The Recorded Calliphoridae of New Zealand (Diptera).

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Communicated by Morris N. Watt, F.E.S.

[*Read before the Wanganui Philosophical Society, 28th October, 1921; received by Editor, 10th October, 1923; issued separately, 28th August, 1924.*]

The following keys include all the genera and species of Calliphoridae that are known to me to occur in New Zealand and adjacent islands. The purpose in publishing the paper is to make available to New Zealand students of Diptera a means by which they may be enabled to identify the species of this group, no keys being available for this purpose except those published many years ago by the late Captain Hutton, which are not up to date in the matter of generic characters.

The family contains species which have a vertical series of strong bristles on middle of the hypopleura below the mesopleural spiracle, the arista plumose to or almost to apex or to middle. The body-colour is generally bluish or greenish, sometimes brassy or bronzy.

The family Sarcophagidae are most nearly related to this group, but the colour of the New Zealand species of the former is invariably greyish, the abdomen being checkered black and grey, and the thorax black-vittate. The number of bristles on the area between the presutural dorsocentrals and humeral area in Sarcophagidae is either two or three, exclusive of the notopleural bristles, while in Calliphoridae there are generally five; if less, the species is brilliantly blue-metallic-coloured.

Key to Genera.

1. Eyes distinctly hairy .. .. *Calliphora* Linné (part).
   Eyes bare 2
2. Lower calyptra bare on disc above; a chitinized plate extending forward from anterior lower angle of scutellum between lower calyptra and lower margin of vertical part of hind-margin of mesonotum, which is more or less densely haired; eyes of male much more narrowly separated than those of female .. *Lucilia* Linné.
   Lower calyptra bare above; no hairy chitinized plate as above; eyes of male much more narrowly separated than those of female .. .. .. *Pollenia* Rob.-Desv.
   Lower calyptra more or less distinctly haired at least at base above; no hairy chitinized plate extending from scutellum as described above 3
3. Basal part of radial vein basad of humeral vein with short fine hairs above and behind; thorax and abdomen brillant blue; lower calyptra with hairs on entire surface above .. .. .. *Chrysomyia* Rob.-Desv.
   Basal part of radial vein without such hairs 4
4. Eyes of male as widely separated as those of female, frons about one-third of the head-width; lower calyptra haired on its entire surface above .. *Xenocalliphora* n. gen.
   Eyes of male much more narrowly separated than those of female; lower calyptra long-haired above on basal half, bare on apical half .. .. .. *Calliphora* Linné (part).

Lucilia Linné.

Only one species, *caesar* Linné, has been reported, so far as I know.

Pollenia Robineau-Desvoidy.

Sepimentum Hutton can not be held distinct from *Pollenia*. Structurally and in chaetotaxy the genotypes of the two, which I have carefully examined, cannot be separated except in such details as are only specific and not generic. I would therefore sink *Sepimentum* as a synonym of *Pollenia*, and after examining the type specimens of Hutton's two species I have arrived at the decision that *demissum* must be considered as a synonym of *fumosum*. The species will thus stand as below :—

Pollenia fumosum (Hutton).

Sepimentum fumosum Hutton; *Septimentum demissum* Hutton.

The species is evidently common in New Zealand, as I have seen many specimens from Messrs. Watt and Fenwick.

Chrysomyia Robineau-Desvoidy.

I have seen only one species from New Zealand, *rufifacies* Macquart.

The two species which occur in Australia, and which may yet occur in New Zealand, may be separated as below :—

Antennae and face rufous; calyptrae whitish, hind-margin of upper one and posterior half of lower dark brown or fuscous; hairs and bristles of fourth abdominal tergite pale except at base of tergite	*dux* Eschscholz.
Third antennal segment fuscous, face yellowish-red in front below; calyptrae entirely whitish; all setulose hairs of fourth tergite black	*rufifacies* Macquart.

Xenocalliphora n. gen.

Generic Characters.—Differs from *Calliphora* in having the eyes separated by fully one-third of the head-width in both sexes, each orbit with two strong forwardly-directed supra-orbital bristles, and the lower calyptra haired on its entire upper surface,

Genotype : *Calliphora eudypti* Hutton.

There are two species known to me from islands off the coast of New Zealand, and one from New Zealand. They may be separated by means of the key given below :—

1.	Thorax with two strong intra-alar bristles on each side; fore tibia with one strong posterior median bristle; legs black; abdomen metallic blue-green, with very slight whitish pruinescence ..	*hortona* Walker.*
	Thorax with but one intra-alar bristle on each side; fore tibia with two rather closely placed posterior median bristles	2
2.	Apices of femora and entire tibiae and tarsi rufous yellow; abdomen black, with a violet tinge and slight greyish pruinescence on dorsum ..	*eudypti* Hutton.
	Legs entirely black, sometimes the extreme apices of femora and the tibiae more or less brownish; abdomen metallic blue-green, with slight greyish pruinescence on dorsum	*antipodei* Hutton.

I have examined only the type series of the last two, but have seen many specimens of the other from New Zealand, sent me by Mr. M. N. Watt.

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* Major Patton has examined the types of Walker's two species *icela* and *hortona* and finds them to be the same species.

Calliphora Linné.

This genus has been subdivided by some authors, but the genera *Neopollenia, Paracalliphora,* and *Neocalliphora* are hardly entitled to subgeneric rank, certainly not to generic rank, if one applies the same criteria to the group as to others in the same family. The segregate with hairy eyes, *Neocalliphora* Brauer and Bergenstamm, is the most distinct, but structurally it is very similar to *Calliphora ;* and I am not inclined to favour a subdivision on a character which is not even of specific value in some allied groups.

There are two segregates in New Zealand which have apparently escaped separation, and which are probably quite likely to receive attention at some future date. I cannot see that the erection of a new genus to receive the hairy-eyed species would benefit science, nor do I believe that such a course is advisable or permissible, so leave the genus with four species from this region.

KEY TO SPECIES.

1. Eyes hairy	2
Eyes bare	3
2. Palpi and a small raised spot on pleura in front of wing-base orange-yellow; hind-tibia with a rather close fringe of short setulae and bristles on entire length of anterodorsal surface..	*quadrimaculatus* Swederus.
Palpi fuscous, no orange spot on pleura at base of wings; hind-tibia with 4 or 5 short anterodorsal bristles ..	*aureonotata* Macquart.
3. Legs entirely black; venter of thorax and abdomen without conspicuous golden-yellow hairs; abdomen metallic blue, with greyish or whitish pruinescence forming iridescent spots or checkerings; lower calyptra fuscous, with white posterior border; bristles black	*erythrocephala* Linné.
Legs fulvous, tarsi fuscous; pleura, venter of thorax and of abdomen with golden-yellow hairs; abdomen olivaceous, with brassy pruinescence forming checkerings; both calyptrae fulvous; bristles of legs in part fulvous	*villosa* Rob.-Desv.

Calliphora quadrimaculatus Swederus.

I have to sink as a synonym of this species *cockaynei* Hutton. I have examined the type specimen of the latter and find that it is identical with specimens which are undoubtedly *quadrimaculatus,* and that Hutton was in error in describing the colour of the abdomen as different from that of the latter.

Calliphora aureonotata Macquart.

I have seen only one specimen of this species, from Wanganui (Watt).

Calliphora erythrocephala Linné.

I have seen this common species, from Wanganui (Watt).

Calliphora villosa Robineau-Desvoidy.

This is the species recorded by Hutton as *laemica* White. It is the genotype of *Neopollenia,* but in my opinion is not separable from *Calliphora.* Common in New Zealand.

N.B.—Hutton's *Calliphora antennatis* does not belong to this family, but to the Anthomyiidae.