

wear and tear. The only two females are somewhat rubbed, and the extent of the blue patch is rather uncertain, it is probably always ill-defined. The males do not vary, except in size; both the largest and smallest specimens were of this sex, the females both being medium sized.

Taken in a mountain pass in the Island of Oahu in March, "flying about in some numbers, frequenting the flowers of the Koa (a forest tree that grows in mountain localities). The insects were very tame, and when settled low enough, could be taken by the fingers, the majority, however, kept high up beyond the reach of any ordinary net."—T. B.

Although, for convenience sake, I have given a comparative description, this species has no real affinity with *Thecla rubi*, but belongs, as Mr. Butler informs me, to the genus *Holochila*, Feld., which is included by Kirby in his genus *Plebeius*. *Holochila* comprises *absimilis* (*Pleb.* No. 291 in Kirby's list) and a few other Australasian species, to none of which does *Blackburni* appear to be closely allied.

Mortimer Lodge, Wimbledon Park :
May 13th, 1878.

NOTES ON AFRICAN HEMIPTERA-HETEROPTERA.

BY W. L. DISTANT.

SCUTATA.

Genus *ASPONGOPUS*, Lap.

✓*ASPONGOPUS NIGRO-VIOLACEUS*, P. B., Ins., p. 83, Hem., pl. 7, fig. 4 (1805).

This species seems to have had some vicissitude in nomenclature. In the B. M. Catalogues it is placed in the genus *Cyclopelta*. As figured above, however, the 5-jointed antennæ are plainly visible, as they are also in H. Schäffer's figure of its synonym *Aspongopus unicolor*, Wanz., Ins., iv, fig. 433. Stål again considers it (*Hem. Af.*, i, p. 216, and *En. Hem.*, i, p. 83) as a variety only of *Aspongopus viduatus*, Fab. I am indebted to Mr. Rutherford for the examination, at different times, of a large number of specimens of both species, and, apart from the very different colour above, have always found the following well-defined differences :

Second and third joints of antennæ of equal length.

Abdomen above rufous. Long., ♂, 12 mm., ♀, 15 mm. *nigro-violaceus*.

Second joint of antennæ somewhat longer than the third.

Abdomen above cyaneous. Long., ♂, 14—16 mm., ♀, 17—19 mm. *viduatus*.

✓*ASPONGOPUS AFFINIS*, n. sp.

Dark shining green, thickly and coarsely punctured; pronotum rugulose, scutellum transversely rugose. Frontal and lateral edges of pronotum, a small central spot at base of scutellum, basal half of border of corium above and below, and abdominal border above, luteous. Antennæ narrowly and obscurely fuscous at tip, 3rd and 5th joints equal, 2nd joint minute, 4th joint incrassated towards tip, shorter than the 3rd and 5th. Head strongly emarginate in front, with the lateral lobes broadly reflexed. The luteous border of the pronotum is widest in front, where it contains the two usual slightly raised prominences. The lateral edges are strongly reflexed. Membrane dark fuscous. Under-side coarsely punctate. Coxæ, trochanters, and lateral sides of prosternum, very broadly luteous. Abdomen below dark greenish-testaceous, much more prominently testaceous on disc, and green towards lateral borders. Femora obsolete spinous, hind tibiæ somewhat dilated except at base and apex, dilated portion distinctly sulcate. Rostrum luteous at base. ♀. Long., 18 mm.

Isubu (W. Africa).

Allied to *A. patruelis*, Stål, from which it can be at once structurally distinguished by the broadly reflexed lateral borders of the pronotum.

✓*ASPONGOPUS DIVERGENS*, n. sp.

Above fuscous, shining, strongly rugose and punctate. Head and antennæ brassy-black. Head strongly emarginate in front, lateral lobes slightly sinuate, strongly reflexed. 2nd and 3rd joints of antennæ sub-equal, 4th somewhat compressed, obsolete sulcate above, rather shorter than apical joint, which is the longest. Pronotum with the lateral angles moderately produced and rounded. Corium rather paler in colour. Membrane concolorous, but largely suffused with brassy-green, which in some specimens appears only at apex, and in others more so throughout the membranal area. Abdomen above castaneous, with the margins brassy-black. Under-side of body and legs brassy-black, thickly and finely (the legs more coarsely) punctate. Femora obtusely spinous, tibiæ strongly sulcate. ♀. Long., 21 mm.; exp. ang. pronot., 12 mm.

Camaroons. Isubu.

The prominence of the lateral angles of the pronotum sufficiently distinguishes this from any other known African species of the genus. Its somewhat elongate form and sulcated tibiæ also give it a characteristic which is slightly divergent from the typical forms of *Aspongopus*. In all essential characters, especially in the size and shape of the head and the broad and rounded scutellum, it agrees perfectly with that genus.

✓*ASPONGOPUS MODESTUS*, n. sp.

Ovate, bronzy-black. Head, pronotum and scutellum thickly and coarsely punctured, the last transversely rugulose. Corium thickly and finely punctured. Head slightly emarginate in front, with the lateral lobe obsolete reflexed. An-

tennæ with the 2nd joint a little longer than the 3rd, 4th compressed, obsolete sulcated, a little shorter than apical joint, which is the longest. Pronotum with an obscure transverse impression, about one-third from apex. Membrane fuscous. Under-side of body thickly and finely punctured, excepting on disc of abdomen, which is impunctate, and shining fuscous. Rostrum luteous, pitchy towards the apex. Coxæ luteous, anterior femora prominently spinous beneath.

Long., 11 mm.

Isubu.

Apart from colour, the nearest allied African form to the above would appear to be *A. pullus*, Stål.

Derwent Grove, East Dulwich:
May, 1878.

DIMORPHISM AND ALTERNATION OF GENERATIONS IN THE *CYNIPIDÆ*.

Simultaneously with the announcement from Mr. Fletcher published in our May No. (Vol. xiv, p. 265) that he had confirmed Dr. Adler's statement (see Vol. xiv, p. 44), so far as two of the supposed species are concerned, there appeared in the *Pet. Nouvelles Entomologiques* for May 1st, 1878, an article by our correspondent M. Lichtenstein under the title "Les Cynipides monoïques," in which he stated that he had obtained galls of *Spathogaster baccarum* from eggs laid by *Neuroterus lenticularis*.

Mr. Fletcher has since informed us that he also obtained two galls of *S. baccarum*, the produce of *N. lenticularis*, but the little oak upon which they were has died. He has now bred *S. vesicatrix* from the galls before alluded to.

We doubt not that all Dr. Adler's statements will be fully confirmed, instead of being "blown to the winds," as it was recently asserted they already had been.—Eds.

ON PARTHENOGENESIS IN THE *TENTHREDINIDÆ*, & ALTERNATION OF GENERATIONS IN THE *CYNIPIDÆ*.

BY P. CAMERON.

In a paper which I published in the "Scottish Naturalist" for October last, I pointed out that the ♂ of *Pacilosoma pulveratum*, Retz. (*obesa*, H.), was quite unknown, and suggested that here we had a case of parthenogenesis. I am glad to be able to confirm this view by direct observation.

At the beginning of the present month (May), I found, in a small bottle containing two or three corks into which the larvæ of *P. pulveratum* had bored to pass the pupal state, two females of that species.

One was dead, but the other had apparently only recently emerged, I at once went out and cut a twig of alder, the food plant of the larva, and placed it and the saw-fly under a bell-glass in the sunshine. The insect, which had been hitherto very sluggish, and had remained motionless in one position, at once on feeling the sunshine became very lively, and flew up and down the enclosure. Soon it discovered the food-plant: examined it nearly all over, and ultimately fixed upon a young, half-grown leaf. At first it rested motionless in the middle of the leaf, then it came close to the border, fixed the outer legs along the edge, then raised the body up so that it was a little more than the height of the tibiæ from the surface of the leaf, which, it may be added, was a little bent on one side. In this position it remained for about a couple of seconds: then the abdomen was bent down, the saw was inserted into the leaf, and apparently was moved up and down but without being withdrawn out of the leaf; at least, I infer this from the motion of the abdomen. The saw was not put in straight, but was bent a little forward; the two leathery sheaths remained at right angles to the saw itself. After being in the leaf for a few seconds, the saw was withdrawn; the insect remained motionless for a second or two, and then the abdomen was bent down again, the saw inserted (but I think not very deeply) into the hole already made, and the egg deposited. During the egg-laying, the antennæ were a little raised above the height of the head, with a slight curve, and almost rigid. The whole operation lasted about eighty or ninety seconds. Several minutes elapsed before the next egg was laid. All were deposited on the thick half-grown leaves, sometimes singly, sometimes as many as three were placed on the same leaf. They were deposited close to, but not touching any of, the nerves, and on the under-side of the leaf.

Immediately after being laid, the eggs were quite invisible; but by twenty-four hours they had swollen up very much, and were easily recognised as greenish oblong elevations. Eight days after being deposited I extracted, with great trouble, an egg from its bed in the epidermis, and on placing it under the microscope, had no difficulty in seeing the future larva curled up inside, which showed conclusively that the eggs were quite fertile. I am not, however, sanguine of rearing many of the larvæ, because of the difficulty of keeping the plant fresh. The leaf, in drying, contracts and presses in the egg, which thus is killed. Experiments of this nature are best performed on growing plants, and are, of course, best carried out by one living in the country.

In the above-mentioned paper, I expressed views unfavourable to the occurrence of alternation of generations in the *Cynipidæ*. I now willingly admit that I then attached too much importance to mere negative observations, and I am very glad to say that I have this spring made some observations on *Neuroterus lenticularis*, which confirm those of Dr. Adler.

31, Willowbank Crescent, Glasgow: May, 1878.