extremely similar to *L. obscuripes*, but is only half the size.

I have received a single individual of this species from Tairua, whence it was sent me in sawdust by Captain Broun.

22. *Lomemus obscuripes*, n. sp.

L. angustulus, sat nitidus, evidenter pubescens, niger, pedibus fuscis; antennis elongatis, crassiusculis, intus serratis, articulis secundo et tertio perbrevis quarto conjunctim fere duplo brevioribus; thorace crebre fortiter punctato, antrorsum leviter angustato; elytris minus elongatis, evidenter striatis, striis ad apicem distinctis, interstitiis crebrius rugulosis. Long. fere 6 m. m.

Sent from Auckland by Mr. Lawson.

23. *Lomemus elegans*, n. sp.

L. angustulus, sat elongatus, evidenter pubescens, sat nitidus, læte fulvo-testaceus; antennis, capite, scutello, prosterno medio pectoreque nigris; antennis (basi fuscis) elongatis, intus serratis, articulis secundo et tertio perbrevis, quarto conjunctim duplo brevioribus; prothorace antrorsum angustato, crebre fortiter, minus profunde punctato; elytris evidenter striatis, striis ad apicem indistinctis. Long. $7\frac{1}{2}$ m. m.

Of this pretty species a single individual was sent me some time ago in spirit from Tairua by Captain Broun.

24. *Lomemus collaris*, n. sp.

L. angustulus, sat elongatus, evidenter pubescens, sat nitidus, niger, prothoracis angulis posterioribus elytris que fulvo-testaceis, pedibus testaceis; antennis elongatis, intus serratis, articulis secundo et tertio perbrevis, quarto conjunctim duplo brevioribus; thorace antrorsum angustato, crebre sat fortiter punctato; elytris striatis, apice extrorsum fuscescentibus. Long. $6\frac{1}{2}$ m. m.

Two individuals of this species have been found by Mr. Wakefield at Christchurch.

Group 7.—These species (Nos. 17 to 24) show characters to a considerable extent similar to those of *Aglophus mo-*

destus; the head is almost similarly formed; the antennæ, however, are always more or less serrate; the thorax is more elongate, the prosternal sutures are narrowly open in their anterior part and are not sinuate in front; the prosternal process is short, and is bent up in *Lomemus pilicornis*, but is longer and nearly straight in *L. obscuripes*; the intercoxal space is narrow, and the mesosternal cavity is narrow, ill-limited behind, its posterior extremity very far from the intercoxal suture; the space separating these two parts is longitudinally grooved. The femoral portion of the coxal plate is short, the trochanteral portion moderately long; the 4th joint of the tarsus is minute, the 3rd simple or obscurely emarginate at the extremity. Species of small size.

I have had so few examples of these small species at my disposal that I cannot deal in a full and satisfactory manner with their structural details; and it is probable that a thorough examination would show that I have left together in one group species which may ultimately form several distinct groups: they may, however, be distinguished from the species of *Aglophus* by the different prosternal sutures, by the less diminished femoral portion of the hind coxal plate, and the less developed 3rd and 4th joints of the tarsi.

[To be continued].

XL.—*Description of three new Species of Lizards from Islands of Torres Straits.* By Dr. A. GÜNTHER.

A COLLECTION of reptiles made by the Rev. S. MacFarlane for the British Museum, at Somerset and in the islands of Torres Straits, contained the lizards enumerated in the following list. Unfortunately no record was made, or has reached us, as regards the particular islands where the specimens were collected.

1. *Odatia prasina*, Müll.
2. *Lialis punctulata*, Gray, together with *L. leptorhyncha*, Ptrs., the specific distinctness of which is very doubtful.
3. *Cryptoblepharus pæcilopleurus*, Wiegman.
4. *Hinulia striatula*, Steind.

5. *Carlia Macfarlani*, sp. n

Scales round the middle of the body in 25 longitudinal series; 45 in a series between the chin and vent. The anterior frontal forms a long suture with the rostral and a short one with the vertical, which is small, smaller than the ante-



Sharp, David. 1877. "On the Elateridae of New Zealand." *The Annals and magazine of natural history; zoology, botany, and geology* 19, 396–413.

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