

VIII. *Notes upon some remarkable parasitic insects from North Queensland.* By F. P. DODD, F.E.S.; *with an Appendix containing descriptions of New Species,* by COLONEL CHARLES T. BINGHAM, F.Z.S., and Dr. BENNO WANDOLLECK.

[Read March 7th, 1906.]

HYMENOPTERA PARASITICA.

[THE material upon which the following interesting observations have been made has been kindly placed in my hands by the author, with the desire that I should make it available for the use of naturalists. Inasmuch as it mainly bears upon those bionomic questions which are so much studied at Oxford, the great majority of the specimens have been placed in the Hope Department; but wherever possible, co-types of the new species have been deposited in the British Museum of Natural History. The type of the interesting Cyrtid fly, *Ogcodes doddi*, has been added to Dr. Wandolleck's famous collection of this group at Dresden.

Mr. Dodd is to be congratulated upon these carefully-recorded observations throwing so much new light upon many of the North Australian Hymenoptera Parasitica. The hosts of the extraordinary Chalcid genus *Schizaspidia* have been hitherto unknown; we here find that *S. doddi* is parasitic upon ants. In other cases, such as the Chalcidid genus *Rhipipallus* and the Cyrtid fly, the general group to which the host belongs is already known, but Mr. Dodd furnishes us with exact data of the utmost value and interest. Many observations here recorded show a remarkable and long-persistent vitality in larvæ attacked by Braconid parasites. It is probable that in hot latitudes, where a dead insect would quickly dry up and in other ways deteriorate as food, the attacks of parasites have been specially adapted to prolong the victim's life to its very utmost. The adaptation of course always exists, but here we probably see it at its highest level.

It is unnecessary to specify any localities, inasmuch as
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the whole of the material was collected by Mr. Dodd at Townsville, North Queensland.—E. B. POULTON.]

Nos. 1 and 2 are from the caterpillars of *Delias argenthona*, F. The larvæ of the larger species (No. 1) push their way through the sides of their host, and at once commence to construct their cocoons in a mass, the caterpillar dying and shrivelling up very quickly. The flies emerge through the end of the cocoon by forcing open the lid. The eggs of the smaller species are, I suppose, deposited upon the larvæ of the larger ere they are secure in the cocoons: they do not push open the lid, but gnaw holes to escape.

[Colonel C. T. Bingham has kindly described the Braconid parasite (No. 1) as *Apanteles deliadis* (Appendix, p. 125); the Chalcidid hyperparasite (No. 2) as *Microterys cœruleus* (Appendix, p. 127). Four Bracons and three Chalcids bear the date Jan. 2, 1903; seven Chalcids, Jan. 6, 1903; and nine Chalcids Jan. 9, 1903.]

No. 3.—From *Chærocampa oldenlandiæ*, F. [*Theretra oldenlandiæ firmata* (Walk.), Rothschild and Jordan, Rev. Sphing., Nov. Zool., ix, suppl., p. 783.] In this (and two following species) only a single parasite attacks the caterpillar. The larva emerges through the side of its victim, and spins a cocoon, like a full grain of wheat, crosswise upon the back, just in front of the horn. The caterpillar never moves from one spot, and lingers until some time after the parasite has flown. The caterpillar, which is exhibited *in formalin*, did not die until forty-eight hours after the emergence of the fly, and I found it, with the cocoon seemingly finished, seven days before the appearance of the Hymenopterous insect.

[Col. Bingham has described this Braconid parasite as *Microgaster basalis* (Appendix, p. 125). The single specimen with its oval cocoon, from which a terminal lid has been pushed off, bears the date Feb. 11, 1903.]

No. 4.—Host *Notodonta* [*Cerura*] *cynoptera*, Lower. The larva of this insect comes through the side or back of the caterpillar: it rears itself nearly upright and is almost entirely outside the aperture when it constructs the cocoon, which leans backwards at an angle of about forty-five degrees. Some twenty or twenty-four hours after, when the cocoon appears to be complete, the larva contrives to move its case from the host's back to the leaf. Wondering how this transference could be effected, I examined the

case before removal, and observed that there was a tiny hole, through which the larva could push its head. The imago emerges through a lid in the upper end. The caterpillar never shifts from the position it has taken up, along the midrib on the under-side of the leaf. Like the preceding and following species it is very irritable. Death takes place about the sixth day, generally a day or so before the fly emerges; but I have found a caterpillar still alive after the fly had gone. One cocoon produced a number of minute Hymenoptera which are shown together with the case from which they had bored their way. *In formalin* several of the stung caterpillars are exhibited, each showing the wound caused by the full-grown Hymenopterous larva in its exit.

[Colonel Bingham has described the Braconid parasite (No. 4) as *Microgaster perelegans* (Appendix, p. 126). The minute hyperparasites are shrivelled and indeterminable.

Two cocoons (one attached to piece of leaf), 1 Braconid and 5 hyperparasites bear the date Feb. 26, 1902.

One cocoon, 1 Braconid and 5 hyperparasites bear the date Feb. 27, 1902.

One cocoon, 1 Braconid, 5 hyperparasites, and 1 caterpillar of *Notodonta*, bear the date March 2, 1902.

Three cocoons and 1 Braconid bear March 11, 1902.

Four of the cocoons have been opened by pushing off a terminal lid. The lids have been preserved with their respective cocoons in three examples. The cocoon on the leaf has not been opened by a lid, but bears two minute apertures, one in the side and one near the end. It is probable that the fifteen hyperparasites emerged through these holes. Two cocoons, dated March 11, 1902, had not been opened from within. These two, unlike the others, are strongly marked by longitudinal furrows, and bear the appearance of a distinct cap at one end, clearly marked off from the rest of the cocoon by a circular ridge. They also differ from the other five cocoons in wanting the oblique flattened area towards one end which doubtless marks the base of attachment to the surface of a leaf.]

No. 5.—Host the bee-hawk *Hemaris kingi* [*Cephonodes kingi*, McLeay, of Rothschild and Jordan, Revision, p. 463.] This larva also places the cocoon across the back of the caterpillar immediately in front of the horn. One day I noticed three small caterpillars upon twigs: the next day in passing I found that each carried a case. I then took

them and observed that after several days the cocoons had dropped off. The parasites appeared in the perfect state on the eighth day, the first caterpillar dying two days, the second five days and the third eight days after the appearance of their respective parasites. The third caterpillar seemed dead on the seventh day, but movements were noticeable in the claspers during this and well into the eighth day.

It will be noticed that this and the two preceding species of caterpillars must be stung when they are exceedingly small, for they are all only about the size of healthy eight- or nine-days-old larvæ.

I had another species of these flies from a common noctuid (*Achæa* sp.). The larva came out under the twelfth or thirteenth segment and affixed its cocoon to the twig, the caterpillar's tail being raised to accommodate it and pressing on and partly around it. In this position the caterpillar remained, though not fastened to the case in any way, it died on the third or fourth day after the appearance of the Hymenopterous imago.

[This Braconid parasite (No. 5) has been described by Col. Bingham as *Microgaster basalis*, viz. the same species as No. 3, also parasitic upon the caterpillar of a hawk-moth (Appendix, p. 125). The single specimen of No. 5 together with its cocoon bears the date Feb. 19, 1902. The cocoon has lost its terminal lid.]

No. 6.—From the handsome Lycænid *Ogyris genoveva*, Hew. [a synonym of *O. zosine*, Hew.] The larvæ of this butterfly are befriended by several species of ants, chiefly by a large *Camponotus*, in whose nests they pass the day. When young however they hide under loose bark or in crevices, and can easily be stung by small parasites. The numerous larvæ crawl out from under the host and form their heap of cocoons, the victim dying very slowly. The flies emerge in about seven days, the caterpillars having a little life left in them up to five days later.

[This Braconid parasite (No. 6) has been described by Col. Bingham as *Protapanteles rufiventris* (Appendix, p. 127). Five Braconids, 1 shrivelled Lycænid larva, and 7 cocoons bear the date March 21, 1902; 5 Braconids and a heap of many cocoons bear Dec. 22, 1902; five Braconids and another large heap bear Dec. 23, 1902. The white oval cocoons have been opened by pushing off a terminal lid which in many cases remains attached as it were by a

slight hinge. When the cocoons are affixed end to end in the heap, the lids appear to be always formed and pushed off at the free ends.]

Nos. 7 and 8.—From the pupæ of the case moth *Ardio-steres moretonella*, Walk., the larvæ of which live in the nests of small black tree ants. The Lepidopterous larvæ never leave these nests; but in order to pupate they approach closely to the entrances, when they are, no doubt, victimised.

[No. 7 is borne by the following undated set of specimens: a Lepidopterous case from which the empty pupal skin of a moth projects, so that this particular specimen was not parasitised; 2 ♀ *Chalcididæ* described by Col. Bingham as *Stomatoceras fasciatipennis* (Appendix, p. 128); 4 ants identified by Prof. Auguste Forel as *Cremastogaster læviceps*, Smith.

No. 8 is borne by a set of specimens dated June 5, 1902: 2 flattened dumb-bell-shaped Lepidopterous cocoons the larger of which has been pierced by an emerging parasite, the other very small; 1 Chalcidid considered by Col. Bingham to be probably a species of *Halticella*, but too fragile to bear removal from the card for examination; 2 *Cremastogaster læviceps*, Smith, ♂.]

No. 9.—These bright little Chalcididæ I have bred frequently from the pupæ of the fine long-jawed ant *Odontomachus* sp., several sometimes coming from the one cocoon.

[No. 9 is borne by 2 ♀ and 1 ♂ Chalcididæ described by Col. Bingham as *Rhipipallus affinis* (Appendix, p. 129). They are dated July 30, 1902. Another set of specimens, without number, but dated March 16, 1902, contains 1 ♂ and 1 ♀ of the same species of Chalcidid, 1 worker ant identified by Prof. Forel as *Odontomachus ruficeps*, Sm., subsp. *coriarius*, Mayr., ♀, and 1 ant cocoon. A third unnumbered set, dated Oct. 1902, contains 1 ♂ and 2 ♀ of the Chalcidids, and 1 worker of the above-named species of ant.]

No. 10 is a great rarity and the only specimen I have bred from several lots of pupæ of a large ant, *Camponotus* sp. From one lot I obtained some large bright pink mites, but I lost these in a great cyclone on March 9, 1903.

[No. 10 is borne by the ♂ of a beautiful and remarkable Chalcidid described by Col. Bingham as *Schizaspidia doddi* (Appendix, p. 130). It is dated Jan. 1903.]

DIPTERA.

No. 11.—In the crevices of the leaf nests of our interesting green ant, *Ecophylla virescens*, Fabr., a pretty jumping spider takes shelter and breeds. Generally it selects the nests which are partly abandoned. I was carding some of these spiders, but one ♀ being rather bulky, seemingly with eggs, I kept her in a glass-bottomed box to deposit them. One morning I found the spider dead, with abdomen strangely small and shrunken, and, instead of a mass of eggs, I noticed a peculiar dark object in a thin web the spider had spun. Later in the day the object became much lighter and I made it out to be a short thick pupa of some kind, not unlike that of a butterfly. Finally in about twelve days' time the pupa produced the dipteron now shown. The exact dates, and box carefully preserved with pupal shell in the web, were lost in the storm already alluded to, owing to the destruction of the house I lived in, when various entomological specimens of interest were destroyed.

[No. 11 is borne by an Attid spider kindly identified by my friend Dr. G. W. Peckham, of Milwaukee, as *Cosmophasis bitæniata*, Keys. Dr. Peckham informs me that the ♂ = *Sobara bitæniata*, and the ♀ = *Selephora rubra*, in Koch and Keyserling's "Arachn. Austral.," p. 1365, and p. 1374. The specimen, which is dated Nov. 15, 1902, has a shrivelled abdomen, and bears the word "Dipteron," so it is certainly the host of the Cyrtid fly, *Ogcodes doddi*, Wandolleck, sent with it. The *Ogcodes* bears the locality and date, Nov. 20, 1902. (See Appendix, p. 131.)

No. 11 is also borne by two more spiders of the same species, dated Nov. 11, 1902.]

APPENDIX.

1. *New species of Braconidæ and Chalcididæ from N. Queensland, bred by F. P. DODD.* By Colonel CHARLES T. BINGHAM, F.Z.S.

BRACONIDÆ.

No. 1. APANTELES DELIADIS, form. nov.

♀. Head broader than long, face below the antennæ slightly raised, front and vertex smooth, occiput not margined. Thorax short, broad anteriorly, pro- and mesonotum and scutellum minutely but very closely punctured; wings hyaline and iridescent, legs long, posterior tibiæ slightly incrassate. Abdomen short irregularly obliquely truncate at apex, compressed, ovipositor slightly exerted. Black; antennæ reddish-brown; the trochanters, femora, tibiæ and tarsi of the legs, and the basal three segments of the abdomen on the sides, dark brownish-yellow.

♂. Similar in sculpture and colouring to the ♀ but the abdomen is vertically not obliquely truncate.

Length ♀ $3\frac{1}{2}$ mm., of ovipositor $\frac{1}{2}$ mm.: ♂ 3 mm.

Exp. ♂ ♀ 5 mm.

♂ and ♀ types in Hope Department, Oxford University Museum: ♂ and ♀ co-types in British Museum of Natural History.

Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

A true *Apanteles*, with the antennæ 18-jointed, eyes minutely pilose, and the radial and cubital abscissi faintly marked. No form of the genus has, so far as I know, been previously recorded from Australia.

The hyperparasites (No. 2) of the above species belong to a new species of *Chalcididæ* described on page 127 as *Microterys cærulescens*.

Nos. 3 and 5. MICROGASTER BASALIS, form. nov.

♂. Head smooth and shining, vertex broad, ocelli prominent. Antennæ elongate 18-jointed densely pilose. Thorax broad, gibbous anteriorly, smooth; mesonotum with two longitudinal short deep impressed lines, mesopleuræ not furrowed smooth; scutellum

triangular, its apex blunt; median segment posteriorly rounded vertically tricarinate and coarsely cribrate between the carinae. Wings: apical two-thirds fuscous, basal third hyaline; legs normal except for the posterior femora and tibiae which are somewhat thickened, pilose. Abdomen: broad, depressed, basal segment superficially lightly and finely punctured, the rest smooth and shining. Head black, antennae brown, basal joint red; thorax red; anterior and intermediate legs and coxae and trochanters of posterior pair pale brownish-yellow, femora tibiae and tarsi of posterior legs dark brown. Abdomen basal segment and sides of 2nd and 3rd segments yellow, remainder of the abdomen jet black.

Length ♂ 5 mm. Exp. 12 mm.

♂ type (No. 3) and co-type (No. 5) in Hope Department, the former from a *Chærocampa*, the latter from a *Hemaris* larva.

Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

Belongs to Marshall's Section 2 of the genus.

No. 4. MICROGASTER PERELEGANS, form. nov.

♀. Head: face in front, vertex and behind the eyes closely but very minutely punctured; antennae 18-jointed densely pilose; thorax smooth or with only a few scattered punctures anteriorly, the mesonotum and scutellum separated by a conspicuous short broad transverse furrow the two sides of which are medially connected by cross carinae; scutellum triangular smooth; median segment obliquely truncate, coarsely cribrate, and with a medial and a lateral (one on each side) prominent vertical carina; wings hyaline lightly infuscate; legs long, posterior pair slightly pilose. Abdomen depressed, polished and shining above. Head median segment and abdomen jet black; thorax anteriorly and up to the scutellum red; legs: anterior and intermediate pair reddish-yellow, posterior pair black with a broad sub-basal ring on the tibia white; sides of 1st and 2nd segments of the abdomen yellowish-white; ovipositor black scarcely exerted.

♂. Similar except that the abdomen is slightly more depressed and there is of course no ovipositor.

Length ♀ ♂ 4 mm. Exp. 9 mm.

♂ and ♀ types in Hope Department, ♂ co-type in British Museum of Natural History.

Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

Belongs to Marshall's Section 1 of the genus with the basal segment longer than its breadth at apex and the 2nd cubital cell subtriangular and open.

The minute hyperparasites sent with this are shrivelled and indeterminable.

No. 6. *PROTAPANTELES RUFIVENTRIS*, form. nov.

♀. Head lightly punctured; face medially carinate below the eyes; antennæ long, pilose, 18-jointed. Thorax shining broad and gibbous, anteriorly finely punctured; scutellum triangular convex divided from the mesonotum by a short broad transverse furrow and with a punctured very narrow groove bordering both sides and meeting at the apex; median segment not carinate oblique, slightly convex, somewhat more closely and coarsely punctured than the pro- and mesonotum; wings hyaline iridescent; legs robust, posterior femora somewhat compressed. Abdomen broad, basal two segments punctured like the median segment, remainder smooth and shining, apex rounded, ovipositor only slightly exerted.

Head, thorax and median segment black; antennæ reddish-brown; legs and abdomen brownish-yellow, basal segment reddish-brown above, apical segment shaded with fuscous.

♂. Similar, slightly smaller; abdomen shorter and more truncate posteriorly.

Length ♀ 4, ♂ 3 mm. Exp. ♀ ♂ 9 mm.

Types in Hope Department, co-types in British Museum of Natural History.

Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

This agrees in generic characters with *Protapanteles*, Ashmead. In the classificatory tables given by this author in the Proceedings of the United States National Museum, vol. xxiii, pp. 1-220 (1900), the presence or absence of a longitudinal carina on the median segment is given as the chief point of difference between the genera *Apanteles* and *Protapanteles*. The present form differs from *Apanteles deliadis* (*supra*), besides other characters, in the much more lengthened median segment.

CHALCIDIDÆ.

No. 2. *MICROTHERYS CÆRULEUS*, form. nov.

♀. Head, thorax and abdomen smooth and shining, the face in front and the prothorax anteriorly with a few scattered punctures.

Antennæ 7-jointed, scape smooth flagellum pilose opaque, the joints distinct; eyes large, bulging out on either side of the head. Thorax, sutures between pro- and mesonotum, scutellum, postscutellum and median segment distinct; wings hyaline iridescent; legs slender. Abdomen lanceolate apically acute, above depressed, concave, ovipositor not exerted. Head, thorax and abdomen metallic-blue, flagellum of the antennæ and the femora of the legs except at apex dark brown, scape of the antennæ and apex of femora, tibiæ and tarsi pale yellow.

♂. Only differs from the ♀ in being smaller, the antennæ are 10-jointed with the flagellum more densely pilose; head and thorax minutely but densely punctured, and the abdomen short, rounded posteriorly, not acute.

Length ♀ $2\frac{1}{4}$, ♂ $1\frac{1}{2}$ mm. Exp. ♂ ♀ 4 mm.

Types in Hope Department; co-types in British Museum of Natural History.

Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

Hyperparasitic upon *Apanteles deliadis* (page 125).

No. 7. STOMATOCERAS FASCIATIPENNIS, form. nov.

♀. Head and thorax closely and evenly punctured. Clypeus and face below the base of the antennæ cribrate; face and front above the base of the antennæ deeply and widely vertically sulcate, the furrow bordered on each side and above, just below the vertex, by a well-marked carina; scape of antennæ long about one-third of the whole length of the latter, smooth but minutely pilose, flagellum simple, granulose, 10-jointed. Thorax: robust, pronotum margined anteriorly; scutellum large oval convex overhanging the median segment, bidentate at apex, posteriorly with a very narrow sub-marginal furrow or channel; median segment short, truncate, bearing on its posterior vertical face a median looped carina and two lateral oblique carinæ; wings hyaline with sub-basal and post-median broad transverse fuscous fasciæ; legs minutely pilose, posterior femora edged posteriorly with numerous extremely minute teeth. Abdomen subsessile smooth and shining, the basal abdominal segment as long as the rest united. Head, thorax and dorsal surface of abdomen black; apex of scape of antennæ, tegulæ of wings, the legs, and sides and ventral surface of abdomen blood-red.

Length ♀ 5 mm. Exp. 8 mm.

♀ type in Hope Department.

Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

Stomatoceras, Kirby, is another widespread genus occurring in Africa, Japan, and America, and now recorded from Australia.

No. 8. The single specimen of this Chalcidid is too fragile to remove from the card for examination. It probably belongs to the genus *Halticella*.

No. 9. *RHIPIPALLUS AFFINIS*, form. nov.

♂. Head lenticular; clypeus triangular deeply incised anteriorly, front below the antennæ slightly raised, smooth and shining, cheeks face and vertex finely but somewhat obsoletely longitudinally striate; scape of antennæ short smooth and shining, flagellum finely granulose, pilose, the hairs very short, the basal two joints simple, the rest except the apical joint with long slightly clavate rami on each side, two to each joint, apex distinctly incrassate. Thorax densely and somewhat coarsely punctured; scutellum conical produced, the apex terminating in two short teeth; at base a transverse series of foveæ or large shallow punctures; postscutellum and median segment very coarsely cribrate, the latter with two or three irregular more or less vertical carinæ; wings hyaline and iridescent; legs slender. Abdomen smooth and shining, its petiole opaque granulose. Mandibles tibiæ and tarsi pale yellowish-brown; coxæ and femora dark blue or black; antennæ dark reddish-brown; head, thorax anteriorly, scutellum and median segment, metallic-green with in certain lights a bronze tint; middle of thorax above entirely coppery-bronze; petiole and abdomen dark metallic-blue.

♀. differs from the ♂ as follows: Clypeus not incised; antennæ moniliform, the joints simple not provided with lateral rami; scutellum not bidentate at apex, at base a deep, broad transverse sulcation within which is situated the transverse series of foveæ so conspicuous in the ♂; petiole of abdomen much shorter, abdomen as in the ♂. Antennæ paler, head and thorax more bronze than green; abdomen a darker blue.

Length ♂ 5; ♀ 4 mm. Exp. ♂ ♀ 9 mm.

♂ ♀ types in the Hope Department, ♂ ♀ co-types in British Museum of Natural History.

Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

Superficially this form closely resembles the type of the genus (*R. volusus*, Walker), but besides other points of difference it is easily separable by the sculpture of the

thorax, which in *volusus* has the humeral angles of the thorax conspicuously smooth and shining, not coarsely punctured and no carinæ on the median segment.

No. 10. SCHIZASPIDIA DODDI, form. nov.

♂. Mandibles sickle-shaped with three teeth, apical tooth long acute, two small teeth on the inner margin; clypeus short quadrate with the cheeks and face below the base of the antennæ transversely striate, the striæ curving round upwards and becoming vertical behind and between the eyes, vertex longitudinally striate; scape of antennæ smooth, flagellum finely granulose, 1st joint simple rounded, remaining joints throwing outwards comparatively short, slightly clavate rami. Thorax: short and stout, densely and somewhat deeply punctured; scutellum: produced elongate conical overhanging the median segment and bearing a stout bifurcate process at apex, the points of the fork blunt with a tooth on the inner side of each; postscutellum and median segment vertical and vertically striate the division between them well marked. Abdomen petiolate, petiole shorter than the rest of the abdomen which is sub-obconical depressed above and broad and bluntly rounded posteriorly. Mandibles, scape of antennæ, and coxæ, femora, tibiæ and tarsi of the legs pale yellowish-brown, flagellum darker brown; head and thorax rich golden bronze with in certain lights scattered green and purple points; wings hyaline iridescent; abdomen shining bronze-brown.

Length ♂ 5 mm. Exp. 12 mm.

♂ type in Hope Department.

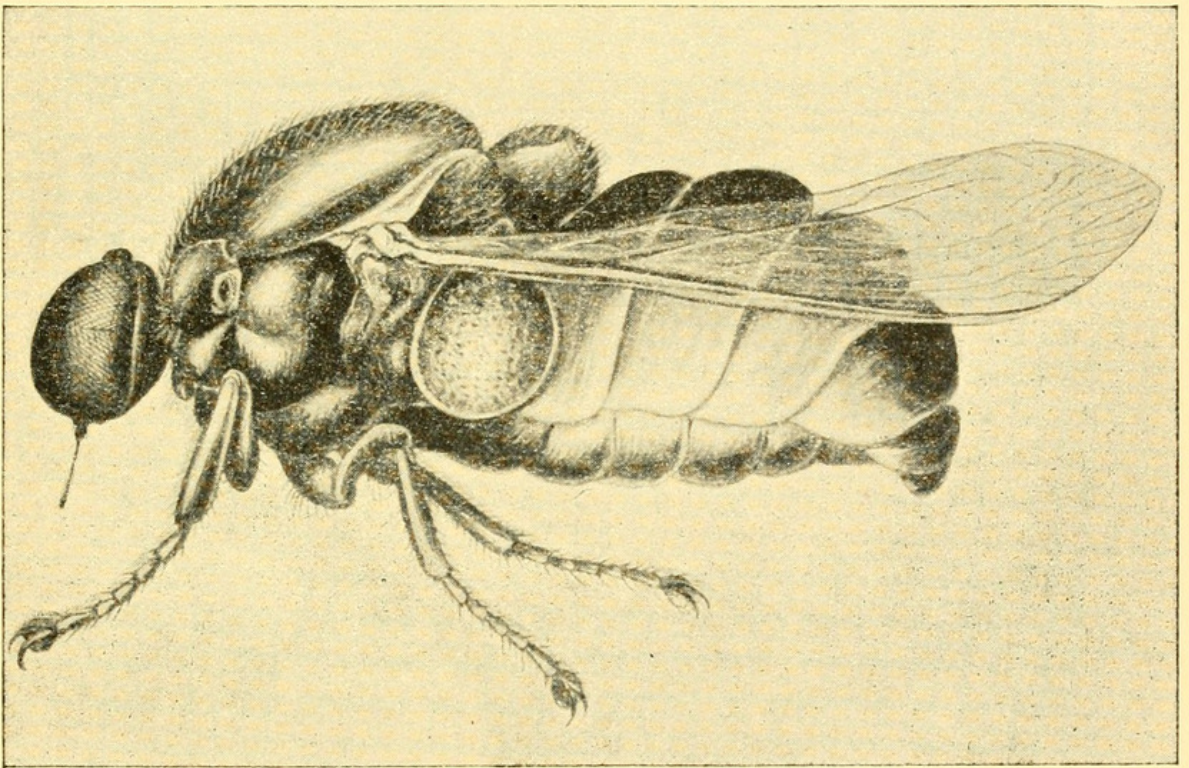
Hab. N. QUEENSLAND, Townsville (*F. P. Dodd*).

Schizaspidia, Westw., is a genus, so far as is recorded, of small extent but wide distribution: forms of it occur in Australia, the Philippines, India and South America.

2. *A new species of Cyrtidæ (Diptera) from N. Queensland, bred by F. P. DODD. By Dr. BENNO WANDOLLECK, of Dresden.*

OGCODES DODDI, n. sp.

♂ (?) N.E. AUSTRALIA.

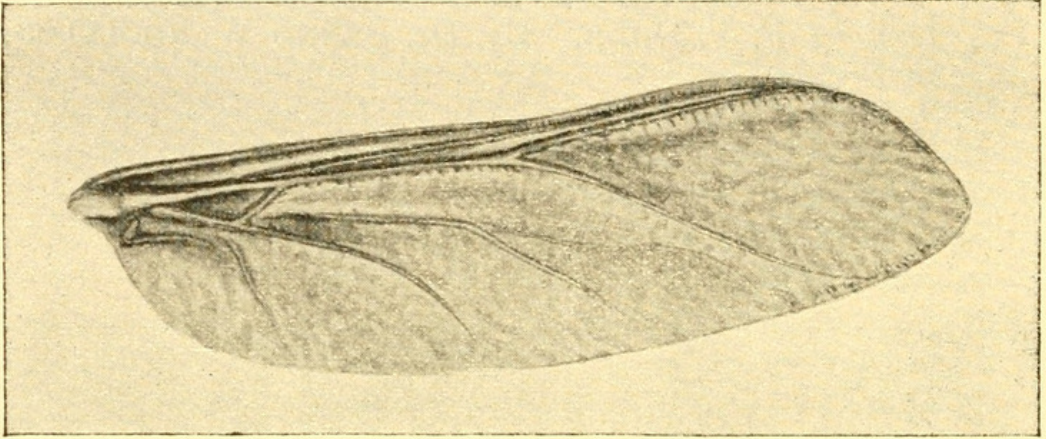


Ogcodes doddi, n. sp.

A small species, allied to *Og. darwini*, Westw.

Body brown, grey-haired. Head black, ocellar tubercle prominent and polished. The facets are of equal size. The horizontal groove of the eyes longer than in *Og. darwini*. Neighbourhood of the mouth grey tomentose, thickened, with a deep vertical notch. Antennæ small, the onion-shaped part of the third joint dark brown, the remaining part light brown and transparent. Thorax brown, smooth, grey-haired. Prothoracic plates small, light brown. Wings brownish; veins stout, brown; squamæ of the same

colour as the wings, with a stout brownish margin ; grey-haired. Legs light brown ; tarsi darker ; claws and pulvilli blackish-brown ; abdomen light brown ; tergites yellowish with a narrow white band in



Wing of *Ogcodes doddi*.

front ; middle of the first and second sternite yellow, the other sternites mottled with dark yellow patches ; margins yellowish-white.

Length 4 mm.



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