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I.—ZOOLOGY.

ART. I. — *Synopsis of the Diptera brachycera of New Zealand.*

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[Read before the Philosophical Institute of Canterbury, 3rd October, 1900.]

IN 1874 I published in our Transactions a list of the New Zealand *Diptera* which had been described before 1870, and in the same year Mr. A. G. Butler, of the British Museum, edited the "Insects of the Voyage of H.M.S. 'Erebus' and 'Terror,'" in which two new descriptions were given.

In 1881 the Geological Survey of New Zealand published a catalogue of our *Diptera*—compiled by me—which gave the original descriptions of the species, but without making any attempt to point out mistakes. In 1884 Mr. W. Kirby, of the British Museum, supplemented this catalogue by describing, in the "Transactions of the Entomological Society of London," three of the species which had been named, but not described, by Adam White, and by adding the names of four others which were unknown to me.

In 1896 Mr. P. Marshall published, in vol. xxviii. of the "Transactions of the New Zealand Institute," two papers which added largely to our knowledge of the *Cecidomyidæ* and the *Mycetophilidæ*, and last year I undertook the *Tipulidæ*.

The time, I think, has now arrived when a revision of the whole of our *Brachycera* may be made with some prospect of success, and the present paper has for its objects—(1) The

correction of the synonymy of the known species; (2) the omission of names which have been erroneously included in our fauna; and (3) the description of the new species which are in the collection of the Canterbury Museum.

The omission of species which have been placed erroneously on our list is a difficult task, for some insects are so local and so irregular in their appearance that they may escape a second capture for a long time. Nevertheless, it is necessary that the work should be attempted, and I have therefore omitted all those species which I do not believe were ever taken in New Zealand. Most of these omitted species were originally stated to have been found near Auckland during the short stay there of the Austrian frigate "Novara" in 1859, but have never been found since. Several of these are now known to occur in other countries. In these cases there can be no doubt but they have been put down to New Zealand in error, and this makes it probable that there may be other mistakes which have not yet been found out. Indeed, the localities of the insects given in the "Voyage of the 'Novara'" must always be looked upon with suspicion until confirmed by some other collector. I have seen no description of *Paramenia semiauriceps*, Brauer and Bergenstamm (Denk. Akad. Wissen. Wien, vol. 56 (1890), p. 171); but as it belongs to a family (*Dexidae*) which, to the best of my knowledge, does not occur in New Zealand I have omitted it also.

I have to thank Captain T. Broun for sending me a collection from the Auckland District, Mr. G. V. Hudson for one from Wellington and Nelson, and Mr. W. W. Smith for a collection made at Ashburton, in Canterbury. By these means the Museum now contains most of the described species. Those that are still unknown to me are mentioned in the text. I have included the introduced species as well as the natives, partly because collectors might be puzzled by them if descriptions were not given, and partly as a record of what species have been introduced and when they were first recorded, if that is known.

This list includes 191 species, of which six are doubtful inhabitants,* but which I retain for the present. Of the remaining 185, ten or eleven have been introduced from Europe, and three probably from Australia or the islands, thus leaving 171 or 172 native species. Of course, many more remain to be discovered. The most remarkable species are *Ersil singularis* and *Cerosomyia usitata*. Unfortunately, I have only a single specimen of each, but I could not pass them over on that account.

* These are *Odontomyia australiensis*, *Clitellaria aberrans*, *Milesia bilineata*, *Sciomyza nigricornis*, *Sapromyza sciomyzina*, and *S. decora*.

the exterior side there is either a very small or no erect bristle before the tip. Wings without bristles on the costa; the first longitudinal vein much abbreviated; the auxiliary vein rudimentary; the discal cell usually, but not in all genera, united with the foremost of the two basal cells. Claws and pulvilli very small" (Loew).

Genus *DROSOPHILA*, Fallen (1820).

Head and thorax convex, with a few bristles. Antennæ short, the third joint nearly linear; arista with five or six long hairs on each side. Abdomen linear in the male, elliptical in the female.

KEY TO THE SPECIES.

Thorax tawny, unspotted .. .. .	..	..	..	..	<i>D. brouni</i> .
Thorax tawny, spotted with brown .. .. .	..	..	..	..	<i>D. marmorata</i> .
Thorax dark-brown .. .. .	..	..	..	..	<i>D. clarkii</i> .

Drosophila brouni, sp. nov.

Tawny, the under-surface and legs paler, yellowish; eyes and antennæ darker, brown. Abdomen dark-brown above, tawny below. Wings nearly colourless, the veins dark-brown; chief cross-vein opposite the end of the first longitudinal; distance between the cross-veins about two and a half times the length of the posterior cross-vein; the distance of the latter from the margin of the wing is about equal to its own length. Length, 3 mm.; wing, 3 mm.

Hab. Auckland (H. Suter).

The arista has about ten long hairs.

Drosophila marmorata, sp. nov.

Head and thorax tawny mottled with dark-brown; abdomen dark-brown. Halteres and legs pale-yellow, fuscous on the outer side of the femora and tibiæ. Wings colourless; the chief cross-vein lies rather outside the end of the first longitudinal; the distance between the cross-veins is two and a half times the length of the posterior cross-vein; the distance of the latter from the margin of the wing is about equal to its own length. Length, 3 mm.; wing, 3 mm.

Hab. Auckland (H. Suter).

The arista has about eight long hairs.

Drosophila clarkii, sp. nov.

Rather dark-brown; the lower surface and the legs pale-tawny; antennæ dark-brown. Wings clear, the veins piceous. The chief cross-vein lies a little outside the end of the first longitudinal; the distance between the cross-veins is about three times the length of the posterior cross-vein; and the distance of the posterior cross-vein from the margin of the

wing is about equal to three-fourths of its length. Length, $2\frac{1}{2}$ mm.; wing, $2\frac{1}{2}$ mm.

Hab. Christchurch (H. Clark).

The mouth has a row of short bristles on each side. The arista has twelve or fourteen long hairs.

Family OSCINIDÆ.

“Front without bristles, the crown having only a few short ones; border of the mouth without vibrissæ, but sometimes a small hair on each side. Middle tibiæ with small spurs; none of the tibiæ with erect bristle on the outside before the tip. Costa of the wing without bristles. Auxiliary vein completely wanting; the anterior of the two small basal cells united with the discal cell, the posterior one totally wanting” (Loew).

Genus OSCINIS, Latreille (1804).

Head transverse; front prominent, face oblique. Antennæ short, not reaching the epistome; third joint nearly round, twice the length of the second; arista bare. Costa extending to the tip of the fourth longitudinal vein. Legs moderate, the hind femora slender; the tibiæ straight.

Oscinis badia, sp. nov.

Uniform blackish-brown; the third joint of the antennæ and the tarsi dark-tawny. Wings clear, veins piceous. The chief cross-vein lies opposite the end of the first longitudinal; the distance between the two cross-veins is about twice the length of the posterior cross-vein; and the posterior cross-vein is distant from the margin of the wing about two and a half times its own length. Length, 3 mm.; wing, $2\frac{1}{2}$ mm.

Hab. Queenstown (F. W. H.).

The mouth has a pair of small vibrissæ, and the vertex has a row of short bristles. Eyes with very short hairs. Third joint of the antennæ nearly round; the arista bare and bent down. The fore femora are rather thickened.

Family AGROMYZIDÆ.

“Front with strong bristles; border of the mouth with a vibrissa on each side. Middle tibiæ with a terminal spur; none of the tibiæ have an erect bristle on the outside before the tip. Wings without bristles on the costa; first longitudinal vein very short, and the auxiliary vein connected with it at the tip; basal cells present, but small; posterior cross-vein generally far distant from the border of the wing” (Loew).