

301

TIPULOIDEA OF THE TONGARIRO NATIONAL PARK AND
OHAKUNE DISTRICT, NEW ZEALAND (DIPTERA)

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ONE TEXT FIGURE

INTRODUCTION

The detailed knowledge of the crane flies of the immediate vicinity of Ohakune and Mount Ruapehu, Wellington Province, New Zealand, that has now become available through the untiring efforts of Mr. Thomas R. Harris and a few other collectors, well warrants the publication of a list of the species.

The first specimens that were received from the vicinity of Ruapehu were collected by Mr. Morris N. Watt in January, 1921, along the trail to the mountain hut on the southwest side of the mountain. The flies were taken in the zone of silver beech (*Nothofagus menziesii* Hooker f.) and included the following species: *Macromastix ferruginosa ruapehuensis*, *Discobola teselata*, *Zelandomyia raupehuensis*, *Z. watti*, *Gynoplistia (Cerozodia) hudsoni hemiptera*, *Ceratocheilus ochraceum*, and *Molophilus latipennis*. All of the species described by the writer were based either wholly or in part on Mr. Watt's material. In late December, 1921, and early January, 1922, Mr. Watt and Mr. Cuthbert C. Fenwick again visited Ruapehu, this time on the northern side, and collections were made in the vicinity of their camp at an approximate altitude of 3,700 feet, where the beech forest, tussock land, and alpine scoria begin to intermingle with one another. The Tipulidæ collected at this time included the following undescribed forms: *Molophilus flagellifer*, *M. niveicinctus*, and *Amphineurus gracilisentis*, as well as sev-

eral species that had been previously described and are recorded later in the present paper. The various excursions undertaken by Harris to the camp on Ruapehu are discussed under the second part of this paper. The few crane flies that were taken in this region by Hudson in 1912 were listed the following year.¹ Hudson's second trip to Ruapehu, in company with his daughter, Miss Stella Hudson, in 1922, included a few additional novelties that were taken in the vicinity of the Whakapapa camp on the northern side of Ruapehu at an approximate altitude of 3,700 feet, and have been described by Edwards; these are *Macromastix bivittata*, *M. elongata*, and *Gynoplistia (Gynoplistia) orophila*.

The first Harris collections that were received by the writer were kindly sent by Dr. James W. Campbell, and included only a few miscellaneous species that had been taken by Harris in the vicinity of Ohakune in 1919 and 1920. Strange to say, these desultory collections included a few species, chiefly of the genus *Gynoplistia*, that were not rediscovered during the subsequent systematic combing of the region by Mr. Harris, beginning in the early spring of 1921 and continued until 1926. These various Harris collections, made in the near vicinity of Ohakune and in Tongariro Park on Mount Ruapehu constitute the basis for the present list. A simple expression of thanks for the untiring efforts of Mr. Harris in making known the fascinating tipulid fauna of New Zealand seems but inadequate reward for the long hours spent afield and at home preparing the material. The writer can honestly state that never has he enjoyed such capable coöperation in the development of a local faunal list and such intelligent appreciation of the problems to be met as has come from Mr. Harris, to whom all credit is given for the results obtained during this study. This abundant material has rendered the writer's task a comparatively easy one.

GEOGRAPHICAL LIMITS ADOPTED IN THE PRESENT REPORT

Mr. Harris has suggested the following geographical limits, which are herein adopted: "I would reckon the Ohakune district to extend from Waimarino, 18 miles to the north (of Ohakune), to Waiouru, 17 miles to the south, and back to Mount Ruapehu. You then have a natural boundary of tussocks and plain on both sides." (See fig. 1.) Acting upon this suggestion, the writer has adopted a circular area having an

¹Trans. N. Z. Inst. 45 (1913) 57-67.

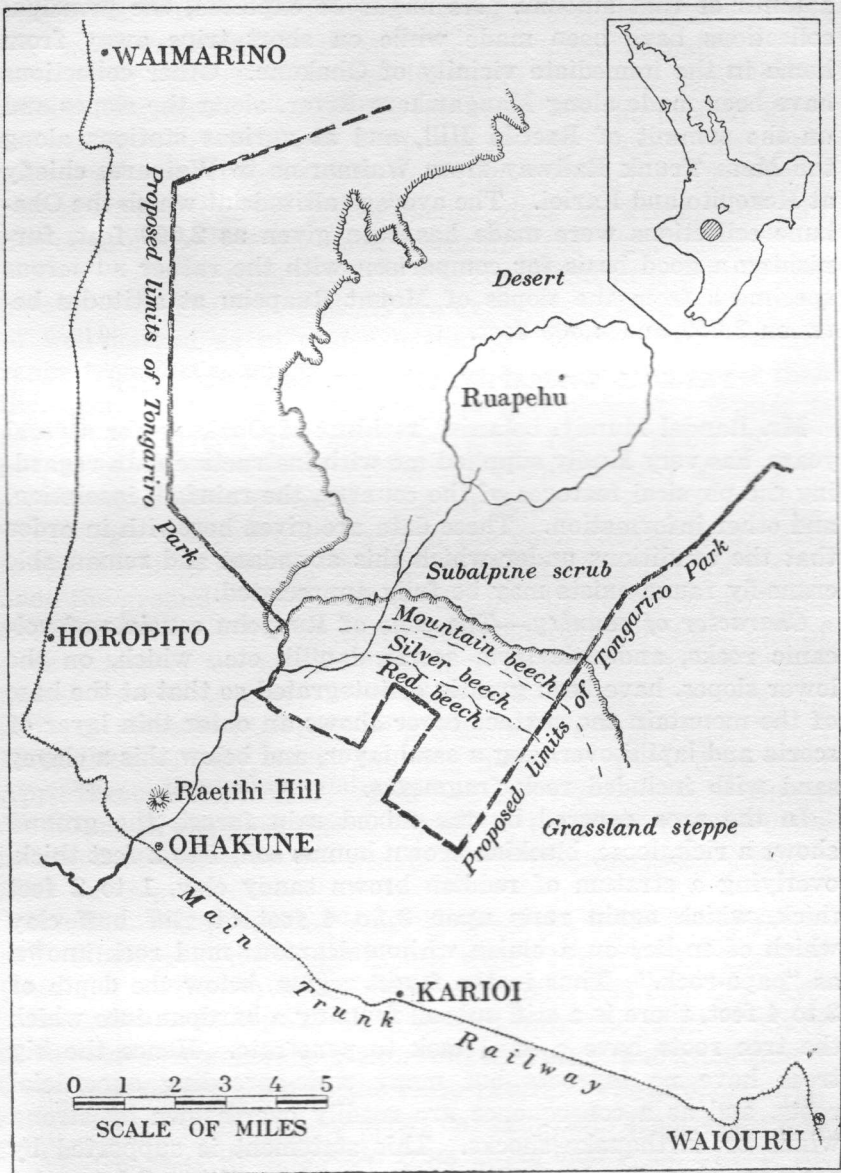


FIG. 1. Ohakune district and Toongariro Park, North Island, New Zealand. The location and the area of the park are indicated by the shaded circle in the index map.

18-mile radius from Ohakune as a center, thus including approximately 1,000 square miles, although the actual area upon which collections have been made presumably would not include

a tenth of that amount. As might be expected, the principal collections have been made while on short trips away from home in the immediate vicinity of Ohakune. Other collections have been made along Mangawhero River, along the slopes and on the summit of Raetihi Hill, and at various stations along the Main Trunk Railway from Waimarino to Waiouru, chiefly at Horopito and Karioi. The average altitude at which the Ohakune collections were made has been given as 2,060 feet, furnishing a good basis for comparison with the rather numerous specimens from the slopes of Mount Ruapehu at altitudes between 3,000 and 4,500 feet.

PHYSICAL GEOGRAPHY, CLIMATE, AND VEGETATION

Mr. Randal Mundy, botanist, resident of Ohakune for several years, has very kindly supplied me with instructive data regarding the physical features of the country, the rainfall, insolation, and other information. These data are given herewith in order that the conditions under which this abundant and remarkable crane-fly fauna exists may be fully appreciated.

Character of country.—The cone of Ruapehu consists of volcanic rocks, andesitic lava, scoria, lapilli, etc., which, on the lower slopes, have been greatly disintegrated so that at the base of the mountain the surface cover shows an outer thin layer of scoria and lapilli overlying a sand layer, and below this a clayey sand with included rock fragments.

In the area covered by the mixed rain forest, the ground shows a rich, loose, blackish brown humus soil, 1 to 2 feet thick, overlying a stratum of reddish brown sandy clay, 1 to 2 feet thick, which again rests upon 3 to 4 feet of stiff buff clay which often lies on a bluish white calcareous mud rock known as "papa-rock." Thus in the forest region, below the depth of 3 to 4 feet, there is a stiff subsoil forming a hardpan into which the tree roots have a hard task to penetrate. Hence the big trees have no taproots but many wide-spreading superficial roots, and as a consequence are readily overthrown by strong winds or earthquake shocks. This statement is supported by the fact that the bush floor is everywhere littered by great fallen trunks showing all stages of decay and making progress through the forest an arduous task.

Rainfall.—Twenty-five years ago (about 1904) all the land around Ohakune was densely forested and had an annual rainfall of nearly 100 inches in the neighborhood of the numerous hill ridges. North of Ohakune for a distance of 9 miles, the

virgin forest is still intact save for the depredations of wandering cattle, and this hummocky bushed area probably has a rainfall of 80 inches or more annually, the rain being fairly equally distributed throughout the year. In the cleared areas the rainfall is much lower. The fall for the years 1919 to 1921 was as follows: 1919, 41.42 inches; 1920, 59.7 inches; 1921, 50.92 inches. This total of 152.04 inches gives an average of 50.7 inches annually for the open township free from bush.

Seasons.—The climate of the Ohakune Plateau is a mild temperate one. The four seasons are experienced here but are not so well-marked as in colder latitudes. Summer temperatures range from 70° to 80° F. or over; the heavy bush is cooler than the open. Spring and fall are mild and pleasant. Winter is never very severe, the mercury rarely falling below 20° F.; but, owing to the high elevation and frequent clear skies, keen night frosts occur in winter and, at times, in spring and fall. These hoar frosts are common in the open cleared land, early in the morning, with the formation of perpendicular ice prisms upon the ground surface. There are usually very few snowfalls about Ohakune. In 1920 there were but two snowfalls, one of 4 or 5 inches, the other of about 2 inches, which were soon melted by the sun. In 1921 there was a single snowfall of about 2 inches. Harris kept a detailed weather report from May, 1922, to May, 1923, and this indicates frosty days from April through September. This fact and the account of winter conditions in the bush, discussed below, becomes of great value in a consideration of the winter crane flies discussed under a later caption.

Winds.—The prevailing wind is from the west or northwest and it brings heavy rain. South winds bring cold. Easterly (east and northeast) winds bring clear skies and fine, dry days.

Insolation.—At the elevation of Ohakune, the heating power of the sun's rays is very great, even in winter, but after sunset there is a sudden drop in the temperature. The proportion of sunny days is high. In summer, daylight lasts from 4 a. m. to 8.30 p. m. In winter it lasts from about 6.30 a. m. to 5 p. m.

Winter conditions in the bush.—In the tall, thick rain forest, owing to the close, overhead foliage cover of the great taxad trees, extremes of temperature are not felt, and throughout the year the forest temperature is fairly equable. In the coldest part of winter, when all the cleared land may be enduring hard frosts, the forest interior has the appearance of a vast conservatory stocked with healthy green vegetation and with no sign

of frost except where, owing to a fall of trees, the bush floor lies open to the sky. In the bush, too, there is no general leaf fall at the cold season of the year, the trees, shrubs, and herbs (with the exception of the fuchsias and ground orchids) retaining their foliage throughout the winter and shedding it almost imperceptibly long after the following spring has clothed them with foliage. Thus, even in the coldest weather, in the shelter of the bush, the lower forms of animal life are not subjected to very rigorous conditions.

Vegetation.—It is well-known that crane flies are lovers of rich vegetation, usually near running or standing water. Definite groups or associations of crane-fly species are found to frequent equally definite plant societies or associations, and this interrelationship is often well marked. No serious attempt can be made to correlate insect societies without a careful study of the plant associations, and for this reason, a general account of the vegetation of the places where the Harris collections were made is given. The notes are based on extensive data sent me by Mr. Randal Mundy, to whom my sincere thanks are extended. For more-detailed accounts of the plant ecology, the student is referred to three recent and comprehensive reports.²

The lower levels of the Ohakune section, at altitudes ranging from 2,000 to 3,000 feet, support a dense, lofty, evergreen, mixed rain forest that almost rivals a semitropical forest in its luxuriance. Above the 3,000-foot contour, however, the character of the forest changes, the mixed forest giving way to the beech forest which extends to the mountain hut on the base of Ruapehu (4,550 feet).

The mixed rain forest.—Seen from the open at a distance of half a mile, the rain forest shows a fairly even contour line about 80 to 90 feet above the ground and stands out as a rather somber, sepia-tinted mass of foliage. Seen closer, the forest has a dark yellow-green color, caused by the dominance of the great taxad trees—rimu (*Dacrydium cupressinum*), matal (*Podocarpus spicatus*), miro (*P. ferrugineus*), kahikatea (*P. dacrydioides*), and totara (*P. totara*)—which reach an average height of 80 to 90 feet, though individual trees may be more than 100 feet in height. These characteristic trees grow intermixed and make up the great bulk of the forest, forming the sheltering

² Cockayne, L., *Vegetation of New Zealand* (1921) 1-364 and *Report on a Botanical Survey of the Tongariro National Park* (1908) 1-42.—Kensington, W. C., *Forestry in New Zealand* (1909) 1-118.

top cover. All other tree species are merely secondary in the composition of the forest and have to fit themselves in as best they can among the big conifers.

On entering the shady, humid "bush" one is bewildered by its dense lush greenery which shuts out all view beyond a distance of 20 to 30 yards. One notes that the tree heads are arranged approximately in three tiers of foliage. The first, or upper, tier is formed by the tall conifers, as given above; the second tier consists of the heads of trees 40 to 60 feet high; for example, hinau, pokaka, black maire, *Weinmannia racemosa*, tawa, and *Griselinia littoralis*; the third tier, averaging from 20 to 30 feet in height, usually shows intermixed *Melicytus ramiflorus*, *Carpodetus serratus*, *Pittosporum colensoi*, *Aristolotelia racemosa*, *Fuchsia excorticata*, *Nothopanax arboreum*, *N. colensoi*, *N. edgerleyi*, *Schefflera digitata*, *Pseudopanax crassifolium*, *Myrsine salicina*, and *Pennantia corymbosa*.

Below these three tiers of trees occur several species of shrubs, varying in height from 5 to 15 feet, the commonest of which are *Drimys colorata*, *D. axillaris*, *Melicope simplex*, *Myrtus pedunculata*, *Nothopanax anomalum*, *Leucopogon fasciculatus*, *Suttonia divaricata*, *Coprosma grandifolia*, *C. robusta*, *C. tenuifolia*, *C. lucida*, *C. rotundifolia*, *C. rhamnoides*, *C. foetidissima*, *Brachyglottis*, *Paratrophis*, and *Alseuosmia macrophylla*. In addition, there is a plentiful sprinkling of handsome tree ferns, from 4 to 20 feet high, of the four species *Cyathea dealbata*, *Dicksonia fibrosa*, *D. squarrosa*, and *Hemitelia smithii*.

The ground cover consists chiefly of big tufts of a coarse fern, *Lomaria discolor*, or, in very damp places, of dense tufts of harsh *Polystichum vestitum* ferns, along with many tufts of the beautiful single- or double-crape ferns, *Todea hymenophylloides* and *T. superba*. In better-illuminated areas the ground is covered with clumps of bush grass, and in the intervening spaces grow filmy ferns, mosses, and hosts of *Coprosma* seedlings. There are, in addition, many lianes and epiphytes, giving to the bush vegetation a somewhat tropical appearance.

The upper beech forest.—Four and one-half miles up the Ruapehu track, at an elevation of about 2,900 feet, the large trees of the mixed forest gradually disappear, giving way to an almost pure beech forest, which extends for another four and one-half miles to the mountain hut at an altitude of 4,550 feet on the lower slopes of Ruapehu. This beech forest is composed of four species which follow one another, in a rather indefinite

zonal arrangement, as one approaches the mountain. Thus, where the mixed forest reaches its upper limit, big trees of *Nothofagus solandri* become common and these are succeeded in turn by belts of *N. fusca*, *N. menziesii*, and *N. cliffortioides*, the last species reaching, with gradually dwindling height, to the mountain hut. At about 3,000 feet *Libocedrus bidwillii* puts in an appearance, and is scattered throughout the beech zones up to the 4,500-foot level. At the 3,100-foot contour nearly all of the tree and shrub species of the lower mixed forest have disappeared and a new assemblage of small trees and shrubs appears among the beeches; thus we find as characteristic species an abundance of *Nothopanax colensoi*, *Phyllocladus alpinus*, *Coprosma cuneata*, *Dacrydium bifforme*, *D. bidwillii*, *D. colensoi*, *D. intermedium*, *Nothopanax simplex*, *N. parvum*, *Coprosma foetidissima*, *Griselinia littoralis*, and the big tufted sedge *Gahnia pauciflora*.

The trail to the mountain hut extends from Ohakune station through the three beech zones and subalpine conditions to the hut itself. The vegetation in the vicinity of the hut consists of shrubby mountain beech (*N. cliffortioides*), certain Epacridaceæ (*Dracophyllum* spp.), and grasses. The details of the subalpine Tipulidæ are given in the following section.

Mr. Mundy writes that Harris gathers most of his material by sweeping with his net the low underscrub of the forest, this including the various *Coprosma* species, *Leucopogon fasciculatus*, the ferns, *Lomaria discolor* and *Polystichum vestitum*, crape ferns, *Melicytus ramiflorus*, *Nothopanax*, *Drimys*, and bush grass.

SEASONAL DISTRIBUTION

Nothing has been recorded concerning the seasonal appearance of crane flies in any country in the Southern Hemisphere, and consequently the following data that have been derived from the present study are of especial value. As a basis for comparison, available records for the mountain hut and beech zones on Ruapehu, the higher slopes and summit of Raetihi Hill, and the red beech forest at Karioi are given. A special caption on Winter Tipuloidea is supplied.

MOUNT RUAPEHU

Ruapehu is an old volcano, supposed to be extinct, but still showing some thermal activity in the form of a hot lake at the bottom of its old crater. It is 9,175 feet above sea level, or approximately 7,000 feet higher than the Ohakune Plateau.

There are a few glaciers and snow upon the upper 2,000 feet of the summit region all the year round, but in winter the snow line descends to about the 5,000-foot contour line. The lower slopes of Ruapehu are deeply gullied, and from the radiating gullies many small rivers pour down. One of these, the Manga-whereo, flows through Ohakune.

In order to compare the lower altitudes and rain-forest conditions obtaining near Ohakune, the material taken in the near vicinity of the mountain hut (4,550 feet) and along the trail to the hut (3,000 to 4,000 feet) by Harris and Watt is summarized. The latter collections are especially valuable as including the zones of red beech (*Nothofagus fusca*), silver beech (*N. menziesii*), and mountain beech (*N. cliffortioides*); the last as a narrow belt between 3,700 and 4,000 feet, but with stunted trees to the hut.

Harris made four trips to the mountain hut (February 25-28, 1922; January 12-15, 1923; January 4-6, 1924; January 20-21, 1924). It is rather unfortunate that no very fine weather was experienced by Harris on any of these trips, and the material that was taken was almost invariably the result of hurried collections between showers or at short intervals between violent wind storms.

January (midsummer) records from near the mountain hut (4,000 to 4,500 feet) in the zone of low scrub and grass steppe.

<i>Dolichozepea atropos.</i>	<i>Elephantomyia zealandica.</i>
<i>Macromastix ferruginosa ruapehuensis.</i>	<i>Aphrophila neozelandica.</i>
<i>Macromastix fucata.</i>	<i>Molophilus flagellifer.</i>
<i>Limonia (Dicranomyia) annulifera.</i>	<i>Molophilus harrisianus.</i>
<i>Limonia (Dicranomyia) megastigma.</i>	<i>Molophilus irregularis.</i>
<i>Limonia (Dicranomyia) sperata.</i>	<i>Molophilus latipennis.</i>
<i>Limonia (Dicranomyia) weschei.</i>	<i>Molophilus morosus.</i>
<i>Discobola ampla.</i>	<i>Molophilus pulcherrimus.</i>
<i>Austrolimnophila argus.</i>	<i>Molophilus uniplagiatus.</i>
<i>Metalimnophila mirifica.</i>	<i>Amphineurus (Amphineurus) lyriformis.</i>
<i>Zelandomyia penthoptera.</i>	<i>Amphineurus (Amphineurus) senex.</i>
<i>Zelandomyia ruapehuensis.</i>	<i>Amphineurus (Nesormosia) fatuus.</i>
<i>Zelandomyia watti.</i>	<i>Amphineurus (Nothormosia) gracilisentis.</i>
<i>Ischnothrix connexa.</i>	<i>Amphineurus (Nothormosia) harrisi.</i>
<i>Elephantomyia ruapehuensis.</i>	

The record of species taken along the trail, chiefly in the beech zones, is more extensive than the above, and is especially

valuable as a basis for comparison with the lower beech zones at Karioi, and the summit of Raetihi Hill.

January (midsummer) records along the track to the hut (3,000 to 4,000 feet), through the beech forests (*Nothofagus* spp., *Libocedrus*, and others).

<i>Paracladura macrotrichiata.</i>	<i>Gynoplistia</i> (<i>Gynoplistia</i>) <i>fimbriata.</i>
<i>Dolichocheza parvicauda.</i>	<i>Gynoplistia</i> (<i>Gynoplistia</i>) <i>lobulifera.</i>
<i>Macromastix ferruginosa ruapehuensis.</i>	<i>Gynoplistia</i> (<i>Gynoplistia</i>) <i>pleuralis.</i>
<i>Macromastix holochlora.</i>	<i>Gynoplistia</i> (<i>Cerzodia</i>) <i>hudsoni hemiptera.</i>
<i>Macromastix viridis.</i>	<i>Atarba filicornis.</i>
<i>Macromastix lunata.</i>	<i>Elephantomyia ruapehuensis.</i>
<i>Limonia</i> (<i>Zelandoglochina</i>) <i>harrisi.</i>	<i>Elephantomyia zealandica.</i>
<i>Limonia</i> (<i>Zelandoglochina</i>) <i>huttoni.</i>	<i>Ceratocheilus ochaceum.</i>
<i>Limonia</i> (<i>Zelandoglochina</i>) <i>melanogramma.</i>	<i>Aphrophila flavopygialis.</i>
<i>Limonia</i> (<i>Dicranomyia</i>) <i>multispina.</i>	<i>Molophilus bidens.</i>
<i>Limonia</i> (<i>Dicranomyia</i>) <i>reversalis.</i>	<i>Molophilus flagellifer.</i>
<i>Limonia</i> (<i>Dicranomyia</i>) <i>seducta.</i>	<i>Molophilus irregularis.</i>
<i>Discobola ampla.</i>	<i>Molophilus latipennis.</i>
<i>Discobola tessellata.</i>	<i>Molophilus oppositus.</i>
<i>Rhamphophila sinistra.</i>	<i>Molophilus uniplagiatus.</i>
<i>Austrolimnophila argus.</i>	<i>Amphineurus</i> (<i>Amphineurus</i>) <i>hudsoni.</i>
<i>Austrolimnophila chrysoorrhæa.</i>	<i>Amphineurus</i> (<i>Amphineurus</i>) <i>lyriformis.</i>
<i>Austrolimnophila leucomelas.</i>	<i>Amphineurus</i> (<i>Amphineurus</i>) <i>senex.</i>
<i>Austrolimnophila marshalli.</i>	<i>Amphineurus</i> (<i>Nesormosia</i>) <i>fatuus.</i>
<i>Austrolimnophila nigrocincta.</i>	<i>Amphineurus</i> (<i>Nothormosia</i>) <i>gracilisentis.</i>
<i>Austrolimnophila oculata.</i>	<i>Amphineurus</i> (<i>Nothormosia</i>) <i>harrisi.</i>
<i>Austrolimnophila subinterventa.</i>	<i>Amphineurus</i> (<i>Nothormosia</i>) <i>insulsus.</i>
<i>Heterolimnophila truncata.</i>	
<i>Metalimnophila mirifica.</i>	
<i>Metalimnophila protea.</i>	
<i>Zelandomyia ruapehuensis.</i>	
<i>Zelandomyia watti.</i>	
<i>Gynoplistia</i> (<i>Paralimnophila</i>) <i>skusei.</i>	

RAETIHI HILL

The following observations are by Mr. Randal Mundy:

This steep ridge, which forms a part of the southern boundary of the Tongariro National Park, lies close to Ohakune and rises to the height of 2,933 feet, or nearly 1,000 feet above the Ohakune Plateau. The rather extensive summit is fairly level and shows an almost vertical escarpment of friable limestone rock. Both the slopes and the summit are densely

timbered, bearing the trees and shrubs that are characteristic of the tall mixed forest at the 2,000-foot level. However, on the slopes, large contorted rata trees (*Metrosideros robusta*) appear in great numbers, intermixed with the big taxads, although they are almost absent from the forest at the base of the ridge; moreover, on the summit, many fine trees of *Libocedrus bidwillii* are met with, just as they are at the 3,000-foot level in the beech woods four and one-half miles up the Ruapehu track. Tree ferns are fairly common all the way up the ridge but are at their best on the lower slopes where some specimens of *Cyathea dealbata* and *Hemitelia smithii* have trunks 10 to 15 feet high. There is also a sprinkling of *Dicksonia squarrosa* but only an occasional *Dicksonia fibrosa*, although the latter is very common in the damp area at the base of the ridge.

On the summit occur fairly big trees of rimu, matai, miro, totara, rata, and *Libocedrus* but not growing so close together as in the forest below; black maire (*Olea cunninghamii*) is present in fair quantity; many *Weinmannia racemosa* trees; *Nothopanax arboreum* and *N. colensoi*, together with many of their seedlings; *Myrsine salicina*; much *Brachyglottis repanda*; a fair number of small-sized *Carpodetus serratus*; numerous small *Fuchsia* trees; a few low shrubs of *Pennantia corymbosa*; some *Melicytus ramiflorus*; shrubs of *Alseuosmia macrophylla* fairly common; in damp places, some young shrubs of *Schefflera digitata*; several big *Drimys colorata*; many small *Aristotelia racemosa*; many shrubs of *Coprosma grandifolia*, and, especially, of *C. tenuifolia* and *C. foetidissima*, these three latter species forming most of the undershrub; big patches of *Lomaria discolor*, and, in damp places, of *Polystichum vestitum*, the tufts of these two latter species forming a great part of the ground color; many tufts of single- and double-crape ferns; plenty of bush grass; abundance of mosses; plenty of *Asplenium bulbiferum*; many filmy ferns on the ground and on old logs.

Harris visited Raetihi Ridge on December 13 and 14, 1922, and collected in greater detail on November 20 and 30, 1923, and April 8, 1924.

November (late spring) records from the summit and the higher slopes of Raetihi Ridge.

<i>Paracladura lobifera.</i>	<i>Limonia (Dicranomyia) gubernatoria.</i>
<i>Dolichopeza parvicauda.</i>	<i>Limonia (Dicranomyia) multispina.</i>
<i>Macromastix atridorsum.</i>	<i>Limonia (Dicranomyia) reversalis.</i>
<i>Macromastix fucata.</i>	<i>Limonia (Dicranomyia) semicuneata.</i>
<i>Limonia (Zelandoglochina) paradisea circuncincta.</i>	<i>Limonia (Dicranomyia) subfasciata.</i>
<i>Limonia (Zelandoglochina) huttoni.</i>	<i>Limonia (Dicranomyia) tarsalba.</i>
<i>Limonia (Zelandoglochina) melanogramma.</i>	<i>Discobola picta.</i>
<i>Limonia (Dicranomyia) annulifera.</i>	<i>Discobola tessellata.</i>
<i>Limonia (Dicranomyia) cuneipennis.</i>	

November (late spring) records from the summit and the higher slopes of Raetihi Ridge—Continued.

<i>Rhamphophila sinistra.</i>	<i>Atarba filicornis.</i>
<i>Tinemyia margaritifera.</i>	<i>Atarba viridicolor.</i>
<i>Austrolimnophila argus.</i>	<i>Molophilus flagellifer.</i>
<i>Austrolimnophila chrysorrhæa.</i>	<i>Molophilus hexacanthus.</i>
<i>Austrolimnophila geographica.</i>	<i>Molophilus tenuistylus.</i>
<i>Austrolimnophila marshalli.</i>	<i>Amphineurus (Amphineurus)</i>
<i>Austrolimnophila nigrocincta.</i>	<i>hudsoni.</i>
<i>Austrolimnophila stemma.</i>	<i>Amphineurus (Nothormosia)</i>
<i>Acantholimnophila maorica.</i>	<i>gracilisentis.</i>
<i>Heterolimnophila truncata.</i>	<i>Amphineurus (Nothormosia)</i>
<i>Metalimnophila howesi.</i>	<i>harrisi.</i>
<i>Metalimnophila unipuncta.</i>	<i>Amphineurus (Nothormosia)</i>
<i>Gynoplistia (Gynoplistia) sac-</i>	<i>insulsus.</i>
<i>keni.</i>	

April (fall) records from the summit and the slopes of Raetihi Ridge (records based on the collection made April 8, 1924).

<i>Paracladura obtusicornis.</i>	<i>Amphineurus (Nesormosia) fa-</i>
<i>Paracladura macrotrichiata.</i>	<i>tutus.</i>
<i>Limonia (Zelandoglochina) cu-</i>	<i>Amphineurus (Nothormosia)</i>
<i>bitalis.</i>	<i>gracilisentis.</i>
<i>Discobola tessellata.</i>	<i>Amphineurus (Nothormosia)</i>
	<i>insulsus.</i>

KARIOI

The following observations on conditions at Karioi are by Mr. Mundy:

Karioi lies about 6 miles eastward of Ohakune and here the forest ends, giving place to open, grassy, pumice plains. The Karioi "bush," at an elevation of 2,100 to 2,200 feet, consists of beech woods, with *Nothofagus fusca* as the dominant tree, but intermixed with many trees of *N. menziesii*. Within the woods, a damp low drainage area is found where the bush soil is water-logged and consequently contains the plant species that can endure such conditions; for example, *Fuchsia*, *Schefflera*, and *Polystichum vestitum*, the last named being very abundant, with the tufts nearly touching. When fairly in this damp portion, no tufts of the common *Lomaria discolor* are found, its place being taken by the *Polystichum*. No taxad trees (rimu, matai, miro, etc.) are found, and black maire and hinau likewise seem to be absent, but a few young contorted pokakas are present. Tawa, *Pennantia*, and *Paratrophis* are absent and the only species of tree fern to be seen is *Dicksonia fibrosa*, which is here in great numbers. Many of Harris's crane flies were swept from the crowded clumps of *Polystichum* and others from beneath the dead, drooping fronds of *Dicksonia*.

Collections made in the red-beech forest (*Nothofagus fusca*) at Karioi.

EARLY SPRING (NOVEMBER 7, 1923)

<i>Mischoderus annuliferus.</i>	<i>Acantholimnophila maorica.</i>
<i>Macromastix atridorsum.</i>	<i>Limnophila quaesita.</i>
<i>Limonia (Zelandoglochina) cubitalis.</i>	<i>Gynoplistia (Gynoplistia) luteicincta.</i>
<i>Limonia (Zelandoglochina) huttoni.</i>	<i>Gynoplistia (Gynoplistia) sackeni.</i>
<i>Limonia (Zelandoglochina) melanogramma.</i>	<i>Atarba viridicolor.</i>
<i>Limonia (Dicranomyia) luteipes.</i>	<i>Trimicra inconstans.</i>
<i>Limonia (Dicranomyia) multispina.</i>	<i>Molophilus flagellifer.</i>
<i>Limonia (Dicranomyia) reversalis.</i>	<i>Molophilus flavidulus.</i>
<i>Limonia (Dicranomyia) tarsalba.</i>	<i>Molophilus howesi.</i>
<i>Discobola tessellata.</i>	<i>Molophilus multicinctus.</i>
<i>Tinemyia margaritifera.</i>	<i>Molophilus plagiatus.</i>
<i>Austrolimnophila argus.</i>	<i>Molophilus sublateralis.</i>
<i>Austrolimnophila cyatheti.</i>	<i>Molophilus sylvicolus.</i>
<i>Austrolimnophila hudsoni atripes.</i>	<i>Amphineurus (Amphineurus) hudsoni.</i>
<i>Austrolimnophila geographica.</i>	<i>Amphineurus (Nothormosia) harrisi.</i>
	<i>Amphineurus (Nothormosia) insulsus.</i>

FALL (APRIL 14, 1924)

<i>Paracladura macrotrichiata.</i>	<i>Molophilus luteipygus.</i>
<i>Paracladura obtusicornis.</i>	<i>Amphineurus (Nothormosia) gracilisentis.</i>
<i>Limonia (Dicranomyia) gubernatoria.</i>	<i>Amphineurus (Nothormosia) harrisi.</i>
<i>Limonia (Dicranomyia) tristigmata.</i>	<i>Amphineurus (Nothormosia) insulsus.</i>
<i>Limonia (Dicranomyia) vicarians.</i>	<i>Amphineurus (Nothormosia) nothofagi.</i>
<i>Nothophila fuscana.</i>	

WINTER TIPULOIDEA

The open winters, with few snowfalls and killing frosts, enable a number of spring and fall species to persist into or even throughout the winter months. A few additional species, moreover, are eminently characteristic of the winter season. These are indicated by an asterisk in the accompanying list. Especially noteworthy are the species of *Paracladura*, the various *Macromastix*, and the magnificent *Gynoplistia hiemalis*.

<i>Paracladura complicata.</i>	<i>Paracladura obtusicornis.</i>
<i>Paracladura lobifera.</i>	<i>Zelandotipula novaræ.</i>
<i>Paracladura maori.</i>	* <i>Macromastix binotata.</i>

- * *Macromastix halterata*.
 * *Macromastix longioricornis*.
 * *Macromastix monstrata*.
 * *Macromastix sessilis*.
 * *Macromastix simillima*.
Limonia (*Zelandoglochina*)
cubitalis.
Limonia (*Dicranomyia*) *ægro-*
tans.
Limonia (*Dicranomyia*) *lu-*
teipes.
Limonia (*Dicranomyia*) *sul-*
phuralis cholorophylloides.
Limonia (*Dicranomyia*) *vica-*
rians.
Limonia (*Dicranomyia*) *wes-*
chei.
Discobola ampla.
Discobola tessellata.
- Gynoplistia* (*Paralimnophila*)
skusei.
 * *Gynoplistia* (*Gynoplistia*) *hie-*
malis.
 * *Gynoplistia* (*Gynoplistia*) *ocel-*
lifera.
Gynoplistia (*Gynoplistia*) *sac-*
keni.
Ischnothrix connexa.
Molophilus flavidulus.
Molophilus multicinctus.
Molophilus macrocerus.
Molophilus tanypus coloratus.
Amphineurus (*Nothormosia*)
gracilisentis.
Amphineurus (*Nothormosia*)
harrisi.
Amphineurus (*Nothormosia*)
insulsus.

There are several additional species of *Macromastix* in New Zealand that are characteristic winter species, but these have not yet been taken in the Ohakune district.

ANNOTATED LIST OF SPECIES

In the accompanying list the families and the genera are arranged in their phylogenetic sequence, so far as this can be determined at present from a study of the adults alone. Species are arranged alphabetically under each genus. A majority of the species were originally described from material taken within the faunal limits of the district; each name of such species is followed by an asterisk. For a common species with numerous records a range of dates is given, since to give only the two extremes would be highly misleading as to whether the species concerned was actually double brooded or had an unusually wide seasonal distribution. The approximate altitude of all Ohakune records is 2,060 feet.

TANYDERIDÆ

1. MISCHODERUS ANNULIFERUS (Hutton).

Tanyderus annuliferus HUTTON, Trans. N. Z. Inst. 32 (1900) 48-49.

The commonest species of the genus. Numerous specimens from Ohakune, mostly taken by beating in the bush; occurs almost throughout the growing season: October 27, 1921; November 16, December 1 and 31, and February 18, 1922; March 11, 1923. In beech forest, Karioi, November 7, 1923.

2. MISCHODERUS FORCIPATUS (Osten Sacken).

Tanyderus forcipatus OSTEN SACKEN, Verh. zool.-bot. Gesell. Wien for 1879, 29 (1880) 520.

"Found hanging on small bushes near edge of creek. Found only on two or three nights, but on one night they were fairly numerous. They were sluggish and easily caught while hanging by a leg or two to the bushes, mostly low down."—*Harris*. Ohakune, October 20, 1921.

TRICHO CERIDÆ

3. PARACLADURA APERTA (Alexander).*

Trochocera aperta ALEXANDER, Insec. Inscit. Menst. 10 (1922) 198-199.

Type locality: Ohakune, May 7, 1922. No additional material taken.

4. PARACLADURA COMPLICATA Alexander.*

Paracladura complicata ALEXANDER, Insec. Inscit. Menst. 12 (1924) 13.

Type locality: Ohakune, May 10, 1923.

5. PARACLADURA LOBIFERA (Alexander).

Trichocera lobifera ALEXANDER, Insec. Inscit. Menst. 10 (1922) 146-147.

Ohakune, November 14-16, 1922, beating in bush; June 13, 1923. Raetihi Hill, November 10, 1923.

6. PARACLADURA MACROTRICHIATA (Alexander).*

Trichocera macrotrichiata ALEXANDER, Insec. Inscit. Menst. 10 (1922) 199.

Type locality: Ohakune, April 10, 1922. Karioi, in beech forest, April 14, 1924. Raetihi Hill, April 8, 1924. Ruapehu, altitude 4,000 feet, January 4, 1924.

7. PARACLADURA MAORI (Alexander).

Trichocera maori ALEXANDER, Insec. Inscit. Menst. 9 (1921) 159-160.

Ohakune, May 16, 1923; July, 1921.

8. PARACLADURA OBTUSICORNIS (Alexander).*

Trichocera obtusicornis ALEXANDER, Insec. Inscit. Menst. 10 (1922) 146.

Type locality: Ohakune, July, 1921. Ohakune, May 2-10, 1923. Karioi, in beech forest, April 14, 1924. Raetihi Hill, April 8, 1924.

TIPULIDÆ

TIPULINAE

Tribe TIPULINI

9. DOLICHOPEZA (DOLICHOPEZA) ATROPOS (Hudson).

Tipula atropos HUDSON, Trans. N. Z. Inst. 27 (1895) 295.

Ohakune, November 18, 1922. Ruapehu, 4,500 feet, February 26, 1922. "Caught these at night with a light; they occurred in a damp spot where a small creek flowed over moss into a larger one; one individual flew and settled low down on the trunk of a tree, head up, all legs on support, wings spread out."—*Harris*.

10. DOLICHOPEZA (DOLICHOPEZA) PARVICAUDA Edwards.

Dolichopeza parvicauda EDWARDS, Trans. N. Z. Inst. 54 (1923) 330-331.

Ohakune, November 3, 1921; November 14-22 and December 1-5, 1922. Raetihi Hill, 2,800 feet, December 14, 1922; November 20-30, 1923. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923.

11. ACRACANTHA (AUSTROTIPULA) HUDSONI (Hutton).

Pachyrhina hudsoni HUTTON, Trans. N. Z. Inst. 32 (1900) 24-25.

Ohakune, January 8, 1923. "Swampy patch in open."—*Harris*.

12. ZELANDOTIPULA NOVARÆ (Schiner).

Tipula novaræ SCHINER, Reise der Novara, Dipt. (1868) 37.

Ohakune, October 14-27, 1921; October 18-25, November 20-23, and February 3, 1922; March 17, 1924; April 30, 1923; May 3, 1922; July, 1921. "When at rest usually hold wings folded over back but sometimes outspread. Occur in many situations on fences, walls, bushes, etc."—*Harris*.

13. MACROMASTIX (AUROTIPULA) BIVITTATA Edwards.*

Macromastix bivittata EDWARDS, Ann. & Mag. Nat. Hist. IX 11 (1923) 629-630.

Type locality: Waimarino and Kaitoka, January, 1922 (*Hudson*).

14. MACROMASTIX (AUROTIPULA) DUX (Kirby).

Tipula dux KIRBY, Trans. Ent. Soc. London (1884) 270-271.

Ohakune, March 7, 1923.

15. MACROMASTIX (AUROTIPULA) FERRUGINOSA RUAPEHUENSIS Alexander.*

Macromastix ferruginosa ruapehuensis ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 208.

Type locality: Ruapehu, 4,000 to 5,000 feet, January, 1921 (*Watt*). Ruapehu, 4,000 to 4,500 feet, January 20, 1924 (*Harris*).

16. **MACROMASTIX (CHLOROTIPULA) ELONGATA** Edwards.*

Macromastix elongata EDWARDS, Ann. & Mag. Nat. Hist. IX 11 (1923) 630-631.

Type locality: Whakapapa, Ruapehu, 3,700 feet, January 9, 1922 (*Stella Hudson*).

17. **MACROMASTIX (CHLOROTIPULA) HOLOCHLORA HOLOCHLORA** (Nowicki).

Tipula holochlora NOWICKI, Beitr. zur Kenntniss der Dipt. Neuseelands (1875) 9.

Ohakune, December 13, 1922. Ruapehu, beech forest, 3,000 to 4,000 feet, January 12, 1923.

17a. **MACROMASTIX (CHLOROTIPULA) HOLOCHLORA ANGUSTIOR** Alexander.*

Macromastix holochlora angustior ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 212.

Type locality: Ohakune, December 31, 1922, to January 5, 1923.

18. **MACROMASTIX (CHLOROTIPULA) VIRIDIS** (Walker).

Tipula viridis WALKER, Ins. Saundersiana, Dipt. (1856) 445.

Ohakune, October 27-29, 1921; October 18-29, 1922; November 6-15, 1921; November 26 and January 11, 1922. Raetihi Hill, 2,800 feet, December 14, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 20, 1924. "February, 1922—Common for some time past on walls, bushes, and fences. When at rest, the wings are held spread out. Have reared them from pupæ found in decaying wood."—*Harris*.

19. **MACROMASTIX (MACROMASTIX) ALBIPLAGIA ALBIPLAGIA** Alexander.*

Macromastix albiplagia ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 202-203.

Type locality: Ohakune, January 18 to February 14, 1922. Ohakune, February 3, 1922.

19a. **MACROMASTIX (MACROMASTIX) ALBIPLAGIA OBLITERATA** Alexander.*

Macromastix albiplagia obliterata ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 203-204.

Type locality: Ohakune February 9-16, 1922. "February 24, 1922—These are very plentiful at present; about fifty on the walls of the house at dusk to-night, holding on with all the legs, the wings outspread. They also rest on bushes, weeds, grass, etc., and are rather quick in flight. They flutter actively about, probably seeking their mates."—*Harris*.

20. MACROMASTIX (MACROMASTIX) ANGUSTICOSTA Alexander.*

Macromastix angusticosta ALEXANDER, Ann. & Mag. Nat. Hist. IX
11 (1923) 110-111.

Type locality: Ohakune, December 23, 1921.

21. MACROMASTIX (MACROMASTIX) ATRIDORSUM Alexander.*

Macromastix atridorsum ALEXANDER, Ann. & Mag. Nat. Hist. IX
9 (1922) 314-315.

Macromastix harrisi ALEXANDER, Ann. & Mag. Nat. Hist. IX
10 (1922) 98-99.

Spring. Type locality: Ohakune, October 10 and November 13, 1921. Karioi, in beech forest, November 7, 1923; very common and variable. Raetihi Hill, 2,800 feet, November 20-30, 1923.

22. MACROMASTIX (MACROMASTIX) BINOTATA Hutton.

Macromastix binotata HUTTON, Trans. N. Z. Inst. 32 (1900) 32.

Late fall and winter. Ohakune, May 11-30, 1922; May 16 and June 13, 1923. "These are the first of the winter tipulids. The males are found on fences during the daytime, legs and wings outspread. The nearly wingless females were found in the mill, around stacked timber, not far above the ground following a hard frost. One isolated female laid 258 eggs. Thinking that possibly I might find them mating at night, I spent an hour and a half searching the same place one night last week. I came across one female about four feet above the ground, the highest I have yet found them. The numerous blackish eggs are very hard so one could walk on them on the ground without breaking them."—*Harris*.

23. MACROMASTIX (MACROMASTIX) FLAVIDIPENNIS Alexander.*

Macromastix flavidipennis ALEXANDER, Ann. & Mag. Nat. Hist. IX
11 (1923) 201-202.

Type locality: Ohakune, January 28, 1922.

24. MACROMASTIX (MACROMASTIX) FUCATA Hutton.

Macromastix fucata HUTTON, Trans. N. Z. Inst. 32 (1900) 31.

Mount Ruapehu, January 1, 1922 (*C. C. Fenwick*). Raetihi Hill, 2,800 feet, November 20, 1923.

25. MACROMASTIX (MACROMASTIX) HALTERATA Alexander.*

Macromastix halterata ALEXANDER, Ann. & Mag. Nat. Hist. IX
11 (1923) 109-110.

Late fall and winter. Type locality: Ohakune, July, 1921; May 21-28, 1922. Ohakune, May 7-11, 1922; May 10 and June 13, 1923; July 17, 1923, in bush. "I get this species flattened out on the large leaves of shrubs in the bush; when at rest both wings and legs are spread wide apart."—*Harris*.

26. MACROMASTIX (MACROMASTIX) HUTTONI Edwards.

Macromastix huttoni EDWARDS, Trans. N. Z. Inst. 54 (1923) 342-343.

Summer. Ohakune, November 16, 1921; January 7-18 and February 8, 1922.

27. MACROMASTIX (MACROMASTIX) LONGIORICORNIS Alexander.*

Macromastix longioricornis ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 108-109.

Late fall and winter. Type locality: Ohakune, July, 1921; May 17, 1922.

28. MACROMASTIX (MACROMASTIX) LUNATA LUNATA Hutton.

Macromastix lunata HUTTON, Trans. N. Z. Inst. 32 (1900) 32.

Summer. Ohakune, November 25, 1922; December 25, 1921; December 1-17, 1922. Raetihi Hill, December 14, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12-15, 1923.

28a. MACROMASTIX (MACROMASTIX) LUNATA FUSCOLATERA Alexander.

Macromastix lunata fuscolatera ALEXANDER, Ann. Ent. Soc. America 15 (1922) 236.

Type locality: Ruapehu, 4,000 to 5,000 feet, January, 1921 (Watt).

29. MACROMASTIX (MACROMASTIX) MONSTRATA Alexander.*

Macromastix monstrata ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 522-523.

Winter. Type locality: Ohakune, July 17, 1923.

30. MACROMASTIX (MACROMASTIX) OHAKUNENSIS Alexander.*

Macromastix ohakunensis ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 204-205.

Type locality: Ohakune, December 25, 1921.

31. MACROMASTIX (MACROMASTIX) SESSILIS Alexander.*

Macromastix sessilis ALEXANDER, Ann. & Mag. Nat. Hist. 13 (1924) 379-380.

Type locality: Ohakune, May 10, 1923.

32. MACROMASTIX (MACROMASTIX) SIMILLIMA Alexander.*

Macromastix simillima ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 521-522.

Winter. Type locality: Ohakune, August 10, 1922. Owhango, July 1, 1922. Waiouru, June 11, 1923.

33. MACROMASTIX (MACROMASTIX) SINCLAIRI Edwards.

Macromastix sinclairi EDWARDS, Trans. N. Z. Inst. 54 (1923) 350.

Taihape, common, March 5, 1923.

34. **MACROMASTIX (MACROMASTIX) SUBMANCA** Alexander.*

Macromastix submanca ALEXANDER, Ann. & Mag. Nat. Hist. IX
12 (1923) 112.

Early spring. Type locality: Ohakune, October 19, 1922.

35. **HUDSONIA ÆNIGMATICA** Alexander.*

Hudsonia ænigmatica ALEXANDER, Ann. & Mag. Nat. Hist. IX
17 (1926) 547-548.

Type locality: Ohakune, January 31, 1924.

LIMONIINÆ

Tribe LIMONIINI

36. **LIMONIA (ZELANDOGLOCHINA) CUBITALIS** (Edwards).

Dicranomyia cubitalis EDWARDS, Trans. N. Z. Inst. 54 (1923)
275-276.

Common, especially in the spring and fall, in the bush lingering into the winter. Ohakune, October 15-24 and November 18, 1921; April 4, May 17, and July 11-17, 1923. Waiouru, May 26, 1923. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, April 8, 1924. Ruapehu, February 25, 1922. "Get these at night, hanging on small bushes in the forest."—*Harris*.

37. **LIMONIA (ZELANDOGLOCHINA) HARRISI** (Alexander).*

Dicranomyia harrisi ALEXANDER, Ann. & Mag. Nat. Hist. IX 12
(1923) 195-196.

Type locality: Ohakune to the mountain hut on Ruapehu, 3,000 to 4,000 feet, January 12, 1923. Ohakune, December 31, 1922.

38. **LIMONIA (ZELANDOGLOCHINA) HUTTONI** (Edwards).

Dicranomyia huttoni EDWARDS, Trans. N. Z. Inst. 54 (1923) 276.

Spring and early summer. Ohakune, November 14 and December 5, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, November 30, 1923; December 14, 1922. Ohakune to mountain hut on Ruapehu, 3,000 to 4,000 feet, January 12, 1923.

39. **LIMONIA (ZELANDOGLOCHINA) MELANOGRAMMA** (Edwards).

Dicranomyia melanogramma EDWARDS, Trans. N. Z. Inst. 54 (1923)
276-277.

Spring and early summer. Ohakune, November 14 and December 1-13, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 30, 1923. Ohakune to mountain hut on Ruapehu, beech zone, January 12, 1923.

40. LIMONIA (ZELANDOGLOCHINA) PARADISEA CIRCUMCINCTA (Alexander).*

Dicranomyia paradisea circumcincta ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 561-562.

Type locality: Summit of Raetihi Hill, 2,800 feet, November 20-30, 1923.

41. LIMONIA (DICRANOMYIA) ÆGROTANS (Edwards).

Dicranomyia ægrotans EDWARDS, Trans. N. Z. Inst. 54 (1923) 280-281.

Spring and fall. Ohakune, October 10-29 and November 1-15, 1921; December 4, 1922; April 4 and May 16, 1923. Taihape, May 19, 1923.

42. LIMONIA (DICRANOMYIA) ANNULIFERA (Alexander).

Dicranomyia annulifera ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 87.

Raetihi Hill, summit, 2,800 feet, November 20, 1923.

43. LIMONIA (DICRANOMYIA) BROOKESI (Edwards).

Dicranomyia brookesi EDWARDS, Trans. N. Z. Inst. 54 (1923) 281.

Ohakune, October 20, 1921.

44. LIMONIA (DICRANOMYIA) CUNEIPENNIS (Alexander).*

Dicranomyia cuneipennis ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 99-100.

Type locality: Ohakune, November 16, 1922. Raetihi Hill, 2,800 feet, November 20, 1923.

45. LIMONIA (DICRANOMYIA) DIVERSISPINA (Alexander).*

Dicranomyia diversispina ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 197-198.

Type locality: Ohakune, October 31, 1922.

46. LIMONIA (DICRANOMYIA) FASCIATA (Hutton).

Dicranomyia fasciata HUTTON, Trans. N. Z. Inst. 32 (1900) 34.

A single female, Ohakune, November 13, 1922.

47. LIMONIA (DICRANOMYIA) GUBERNATORIA (Alexander).

Dicranomyia gubernatoria ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 363-364.

Karioi, in beech forest, April 14, 1924. Raetihi Hill, 2,800 feet, November 30, 1923.

48. LIMONIA (DICRANOMYIA) HETERACANTHA (Alexander).*

Dicranomyia heteracantha ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 195.

Type locality: Ohakune, January 28, 1922.

49. LIMONIA (DICRANOMYIA) LUTEIPES (Alexander).*

Dicranomyia luteipes ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 196-197.

Type locality: Ohakune, November 18, 1921; December 10, 1922. Ohakune, May 16 and June 13, 1923. Karioi, in beech forest, November 7, 1923. The allotype female was associated with *Limonia (Dicranomyia) torrens* near a waterfall.

50. LIMONIA (DICRANOMYIA) MEGASTIGMOSA (Alexander).

Dicranomyia megastigma ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 557-558.

Ruapehu, 4,500 feet, February 26, 1922; January 14, 1923; January 20, 1924. "On underside of rocks in creek; wings folded over back when at rest."—Harris. This crane fly is a characteristic mountain species. It is very closely allied to *L. (D.) sperata* Alexander, and the exact relationships between the two are still uncertain.

51. LIMONIA (DICRANOMYIA) MÆSTA (Alexander).*

Dicranomyia mæsta ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 193-194.

Type locality: Ohakune, February 8, 1922.

52. LIMONIA (DICRANOMYIA) MULTISPINA (Alexander).*

Dicranomyia multispina ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 509-510.

Type locality: Ohakune, October 1, 1921. Ohakune, November 14 and December 31, 1922; January 5, 1923. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 30, 1923. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923.

53. LIMONIA (DICRANOMYIA) NEPHELODES (Alexander).*

Dicranomyia nephelodes ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 84-85.

Type locality: Ohakune, September 30 to October 27, 1921.

54. LIMONIA (DICRANOMYIA) NIGRESCENS (Hutton).

Dicranomyia nigrescens HUTTON, Trans. N. Z. Inst. 32 (1900) 34.

Ohakune, September 25, 1922; "taken at night, hanging over water."—Harris.

55. LIMONIA (DICRANOMYIA) PUNCTIPENNIS MAORIENSIS (Alexander).*

Dicranomyia punctipennis maoriensis ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 98.

Type locality: Ohakune, October 10, 1922; November 6-13, 1921. Taihape, October 18, 1922. "Taken in daytime in a swampy bulrush patch in open."—Harris.

56. LIMONIA (DICRANOMYIA) PENDULIFERA (Alexander).

Dicranomyia pendulifera ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 379-380.

Ohakune, October 11 and November 16, 1921.

57. LIMONIA (DICRANOMYIA) REPANDA (Edwards).

Dicranomyia repanda EDWARDS, Trans. N. Z. Inst. 54 (1923) 278.

A spring species. Ohakune, October 1-21 and November 8-13, 1921; October 31 to November 16, 1922.

58. LIMONIA (DICRANOMYIA) REVERSALIS (Alexander).*

Dicranomyia reversalis ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 507-508.

Type locality: Ohakune, October 10, 1921. Taihape, October 12, 1921. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 30, 1923. Ruapehu beech zone, January 12, 1923.

59. LIMONIA (DICRANOMYIA) SEDUCTA (Alexander).*

Dicranomyia seducta ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 97-98.

Type locality: Ohakune, December 25, 1921. Ohakune, December 1-31, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923. "These rest on spider webs; legs outspread; wings folded over body."—Harris.

60. LIMONIA (DICRANOMYIA) SEMICUNEATA (Alexander).*

Dicranomyia semicuneata ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 564-565.

Type locality: Raetihi Hill, 2,800 feet, November 20-30, 1923.

61. LIMONIA (DICRANOMYIA) SPERATA (Alexander).

Dicranomyia sperata ALEXANDER, Ann. Ent. Soc. America 15 (1922) 224-225.

A characteristic mountain species. Ruapehu, 4,000 to 4,500 feet, January 20, 1924; 4,500 feet, February 26, 1922. "Secured at night with lamp, some on rocks near water, others in flight or resting on small bushes."—Harris.

62. LIMONIA (DICRANOMYIA) SPONSA (Alexander).*

Dicranomyia sponsa ALEXANDER, Insec. Inscit. Menst. 10 (1922) 199-200.

Type locality: Ohakune, April 10, 1922. Ohakune, May 16, 1922.

63. LIMONIA (DICRANOMYIA) SUBFASCIATA (Alexander).*

Dicranomyia subfasciata ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 563-564.

Type locality: Raetihi Hill, 2,800 feet, November 20-30, 1923.

64. LIMONIA (DICRANOMYIA) SUBVIRIDIS (Alexander).

Dicranomyia subviridis ALEXANDER, Ann. Ent. Soc. America 15 (1922) 223-224.

One female, Ohakune, October 29, 1921.

65. LIMONIA (DICRANOMYIA) SULPHURALIS CHLOROPHYLLOIDES (Alexander).

Dicranomyia sulphuralis chlorophylloides ALEXANDER, Ann. & Mag. Nat. Hist. IX 16 (1925) 67.

Spring and early summer. Ohakune, September 21 to October 13, 1921; November 14–24 and January 24, 1922; July 17, 1923, in bush. One specimen has cell 1st M_2 open in both wings.

66. LIMONIA (DICRANOMYIA) TARSALBA (Alexander).*

Dicranomyia tarsalba ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 505–506.

Type locality: Ohakune, November 10, 1921. Ohakune, November 14–16, 1922; November 22, 1922, in a half-dry patch of swampy ground, chiefly toetoe (*Arundo conspicua* Forster f.), with a few trees and shrubs; December 13, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 20–30, 1923.

67. LIMONIA (DICRANOMYIA) TORRENS (Alexander).*

Dicranomyia torrens ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 194–195.

Type locality: Ohakune, November 18–20, 1921. "These were swarming up and down the damp face of a papa-rock cliff near a small waterfall; many were mating or attempting copulation, while others were walking about on the face of the cliff."—*Harris*.

68. LIMONIA (DICRANOMYIA) TRISTIGMATA (Alexander).*

Dicranomyia tristigmata ALEXANDER, Ann. & Mag. Nat. Hist. IX 16 (1925) 68–69.

Type locality: Karioi, in beech forest, April 14, 1924.

69. LIMONIA (DICRANOMYIA) VICARIANS (Schiner).

Limnobia vicarians SCHINER, Reise der Novara, Dipt. (1868) 46.

Occurs in the spring and fall and is presumably double brooded. Ohakune, September 26 to October 15, 1921; May 2–23 and June 13, 1923. Taihape, May 19, 1923. Karioi, in beech forest, April 14, 1924.

70. LIMONIA (DICRANOMYIA) WESCHEI (Edwards).

Dicranomyia weschei EDWARDS, Trans. N. Z. Inst. 54 (1923) 284.

A fall species appearing earlier in the season at higher altitudes. Ohakune, May 9–16 and June 13, 1923. Taihape, May 19, 1923; Ruapehu, 4,000 to 4,500 feet, January 20, 1924.

71. DISCOBOLA AMPLA (Hutton).

Trochobola ampla HUTTON, Trans. N. Z. Inst. 32 (1900) 36–37.

This striking crane fly is commonest in the spring and fall and is presumably double brooded. In the bush it persists into

the winter months. Ohakune, October 10–25, 1921; October 18 to November 26, 1922; December 23, 1921; May 7, 1922; June 13, 1923; July, 1921. Owhango, April 7, 1922; “wings folded over back, legs stretched in all directions.” Ruapehu, beech zone, 3,000 to 4,000 feet, January 15, 1923; 4,500 feet, night of February 26, 1922; “hanging with a few legs on a small beech near creek.”—*Harris*.

72. *DISCOBOLA GIBBERA* Edwards.

Discobola gibbera EDWARDS, Trans. N. Z. Inst. 54 (1923) 286.

A spring species. Ohakune, October 10–19 and November 3–28, 1921; December 2, 1922; December 23, 1921.

73. *DISCOBOLA PICTA* (Hutton).

Trochobola picta HUTTON, Trans. N. Z. Inst. 32 (1900) 37.

A spring species. Ohakune, October 10–27 and November 3–16, 1921; November 26, 1922. Raetihi Hill, November 30, 1923; December 14, 1922, on shrubs in bush.

74. *DISCOBOLA TESSELATA* Osten Sacken.

Trochobola tessellata OSTEN SACKEN, Berlin. Ent. Zeitschr. 39 (1894) 266.

This abundant species occurs almost throughout the year. Ohakune, September 19 and October 20, 1921; November 22, 1922; December 23–25, 1921; January 11–24 and April 9, 1922; May 11, 1922, “on tree-trunks at night, some bobbing up and down;” July, 1921. Karioi, in beech forest, November 7, 1923. Raetihi Hill, November 30 to December 14, 1923, beating shrubs in bush. Ruapehu 2,500 feet, February 25, 1922; beech zone, 3,000 to 4,000 feet, January 12, 1923.

75. *HELIUS HARRISI* (Alexander).*

Rhamphidia harrisi ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 98–99.

Type locality: Ohakune, December 1, 1921.

Tribe HEXATOMINI

76. *RHAMPHOPHILA SINISTRA* (Hutton).

Limnophila sinistra HUTTON, Trans. N. Z. Inst. 32 (1900) 40.

Spring and early summer. Ohakune, October 27 to November 16, 1921; October 18, November 22, December 31, and January 24, 1922; January 10, 1923. Raetihi Hill, 2,800 feet, November

20, 1923. Ruapehu, beech zone, January 15, 1923; January 20, 1924.

"These seem to vary somewhat in color. They appear to prefer the ground, although found in other situations. When at rest the legs are bent and the wings folded over the back. They invariably make short flights of a few yards and then settle but are fairly quick on the wing."—*Harris*.

77. *TINEMYIA MARGARITIFERA* Hutton.

Tinemyia margaritifera HUTTON, Trans. N. Z. Inst. 32 (1900) 44.

A spring species. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 20, 1923.

78. *NOTHOPHILA FUSCANA* (Edwards).

Ulomorpha fuscana EDWARDS, Trans. N. Z. Inst. 54 (1923) 305.

Late summer and fall. Ohakune, March 11, 1923, in bush; April 11, 1922. Karioi, in beech forest, April 14, 1924.

79. *AUSTROLIMNOPHILA ARGUS* (Hutton).

Limnophila argus HUTTON, Trans. N. Z. Inst. 32 (1900) 41.

Spring and early summer. Ohakune, September 19, October 25–30, and November 4–11, 1921; November 22, December 31, and January 9–24, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, December 14, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; 4,000 to 4,500 feet, January 20, 1924.

80. *AUSTROLIMNOPHILA CHRYSORRHŒA* (Edwards).

Limnophila chrysorrhœa EDWARDS, Trans. N. Z. Inst. 54 (1923) 311–312.

An early summer mountain species. Raetihi Hill, November 20–30, 1923; December 14, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; January 20, 1924.

81. *AUSTROLIMNOPHILA CYATHETI* (Edwards).

Limnophila cyatheti EDWARDS, Trans. N. Z. Inst. 54 (1923) 313–314.

Ohakune, March 11, 1923, in bush. Karioi, in beech forest, November 7, 1923; emerged from pupa found in decaying wood.

82. *AUSTROLIMNOPHILA GEOGRAPHICA* (Hutton).

Limnophila geographica HUTTON, Trans. N. Z. Inst. 32 (1900) 43–44.

Spring and early summer. Ohakune, November 18, 1921; November 1–22, December 5, and January 11, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, November 20–30, 1923; December 14, 1922.

83. AUSTROLIMNOPHILA HUDSONI ATRIPES (Alexander).*

Limnophila hudsoni atripes ALEXANDER, Ann. & Mag. Nat. Hist. IX
10 (1922) 92.

Late spring and early summer. Type locality: Ohakune, November 6–14, 1921. Ohakune, December 23–31, 1921; January 5, 1923. Karioi, in beech forest, November 7, 1923.

84. AUSTROLIMNOPHILA LEUCOMELAS (Edwards).

Limnophila leucomelas EDWARDS, Trans. N. Z. Inst. 54 (1923)
308.

Early summer. Ohakune, December 23, 1921; December 1–2, 1922. Raetihi Hill, December 14, 1922. Ruapehu, beech zone, January 12–15, 1923.

85. AUSTROLIMNOPHILA MARSHALLI (Hutton).

Limnophila marshalli HUTTON, Trans. N. Z. Inst. 32 (1900) 42.
Limnophila umbrosa HUTTON, Trans. N. Z. Inst. 32 (1900) 43.

Late spring and early summer. Ohakune, November 22, December 31, and January 9, 1922. Raetihi Hill, December 13–14, 1922; November 30, 1923. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923.

86. AUSTROLIMNOPHILA NIGROCINCTA (Edwards).

Limnophila nigrocincta EDWARDS, Trans. N. Z. Inst. 54 (1923)
312–313.

Late spring and early summer. Ohakune, November 12, 1921; December 5–13 and January 11, 1922. Raetihi Hill, November 20–30, 1923; December 14, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923.

87. AUSTROLIMNOPHILA OCLATA (Edwards).

Limnophila oculata EDWARDS, Trans. N. Z. Inst. 54 (1923) 310–
311.

Early summer. Ohakune, January 11–18, 1922. Ruapehu, 4,000 feet, January 15, 1923; "a pair in copula, resting on beech trunk; legs spread out flat, wings folded over back."—*Harris*.

88. AUSTROLIMNOPHILA STEMMA (Alexander).*

Limnophila stemma ALEXANDER, Insec. Inscit. Menst. 10 (1922)
201–202.

Type locality: Ohakune, November 18, 1921. Raetihi Hill, November 20–30, 1923; December 14, 1922; "taken near a spring on damp hillside in bush."—*Harris*.

89. AUSTROLIMNOPHILA SUBINTERVENTA (Edwards).

Limnophila subinterventa EDWARDS, Trans. N. Z. Inst. 54 (1923)
309.

Early summer. Raetihi Hill, December 13, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; 4,000 feet, January 4, 1924.

90. ACANTHOLIMNOPHILA MAORICA (Alexander).*

Limnophila maorica ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 309-310.

Spring. Type locality: Ohakune, September 21 to October 11, 1921. Ohakune, October 19-20, 1921; October 22 to November 16, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, November 20-30, 1923.

91. HETEROLIMNOPHILA SUBTRUNCATA (Alexander).*

Limnophila subtruncata ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 199-200.

Type locality: Ohakune, January 18, 1922.

92. HETEROLIMNOPHILA TRUNCATA (Alexander).

Limnophila truncata ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 93-94.

Spring and early summer. Raetihi Hill, November 20-30, 1923. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; January 20, 1924.

93. LIMNOPHILELLA DELICATULA (Hutton).

Limnophila delicatula HUTTON, Trans. N. Z. Inst. 32 (1900) 42.

Spring and early summer. Ohakune, November 14-22 and December 1, 1922; January 5, 1923; "among ferns near creek; they seem to prefer damp places."—Harris. Raetihi Hill, December 14, 1922.

94. LIMNOPHILA QUÆSITA Alexander.*

Limnophila quæsita ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 109-110.

Type locality: Ohakune, November 8, 1922. Ohakune, October 30, 1923. Karioi, in beech forest, November 7, 1923.

95. METALIMNOPHILA HOWESI (Alexander).

Limnophila howesi ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 513-514.

Spring. Ohakune, November 14-22, 1922. Raetihi Hill, 2,800 feet, November 20-30, 1923.

96. METALIMNOPHILA MIRIFICA (Alexander).*

Limnophila mirifica ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 310-311.

Type locality: Ohakune, October 10, 1921. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; 4,000 to 4,500 feet, January 20, 1924.

97. METALIMNOPHILA NEMOCERA (Alexander).*

Limnophila nemocera ALEXANDER, Ann. & Mag. Nat. Hist. IX 12
(1923) 107-108.

Type locality: Ohakune, September 17, 1922.

98. METALIMNOPHILA PROTEA Alexander.*

Metalimnophila protea ALEXANDER, Ann. & Mag. Nat. Hist. IX
16 (1925) 69-71.

Type locality: Ruapehu, beech zone, 3,000 to 4,000 feet, January 20, 1924.

99. METALIMNOPHILA UNIPUNCTA (Alexander).

Limnophila unipuncta ALEXANDER, Ann. & Mag. Nat. Hist. IX
10 (1922) 94-95.

Raetihi Hill, 2,800 feet, November 20, 1923.

100. NOTHOLIMNOPHILA EXCLUSA (Alexander).*

Limnophila exclusa ALEXANDER, Ann. & Mag. Nat. Hist. IX 9
(1922) 517-518.

Type locality: Ohakune, November 12, 1921. Ohakune, December 10, 1922, beating in bush; January 4, 1922.

101. ZELANDOMYIA CINEREIPLEURA (Alexander).

Limnophila cinereipleura ALEXANDER, Ann. & Mag. Nat. Hist. IX
10 (1922) 92-93.

Late spring. Ohakune, November 22, 1922, in a half-dry swampy patch, chiefly toetoe (*Arundo conspicua* Forster f.), with a few trees and shrubs; December 1, 1922, on mint; December 5-10, 1922.

102. ZELANDOMYIA PENTHOPTERA Alexander.*

Zelandomyia penthoptera ALEXANDER, Ann. & Mag. Nat. Hist. IX
13 (1924) 371-372.

Type locality: Ohakune, March 23 to April 6, 1923. Ruapehu, 4,000 to 4,500 feet, January 20, 1924.

103. ZELANDOMYIA PYGMÆA Alexander.*

Zelandomyia pygmæa ALEXANDER, Ann. & Mag. Nat. Hist. IX 11
(1923) 106-107.

Type locality: Ohakune, January 28, 1922.

104. ZELANDOMYIA RUAPEHUENSIS (Alexander).*

Limnophila ruapehuensis ALEXANDER, Ann. & Mag. Nat. Hist. IX
9 (1922) 153-154.

Type locality: Ruapehu, 4,000 to 5,000 feet, January, 1921 (Watt). Ohakune, November 14-22, 1922. Ruapehu, 4,000 to 4,500 feet, January 20, 1924.

105. ZELANDOMYIA WATTI (Alexander).*

Limnophila watti ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922)
152-153.

Type locality: Ruapehu, 4,000 to 4,500 feet, January, 1921 (Watt). Ruapehu, beech zone, 3,000 to 4,000 feet, January 20, 1924.

106. GYNOPLISTIA (PARALIMNOPHILA) SKUSEI (Hutton).

Limnophila skusei HUTTON, Trans. N. Z. Inst. 34 (1902) 190-191.

Wide-spread throughout the season. Ohakune, October 11-15, 1921; October 18-31, 1922; November 16, 1921; January 10 and February 16, 1922. Taihape, May 6, 1922; "a few still about."—Harris. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923. "This species holds on flat surfaces with all legs on support, wings folded over body, the latter tilted at an angle of from 80° to 90°."—Harris.

107. GYNOPLISTIA (GYNOPLISTIA) BILOBATA Alexander.*

Gynoplistia bilobata ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 205.

Type locality: Ohakune, November 16-25, 1921; December 1, 1922.

108. GYNOPLISTIA (GYNOPLISTIA) BONA Alexander.

Gynoplistia bona ALEXANDER, Insec. Inscit. Menst. 8 (1920) 123-125.

Late spring and early summer. Ohakune, December 1-31 and January 9-24, 1922; January 5-11, 1923; "rests with legs half-spread, wings folded over back."—Harris.

109. GYNOPLISTIA (GYNOPLISTIA) CONCAVA Alexander.*

Gynoplistia concava ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 311-312.

Spring. Type locality: Ohakune, October 3, 1921. Taihape, October 12-22, 1921. Ohakune, October 24, 1922.

110. GYNOPLISTIA (GYNOPLISTIA) ELUTA Alexander.*

Gynoplistia eluta ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 107-108.

Early summer. Type locality: Ohakune, December 20-25, 1921; Waimarino, January, 1922 (Fenwick). Ohakune, December 29, 1922; January 10, 1923.

111. GYNOPLISTIA (GYNOPLISTIA) FIMBRIATA Alexander.

Gynoplistia fimbriata ALEXANDER, Insec. Inscit. Menst. 8 (1920) 126-128.

Late spring and early summer. Ohakune, November 16, 1921; December 9, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 20, 1924.

112. GYNOPLISTIA (GYNOPLISTIA) FUSCOPLUMEA Edwards.

Gynoplistia fuscoplumbea EDWARDS, Trans. N. Z. Inst. 54 (1923) 318.

Late spring. Ohakune, November 18, 1921; December 1 and 2, 1922.

113. GYNOPLISTIA (GYNOPLISTIA) GLAUCA Edwards.

Gynoplistia glauca EDWARDS, Trans. N. Z. Inst. 54 (1923) 318.

Early summer. Ohakune, December 10 and January 4, 1922; January 15, 1923.

114. GYNOPLISTIA (GYNOPLISTIA) HARRISI Alexander.*

Gynoplistia harrisi ALEXANDER, Ann. Ent. Soc. America 15 (1922) 231-232.

Type locality: Ohakune, February, 1920.

115. GYNOPLISTIA (GYNOPLISTIA) HIEMALIS (Alexander).*

Cerzodia hiemalis ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 108.

Gynoplistia hiemalis ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 372.

Winter. Type locality: Ohakune, July, 1921, in bush. The unique type, a female, was found hanging near the bottom of a small shrub near the ground. It was found in the daytime and was the only specimen observed. On June 14, 1923, Harris found five additional females. One of these was resting against a tree trunk, the beautiful male nearby, hanging to a small shrub by a couple of legs. These were taken at night; the male and a female were placed in a box and kept alive for a time to see if they would mate. Although very sluggish in the bush, the nearly apterous females became very lively in the observation boxes, but no mating occurred. On June 22, 1923, Harris found a second male. This was resting on a tree trunk, stowed away amongst some vines, the wings folded incumbent over the back, the legs spread apart. At about the same time, Dr. John G. Myers secured two additional males in the Wainui State Forest, Wellington. One of these was beaten from a dead tawa tree that had been recently felled, the second from the dead, hanging fronds of a tree fern (either *Hemitelia* or *Dicksonia squarrosa*).

116. GYNOPLISTIA (GYNOPLISTIA) INCISA Edwards.

Gynoplistia incisa EDWARDS, Trans. N. Z. Inst. 54 (1923) 318-319.

Ohakune, December 25, 1921.

117. GYNOPLISTIA (GYNOPLISTIA) LOBULIFERA Alexander.*

Gynoplistia lobulifera ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 209-210.

Type locality: Ohakune to the mountain hut on Ruapehu, beech zone, 3,000 to 4,500 feet, January 12-15, 1923.

118. GYNOPLISTIA (GYNOPLISTIA) LUTEICINCTA Alexander.*

Gynoplistia luteicincta ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 576-577.

Type locality: Ohakune, December 12, 1922. Karioi, in beech forest, November 7, 1923.

119. GYNOPLISTIA (GYNOPLISTIA) NIVEICINCTA Alexander.*

Gynoplistia niveicincta ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 519-520.

Type locality: Ohakune, December 15, 1919.

120. GYNOPLISTIA (GYNOPLISTIA) OCELLIFERA Alexander.*

Gynoplistia ocellifera ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 111-112.

Type locality: Raurimu, June 7, 1922.

121. GYNOPLISTIA (GYNOPLISTIA) OROPHILA Edwards.*

Gynoplistia orophila EDWARDS, Ann. & Mag. Nat. Hist. IX 11 (1923) 628-629.

Type locality: Whakapapa, Ruapehu, altitude 4,000 feet, January, 1922 (*Hudson*).

122. GYNOPLISTIA (GYNOPLISTIA) PLEURALIS Alexander.*

Gynoplistia pleuralis ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 208-209.

Type locality: Ohakune to the mountain hut on Ruapehu, beech zone, 3,000 to 4,500 feet, January 12-15, 1923.

123. GYNOPLISTIA (GYNOPLISTIA) RECURVATA Alexander.*

Gynoplistia recurvata ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 211-212.

Type locality: Ohakune, December 1-12, 1922, on mint.

124. GYNOPLISTIA (GYNOPLISTIA) SACKENI Alexander.

Gynoplistia sackeni ALEXANDER, Insec. Inscit. Menst. 8 (1920) 125-126.

Spring. Ohakune, September 29-30 and October 1-4, 1921. Karioi, in beech forest, November 7, 1923. Raetihi Hill, November 20-30, 1923.

125. GYNOPLISTIA (GYNOPLISTIA) SPINICALCAR Alexander.*

Gynoplistia spinicalcar ALEXANDER, Ann. Ent. Soc. America 15 (1922) 230-231.

Type locality: Ohakune, March 1, 1919.

126. GYNOPLISTIA (GYNOPLISTIA) SPLENDENS Alexander.*

Gynoplistia splendens ALEXANDER, Ann. Ent. Soc. America 15
(1922) 233-234.

Type locality: Ohakune, February 15, 1920.

127. GYNOPLISTIA (GYNOPLISTIA) SUBCLAVIPES Alexander.*

Gynoplistia subclavipes ALEXANDER, Ann. & Mag. Nat. Hist. IX
13 (1924) 373-375.

Type locality: Ohakune, December 17, 1922.

128. GYNOPLISTIA (GYNOPLISTIA) SUBFASCIATA Walker.

Gynoplistia subfasciata WALKER, List. Dipt. Brit. Mus. 1 (1848)
74.

Spring. Ohakune, November 16 and December 1, 1921.

129. GYNOPLISTIA (GYNOPLISTIA) TRIDACTYLA Edwards.

Gynoplistia tridactyla EDWARDS, Trans. N. Z. Inst. 54 (1923) 321.

Spring and fall. Ohakune, October 22, 1922; April 20, 1923.

130. GYNOULISTIA (CEROZODIA) HUDSONI HEMIPTERA (Alexander).*

Cerozodia hudsoni hemiptera ALEXANDER, Insec. Inscit. Menst. 10
(1922) 203-204.

Type locality: Ruapehu, 4,000 to 5,000 feet, January, 1921
(Watt). Ohakune, January 11, 1922. Ruapehu, beech zone,
3,000 to 4,000 feet, January 12, 1923.

131. ISCHNOTHRIX CONNEXA (Alexander).*

Orolimnophila connexa ALEXANDER, Ann. & Mag. Nat. Hist. IX
11 (1923) 198-199.

Type locality: Ohakune, July, 1921. Ohakune, May 2, 1923.
Horopito, 2,300 feet, February, 1922; "on uprights of water tank
on wet morning."—Harris. Ruapehu, beech zone, 3,000 to 4,000
feet, February 26, 1922; 4,000 to 4,500 feet, January 20, 1924.

132. ATARBA (ATARBA) FILICORNIS Alexander.

Atarba filicornis ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922)
151-152.

Spring and early summer. Ohakune, November 8-26 and
December 1, 1922; December 25, 1921; January 18, 1922. Rae-
tihi Hill, 2,800 feet, November 20-30, 1923; December 14, 1922.
Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923;
4,000 feet, January 4, 1924.

133. ATARBA (ATARBA) VIRIDICOLOR Alexander.*

Atarba viridicolor ALEXANDER, Ann. & Mag. Nat. Hist. IX 9
(1922) 308.

Spring. Type locality: Ohakune, October 11, 1921. Ohakune,
November 3, 1921; November 24-26, 1922. Karioi, in beech

forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 20-30, 1923.

134. *ELEPHANTOMYIA RUAPEHUENSIS* Alexander.*

Elephantomyia ruapehuensis ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 204-205.

Type locality: Ruapehu, beech zone, 3,000 to 4,000 feet, January 15, 1923. A second specimen, a male, was taken near the type locality, January 4, 1924, at an altitude of 4,000 feet.

135. *ELEPHANTOMYIA ZEALANDICA* Edwards.

Elephantomyia zealandica EDWARDS, Trans. N. Z. Inst. 54 (1923) 288.

Ohakune, December 7, 1923. Ruapehu, beech zone, 3,000 to 4,000 feet, January 20, 1924; 4,000 to 4,500 feet, January 20, 1924.

Tribe ERIOPTERINI

136. *CERATOCHEILUS LEVIS* (Hutton).

Rhamphidia levis HUTTON, Trans. N. Z. Inst. 32 (1900) 38.

Ohakune, December 17, 1922; December 7, 1923.

137. *CERATOCHEILUS OCHRACEUM* Edwards.

Ceratocheilus ochraceum EDWARDS, Trans. N. Z. Inst. 54 (1923) 289.

Ruapehu, 4,000 to 5,000 feet, January, 1921 (Watt).

138. *RHABDOMASTIX (SACANDAGA) OPTATA* Alexander.*

Rhabdomastix optata ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 104-105.

Type locality: Ohakune, January 24 to February 8, 1922.

139. *RHABDOMASTIX (SACANDAGA) TRICHIATA* Alexander.*

Rhabdomastix trichiata ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 197-198.

Type locality: Ohakune, February 8, 1922. Ohakune, December 2, 1922.

140. *RHABDOMASTIX (SACANDAGA) VITTITHORAX* Alexander.*

Rhabdomastix vittithorax ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 105-106.

Type locality: Ohakune, January 28, 1922.

141. *GONOMYIA (LIPOPHLEPS) LONGISPINA* Alexander.*

Gonomyia longispina ALEXANDER, Insec. Inscit. Menst. 10 (1922) 201.

Type locality: Ohakune, April 9, 1922.

142. *GONOMYIA (LIPOPHLEPS) NIGROHALTERATA* Edwards.

Gonomyia nigrohalterata EDWARDS, Trans. N. Z. Inst. 54 (1923) 290.

Spring and early summer. Ohakune, November 24 and December 2, 1922. Taihape, October 14, 1921. Raetihi Hill, near base, December 13, 1922.

143. *CAMPBELLOWYIA ALPINA ALPINA* (Alexander).

Gnophomyia (?) *alpina* ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 565-566.

Ohakune, February 24, 1922.

143a. *CAMPBELLOWYIA ALPINA FULVIPLEURA* (Alexander).*

Gnophomyia alpina fulvipleura ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 203-204.

Type locality: Ohakune, December 1, 1922.

143b. *CAMPBELLOWYIA ALPINA FUMIPENNIS* (Alexander).*

Gnophomyia alpina fumipennis ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 203.

Type locality: Ohakune, December 13, 1922.

144. *APHROPHILA FLAVOPYGIALIS* (Alexander).

Gnophomyia flavopygialis ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 150-151.

Summer. Ohakune, November 16 and December 25, 1921; December 1-29, 1922; January 28, 1921; February 1-5, 1922. Ruapehu, 4,000 feet, January 4, 1924.

145. *APHROPHILA NEOZELANDICA* (Edwards).

Gnophomyia (Aphrophila) neozelandica EDWARDS, Trans. N. Z. Inst. 54 (1923) 298.

Ohakune, February 8, 1922. Popaka, February, 1922. Ruapehu, 4,500 feet, February 26, 1922. "These skim along the surface of the water like a hydroplane. When resting, they settle on wet rocks, usually on the underside of an inclined boulder. Mating takes place in similar situations."—Harris.

146. *TRIMICRA INCONSTANS* Alexander.

Trimicra inconstans ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 148-149.

Ohakune, November 1-16, 1921; February 8, 1922; April 4, 1923. Taihape, October 22, 1921. Karioi, in beech forest, November 7, 1923.

147. *TASIOCERA PAULULA* (Alexander).*

Molophilus paululus ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 103-104.

Type locality: Ohakune, January 18, 1922.

148. *MOLOPHILUS AUCKLANDICUS* Alexander.*

Molophilus aucklandicus ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 106-107.

Type locality: Ruapehu, beech zone, 3,000 to 4,000 feet, February 26, 1922; 4,500 feet, February 27, 1922.

149. *MOLOPHILUS BIDENS* Alexander.*

Molophilus bidens ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 202.

Type locality: Ohakune, December 10, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923.

150. *MOLOPHILUS BREVINERVIS* Alexander.*

Molophilus brevinervis ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 102-103.

Type locality: Ohakune, December 22, 1921.

151. *MOLOPHILUS CRUCIFERUS* Alexander.

Molophilus cruciferus ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 147.

Ohakune, December 1, 1922.

152. *MOLOPHILUS FLAGELLIFER* Alexander.*

Molophilus flagellifer ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 560.

A characteristic mountain species. Type locality: Ruapehu, 3,700 feet, January 6, 1922 (*Watt*). Ohakune, November 14-24, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 20, 1923. Ruapehu, beech zone, January 12, 1923; February 26, 1922; 4,000 to 4,500 feet, January 4-20, 1924.

153. *MOLOPHILUS FLAVIDULUS* Alexander.*

Molophilus flavidulus ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 100.

Type locality: Ohakune, January 18, 1922. Ohakune, May 10, 1923. Karioi, in beech forest, November 7, 1923.

154. *MOLOPHILUS FLAVOMARGINALIS* Alexander.*

Molophilus flavomarginalis ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 105-106.

Type locality: Ohakune, November 14, 1922.

155. *MOLOPHILUS HARRISIANUS* Alexander.*

Molophilus harrisianus ALEXANDER, Ann. & Mag. Nat. Hist. IX 15 (1925) 649-650.

Type locality: Ruapehu, 4,000 to 4,500 feet, January 20, 1924.

156. *MOLOPHILUS HEXACANTHUS* Alexander.*

Molophilus hexacanthus ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 567.

Type locality: Raetihi Hill, 2,800 feet, November 20, 1923.

157. **MOLOPHILUS HILARIS** Alexander.*

Molophilus hilaris ALEXANDER, Ann. & Mag. Nat. Hist. IX 11
(1923) 99-100.

Type locality: Ohakune, January 24, 1922. Ohakune, December 1, 1922.

158. **MOLOPHILUS HOWESI** Alexander.

Molophilus howesi ALEXANDER, Ann. & Mag. Nat. Hist. IX 11
(1923) 195-196.

Spring. Ohakune, November 14-24, 1922. Karioi, in beech forest, November 7, 1923.

159. **MOLOPHILUS IRREGULARIS** Alexander.*

Molophilus irregularis ALEXANDER, Ann. & Mag. Nat. Hist. IX
11 (1923) 196-197.

A characteristic mountain species. Type locality: Ruapehu, 4,500 feet. February 27, 1922. Ohakune, November 14-16 and December 1-17, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; 4,000 to 4,500 feet, January 4-20, 1924.

160. **MOLOPHILUS LATIPENNIS** Alexander.*

Molophilus latipennis ALEXANDER, Ann. & Mag. Nat. Hist. IX
12 (1923) 198-199.

A characteristic mountain species. Type locality: Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923. Ruapehu, 4,000 to 4,500 feet, January 20, 1924.

161. **MOLOPHILUS LUTEIPYGUS** Alexander.*

Molophilus luteipygus ALEXANDER, Ann. & Mag. Nat. Hist. IX 9
(1922) 510-511.

Karioi, in beech forest, April 14, 1924.

162. **MOLOPHILUS MACROCERUS** Alexander.*

Molophilus macrocerus ALEXANDER, Ann. & Mag. Nat. Hist. IX 9
(1922) 297-298.

Winter and early spring. Type locality: Ohakune, September 14 to October 15, 1921. Ohakune, June 13, 1923; July, 1921; July 11, 1923.

163. **MOLOPHILUS MOROSUS** Alexander.

Molophilus morosus ALEXANDER, Ann. & Mag. Nat. Hist. IX 12
(1923) 104-105.

Ruapehu, 4,000 to 4,500 feet, January 20, 1924.

164. **MOLOPHILUS MULTICINCTUS** Edwards.

Molophilus multicinctus EDWARDS, Trans. N. Z. Inst. 54 (1923)
295.

Spring, fall, and early summer; presumably double brooded. Ohakune, September 23, 1921; October 10-31, 1921; November

12, 1922, on mint; November 14–30, December 2–17, and January 18–28, 1922; February 24, 1922, “about fifty or sixty of these were swarming over a damp patch, close to ground.”—*Harris*; May 2–16, 1923. Karioi, in beech forest, November 7, 1923.

165. *MOLOPHILUS NIVEICINCTUS* Alexander.*

Molophilus niveicinctus ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 560–561.

Type locality: Ruapehu, 3,700 feet, January 6, 1922 (*Watt*).

166. *MOLOPHILUS OHAKUNENSIS* Alexander.*

Molophilus quadrifidus ohakunensis ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 102.

Type locality: Ohakune, February 9 to March 10, 1922. Ohakune, November 30, 1922.

167. *MOLOPHILUS OPPOSITUS* Alexander.*

Molophilus oppositus ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 201.

Type locality: Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923.

168. *MOLOPHILUS PARVULUS* Alexander.*

Molophilus parvulus ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 146.

Type locality: Ohakune, November 10, 1920.

169. *MOLOPHILUS PHILPOTTI* Alexander.

Molophilus philpotti ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 145–146.

Ruapehu, 3,700 feet, January 6, 1922 (*Watt*).

170. *MOLOPHILUS PLAGIATUS* Alexander.*

Molophilus plagiatus ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 301–302.

Spring, recurring in the fall; probably double brooded. Type locality: Ohakune, October 7–27, 1921. Ohakune, October 27, November 12–22, and December 23, 1922; April 4, 1923. Karioi, in beech forest, November 7, 1923.

171. *MOLOPHILUS PULCHERRIMUS* Edwards.

Molophilus pulcherrimus EDWARDS, Trans. N. Z. Inst. 54 (1923) 295.

Summer. Ohakune, December 17–31, 1922; December 7, 1923. Ruapehu, beech zone, 3,000 to 4,000 feet, January 15, 1923; February 27, 1922; 4,000 to 4,500 feet, January 20, 1924; February 26, 1922.

172. *MOLOPHILUS REPANDUS* Alexander.*

Molophilus repandus ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 103-104.

Type locality: Ohakune, November 14-16, 1922.

173. *MOLOPHILUS SECUNDUS* Alexander.*

Molophilus secundus ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 200.

Type locality: Ohakune, December 13, 1922.

174. *MOLOPHILUS SEPOSITUS* Alexander.*

Molophilus sepositus ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 103.

Type locality: Ohakune, December 22, 1921.

175. *MOLOPHILUS SUBLATERALIS* Alexander.*

Molophilus sublateralis ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 302-303.

Type locality: Ohakune, October 7-15, 1921. Ohakune, November 14, 1922. Karioi, in beech forest, November 7, 1923.

176. *MOLOPHILUS SYLVICOLUS* Alexander.*

Molophilus sylvicolus ALEXANDER, Ann. & Mag. Nat. Hist. IX 13 (1924) 567-568.

Type locality: Karioi, in beech forest, November 7, 1923.

177. *MOLOPHILUS TANYPUS* Alexander.*

Molophilus tanypus ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 298-299.

Spring. Type locality: Ohakune, September 23, 1921.

177a. *MOLOPHILUS TANYPUS COLORATUS* Alexander.*

Molophilus tanypus coloratus ALEXANDER, Ann. & Mag. Nat. Hist. IX 11 (1923) 197.

Winter. Type locality: Ohakune, July, 1921.

178. *MOLOPHILUS TENUISSIMUS* Alexander.*

Molophilus tenuissimus ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 202-203.

Type locality: Ohakune, December 13, 1922.

179. *MOLOPHILUS TENUISTYLUS* Alexander.*

Molophilus tenuistylus ALEXANDER, Ann. & Mag. Nat. Hist. IX 12 (1923) 104.

Type locality: Ohakune, November 14-22, 1922. Ohakune, January 5, 1923. Raetihi Hill, 2,800 feet, November 30, 1923.

180. *MOLOPHILUS TERMINANS* Alexander.*

Molophilus terminans ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 511-512.

Type locality: Ohakune, November 6-15, 1921. Ohakune, November 24 and December 10, 1922; January 5, 1923; "found

near a culvert over a small creek. When at rest, legs spread out, wings folded over back."—Harris.

181. **MOLOPHILUS UNIPLAGIATUS** Alexander.*

Molophilus uniplagiatus ALEXANDER, Ann. & Mag. Nat. Hist. IX
12 (1923) 199-200.

A characteristic mountain species. Type locality: Ruapehu, beech forest, 3,000 to 4,000 feet, December 31, 1922, to January 12-15, 1923. In same locality, January 21, 1923. Ruapehu, 4,000 to 4,500 feet, January 20, 1923.

182. **AMPHINEURUS (AMPHINEURUS) HUDSONI** Edwards.

Amphineurus hudsoni EDWARDS, Trans. N. Z. Inst. 54 (1923) 293.

Late spring and summer. Ohakune, November 22, 1922, in a half-dry swampy toetoe patch, with some trees and shrubs; February 20, 1922. Karioi, in beech forest, November 7, 1923. Raetihi Hill, 2,800 feet, November 20-30, 1923. Ruapehu, beech zone, January 12, 1923; January 4, 1924.

183. **AMPHINEURUS (AMPHINEURUS) LYRIFORMIS** Alexander.*

Amphineurus lyriformis ALEXANDER, Ann. & Mag. Nat. Hist. IX
12 (1923) 101.

Type locality: Ohakune, December 1, 1922. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; 4,000 to 4,500 feet, January 4-20, 1924.

184. **AMPHINEURUS (AMPHINEURUS) SENEX** Alexander.

Amphineurus senex ALEXANDER, Ann. Ent. Soc. America 15 (1922)
225-226.

Ohakune, November 22, 1922, in a half-dry toetoe patch, with a few trees and shrubs. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; 4,000 to 4,500 feet, January 4-20, 1924.

185. **AMPHINEURUS (NESORMOSIA) FATUUS** (Hutton).

Rhypholophus fatuus HUTTON, Trans. N. Z. Inst. 34 (1900) 188.

Spring and early summer, recurring in the fall. Ohakune, November 22 and December 1-13, 1922; January 5, 1923. Raetihi Hill, 2,800 feet, April 8, 1924. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12-15, 1923; 4,000 to 4,500 feet, January 20, 1924.

186. **AMPHINEURUS (NESORMOSIA) SUBFATUUS** Alexander.*

Amphineurus subfatuus ALEXANDER, Ann. & Mag. Nat. Hist. IX
10 (1922) 87-88.

Spring and summer, possibly double brooded. Type locality: Ohakune, November 13, 1921, to February 20, 1922. Ohakune, November 14-22, 1922, the latter in a half-dry swampy patch, chiefly of toetoe (*Arundo conspicua* Forster f.), with a few trees and shrubs; December 13, 1922; February 20, 1923.

187. AMPHINEURUS (NOTHORMOSIA) FIMBRIATULUS Alexander.

Amphineurus (Nothormosia) fimbriatulus ALEXANDER, Ann. & Mag. Nat. Hist. IX 16 (1925) 75-76.

A paratype, Ohakune, March 8, 1923 (*Tonnoir*).

188. AMPHINEURUS (NOTHORMOSIA) GRACILISENTIS Alexander.*

Amphineurus gracilisentis ALEXANDER, Ann. & Mag. Nat. Hist. IX 10 (1922) 563.

Type locality: Ruapehu, 3,700 feet, January 6, 1922 (*Watt*); Ohakune, July, 1921. Common in the spring and fall, lingering into the winter months in the bush and into the summer in the mountains. Ohakune, November 14-18, 1921; December 1-13, 1922; May 6-17 and June 13, 1923; July 11-17, 1923, in bush. Karioi, in beech forest, November 7, 1923; April 14, 1924. Raetihi Hill, 2,800 feet, November 30, 1923; April 8, 1924. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923; February 26, 1922.

189. AMPHINEURUS (NOTHORMOSIA) HARRISI Alexander.*

Amphineurus harrisi ALEXANDER, Ann. & Mag. Nat. Hist. IX 9 (1922) 304-305.

Type locality: Ohakune, October 10, 1921. Ohakune, November 8-24, 1922; May 10 and July 17, 1923. Karioi, in beech forest, November 7, 1923; April 14, 1924. Raetihi Hill, 2,800 feet, November 20-30, 1923. Ruapehu, beech zone, 3,000 to 4,000 feet, February 26, 1922; 4,000 to 4,500 feet, January 20, 1924.

190. AMPHINEURUS (NOTHORMOSIA) INSULSUS (Hutton).

Rhypholophus insulsus HUTTON, Trans. N. Z. Inst. 34 (1900) 188.

Spring and fall, in the mountains persisting into the summer; probably double brooded. Ohakune, October 1-27 and November 3-28, 1921; December 2, 1922; December 13-23, 1921; May 10, 1923. Karioi, in beech forest, November 7, 1923; April 14, 1924. Raetihi Hill, 2,800 feet, November 20-30, 1923; April 8, 1924. Ruapehu, beech zone, 3,000 to 4,000 feet, January 12, 1923.

191. AMPHINEURUS (NOTHORMOSIA) NOTHOFAGI Alexander.*

Amphineurus nothofagi ALEXANDER, Ann. & Mag. Nat. Hist. IX 16 (1925) 76.

Type locality: Karioi, in beech forest, April 14, 1924.

192. AMPHINEURUS (NOTHORMOSIA) PATRUELIS Alexander.*

Amphineurus (Nothormosia) patruelis ALEXANDER, Ann. & Mag. Nat. Hist. IX 16 (1925) 78.

Ohakune, October 10-15, 1921; November 8-14 and December 4, 1922.

ILLUSTRATION

TEXT FIG. 1. Sketch map indicating the limits of Ohakune district and Tongariro Park, North Island, New Zealand (1908).