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W. E. LaBerge

On the Hymenoptera of the Albany Museum, Grahamstown,
South Africa.

BY P. CAMERON.

(Third Paper).*

SCOLIIDÆ.

The species of *Plesia* (*olim Myzine*) appear to be well represented in South Africa. The females are easily enough separated; but as regards the males they are at present in great need of a thorough revision. To do the work thoroughly I should think that a considerable number of specimens would be necessary, and a critical examination of the types of Guérin, who has described (*Dict. pict. d'Hist. nat. v.*) 14 species from North Africa (chiefly from Egypt). My impression is that the species (males) should be easily enough separated by structural characters—form, sculpture, neurulation—if the colouration and markings be somewhat unsafe guides for specific discrimination. Size also appears to be an untrustworthy guide.

Plesia melanaria, sp. nov.

Black, shining, densely covered with long white hair, the apex of the fore tibiæ and fore tarsi rufous; wings fuscous, tinged with violaceous, the nervures and stigma black. Underside of flagellum of antennæ, dark, the basal two-thirds of the mandibles bright red. Female.

*See also "On some new Genera and Species of Hymenoptera from Cape Colony and Transvaal," *Trans. of the South African Philosophical Society*, xv, pp. 195-257.

Length 15 mm.

Brak Kloof. Mrs. G. White.

Front and vertex with fine, scattered punctures, the centre of front more closely and coarsely punctured on the lower half. Pronotum finely, but not closely punctured, the apical half of the pronotum smooth. Middle lobe of mesonotum smooth at the base, the rest moderately closely and strongly punctured. Scutellum punctured round the sides; the apical half of post-scutellum more closely punctured. Metanotum closely, finely punctured except for a stripe on the basal half, this being wide at the base; the apical slope in the centre closely, obliquely striated. Pro- and metapleuræ smooth and almost bare; the mesopleuræ punctured and pilose. Apical segments of abdomen closely, finely punctured; the pygidium piceous red, its base fringed with long, bright rufous hair. Second transverse cubital nervure very obliquely sloped; apex of radial cellule sharply pointed; the apex of radius straight, oblique.

Plesia rufo-femorata, sp. nov.

Black, densely covered with long white hair, apex of clypeus broadly, mandibles to near the teeth, palpi, a small mark on the apex of the 2nd abdominal segment, a longer one on the apex of the 3rd, and 2 small ones in its centre, a curved line dilated in the centre on the 4th, a similar one, but interrupted in the middle, on the 5th, and 2 oblique spots in the centre of the 6th, white. Legs black, the femora red; the posterior black at the apex, the 4 hind tibiae red in front, the anterior white in front; the tarsi more or less reddish below; the calcaria pale. Wings hyaline, the nervures and stigma black; the 3rd and 4th abscissæ of radius equal in length, the 2nd not much shorter. Male.

Length 12-13 mm.

O'okiep. September. Rev. J. A. O'Neil, S.J.

Head coarsely rugosely punctured, the punctures running into reticulations in the centre of the vertex. Apex of clypeus broadly rounded. Pro- and mesonotum closely and strongly punctured, except the apical half of the middle lobe of the mesonotum, which is raised and bordered by distinct furrows

which converge slightly towards the apex. Scutellum similarly punctured. Metanotum closely rugosely punctured, the punctures round and forming reticulations in places. Propleuræ sparsely punctured; the lower part of the apex longitudinally striated; the meso- and metapleuræ closely rugosely punctured—reticulated; more strongly and irregularly in the middle of the mesopleuræ than elsewhere. Apical two-thirds of the 1st abdominal segment nodose, the apex of the narrowed base depressed, keeled down the centre, the base shagreened, raised in the middle; the 2nd, 3rd and 4th segments closely and finely punctured; the others more sparsely, except on the base and apex of the last which are smooth; its apex bears some deep, large punctures. The 2nd recurrent nervure is roundly curved outwardly in the middle.

Plesia continua, sp. nov.

Length 15 mm. Male.

Brak Kloof. Mrs. G. White.

This species closely resembles *P. interrupta*; the two may be separated thus:—

A smooth tubercle below the ocelli, the central mark on the abdominal segments not united to the lateral by a distinct yellow line; the 2nd and 3rd abscissæ of radius equal in length; the transverse median nervure in hind wings, with the upper branch not much shorter than the lower; the yellow line on ventral segments largely and broadly dilated in the middle . . . *interrupta*.

No smooth tubercle below the ocelli; the central mark on the abdominal segments not united to the lateral by broad bands; the 2nd abscissæ of radius distinctly shorter than the 3rd, the transverse median nervure in hind wings with the upper branch distinctly shorter than the lower; the yellow lines on the ventral segments not dilated in the middle. . . . *continua*.

The mark on the mesopleuræ is broadly rounded behind; the lower side rounded and longest at the base, not transverse and only slightly dilated at the base; the base of the median segment is much more strongly punctured than the apex; the mark on the apical segment of the abdomen is larger, it commencing behind the middle, obliquely narrowed at the apex

the base slightly rounded inwardly, not straight and oblique as in *interrupta*; the occiput is more broadly, distinctly rounded than it is in the latter, which has the centre more distinctly transverse; the incision in the apical abdominal segment is shorter, and the yellow line on the 1st abdominal segment is not dilated in the middle.

Plesia reticulata, sp. nov.

Black, the palpi fuscous; the wings hyaline, the nervures and stigma black; the entire body and legs densely covered with white pubescence. Male.

Length 11 mm.

Brak Kloof. Mrs. G. White.

Face, clypeus and eye incision densely covered with long hair. Front closely, regularly, reticulated; the vertex more shining, strongly, irregularly, but not closely punctured, more coarsely along the orbits than in the centre; the temples strongly rugosely punctured and thickly covered with long white hair. Base of pronotum strongly and closely, the apex sparsely punctured. Middle lobe of mesonotum distinctly punctured, the lateral more strongly and closely punctured; the furrows wide, shallow, punctured. Base of scutellum sparsely, the apex closely rugosely punctured; the basal furrow distinct, deep. Post-scutellum closely, rugosely punctured. Base of metanotum broadly raised, irregularly, somewhat strongly reticulated, the sides and apical slope closely rugosely punctured, almost reticulated. Propleuræ finely, irregularly punctured; before the apex with some irregular striæ. Mesopleuræ strongly, closely punctured. Metapleuræ broadly, deeply depressed at the base, shining and bearing some irregular keels; the rest irregularly, obliquely, striate-punctured. First abdominal segment elongate-pyriform with a distinctly narrowed pedicle at the base, this being irregularly, strongly striated; the rest of the abdomen shining, minutely closely punctured, the punctuation towards the penultimate somewhat stronger; the apical is more strongly, irregularly punctured; the centre of the apical half is smooth, and becomes narrowed towards the apex; the sides depressed, the depression forming, with the

raised apex and sides, a broad, punctured furrow. The 3rd abscissa of the radius is the longest; the 2nd is slightly longer than the 4th; the 1st recurrent nervure is received shortly beyond the middle; the 2nd near the apex of the basal fourth; it is straight, slightly oblique, the rest is broadly, roundly curved outwardly; the 1st transverse cubital nervure is roundly curved.

This is a smaller species than *P. carbonaria*; an easy method of separating the two is by the form of the 1st transverse cubital and the 2nd recurrent nervure; in *carbonaria* the former is straight, sharply oblique and elbowed at the bottom, the edge of the geniculation having on the inner side a short projection; the recurrent nervure has 3 curves; a short one in front, almost straight, an oblique curve reaching close to the middle directed outwardly, and the lower and larger part, which is straight and curves slightly towards the base of the wing, the junction of the two forming an angle; in *reticulata* the 1st transverse cubital nervure is roundly curved, and not elbowed below; and the recurrent nervure has only 2 curves; the short, almost straight one in front and the large, broadly rounded apical one.

Myzine (Meira) violaceipennis, sp. nov.

Black, the front, vertex and temples bright red; a cream coloured, irregular transverse mark (that on the 3rd the larger) on the 2nd, 3rd and 4th segments of the abdomen; the tarsi and anterior tibiae in front, rufous; wings, dark fuscous violaceous, highly iridescent, the posterior lighter in tint than the anterior the nervures and stigma black. Female.

Length 16 mm.; breadth 3 mm.

Brak Kloof. Mrs. G. White.

Very smooth and shining; there are 3 rows of deep punctures along the sides of the scutellum; the central part of the mesonotum is bounded by two deep oblique furrows which commence close to the base and reach to the apex; outside this, near the edge, is a narrower furrow, running from the base to the apex. Base of metanotum smooth in the centre; it has there a deep, clearly defined furrow, which extends from the base to the top of the apical slope; the rest of the metanotum closely,

strongly transversely striated. Mandibles deeply furrowed on the lower side, and there is a shorter, narrower, less distinct one on the upper side. The 2nd cubital cellule is shorter than its width along the cubitus; the pedicle is longer than the 2nd transverse cubital nervure; the 1st recurrent nervure is interstitial with the 2nd transverse cubital; the 2nd is received shortly beyond the middle of the cellule; the apex of the radius is roundly dilated outwardly on the lower part. Hair on head, thorax and legs long, black and stiff except on the tarsi; the calcaria white; the fore tarsi, inside and out, bearing long, stout spines. Antennal scape thickly covered with longish stiff hair; the basal 2 joints of flagellum narrowed at the base; the 1st roundly dilated, slightly shorter than the 2nd. The 1st abdominal segment has a distinct narrowed, longer than wide, petiole on the base; there is a narrow, but distinct, transverse furrow near the apex of the basal third of the 2nd and 3rd segments. Pleuræ strongly, deeply but not closely punctured, each puncture having a hair. Hind ocelli separated from each other by a slightly less distance than they are from the eyes. Occiput broadly rounded, not transverse. On the enner side of the top of the eyes is a deep, longish fovea bearing longish hairs.

This is a broader, more robust, species than any I have seen. In this respect it somewhat resembles *M. Klugii*, West., which I only know from Smith's figure (Cat. Hym. Ins. Brit. Mus. iii, f. H.) In the figure the parapsidal furrows are shown only on the apical half, the scutellum is shorter than the mesonotum, in my species it is longer than it; the scutellum in *Klugii* is broader than long, in my species it is nearly as long as its width at the base; and the apex of the metanotum is transverse, not incised as in Smith's figure of *Klugii*. In it, too, the ocelli are placed considerably nearer the eyes, from which they are separated by about one half the distance they are from each other.

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POMPILIDÆ.

Microphadnus.

This genus belongs to the *Aperini*, which name should have been placed above *Microphadnus* on p. 212.

As there seems to be considerable doubt if the name *Pompilus* was ever in actual use in Mollusca (Cephalopods) it hardly appears advisable to drop it in the Hymenoptera. Cf. Schulz, Hymenopterenstudien, 1905, p. 8.

SPHEGIDÆ.

Ammophila erythrospila, sp. nov.

Black, thickly covered with a white pile and with white hair, the mandibles, greater part of pronotum, tegulæ, 2 lines on the basal half of metanotum, its apex, the greater part of mesopleuræ and the lower half of metapleuræ, rufous. Four anterior legs rufous, the femora and tibiæ more or less marked behind with black; hind legs black, the apex of femora and more or less of the inner side and base of tibiæ black. Wings short, reaching to the apex of the 2nd joint of the petiole; hyaline, the stigma and nervures black; the 3rd cubital cellule scarcely half the length of the 2nd. Male.

Length 20 mm.; petiole $7\frac{1}{2}$ mm.

Table Farm. Mrs. G. White.- Glen Lynden. Miss L. Leppan.

Clypeus about one-third longer than its width; its apex transverse. Hind ocelli separated from each other by a slightly less distance than they are from the eyes. Front, except at the top, somewhat strongly and moderately closely punctured; the vertex sparsely punctured along the sides and between the ocelli. Pronotum punctured, but not strongly or closely, the apex almost smooth. Mesonotum transversely punctured, the punctures with interlacing transverse fine striæ. Scutellum somewhat closely punctured; the centre, with a narrow, finely striated longitudinal furrow. Post-scutellum deeply punctured. Metanotum closely,

strongly punctured, striated, the striæ forming in parts an interlacing network. The propleuræ sparsely punctured, the punctures below running into striæ; meso- and metapleuræ closely and strongly punctured, the punctures almost hid by the dense white pubescence. The sides of the metanotum are bordered, except at the base and apex, by a furrow. Apex of abdomen covered by silvery pubescence. The 2nd joint of the antennæ, together with the 1st are as long as the third. Collar short, much broader than long. Occiput transverse in the middle.

Comes close in structure and colouration to *A. dolichodera*, Kohl; that species should be readily separated by its longer and smooth collar.

ANTHOPHILA.

Crocisa maculiscutis, sp. nov.

Black, with the following patches of snow-white pubescence: the lower part of the front, face, clypeus, except at the apex, outer orbits, a line on the sides and base of the mesonotum, a line in the centre, extending from the base to opposite the base of the tegulæ, an irregular spot on either side of the apex of this line, a broad line on the sides, close to the scutellum, a line or spot on the centre of the scutellum, along the centre of the incision, sides of metanotum, the greater part of the pleuræ, a large patch on the sides of the mesosternum, a broad band on the base of the 1st abdominal segment, united by a band down the sides to a long band on either side of the apex, and broad bands on the sides of the other segments. The apex of the femora, outer sides of the tibiae, and the greater part of the tarsi (in fresh examples probably the whole) thickly covered with snow white pubescence. Wings fuscous-violaceous; the costal cellule in front, the first discoidal on the apical half, the greater part of the other discoidal cellules, an irregular hyaline cloud near the middle of the radial cellule, a

narrow one along the fore margin of the 1st cubital, from the base of which a similar streak runs obliquely to the 2nd cubital cellule, and a cloud along the outside of the 3rd transverse cubital, and of the 2nd recurrent nervures. The sides of the incision on the scutellum are straight, oblique, not curved and incised in the middle as in *C. scutellaris*, but more as in *C. picta*; but not so deep and without any widening in the middle, at the base; the outer sides are straight, oblique. The centre of the last abdominal segment is roundly transverse, followed by a rounded depression, the outsides being dilated into projecting teeth; the epipygium is roundly, broadly dilated in the middle.

Length 15 mm. Male.

Katberg. December. Miss Sole.

The middle joints of the flagellum are roundly dilated below; the last is laterally obliquely compressed; the 3rd is about one-third longer than the 4th. Labrum closely and strongly punctured; the upper three-fourths are clearly, widely, deeply furrowed in the middle; the upper half projects largely over the lower.

This species might be taken for a large variety of *C. scutellaris*, F., but the very different form of the apex of the scutellum distinguishes the two; in *scutellaris* the middle is incised, and the sides roundly curved, ending in a sharp point; scutellum, too, wants the patch of pubescence: *C. jaegerskiveldi*, Morice, has a patch of pubescence on the scutellum, but it has the latter formed as in *scutellaris*. According to Morice the results of the Swedish Zool. Exped. to Egypt and the White Nile (No. 14, p. 9) none of the previously described species of *Cricosa* possess this patch (but see Vachal, Ann. Soc. Ent. Fr., 1903, p. 381) but it is to be found in the Cape *C. picta*, Sm. The pubescence on the latter is blue, and the scutellar incision is wide and not clearly defined as in *scutellaris*; it is also much larger.

THYNNIDÆ.

Adontothynnus, Cam.

In connection with this genus (cf. Rec. Alb. Mus. I., p. 161-3) it is worth pointing out that Smith (Descr. New Species of Hym. in Brit. Mus., p. 174) has described an *Anthobosca antennata* from Zululand and Port Natal, which may really belong to my genus. *Anthobosca* differs, *inter alia*, in having the maxillary palpi 5- instead of 6-jointed, and the labrum well developed. If this generic identification of Smith's species be correct, it will make a 3rd species, easily separated from the two I have described by the ferruginous legs.

ICHNEUMONIDÆ.

Macrophatnus rufipes, Cam.

Owing, I believe, to an accident at the printers, part of the description of this species has been omitted. Cf. Albany Mus. Records, I, 232.

Length 12 mm. Male.

Brak Kloof. Mrs. G. White.

Wings hyaline, the nervures and stigma black; the areolet wide in front, the recurrent nervure received in the middle. Front and vertex strongly punctured; the inner orbits on them bordered with rufous mandibles dark rufous towards the apex. Palpi black pro- and mesopleuræ strongly, but not very closely punctured; the former more strongly, rugosely punctured in the middle; the metapleuræ coarsely, closely punctured. Base of metanotum in the middle with a steep oblique slope; the areola has the bounding keel distinct at the base, more indistinct on the sides, and still more indistinct at the apex; the base has the sides rounded; inside the base is depressed, the depression or furrow bearing a few keels. The apical slope is bounded on the sides by

a keel ; the 2 keels converge above, but do not meet, the central part not being bounded by them. Tarsi pilose and spinose beneath ; the apices of the joints with longer spines ; the calcaria are short, about one-fourth of the length of the metatarsus.

Behind the middle of the mandibles there seems to be a minute incision or depression, the part behind projecting slightly. The areola is the only defined area on the median segment.

Zonocryptus fumipennis, sp. nov.

Black, the legs (except the coxæ and trochanters which are black, and the 2nd, 3rd and 4th joints of the hind tarsi, which are white) and the abdomen red ; the flagellum of antennæ fuscous below ; the upper edge of the mandibles to the teeth lined with yellow ; the wings smoky, highly iridescent, the nervures black, the stigma dark fuscous.

Length 8-9 mm. Male.

Grahamstown. Misses Daly and Sole:

Face and upper part of clypeus closely, distinctly punctured, and thickly covered with white pubescence ; the rest of the clypeus shining, bare, sparsely, minutely punctured ; the space at the sides of the ocelli strongly, obliquely striated, the upper part of the front irregularly, transversely striated ; on both parts the striæ are distinct and clearly separated, and do not reach to the eyes, the orbits being smooth. Punctuation on mesonotum close moderately strong, the furrows striated. Scutellum roundly convex, the basal part less closely punctured than the mesonotum, the apex more rugosely punctured, the sides keeled to near the apex. Post-scutellum smooth and shining. Median segment closely rugosely punctured, the punctures running into reticulations in places ; the spiracles slightly more than twice longer than wide, elongated oval ; there is only one transverse keel distinctly indicated ; the second is only weakly indicated at the sides on the outer edge, where it is dilated into a tubercle. Abdominal petiole long and slender, not dilated at the apex, but distinctly tuberculate at the spiracles ; the other segments are slender and smooth. The pleuræ are more rugosely punctured than the mesonotum ; the punctures

are close, and run into reticulations. Flagellum of antennæ densely covered with short black pubescence. Hind tibiæ sparsely, their tarsi more thickly spinose. The stump of a nervure on the disco-cubital is longish, the transverse median nervure is received shortly behind the transverse basal. Coxæ covered with white pubescence; the posterior closely punctured, the others smooth and shining. The front is only slightly depressed.

Zomocryptus was founded by Dr. Ashmead (U.S. Nat. Mus. XXIII, 40) on an undescribed African species (*Cryptus sphingis*, Ashm. MS.) Probably *Cryptus erythrogaster*, Holmgren (Eugenes Resa, Hymen., p. 397) from the Cape of Good Hope is another species. That species, however, has the metathoracic spiracles "elongatis," which is certainly not the cause with mine.

Cryptus tuberculatus, sp. nov.

Black, the abdomen, except the base of petiole and the legs from the apical joint of the trochanters, red; wings hyaline, slightly suffused with fuscous, the nervures and stigma black. Female.

Length 14; terebra 5 mm.

Brak Kloof. March. Mrs. G. White.

Face closely, finely rugosely punctured; its centre produced into a large, longer than broad, tubercle; the middle of the inner orbits narrowly rufous. Clypeus roundly convex, shining, distinctly, but not closely punctured. Upper part of front to near the hind ocelli coarsely transversely reticulated, the lower (and larger) part closely transversely striated. Temples sharply obliquely narrowed. Thorax closely, strongly punctured; the parapsidal furrows and the parts bordering them transversely striated; the furrows shallow; the part between, at their apices, coarsely reticulated. Scutellum finely, irregularly punctured, the apical slope more coarsely, rugosely than the rest; the sides stoutly keeled to near the apex. Post-scutellum with some stout oblique striæ. Sides of metanotum closely, coarsely reticulated; the part beyond the basal keel transversely in the middle at the base, the rest obliquely reticulated-striated; the apical slope coarsely, transversely reticulated. Pleuræ above the middle closely reticulated-

punctured, the rest more strongly, obliquely striated; the meso- and metapleuræ coarsely, closely reticulated. Spiracular area on median segment coarsely reticulated beyond the spiracles, which are elongate, linear. Basal 2 segments of abdomen finely closely punctured; in the centre of the 2nd segment, at the apex, is a depression, twice longer than wide, and rounded at the base. Seen from above, the apex of the basal part of the metanotum is almost transverse with the sides toothed; there are 2 traverse keels; the posterior largely bent backwards in the middle, the narrowed basal central part being closely transversely striated. Disco-cubital nervure broken by a stump. On the upper side the mandibles are rufo-testaceous to near the teeth, which are almost equal in size. Antennal scape brownish; the malar space is as long as it.

Limnieriium iratum, sp. nov.

Black, the legs rufous, slightly tinged with fulvous, the coxæ black, the anterior is yellow at the apex, as are also the trochanters; the hind tibiæ fuscous, broadly testaceous in the middle, their tarsi of a darker fuscous colour, wings hyaline, the nervures and stigma fuscous. Female.

Length 4; terebra 1.5 mm.

Museum Grounds. Grahamstown. November. Misses Daly and Sole.

Eyes with a distinct greenish hue, iridescent. Head shagreened, opaque, the sides of the face and clypeus covered with white pubescence. Pro- and mesothorax closely, minutely punctured; the propleuræ somewhat strongly striated on the apical half. Median segment more coarsely shagreened; areola small, longer than its width at the apex, towards which it becomes gradually widened; there is one large basal and a small apical triangular area; the posterior median area is more closely shagreened than the rest. Propleuræ obscurely striated; the rest closely, minutely punctured. Abdomen aciculated somewhat strongly. Areolet small, longly pedunculated, the peduncle as long as the outer branch.

CHALCIDIDÆ.

Phasgonophora rufo-ornata, sp. nov.

Black, densely covered with long white pubescence; the front and vertex outside the groove, the lower half of the outer eye orbits broadly, the propleuræ, the part bordering the middle lobe of the pronotum, the sides and apex of the scutellum, and the centre of the propleuræ broadly rufous. Legs rufous, the femora and tibiæ largely black; the hind femora with 9 teeth. Wings hyaline, the nervures black. Female.

Length nearly 8 mm.

Museum Grounds. Grahamstown. December.

Antennæ longish, of uniform thickness, the apex of scape and base of flagellum rufous. Head in front rugosely reticulated-punctured; the antennal depression in the centre closely, strongly striated; the outer orbits sparsely punctured. Pronotum at apex broadly depressed in the centre; the sides broadly rounded; the basal slope transversely striated, the striæ becoming stronger towards the apex. Mesonotum strongly transversely striated, the striæ curved; those on the base of the lateral lobes finer and closer. Scutellum coarsely transversely reticulated; its apex bluntly rounded, almost transverse. Metanotum with a double row of areæ, the basal the larger. Pleuræ reticulated, the meta-pleuræ more strongly than the rest; the meso- widely, deeply depressed in the middle from near the top; the centre of depression closely striated, the sides smooth; the sides of median segment are broadly rounded and with a tooth—stout and narrowed towards the apex—in the centre. Basal segment of the abdomen not quite as long as the other segments (not counting the ovipositor) united; above it is closely, irregularly longitudinally, finely striated; the apices of the segments, laterally, are rufous. Except the apical 4 (which are also smaller) the femora teeth are clearly separated, distinct, regular and bluntly rounded. The hind coxæ and trochanters are, united, nearly as long as the femora.

I have in my collection from the Cape a specimen which is larger than the above (10 mm. to the end of the ovipositor); it is more largely marked with red, the scape of the antennæ being

entirely red, the flagellum more largely red; the thorax and legs being also more largely marked with red: and the punctuation appears to be stronger, probably from its greater size.

P. rubeus, Klug and *P. decorata*, Klug from North East Africa, are allied species.

Chalcis capensis sp. nov.,

Black; the lower half of the antennal scape below, yellow, tinged with red; tegulae dull whitish yellow; legs red; the 4 anterior coxae and trochanters, fore femora at the base below to near the middle, the greater part of the middle femora, their tibiae broadly in the middle and the base of the hind tibiae behind, black; the base and apex of all the tibiae, the apical half of the fore femora below and more narrowly above, the apex of the middle more narrowly and of the hinder still more narrowly, whitish yellow; the tarsi testaceous. Hind femora with 10 teeth; the basal 3 stumpy and close to each other; the others longer, sharper and more widely separated. Female.

Length 6 m.m.

Katberg. Miss Sole.

Front and vertex rugose, reticulated at the sides of the ocelli and with 3 curved striae—the outer waved and less distinct than the others. Sides of face strongly, closely, reticulated, the centre more shining and bearing widely separated punctures. Malar space weakly punctured, stoutly keeled below and less strongly on the outer side. Pronotum closely rugosely punctured. Mesonotum more shining, less closely and more strongly punctured; the scutellum is somewhat more strongly punctured than the mesonotum and more closely on the sides than in the middle; the apical teeth are broader than long, irregular, one being broader than the other. Metanotum reticulated a long area of equal width and with 2 transverse keels near the middle; the sides are broadly rounded and untoothed. Propleurae aciculated, obscurely striated below and at the base apex. Mesonotum shining; the lower part at the base closely reticulated; the middle with some stout, clearly separated striae on the upper half. Basal half of metapleurae hollowed, smooth except for some curved striae at the base; the

apex closely, strongly reticulated and thickly covered with long silvery hair; on the sides, above the middle, is a stout, obliquely turned up tooth. Abdomen smooth; the last segment long, broad at the base, gradually narrowed towards the apex, forming an approach to *Phasgonophora* or *Trigonoura*.

Chalcis Pymi, sp. nov.

Black, the base of abdomen, its sides and ventral surface, hind coxæ except below, hind trochanters and femora bright red, the apices of the 4 front femora, tibiæ and tarsi testaceous yellow; the hind femora with 12 stout black teeth; the apical the larger, the basal 4 shorter, broader and closer together. Wings hyaline. the nervures black. Female.

Length 6 m.m.

Grahamstown. Mr. F. Pym.

Front and vertex irregularly rugosely reticulated, the face more irregularly and weakly punctured and thickly covered with long white pubescence; in the centre is an irregular smooth and shining longitudinal line, dilated in the centre; its apex raised, smooth and shining. Occiput irregular, transversely striated, the striæ more or less broken. Pronotum closely, transversely rugose; the mesonotum more strongly, irregularly transversely reticulated; the scutellum more closely rugosely, reticulated; its apex almost transverse and covered with long white hair. Hind coxæ nearly as long as the femora, closely punctured on the sides and below; they are about 3 times longer than their width in the middle. Metanotum reticulated, the base with a row of regular reticulations; above this (on the post-scutellum?) are 2 stout, longish teeth, obliquely directed upwards; below the centre of these is a transversely striated longish area.

Tanycoryphus, gen. nov.

Hind femora with one stout tooth shortly behind the middle, the part above it closely, minutely serrate; the anterior femora greatly swollen, twice the thickness of the middle. Antennæ 11-jointed, the scape long and thin, the flagellum stout. Sides of

scutellum bordered by a distinct, thin keel, which becomes narrowed at the apex where they unite; the apex thus appears depressed in the middle. Sides of metathorax broadly rounded, not toothed.

The fore tibiæ are much thickened, compared with the others; their spur is long, thin and curved. Tegulæ large, conchiform. Between the antennæ is a plate, which becomes roundly narrowed towards the middle. Ovipositor as in *Phasgonophora*. Malar space longer than the eyes.

Comes near to *Euchalcis* and *Neochalcis*. Characteristic distinctions are the swollen anterior femora and tibiæ, and the plate between the antennæ. The frontal furrow, too, is more clearly defined than usual.

Tanycoryphus sulcifrons, sp. nov.

Black; all the tibiæ and tarsi, under side of their anterior femora, hind tibiæ behind, the apex and the ventral surface of the abdomen, red. Wings hyaline, the nervures and stigma black; there is a black cloud behind the stigmal branch and there are 2 spurious veins running from the stigmal region; tegulæ large, piceous. Female.

Length 8 m.m.

Grahamstown, December.

Densely covered with silvery pubescence. Basal half of flagellum dark rufous. Head in front closely, almost uniformly reticulated. Pro- and mesonotum closely, rugosely reticulated; the centre of the latter more strongly than the sides; the scutellum is similarly, but more strongly punctured-reticulated. Metanotum deeply reticulated; the reticulations large. Propleuræ rugose; the meso- and metapleuræ irregularly punctured. Mesopleural furrow shallow; irregularly striated, most strongly behind. Metapleuræ reticulated, the sides rounded, not toothed; densely covered with long silvery hair. The centre of the pro- and mesopleuræ is more strongly and distinctly reticulated than the sides; the sides of the pro-thorax at the base are keeled, the keels extending on to the pronotum.

Hockeria melanaria, sp. nov.

Black, the sides of the head and thorax densely covered with long white hair; the rest more sparsely with white pubescence; wings clear hyaline, iridescent, the nervures fuscous, tegulæ black. Female.

Length 3.5 mm.

Grahamstown. Misses Daly and Sole.

Front laterally and vertex bearing round, not very deep clearly separated punctures; the inner orbits longitudinally punctured-striated. Malar space longer than the eyes; the lower half with a wide deep furrow. Occiput, except in the centre, closely, strongly reticulated; in the centre is an aciculated space which becomes gradually wider below. Middle lobe of mesonotum closely, rugosely punctured; the lateral less strongly punctured more shining, less strongly and closely punctured on the inner-side; it is roundly convex and clearly separated from the middle lobe. The scutellum is strongly, closely punctured-reticulated; the apical lobes gradually roundly narrowed towards the apex, about as long as they are wide at the base; the lower edge with a distinct bordering keel. On the base of the metanotum are 6 stout, slightly curved keels, which form, longer than wide, areae; the apical part bears longitudinal keels, united by more numerous transverse ones; the sides project into a triangular point, above the middle; this tooth is bluntly pointed at the apex, and has the sides equal in length. Propleuræ distinctly regularly reticulated; the rest more closely rugosely punctured. The base of the hind femora is straight and oblique on the underside, the junction of this with the rounded central part forms an angle; the apex projects more than the centre.

The scutellar spines are much broader, compared with their length than in the European species, than in *e.g. H. rufipes*. Above they are distinctly hollowed.

On some new species of Hymenoptera collected by the Rev. J. A. O'Neil, S.J., at Dunbrody, Cape Colony.

BY P. CAMERON.

ICHNEUMONIDÆ.

Campoplex O'neili, sp. nov.

Luteous, the flagellum of antennæ, stemmata, and a broad line down the mesonotum, black; wings hyaline, the nervures black, the stigma fuscous; areolet shortly appendiculated; the recurrent nervure broadly rounded; the transverse median nervure received shortly beyond the transverse basal. Male.

Length nearly 8 mm.

May. At light.

Face and clypeus closely, distinctly punctured, almost reticulated; the front and vertex much less strongly punctured; a smooth line down the centre of the front. Eyes obliquely converging on the innerside above. Occiput almost transverse. Thorax above closely, distinctly punctured, the metanotum not areolated; a broad, moderately deep furrow down its centre. Pleuræ closely, distinctly punctured; the metapleuræ more strongly and closely than the rest. The pedicle of the areolet is shorter than the 1st transverse cubital nervure, the 2nd is longer, bullated from shortly above the middle; the recurrent nervure is interstitial with it.

The hind femora &c. are wanting in the only specimen; presumably they are coloured like their coxæ. There is a broad transverse band on the base of the scutellum, followed by a short longitudinal one; the extreme base of the 2nd abdominal segment is black. The face is only slightly covered with white hair.

Limmerium garrulum, sp. nov.

Black; the apex of the 3rd and the whole of the following segments rufo-testaceous; the 4 front legs fulvous, their coxæ and trochanters pallid stramineous; the hind coxæ and basal joint of

trochanters black, the femora and tibiæ rufous, suffused with fuscous, the tarsi fuscous, wings clear hyaline, the stigma fuscous, the nervures paler; the pedicle of the areolet thick, as long as the basal transverse cubital nervure; the recurrent nervure received close to the apex of the cellule. Antennæ black, the scape yellow below, the flagellum dark fuscous. Female.

Length 6 mm., terebra 2.5 mm.

Head and thorax covered with a white pubescence. Front and vertex shagreened. Mesonotum somewhat strongly, closely and regularly punctured. Metanotum shining, indistinctly punctured at the base in the centre, the sides closely punctured; the areola large, obliquely narrowed at the base, its apex open, there are 2 lateral areæ, both widely open at the base on the outside; the posterior median area bears about 10 stout, transverse keels; on its apical outside is a triangular area; the spiracular is bounded on the outside by a distinct keel. Post-petiole nodose, longer than wide, clearly separated, aciculated; the 2nd and 3rd segments are closely, minutely punctured.

"Cape" Coll. Cameron.

CHALCIDIDÆ.

Holceupelmus, gen. nov.

Eyes large, bare, strongly faceted, rounded and narrowed above and below on the innerside, not converging above. Ocelli separated by a clear space from the eyes. Front and vertex rounded, not depressed. Malar space with an oblique furrow on the outside; it is long, the eyes being separated by half their length from the base of the mandibles. Head wider than the thorax. Middle lobe of mesonotum raised, broad and rounded at the base, gradually narrowed towards the apex; the lateral lobes depressed broadly in the centre. Scutellum broad at the base, a narrow, slightly curved, transverse furrow at the base. Abdomen shorter than the thorax, the segments not incised in the middle;

the ovipositor largely projecting. Stigmal vein long, thick. Antennæ long, thickened towards the apex, placed close to the mouth. The 2nd abdominal segment is long, nearly as long as wide.

The hind tibiæ have only one spur; their tarsi long and slender; middle tarsi dilated at base, covered below with black, short spines.

In Ashmead's arrangement of *Eupelmini* this genus would come in close to the American genus *Brasema*, Cam. It is not unlike the Cape *Mesocomys*, Cam.; but that genus may be known by the cleft apex of stigmal branch, the broad hair-band on the costa before the stigmal branch, the large, broad middle lobe of mesonotum, the 2 large foveæ at the base of the scutellum &c.

Holceupelmus bifasciatus, sp. nov.

Dark purple, the middle lobe of mesonotum largely tinged with blue and green, the front and vertex brassy tinted, the front with a brighter tint than the vertex. Legs blackish fuscous, the knees, apex of tibiæ, hind trochanters, base of hind femora and tarsi whitish yellow, the apex of the middle tibiæ more broadly yellow than the others. Antennæ black, the scape and base of flagellum blue. Wings nyaline, a broad fuscous cloud of uniform thickness in the middle and another, narrowed gradually towards the apex, commencing at the base of the stigmal branch, and reaching close to the apex. Ovipositor yellow, not quite half the length of the abdomen. Head above closely, finely punctured, the thorax and abdomen smooth; the base of the abdomen green. Female.

Length with ovipositor nearly 3 mm.

May.

Plesia carbonaria, sp. nov.

Black, a pyriform spot in the centre of the clypeus, the knees narrowly and the anterior tibiæ and tarsi in front and the calcaria, white; the body and legs densely covered with white hair, wings hyaline, the stigma and nervures black; the apical 3 abscissæ of the radius almost of equal length; the 1st recurrent nervure is

received shortly beyond the middle; the front part of the 2nd is roundly curved backwards, the lower from shortly above the middle, straight, oblique. Vertex strongly, but not closely punctured, more sparsely behind the ocelli, the front closely punctured the punctures running into reticulations in the centre. Apex of clypeus broadly rounded. Pro-mesonotum and scutellum strongly punctured; the apex of the pronotum and the centre of the scutellum almost impunctate, Post-scutellum closely rugose. Metanotum closely rugosely punctured, the punctures round and distinct; a broad depression in the centre. Propleuræ closely punctured, more sparsely above; the meso- and metapleuræ closely, coarsely rugosely punctured. The narrowed base of the 1st abdominal segment closely, coarsely punctured, the base of the dilated apical part less closely punctured, the punctures large and clearly separated. Pygidium stoutly keeled laterally on the apical half, inside of the keel is a furrow; the apex in the centre is shortly incised; the sides of the incision straight and oblique, narrowed to a sharp point behind. Male.

Length 14 mm.

February.

Plesia interrupta, sp. nov.

Black; the abdomen in the centre with a slight blue tinge, clypeus, mandibles (their apex piceous), a line on the base and apex of the pronotum, the greater part of the tegulæ, a mark, nearly twice longer than wide, and with its upper half obliquely narrowed behind, a trilobate line (the central lobe sharply pointed) on the apex of the 1st abdominal segment, a mark twice wider than long, and with the base rounded in the centre of the 2nd and 5th segment; a larger mark on the sides of the apex, its sides dilated largely backwards obliquely to near the base of the segment; and a curved mark on the sides of the last segment, yellow. Legs black, the tibiæ and tarsi yellow, largely tinged with fulvous. Wings hyaline; the stigma and apex of costa fulvous, the nervures black. Male.

Length 18 mm.

Head and thorax thickly covered with long white pubescence. Front and vertex closely rugosely punctured, the punctures running into reticulations; below the ocelli is a smooth, shining rounded tubercle. Clypeus strongly and moderately closely punctured, the middle not quite transverse. Pro- and mesonotum strongly, closely punctured; the middle of scutellum smooth; the post-scutellum coarsely rugosely punctured; the metanotum closely reticulated-punctured; pleuræ closely, distinctly, rugosely punctured; the base of the metapleuræ smooth and shining, this shining part being narrowed above, finely, closely longitudinally striated at the base and more broadly below. Abdominal segments: the part behind the furrows smooth, the rest punctured, but not strongly or closely; the last segment is more strongly punctured, except on the centre of the apex, which is smooth; the apical incision is nearly as long as the width at the apex, towards which it becomes gradually wider. The ventral segments are marked with yellow, like the dorsal. Radial cellule long, lanceolate; the 2nd and 3rd abscissæ of radius equal in length, the 1st transverse cubital nervure broadly, roundly curved; the 2nd slightly roundly on the fore two-thirds, the smaller hind part straight, oblique; the 2nd recurrent nervure is received close to the 2nd transverse cubital; it is obliquely sloped outwardly to below the middle, then, to a less extent, inwardly, the angled being rounded; the transverse median nervure in hind wings broken shortly above the middle.

Plesia leucospila, sp. nov.

Black; the mandibles, underside of flagellum, tarsi and hind tibiæ bright red; the 2nd, 3rd and 4th segments of abdomen with a white spot, wider than long, on the outer side; wings hyaline, distinctly tinged with fuscous; the stigma and nervures black; the apex of radius rounded. Female.

Length 11 mm.

Shining, covered with white hairs, which are tinged with fulvous on the front. Head closely and distinctly punctured; the middle of vertex behind and sides of front anteriorly smooth. Pro- and mesonotum with scattered punctures; the

metanotum closely, finely, distinctly punctured, except in the centre at the base. Pleuræ almost smooth. Abdomen sparsely punctured; the pygidium thickly covered with short, thick rufous hair, except on the apex, which is rufo-testaceous. Apex of 4 anterior and the outside of the posterior tibiæ thickly covered with bright red, bristle-like hair; the calcaria white. Clypeus transverse, piceous, the centre distinctly projecting; its apex not quite transverse. The 1st recurrent nervure is received shortly behind the middle; the 3rd transverse cubital nervure forms a broad, rounded curve, without any oblique slope.

Plesia erythronota, sp. nov.

Black; the prothorax and mesonotum bright red; the tarsi, apex of middle tibiæ and the greater part of the hind tibiæ rufous; a transverse white mark, wider than long on the sides of the 2nd, 3rd and 4th abdominal segments, white; the mark on the 4th wider than on the others, reaching close to the centre of the segment. Wings hyaline, suffused with fuscous; the stigma and nervures black. Female.

Length 11—12 mm.

Head, except in the centre of the vertex, closely and strongly punctured; the face and clypeus smooth. Apex of pronotum and apical two-thirds of mesonotum punctured, but not closely or strongly; the latter more strongly than the former. Base and centre of scutellum smooth, the rest with somewhat coarse, clearly separated punctures; in the centre is a curved, transverse white line. Metanotum finely and closely punctured; the triangular basal area smooth. Apical segments of abdomen punctured; the pubescence tinged with fulvous; the pygidium piceous at the apex; the pubescence black, mixed with shorter rufous bristles.

Plesia incisa, sp. nov.

Black, the clypeus, mandibles, except at the apex, a line on the apex of the frontal tubercles, palpi, a line on the apex of the pronotum and narrow lines, dilated in the middle and on the sides—except that on the 1st,—on the apex of the abdominal segments, the 4 anterior legs below and the hind tarsi, below, pale

yellow; head, thorax and legs densely covered with white pubescence; the wings hyaline, the nervures and stigma black. Male.

Length 13 mm.

March.

Apex of clypeus transverse in the middle, the sides roundly curved and narrowed. Front and vertex coarsely, rugosely punctured, the pro- and mesonotum are less closely and less rugosely punctured, the punctures being clearly separated. Parapsidal furrows wide, shallow, striated. Metanotum closely, rugosely punctured, the apical slope more closely than the base; there is a smooth, irregular space in the centre of the basal part. Pleuræ coarsely, rugosely punctured, the base of the propleuræ lined with white. The narrowed basal third of the 1st abdominal segment almost smooth, the dilated pyriform apex closely punctured; there is a narrow transverse furrow near the base of the 3rd, 4th, and 5th, the incision in the pygidium is twice longer than wide, roundly narrowed at the base; the sides are not keeled. The 3rd abscissa of the radius is not much longer than the 2nd; the 4th distinctly longer; the 2nd recurrent nervure is roundly obliquely curved outwardly above; the lower part straight, oblique, slightly turned towards the base of the wings.

SPHEGIDÆ.

Notogonia rufoscapa, sp. nov.

Black, the antennal scape bright red, darker at the apex above, the mandibles of a darker red, palpi dark fuscous, the body covered with a silvery pile; wings uniformly dark fuscous violaceous; the nervures and stigma black; 2nd cubital cellule much narrowed in front, half the length of the space bounded by the 1st transverse cubital and the 1st recurrent nervures are united, and are received near the apex of the basal third of the cellule; the metanotum minutely, obscurely transversely striated, the apical slope more distinctly, widely and irregularly striated.

The apical 3 joints of the antennæ are dark rufous ; the long spur of the hind tarsi three-fourths of the length of the metatarsus. Third joint of antennæ not much longer than the fourth. Metapleuræ weakly obliquely striated. Metatarsus of fore legs with 3 long spines on the outside ; the tibial and tarsal spines of moderate length ; the long claws have no tooth. The pygidium in the specimen described, whatever it may be in fresh examples, has no pubescence, and is pitted all over with little raised points. Female.

Length 12 mm.

December.

Characteristic of this species is the red scape, and the united recurrent nervures. It comes near to *N. ciliata*, Sm. ; that species may be known by the fore tarsi being armed with numerous long stiff spines, longer than the joints, there being 5 on the metatarsus, by the 2nd cubital cellule being one-third of the length of the 3rd in front, very slightly more than the space bounded by the recurrent nervures, which are received not far from the base of the cellule ; and the 1st recurrent nervure has not the front half obliquely bent as it is in *N. rufoscapa*.

Ammophila dunbrodyensis, sp. nov.

Length 19 mm. Male.

This species is very similar to *A. erythrospila* ; it is a more slenderly built species ; the red colouration on the thorax being present only on the lower half of the meso- and metapleuræ and absent from the apex of the metanotum, the 4 front legs are only very slightly marked with black, the occiput is broadly rounded, not transverse in the middle ; and otherwise is easily separated from it, and from *A. dolichodera*, Kohl, by the 3rd cubital cellule being only one-quarter of the length of the 2nd.

Hind ocelli separated from each other by a slightly less distance than they are from the eyes. Clypeus about one-half longer than wide, its apex almost transverse. Pronotum broader than long, sparsely, weakly punctured. Mesonotum transversely rugulose, but not closely striated. Metanotum closely, transversely rugulose. Pleuræ rugulose, thickly covered with white

pubescence. Tubercles large, round, reddish. Third cubital cellule short, in front hardly longer than the space bounded by the 2nd transverse cubital and 2nd recurrent nervures. The underside of the petiole and the greater part of the 3rd and 4th abdominal segments, rufous. The 4 front legs are light red; the trochanters and basal three-fourths of the femora black above; the hind coxæ, trochanters and femora, except at the apex, black, the rest of the legs of a darker red than the anterior.

Stizus Johannis, sp. nov.

Length 9-10 mm.

February.

Belongs to the group of *tridens*, having the same form and colouration. Median cellule in hindwings emitting only an anterior nervure. Lateral incision in sides of median segment large, twice longer than wide, rounded; the upper angle broad, rounder, the lower short, acute.

Black, covered with a closely silvery pubescence, the clypeus, face, lower inner orbits, opposite the antennæ, base of mandibles, a narrow, short line, near the top of the upper eye orbits, lower part of scape, the hind edge of pronotum, the line extending on to the tubercles, a small oval mark behind the latter, a line along the apical half of the sides of the mesonotum, a mark longer than wide on the sides of the scutellum, not quite reaching to the apex, a broad curved line on the post-scutellum, broad lines on the apices of the abdominal segments—the basal 2 broadly dilated backwards on the sides, and the apical 3 bordered with brown,—and fascial on the 2nd and following ventral segments—dilated laterally and in the centre. The 2nd cubital cellule not pedunculated, at the top separated by the length of the space bounded by the 2nd transverse cubital and 2nd recurrent nervures. The legs yellow, the coxæ, trochanters, a line behind on the 4 front tibiæ, one in the centre of tibiæ and the basal half of the hind femora, black. The flagellum of antennæ reddish brown, black above. Clypeus not clearly separated, densely pilose. Front and vertex shagreened. Thorax above closely, minutely punctured, as are also the basal segments of the abdomen.

The male is coloured like the female, including the antennæ ; the penultimate ventral segment is laterally, broadly, roundly incised. It wants the round spot on the pleuræ behind the tubercles. The eyes in both sexes strongly converge below ; the antennæ clavate, short. In the female the eyes near the face are separated by distinctly more than the length of the antennal scape ; in the male by very little more than its length. The wings in both sexes are clear hyaline ; the costa is testaceous.

VESPIDÆ.

Odynerus senex, sp. nov.

Black, the clypeus, a mark, broader than long, above the antennæ, mandibles, except at the apex, underside of antennal scape, a spot on the innerside at lower side of the eye orbits, a short line on the upper outer eye orbits, the edge of the pronotum at the apex, tegulæ, the hinder part of the tegulæ tubercles, the sides of both scutellums and the apices of the abdominal segments, yellow, red are the base of the antennal scape above, the hinder part of the pronotum from near the base, the sides of the median segment, of the 1st abdominal segment and a large mark on the sides of the basal half of the 2nd, legs red, the outer side of the tibiæ and base of tarsi yellow. Wings fuscous, highly iridescent, the apex darker coloured and with a distinct violaceous tinge, the nervures and stigma black. Male.

Length 10 m.m.

Head and thorax strongly and closely punctured, the punctures above running into reticulations ; the abdomen are closely, but less strongly punctured ; the 2nd segment with a longitudinal keel down the centre. Antennæ stout, the underside of the flagellum brown ; its hook stout, reaching close to the base of the joint. Clypeus as long as its greatest width, strongly, but not closely punctured ; the central length of the apical incision not as great as the width at the apex ; the centre at the base is rounded ; the top of the clypeus is broadly rounded. Base of thorax transverse,

sharply angled laterally. Sides of scutellum largely raised into a keel or tooth ; its highest part is beyond the middle ; the basal and longer slope is straight, obliquely sloped ; the apical has a more rounded slope ; the sides of the post-scutellum rise into a prominent tooth, which is triangular as seen from behind ; its apex has a more rounded, dilated slope than the base. Sides of metanotum broadly rounded. Basal segment of abdomen cup-shaped ; the 2nd segment is as long as its width at the apex.

This species comes close to *O. Whiteanus*, Cam. ; probably the coloration differences between the two are not of much importance ; but there are structural differences between them ; *e.g.* the base of the thorax in *Whiteanus* is not so transverse, it being somewhat dilated in the middle ; the keel on the sides of the scutellum is less prominent, it being less prominent and not so high as that on the post-scutellum. the opposite being the case with the present species ; the post-scutellal keel on *Whiteanus* is more prominent, longer and more broadly and distinctly rounded above, its pterostigma testaceous, not black ; and there is no keel on the 2nd dorsal segment of the abdomen which is shorter compared with the width.

Odynerus quadrituberculatus, Sm. (Cat. Hymen. Ins. Brit. Mus. v, 70) from Port Natal appears to be related to the present species and to *O. Whiteanus*. The terms used by Smith for the scutellums "sub-dentate on each side laterally" can hardly be applied to the two species I have described.

Odynerus erythrotomus, sp. nov.

Black, the underside of the scape, mandibles except their teeth ; a small mark, wider than long, rounded and narrowed above, slightly incised in the centre below, clypeus, labrum, a short line above the middle of the outer orbits, a band on the apex of the pronotum, dilated laterally, a small spot on the sides of the scutellum, the greater part of the post-scutellum, a line on the apex of the 1st abdominal segment above, and a broader one on the 2nd, all round, yellow. Legs rufo-testaceous, the fore coxæ and trochanters, the base of the fore femora narrowly, the middle coxæ above, trochanters, femora to beyond the middle, the hind

coxæ, trochanters and femora to near the apex, black. Wings fuscous violaceous, the nervures and stigma black. Male.

Length 10 mm.

Head and thorax closely and strongly punctured, covered with a silvery pile. Thorax longer than wide, the base not transverse, being slightly roundly dilated in the middle, its sides bluntly rounded. Sides of metanotum broadly rounded. Scutellum not toothed laterally; the post-scutellum not flat, somewhat rounded, obliquely sloped. Clypeus about as wide as long, rounded above but with a slight projection in the middle on the top; the apical incision, rounded, distinctly wider than long. First abdominal segment cup-shaped, narrow at the base, becoming gradually wider towards the apex; the second slightly longer than its width at the apex, width at the apex, which is smooth and distinctly raised; the 1st and 2nd segments are closely, uniformly and strongly punctured; the 1st more strongly than the 2nd.

The post-scutellum is rounded behind. Antennal hook stout, curved, reaching to shortly beyond the base of the joint. The punctuation the mesonotum and scutellum runs into striæ. Tegulæ rufous, large.

Is allied, by the not transverse base of thorax, to *O. melanodontus*; that species should be readily separated by the raised sides of the scutellum, by the black teeth on the post-scutellum; and by the yellow bands on the apex of the 1st abdominal segment being dilated laterally. In Saussure's Work it would come in near *O. hottentotus* (*olim posticus*). The head and thorax are more densely covered with white pubescence than usual.

Odynerus O'neili, sp. nov.

Black, largely tinged with ferruginous; the antennæ, vertex, outer orbits and legs ferruginous, the clypeus of a lighter ferruginous tint; the 2nd abdominal segment above light orange coloured; with a dark line, darker and dilated at the base and apex, down the centre; wings bright fulvous, the apex smoky violaceous from the end of the stigma. Female.

Length 17 mm.

March.

Front and vertex strongly, but not closely punctured. Clypeus longer than its greatest width, its sides obliquely sloped; the apex narrow, transverse, depressed in the centre; the top broadly rounded. Thorax closely, strongly rugosely punctured; the base of pronotum broadly rounded and bordered by a distinct, sharply raised keel. Scutellum flat, on a level with the mesonotum, the post-scutellum slightly more raised, especially towards the apex; its apical slope long, slightly oblique and sparsely punctured. Sides of median segment broadly rounded, the apex obscurely transversely striated, punctured round the edges. The lower part of propleuræ is only sparsely punctured. First abdominal segment cupshaped, broadly rounded at the base; the 2nd segment barrel-shaped, clearly longer than the greatest width. The thorax is longer than usual, fully twice longer than wide; the base of the 2nd abdominal segment is not sharply contracted and separated from the apex of the 1st.

The rounded and narrowed base of the thorax, bright fulvous wings and broad orange band on the abdomen makes this *Leionotus*, with its large size for an *Odynerus*, easily recognised. The metanotum is more obliquely sloped than usual and has its face finely, closely, transversely striated. The species looks more like a *Polistes* than an *Odynerus*. The broad orange band reminds one of *O. punctum*.

ANTHOPHILA.

Sphecodes iridipennis, sp. nov.

Black, the abdomen bright red, the wings fuscous violaceous, highly iridescent, the nervures and stigma black; the hind wings with at least 9 hooks; the first 5 separated from the 6th by a space and the latter from the apical three; the flagellum of antennæ brownish beneath; the basal two-thirds of the mandibles bright red. Female.

Length 7 mm.

Front and vertex closely, rugosely punctured, the punctures almost running into reticulations in places; there is a narrow fine

keel down the centre of the front on its lower half. Face closely rugosely punctured, its centre forming a raised triangle, with the apex above; the clypeus strongly, but not closely punctured; its apex fringed with fulvous hair. Labrum depressed in the centre, the sides forming 2 rounded tubercles. Mesonotum strongly, but not very closely punctured, with a central smooth depression, and with a smooth space down the sides. Scutellum strongly punctured; a smooth space in the centre of the basal half. Post-scutellum coarsely, closely longitudinally rugose. Base of metanotum coarsely, closely, longitudinally reticulated in the centre, the sides more closely, obliquely striated. Pleuræ coarsely, closely rugosely reticulated, as is also the breast. Legs black, the calcaria and the apical joints of the tarsi pale testaceous, as are also the tarsal spines; the hair on the tarsi inclines to fulvous; on the rest of the legs it is black.

Sphecodes O'neili, sp. nov.

Black, the antennæ, basal two-thirds of the mandibles, apex of clypeus, legs, basal segment of the abdomen and the basal half of the 2nd, bright red; wings hyaline, the nervures and stigma blackish; the hind wings with ten hooks in 3 divisions of 5, 1 and 4. Metanotum widely reticulated, the keels distinct, stout; the centre of the area with 2 large smooth spaces. Female.

Length 7 mm.

December.

Front and vertex closely, rugosely punctured, the former below the ocelli finely longitudinally striated; the raised part of the face finely, closely rugose; the clypeus strongly punctured, the punctures clearly separated. Mesonotum closely, strongly punctured, a shallow furrow down the middle. Scutellum with the basal half only sparsely, the apical much more closely, punctured. Apical slope of metanotum closely, strongly punctured. Pleuræ: the upper part of the pro- almost smooth, lower, especially towards the apex, striated; the meso- irregularly reticulated-rugose, the apex finely and closely rugose; the meta- on the upper basal part obscurely, the lower more distinctly obliquely striated, the rest irregularly reticulated-striated. The

1st abdominal segment closely punctured ; the basal half of the 2nd more strongly, and of the 3rd still more strongly punctured ; the others smooth ; the pubescence white.

Sphecodes capensis, sp. nov.

Black, the apex of the 1st abdominal segment and the sides of the 2nd and 3rd segments broadly, red; the mandibles dark red before the apex ; wings clear hyaline, iridescent, the nervures and stigma blackish, the latter fuscous behind ; the hind wings with 8 narrow curved hooks. Male.

Length 6 mm.

Head thickly covered with longish white pubescence, the front and vertex closely rugose ; the clypeus more strongly, less closely punctured. Labrum smooth and shining ; a small rounded incision in the centre of the apex above. Mesonotum strongly, but not very closely punctured ; the base of scutellum sparsely, the apex, more closely punctured. Post-scutellum closely rugosely punctured. Base of metanotum closely, strongly, irregularly and somewhat obliquely striated. Propleuræ strongly, the meso more closely and less strongly reticulated, the apex above with some oblique striæ ; the metapleuræ wrinkled and bearing some striæ at the base. Basal 3 segments of abdomen closely and strongly punctured, the apex of the 2nd and 3rd depressed and smooth. Apical joints of tarsi and calcaria pale testaceous.

Halictus Schönlandi, sp. nov.

Black, the apical third of the 1st abdominal segment, the whole of the 2nd and the greater part of the 3rd red ; wings clear hyaline, the stigma fuscous, the nervures pale. Hair dense whitish cinereous. Female.

Length 5 mm.

Metanotal area closely, longitudinally reticulated, more finely and closely at the apex than at the base, the sides with stouter, more widely separated oblique striæ. The hair on the face, clypeus and front is very dense, hiding the sculpture. Sides of mesonotum finely, closely and distinctly punctured, the centre more widely and strongly punctured. Apex of scutellum

closely, the base sparsely punctured. Calcaria pale testaceous; the hair on the innerside of the tarsi is rufous. The 3rd abscissa of radius is not much longer than the 2nd; the 3rd transverse cubital nervure is oblique in front, the hinder (and smaller) part is broadly rounded. Tegulæ piceous. Antennæ stout, the joints of flagellum almost moniliform. The apex of the metanotum is transverse in the middle above, its sides rounded. Only the base of the 2nd abdominal segment is depressed. There are no basal or apical fasciæ on the abdominal segments. Above the propleuræ is dilated into a triangular, large projection, which is bare below, above thickly covered with long white hair; it is as long as its width at the base, and becomes gradually narrowed towards the apex.

Halictus dunbrodyensis, sp. nov.

Black; the underside of the antennal flagellum and the greater part of the mandibles rufous; as are also the apical joints of the tarsi; the hair on head, thorax, abdomen and legs white; wings clear hyaline, the nervures and stigma black. Female.

Length 4-5 mm.

Metanotal area irregularly, finely obliquely striated. Clypeus strongly, but not closely punctured, the large punctures being widely separated. Centre of face finely and closely punctured. Mesonotum closely finely, but distinctly punctured, depressed in the middle; the base with a fine longitudinal furrow. Abdomen impunctate. The hair on the underside of the tarsi rufous; the calcaria pale testaceous. The rima is testaceous laterally, its centre black. The hinder parts of the transverse cubital nervures are testaceous; the 3rd transverse cubital nervure is obliquely sloped in front, the rest broadly, roundly curved. Abdominal segments not depressed.

The propleural projection is large, the apex broad, rounded and clearly separated. On the base of the abdominal segments are bands of depressed pubescence.