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INSECTS OF CAMPBELL ISLAND. COLEOPTERA: CURCULIONIDAE OF THE SUBANTARCTIC ISLANDS OF NEW ZEALAND[1]

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Abstract: This paper deals with the Curculionidae of Auckland, Campbell, Snares, and Antipodes Is. The native fauna of these islands contains 16 genera and 32 species, 5 genera (32.25%) and 20 species (62.5%) being endemic. It is regarded as a fairly rich and varied fauna for a cold-temperate climate. The 2 largest islands, Auckland and Campbell, share 50% of the genera and 42.3% of the species. The fauna is characterized by a relatively high number of species having ectophytic larvae which comprise 43.75% of the native fauna and 65% of the endemic species. Two species have functional wings (none endemic), and 19 have highly atrophied wings (16 endemic), and 11 have no wings at all (4 endemic). Only 5 species are diurnal (15.6%), 3 of these endemic. The fauna of the islands is very close in its relationships to that of the mainland of New Zealand. The non-endemic species are regarded as a post-glacial element derived from the New Zealand fauna within the last 15000 years. The endemic species are assumed to be the truly insular element which was already there before the beginning of the Ice Ages and survived the glaciations in some ice-free refuges on the islands themselves. A graph on the cumulative frequency curves for mean length of Subantarctic Island species, a table on the approximate distances between the islands, and 4 tables containing information on the composition, distribution, habits and ecology are given. Attention is drawn for the first time to the rectal ring and loop, 2 sclerotized structures of the hind-gut, and their possible significance. The taxonomic section contains keys to genera and species. 274 figures of the ♂ and ♀ genitalia and of a few other structures of the species are given. One new subfamily, 3 new genera, and 10 new species are described. Several new combinations and new synonymies are established.

This report on the Curculionidae of the Subantarctic Islands of New Zealand follows an invitation from Dr. J. L. Gressitt to contribute a paper for a series on the insects of Campbell I. As I had already completed a large part of the faunistic study of the whole area it seemed to me useful to present the results as a unit and I am indebted to Dr. Gressitt for agreeing to publish it in this volume. Because of intensive collecting in recent years the amount of available material totaled almost 3000 specimens, more than ten times the number that previous authors had examined. While it is true that more collecting is needed, especially in the smaller islands, it is unlikely that there will be significant changes in the composition of the fauna as we now know it. In this paper the number of native genera is increased by 60 %, and of the native species by 66.4 %, which represents a sub-

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stantial addition to the fauna of the islands.

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The Subantarctic Islands of New Zealand comprise Bounty Is., Snares Is., Antipodes Is., Auckland Is., and Campbell I., all of which lie S or SE of New Zealand between 167° and 179°W, and between 47°40′ and 52°38′S. Although Macquarie I., approximately 600 km WSW of Campbell I., forms part of this biogeographic unit, it is excluded from this report because of the absence of any material from there.

Table 1. Approximate distances in kilometers between the islands.

	Antipodes	Auckland	Bounty	Campbell	Chatham	Snares	South I.	Stewart
Antipodes	×	880	220	745	700	900	735	830
Auckland	880	×	1030	270	1510	275	480	385
Bounty	220	1030	×	885	515	920	660	810
Campbell	745	270	885	×	1435	505	645	605
Chatham	700	1510	515	1435	×	1360	800	1230
Snares	900	275	920	505	1360	×	190	110
South Island	735	480	660	645	800	190	×	27
Stewart	830	385	810	605	1230	110	27	×

Historical survey of collecting

Dumont-d'Urville called at Auckland Is. during his "Voyage au Pôle Sud et dans l'Océanie sur les Corvettes l'Astrolabe et la Zélée (1837–1840)" in March 1840. He sighted the west coast on 25 February 1840, sailed down the west coast, round the southern end and up the east coast entering Sarah's Bosom (Port Ross) on March 9. He anchored on the 11th near Shoe I. opposite Erebus and Terror Coves and went the following day to the head of Laurie Harbor touring the bay two days later. There is no evidence that the explorers of this expedition did any collecting outside Laurie Harbor or Port Ross; therefore we can quite safely assume that the type localities of *Gromilus insularis* Blanchard and *Oclandius cinereus* Bl., the 2 weevils subsequently described in 1853, were obtained either near Erebus or Terror Coves at the head of Port Ross or at the head of Laurie Harbor. The vessels left Port Ross early on 20 March.

H. Krone, the photographer of the German Expedition to Auckland Is. for the observation of the transit of Venus, spent nearly 5 months, from October 1874 to February 1875, in the areas of Laurie Harbor and Port Ross and did some collecting in the free time. In 1877 Kirsch described the 6 species collected by Krone, *Steriphus veneris*, *S. opacus* (=

Gromilus insularis Blanchard), *Cyttalia depressirostris*, *Peristoreus innocens*, *Acalles planidorsis*, and *A. kronei*, and included in the introduction Krone's notes on the precise localities and ecological observations.

F. W. Hutton visited Auckland Is. in January 1901 and collected the 2 largest weevils which Broun described in 1902 as *Lyperobius laeviusculus* and *Inocatoptes incertus*, the latter being a junior synonym of *Oclandius cinereus* Blanchard. The botanist L. Cockayne went to Auckland Is. in June 1903 and accidentally found amongst the plants he collected a weevil described by Broun in 1905 as *Hycanus cockaynei* which turned out to be a junior synonym of *Gromilus insularis* Blanchard.

The Expedition to the Subantarctic Islands of New Zealand of November 1907 stopped briefly at Snares Is. collecting one species of weevil, *Catodryobius vestitus* Broun, and then continued farther south. The members of the Expedition split into two parties, one landing on Auckland Is., and the other on Campbell I. The latter party did not obtain any weevil on Campbell I., but the former, with G. V. Hudson in charge of entomology, added 4 species to the fauna of Auckland Is. Broun reported the results of the expedition in 1909 describing 10 new species, but 6 of these were previously known. In the same paper he also described the first weevil from Campbell I. which most likely was collected by Chambers and Des Barres during their later trip in 1908.

The Cape Expedition, stationed on Auckland and Campbell Islands from 1942 to 1945, included several biologists who spent part of their time collecting insects. A report on the Coleoptera obtained by the expedition was published by Brookes in 1951, adding 3 species to Auckland Is. and 6 to Campbell I. His paper contained the last additions to the weevil fauna of the Subantarctic Islands.

More recently, all the islands have been visited by parties of biologists, but their collections have remained unstudied. Some collectings were carried out on Snares Is. by Drs. R. A. Falla and C. A. Fleming in Nov.–Dec. 1947, and by Prof. G. A. Knox in Jan.–Feb. 1961; on Antipodes Is. by Drs. R. K. Dell and E. G. Turbott in Nov. 1950; and on Auckland Is. by Dr. R. K. Dell in Mar. 1954, and by Mr. E. S. Gourlay in Nov. 1954.

Intensive collecting on Campbell I. was organized by Dr. J. L. Gressitt since Nov. 1961; and a scientific expedition visited the northern part of Auckland I. between Dec. 1962 and Jan. 1963. These last trips and expedition have increased the number of weevils from fewer than 300 to almost 3000 specimens. All the specimens, except for those deposited in London and Paris, were available for the present study.

Composition of the weevil fauna

Only 2 families of Curculionoidea occur on the Subantarctic Islands of New Zealand, Anthribidae, with 1 species, and Curculionidae. The composition of the native Curculionidae is shown in tables 2–4. Representatives of both Phanerognatha and Adelognatha exist on the islands. Eight subfamilies, 16 genera, and 32 species are represented giving an average of 2 genera per subfamily and 2 species per genus. The diversity of the curculionid fauna is thus remarkable for such isolated cold-temperate islands. The number of genera and species occurring on the islands is given in table 4. To date, Bounty Is. have not yielded a species.

Snares Is., lying between Stewart I. and Auckland Is., are the nearest to New Zealand.

Their close proximity probably accounts for the presence of *Nestrius* and *Platyomida*, 2 New Zealand genera that do not occur on other subantarctic islands. The presence, however, of *Oclandius* and of the *Gromilus insularis*-group of species links them with the other subantarctic islands. Auckland Is. have the largest area and the most rich and varied flora. Also the weevil fauna is best developed there. Campbell I., the second largest and most southern island, has also a relatively rich weevil fauna. Although its distance from Auckland Is. is quite considerable, about 270 km, it shares with Auckland Is. 50 % of the genera, and 42.3 % of the species. Antipodes Is. are about 775 km NNE of Campbell I. The single species known there is a ground weevil with hypogeous ectophytic larvae and is shared by Auckland and Campbell Is. The populations of this species, *Gromilus insularis* Blanchard, differ on the 3 islands and can be regarded as 3 good geographical races. The subspecies from Antipodes Is. is morphologically closer to that from Campbell I. and is as a whole 25 % smaller in the size of the adults.

The endemic element of the curculionid fauna is also shown in tables 2–4. 32.25 % of the genera and 62.5 % of the species are endemic to the islands. It is quite possible that the actual percentage of the endemic genera will decrease a little once the southern por-

Table 2. Composition and distribution of the genera of the Subantarctic Islands. (*=endemic; endemic genera: 32.25 %).

Genera	Distribution Snares	Auckland	Campbell	Elsewhere
COSSONINAE				
1. *Pentarthrum* Wollaston	−	+	−	N. Z., Chatham, Tasmania, N. Caledonia, Chile, J. Fernandez, Tr. da Cunha
TRYPETINAE				
2. *Exeiratus* Broun	+	+	−	South I., Stewart I., Chatham Is.
CRYPTORHYNCHINAE				
3. *Pachyderris* Broun	−	+	−	N. Z., Stewart I., Chatham Is.
4. *Notacalles* Kuschel	+	+	+	North+South I., Stewart I.
EUGNOMINAE				
5. *Pactolotypus* Broun	−	+	+	North+South I., Chatham Is.
ERIRHININAE				
6. *Baeosomus* Broun	−	−	+	N. Z., Chatham Is., SE Australia
7. *Peristoreus* Kirsch	+	+	+	N. Z.
8. **Notinus* Kuschel	−	+	−	−
RHYPAROSOMINAE				
9. *Gromilus* Blanchard	+	+	+	Antipodes, North+South I., Stewart I.
10. *Nestrius* Broun	+	−	−	North+South I., Stewart I.
PHRYNIXINAE				
11. **Notonesius* Kuschel	−	+	−	−
12. *Phrynixus* Pascoe	+	−	+	North+South I., Stewart I., Chatham Is.
LEPTOPIINAE				
13. *Platyomida* White	+	−	−	North+South I., Stewart I., Chatham Is.
14. **Heterexis* Broun	−	+	+	−
15. **Oclandius* Blanchard	+	+	+	−
16. **Catodryobiolus* Brookes	−	+	+	−
Total	8	12	9	

tions of New Zealand are better known, while we can expect that a few highly specialized species remain undiscovered and will increase the percentage of the endemic species.

The 2 cosmopolitan pests in cereals, *Sitophilus oryzae* (Linné) and *S. granarius* (L.) occasionally found on Auckland Is., have been excluded altogether from this paper. A further 2 species, *Nestrius bifurcus* Kuschel and *Phrynixus thoracicus* (Broun), have been either

Table 3. Composition, distribution, wings, habits.

(*=endemic; endemic species: 62.5 %. Antipodes, Campbell, Auckland, Snares, Stewart, South Island; wings functional, vestigial, or absent; diurnal, nocturnal; in decaying wood)

	Distribution						Wings			Habits		Decay.
Species	Ant.	Cmpb.	Auck.	Snar.	Stew.	S. I.	funct.	vest.	abs.	diurn.	noct.	wood
1. *Pentarthrum spadiceum*	−	−	+	−	+	+	+	−	−	−	+	+
2. **Exeiratus laqueorum*	−	−	−	+	−	−	−	+	−	−	+	?
3. * *turbotti*	−	−	+	−	−	−	−	+	−	−	+	?
4. *Pachyderris punctiventris*	−	−	+	−	+	+	−	+	−	−	+	+
5. *Notacalles planidorsis*	−	+	+	+	+	−	−	−	+	−	+	+
6. *piciventris*	−	+	+	−	+	+	−	−	+	−	+	+
7. *kronei*	−	+	+	−	−	+	−	−	+	−	+	+
8. *latitarsis*	−	−	+	−	+	+	−	−	+	−	+	+
9. *suillus*	−	+	+	−	+	−	−	−	+	−	+	+
10. *multisetosus*	−	+	+	−	−	+	−	−	+	−	+	+
11. **Pactolotypus subantarcticus*	−	+	+	−	−	−	−	−	+	+	−	−
12. *depressirostris*	−	−	+	−	−	+	−	−	+	+	−	−
13. **Baeosomus serripes*	−	+	−	−	−	−	−	−	+	+	−	−
14. *Peristoreus innocens*	−	+	+	+	+	−	+	−	−	+	−	−
15. **Notinus aucklandicus*	−	−	+	−	−	−	−	+	−	+	−	−
16. **Gromilus laqueorum*	−	−	−	+	−	−	−	+	−	−	+	−
17. * *insularis insularis*	−	−	+	−	−	−	−	+	−	−	+	−
i. robustus	−	+	−	−	−	−	−	+	−	−	+	−
i. antipodarum	+	−	−	−	−	−	−	+	−	−	+	−
18. * *exiguus*	−	+	−	−	−	−	−	+	−	−	+	−
19. * *veneris veneris*	−	−	+	−	−	−	−	+	−	−	+	−
v. setarius	−	+	−	−	−	−	−	+	−	−	+	−
20. * *frontalis*	−	−	+	−	−	−	−	+	−	−	+	−
21. * *fallai*	−	−	+	−	−	−	−	+	−	−	+	−
22. **Nestrius laqueorum*	−	−	−	+	−	−	−	+	−	−	+	−
23. **Notonesius aucklandicus*	−	−	+	−	−	−	−	−	+	−	+	−
24. *Phrynixus astutus*-complex	−	+	−	−	+	+	−	+	−	−	+	+
25. * *laqueorum*	−	−	−	+	−	−	−	−	+	−	+	+
26. *Platyomida brevicornis*	−	−	−	+	+	+	−	+	−	−	+	−
27. **Heterexis sculptipennis*	−	−	+	−	−	−	−	+	−	−	+	−
28. * *seticostatus*	−	+	−	−	−	−	−	+	−	−	+	−
29. **Oclandius vestitus*	−	−	−	+	−	−	−	+	−	−	+	−
30. * *cinereus*	−	+	+	−	−	−	−	+	−	−	+	−
31. * *laeviusculus*	−	−	+	−	−	−	−	+	−	−	+	−
32. **Catodryobiolus antipoda*	−	+	+	−	−	−	−	+	−	−	+	−
Total:	1	15	22	8	9	9	2	19	11	5	27	10-12

Table 4. Comparison of the elements of the islands.

	Genera			Species			Shared genera		Shared species	
	total	end.	end. %	total	end.	end. %	total	%	total	%
Snares	8	–	–	8	5	62.5				
Auckland	12	2	16.7	22	7	31.8				
Campbell	9	–	–	15	3	20.0				
Antipodes	1	–	–	1	–	–				
Snares+Auckland	15	2	13.3	28	12	42.8	5	33.3	2	7.1
Snares+Campbell	12	–	–	21	8	38.1	5	41.7	2	9.5
Auckland+Campbell	14	4	28.6	26	14	53.8	7	50.0	11	42.3

Table 5. Information on wings and habits.

	Native species (32)		Endemic species (20)	
	total	%	total	%
Wings functional	2	6.2	–	–
Wings vestigial	19	59.4	16	84.2
Wings absent	11	34.4	4	36.4
Habit diurnal	5	15.6	3	60.0
Habit nocturnal	27	84.4	17	62.9
Adults mainly on vegetation (incl. litter)	19	59.4	7	36.8
Adults mainly on the ground	13	40.6	13	100.0
Larvae endophytic	18	56.2	7	38.9
Larvae ectophytic	14	43.8	13	92.9

recorded or labelled as from Auckland Is., but as both species are restricted to the North Island of New Zealand it is very doubtful whether the specimens have been correctly labelled. As we cannot entirely disregard the possibility that the species have been taken to the islands and have established themselves there, they are included in the taxonomic section of this report, but are excluded from the native fauna and, therefore, from the tables and general considerations on the fauna.

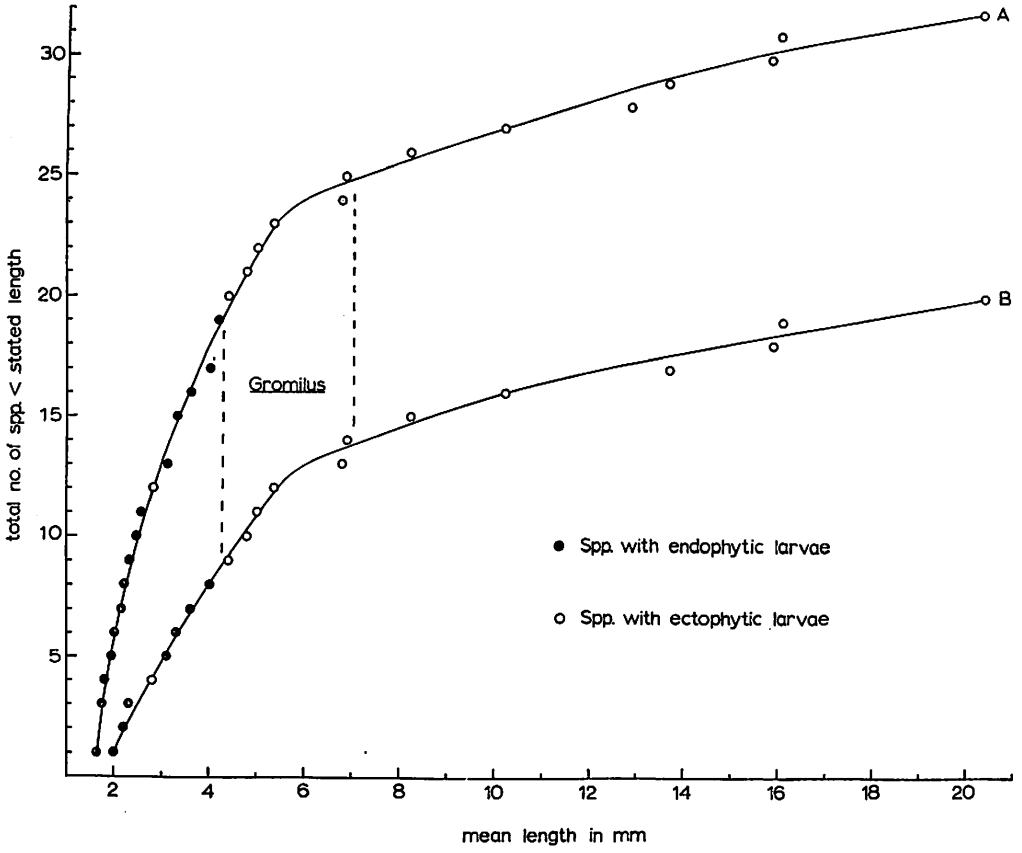
Relationships and origin of the weevil fauna

The study of the subantarctic fauna, including the endemic genera, leaves no doubt about its close affinity with that of New Zealand. This relationship is even more apparent if we compare the subantarctic Curculionidae with those of SE Australia and Tasmania or southern South America. I am not concerned here with the discussion of obvious supra-generic similarities and affinities between the weevil fauna of the Subantarctic Islands and that of other cold-temperate areas of the Southern Hemisphere.

It is in my opinion quite safe to assert that the present-day fauna of the islands has been derived from two main sources of different ages. Those species which are shared with the mainland of New Zealand and form a native but not endemic element on the islands have most likely come from post-glacial colonizers that have reached the islands within the last 15,000 years. This period of time would also be sufficient to allow some subspecies to evolve. The post-glacial element contains 12 species, that is 37.5 % of the native fauna. It is composed of species mainly with endophytic larvae developing in decaying wood. The single species of this element with ectophytic larvae is found on Snares Is. which are

situated only a little more than 100 km south of Stewart I. The only 2 species with functional wings are part of this post-glacial element.

The 20 endemic species, comprising 62.5 % of the native fauna, form an older element. As these are strictly cold-climate species it is difficult to believe that they have migrated to the islands from a warmer climate in the North during the glacial periods and, therefore, we can assume that this element was already established on the islands before the Ice Ages. Climatic conditions during the glaciations must have been very rigorous for the



Cumulative frequency curves for mean length of Subantarctic Island Curculionidae.
Curve A=total native fauna (32 species)
Curve B=endemic species only (20 species)

Explanation of graph: The steeper rise of curve A is due to the relatively great number of small-sized species that are native but not endemic to the islands. The flattening of the curves is due to the usually larger size of the species that have ectophytic larvae. It is a little puzzling that the flexure of the curves occurs within the range of the *Gromilus* species. This flexure would not occur if 1 or 2 species had fallen within the 5.5-6.5 mm range. The flexure still persists if we include the subspecies separately. It must be said that the *Gromilus* species from the Subantarctic Islands form an harmonic group that does not permit a polyphyletic origin. Therefore it seems to me that this flexure within the same genus is most likely attributable to the loss of one or more species during the rigorous conditions of the glaciations.

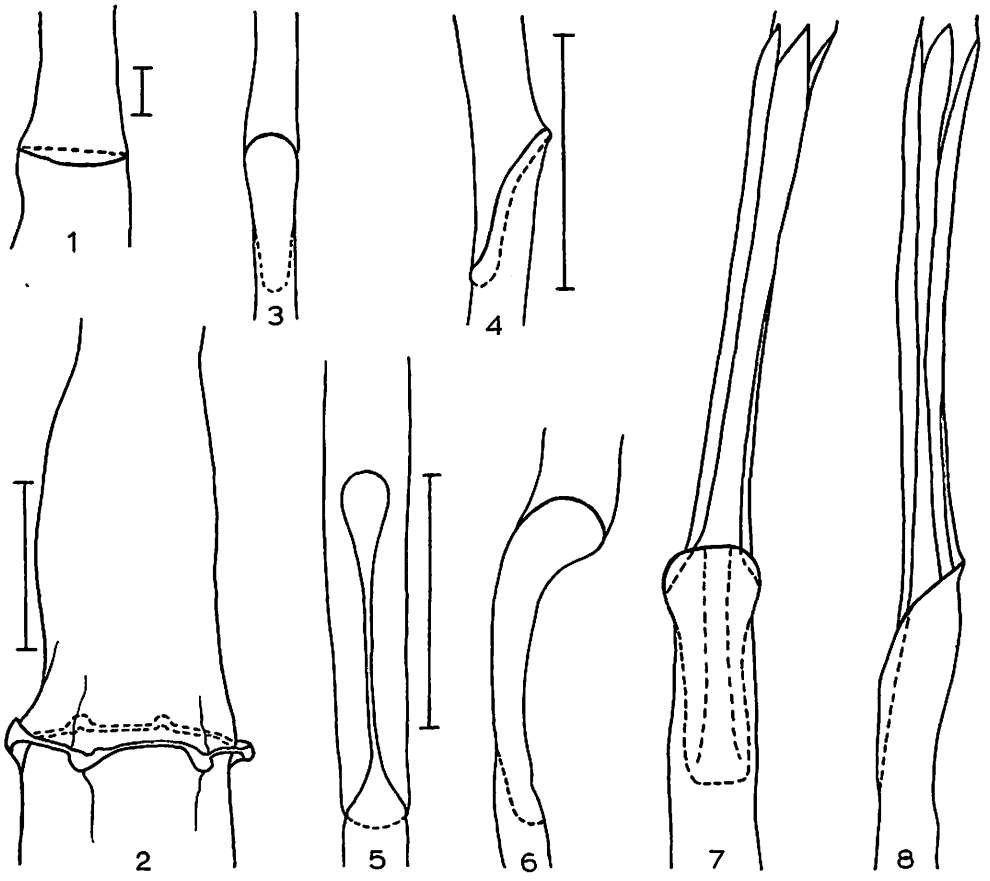
whole fauna, but especially so for those species with endophytic larvae. This probably accounts for the species with endophytic larvae comprising only 35 % of the endemic fauna while they form 56.2 % of the total native fauna. This pre-glacial element pre-supposes that some ice-free refuges remained during the glaciations on the islands.

Certain structures of the rectal valve and their significance

The fold of the proctodaeal wall which separates the intestine from the rectum is called by most authors the rectal valve. When the tissues are removed a sclerotized ring becomes apparent at this place seemingly forming an articulation as with a slight pull the gut is easily broken here. In some Curculionoidea, however, the rectal valve is strongly oblique to the longitudinal axis of the proctodaeum and the ring is then also strongly oblique in lateral aspect while elongate in dorsal or ventral view. It seems that these 2 kinds of structures have a certain significance in detecting relationships of some Curculionoidea of hitherto doubtful systematic position. As these structures are quite obvious in both fresh and old specimens after macerating the abdominal organs in caustic potash for the convenient preparation of genitalia, it would be advisable to mention also those structures in the papers. It is herewith suggested that the name 'rectal ring' be applied to the sclerotized circular feature (figs. 1, 2), and 'rectal loop' to the sclerotized oblique structure (figs. 3–8) of the rectal valve. The rectal ring could be fine and rather difficult to observe, but the rectal loop is always clearly visible at least at its distal (ventral) end even in the most teneral specimens and thus no doubt could arise as to whether a ring or loop were present.

Although only a limited number of species of different families and subfamilies have been examined, a rectal ring seems to be characteristic of the majority of Curculionoidea as well as of the other Phytophaga (Chrysomelidae, Bruchidae, Cerambycidae). A rectal loop is present apparently in Anthribidae and Aglycyderidae only amongst Orthoceri, and has been observed also in Cossoninae, Petalochilinae, and some Rhynchophorinae amongst Gonatoceri. It might be interesting to note that some authors advocate a fusion of Nemonychidae with Anthribidae, and Aglycyderidae with Oxycorynidae, but the ring present in Nemonychidae and Oxycorynidae against a loop in Anthribidae and Aglycyderidae would bring a further point to maintain them as separate families.

The loop is certainly a derivative feature of the ring, and must represent the ancestral character of the superfamily. It would seem most unlikely that such a specialized structure as the loop could have arisen independently on a number of different occasions, yet it occurs in obviously unrelated groups. Thus, the full implications of the presence of a loop or a ring are uncertain although the phylogenetic significance of these structures probably is very great. While most major groups seem to be clearly defined in having consistently either a ring or a loop, a few such as Sitophilini (Rhynchophorinae), Cossoninae, and Petalochilinae pose problems in that some of their genera have rings and others have loops. For instance in Sitophilini, *Sitophilus* and *Myocalandra* have a loop while the otherwise structurally similar *Polytus* and *Diocalandra* have a ring. In Petalochilinae, *Petalochilus*, *Spermologus*, and *Hormops* (*Ctenomyophila*), and most likely their close relatives *Caviaphila*, *Georhynchus*, and *Iphipus* (these genera not available at present) have a loop whilst the other genera that I have included in this subfamily some years ago (Kuschel, 1952) have a ring. In Cossoninae the loop is so widespread that it probably should be regarded as a



Figs. 1–8. Rectal rings and loops in Curculionoidea. 1, *Lyperobius carinatus* Broun, Hylobiinae; 2, *Agathinus tridens* (Fabricius), Belidae; 3 & 4, *Sitophilus oryzae* (Linné), ventral and lateral, Rhynchophorinae; 5, *Novitas dispar* Broun, ventral, Cossoninae; 6, *Stenoscelis hylastoides* Wollaston, ventral, Cossoninae; 7 & 8, *Acanthopygus metallicus* Montrouzier, ventral and lateral, Anthribinae. (Scales beside figs. 1, 2, 4 equal 0.5 mm, beside fig. 5 equals 0.25 mm. Figs. 2, 6, 7, 8 same scale; figs. 3, 4 same scale.)

subfamily character. Most of the relatively few genera which thus would be excluded from Cossoninae were doubtfully placed in this subfamily and could appropriately be transferred either to Trypetinae or Scolytinae when not to other subfamilies. Some genera such as *Arecocryptus*, *Sphinctocephalus*, *Novitas*, and *Cylindrotrypetes* which would come under Trypetinae because of certain morphological characters, have a well-developed loop and should therefore be placed in Cossoninae (see also Trypetinae in the taxonomical part of this paper).

Modifications occur in both ring and loop. For instance, Belidae and Oxycorynidae have a hexagonal ring with a strong knob at each angle (fig. 2). The subfamily Anthribinae has 6 long sclerotized plates extending from the loop to near the anus (figs. 7, 8).

KEY TO GENERA

1 (24). Mandibular appendix and scar absent (Phanerognatha).
2 (9). Tibiae uncinate (tooth at or close to dorsal angle).
3 (6). Metepisternal suture with sclerolepidia (row of modified scales). Without pectoral canal.
4 (5). Funicle 5-segmented ..... 1. **Pentarthrum**
5 (4). Funicle 7-segmented ..... 2. **Exeiratus**
6 (3). Metepisternal suture without sclerolepidia. With pectoral canal for reception of rostrum.
7 (8). Wings vestigial. Scutellum conspicuous. Elytra tufted ..... 3. **Pachyderris**
8 (7). Wings absent. Scutellum very small or invisible. Elytra not tufted...4. **Notacalles**
9 (2). Tibiae mucronate (tooth at lower angle) or unarmed.
10 (11). Tibiae not mucronate. Eyes pilose between ommatidia. Rostrum very short, about as long as head ..... 5. **Pactolotypus**
11 (10). Tibiae mucronate. Eyes bare. Rostrum long, much longer than head.
12 (13). Funicle 6-segmented ..... 6. **Baeosomus**
13 (12). Funicle 7-segmented.
14 (17). Claws appendiculate, with broad expansion at base.
15 (16). Elytra with humeral callus. Wings functional. Femora armed.....7. **Peristoreus**
16 (15). Elytra without humeral callus. Wings vestigial. Femora unarmed ..... 8. **Notinus**
17 (14). Claws simple.
18 (21). Tibiae with mucro and spurs. ♂ : parameres absent. ♀ : styli with long setae.
19 (20). Eyes large. Metepisternal suture visible throughout. Mandibles with a single long seta ..... 9. **Gromilus**
20 (19). Eyes small. Metepisternal suture invisible throughout. Mandibles with 2 or 3 long setae ..... 10. **Nestrius**
21 (18). Tibiae with mucro only. ♂ : parameres present. ♀ : styli with very short setae.
22 (23). Scrobes deep, directed towards gular angle. Body nearly bare, without multifid hairs or scales and without tubercles or tufts ..... 11. **Notonesius**
23 (22). Scrobes shallow, directed towards eyes. Body squamose, with multifid scales and with tufted tubercles or asperities ..... 12. **Phrynixus**
24 (1). Mandibular appendix or scar present (Adelognatha).
25 (28). Prementum bare.
26 (27). Rostrum more than 1.5× as long as wide (length from distal margin of epistome to front margin of eyes). Scrobes parallel, directed towards lower 1/2 of eyes. ♂ : internal sac protruding beyond base of apophyses. ♀ : sternite 8 emarginate or incised at tip ..... 13. **Platyomida**
27 (26). Rostrum very slightly longer than wide. Scrobes strongly widened, directed downwards. ♂ : internal sac contained in main body of aedeagus. ♀ : sternite 8 acute ..... 14. **Heterexis**
28 (25). Prementum with a pair of setae.
29 (30). Tibiae with mucro and spurs. Lateral genal suture visible as a proximal foveiform impression. ♂ : internal sac exposed, without basal sclerite. ♀ : sternite 8 strongly asymmetrical; spermathecal duct inserted near oviduct ....15. **Oclandius**
30 (29). Tibiae with mucro only. Lateral genal suture visible as a long sinuous groove

almost reaching tip of rostrum. ♂: internal sac not exposed, with strong basal sclerite. ♀: sternite 8 symmetrical; spermathecal duct inserted on distal end of bursa copulatrix..... 16. **Catodryobiolus**

Subfamily COSSONINAE

1. Genus **Pentarthrum** Wollaston, 1854

Pentarthrum Woll., 1854, Ann. Mag. Nat. Hist. ser. 2, **14**: 129 (type species: *P. huttoni* Woll.).

Attarus Broun, 1909, Trans. Proc. N. Z. Inst. **41**: 180 (type species: *Pentarthrum vestitum* Brn.). **New Synonymy.**

Belka Brn., 1909, *Ibid.* **41**: 179 (type species: *Pentarthrum spadiceum* Broun). **New Synonymy.**

Gaurocryphus Brn., 1909, *Ibid.* **41**: 185 (type species: *Pentarthrum auricomum* Broun). **New Synonymy.**

Trachyglyphus Brn., 1909, *Ibid.* **41**: 195 (type species: *Pentarthrum rugirostre* Broun). **New Synonymy.**

Head not or very slightly constricted just behind eyes. Sexual dimorphism of rostrum very strong, rostrum of ♂ thick, more than 2× as long as wide at apex (length measured from distal margin of epistome to front margin of eyes), conical, parallel or gradually widened; rostrum of ♀ thin, cylindrical, nearly straight. Secondary scrobe very distinct, primary scrobe directed below lower angle of eyes, its upper margin touching lower angle of eyes. Scape not or very slightly reaching beyond hind margin of eyes; funicle 5-segmented, club segmented. Prothorax widest near base in both sexes, sides above and in front of coxae not compressed. Scutellum visible. Elytra parallel or nearly so, cylindrical. Interstria 9 not carinate, if strongly raised then not continued to latero-apical margin of elytra. Wings functional. Tarsal segment 3 small, with small lobes.

♂. Sternite 9 (*i. e.* spiculum gastrale) very thick. Aedeagus with broad short body, seldom a little longer than wide, distal margin with numerous long hairs.

♀. Sternite 8 roughly as in fig. 11, distal sclerotized margin slightly interrupted in middle; genitalia as in fig. 12.

Relationships: *Pentarthrum* is the type genus of Pentarthrini which are characterized by the presence of a secondary scrobe. This tribe comprises a little more than 30 genera and is best represented in New Zealand where it constitutes the bulk of the cossonine fauna. *Euophryum* Broun and *Torostoma* Broun are 2 close allies differing from *Pentarthrum* by a strongly raised interstria 9 which continues to the latero-apical margin of the elytra, and by long aedeagi.

Ecology: Both larvae and adults of *Pentarthrum* live in soft decaying wood of dicotyledons and also in thick pithy decaying flower stems of some monocotyledons. Most species occur mainly in logs and branches and under bark, and are found occasionally in driftwood and in wooden houses.

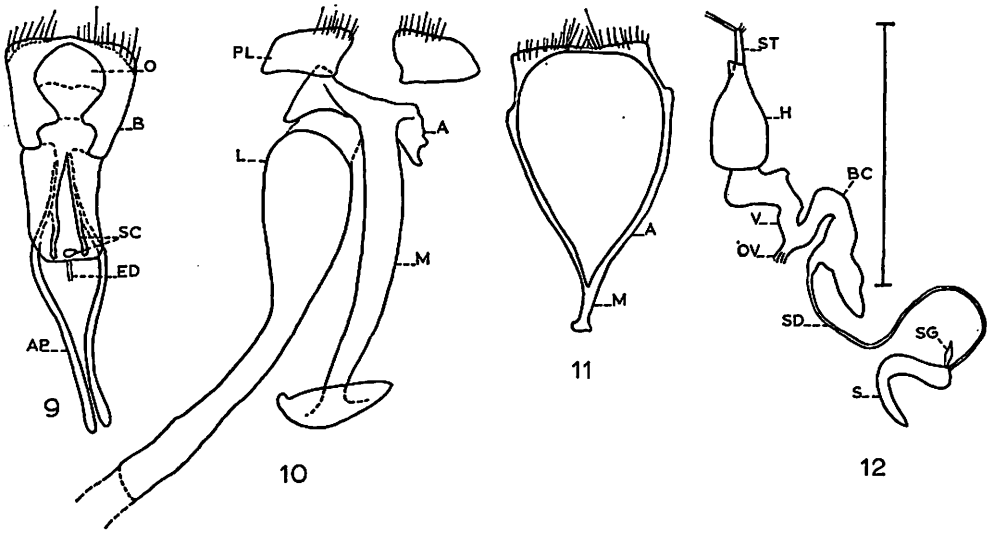
Geographical distribution: *Pentarthrum* is confined mainly to temperate climates of the southern hemisphere having 2 main centers of distribution, one in New Zealand, the other in Chile (including Juan Fernandez and Desventuradas Is.). Isolated species occur also in Tasmania, New Caledonia, Tristan da Cunha and Gough I. It is the southernmost genus of all Cossoninae, and together with its close relative *Euophryum*, occurs south of parallel 47.

Pentarthrum spadiceum Broun Figs. 9–12.

Broun, 1886, Man. N. Zealand Coleopt. **4**: 911 (*Pentarthrum*); 1909, Trans. Proc. N. Z. Inst. **41**: 180 (*Belka*).

Castaneous or piceous, dull, alutaceous on pronotum and also on rostrum of ♂♂, elytra coriaceous. Sparsely covered with fine long yellow hairs. Rostrum of ♂ parallel, alutaceous, with or without a median depression. Pronotum with rather small punctures on central area, intervals distinctly alutaceous under high magnification, many intervals larger than diameter of punctures in central area. Elytra usually 2.0–2.1× as long as wide; striae shallow and fine, their punctures very indistinct; interstriae coriaceous, the yellow hairs longer than interstrial width; interstria 9 slightly convex. Mid and hind tibiae gently widened. Tarsal segment 3 small, with feeble emargination. Claw segment depressed, subparallel in both sexes. ♂: Sternites 8 & 9 as in fig. 10. Aedeagus as in fig. 9; internal sac with a 3-piece basal sclerite, the median piece small, the other 2 with a wider basal portion and converging towards base of main body of aedeagus. ♀: Sternite 8 as in fig. 11; hemisternites undivided, with a long apical stylus. Bursa copulatrix long, expanded at insertion of spermathecal duct which has rather thick walls. Spermatheca with a very short stalk at insertion of spermathecal duct. Spermathecal gland very close to spermathecal duct and very small. Length 2.8–3.8 mm; width 0.95–1.2 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 12 in *Metrosideros umbellata*, Gressitt, Wise; *Neopanax simplex*, Dumbleton; without host plant, Gourlay; Erebus Cove, 2 in the boatshed, Wise; Terror Cove, 1, Wise. ROSE I.: 7 in dead *Metrosideros umbellata*, Johns.



Figs. 9–12. *Pentarthrum spadiceum* Broun, Ranui Cove, Auckland Is.; 9, aedeagus, dorsal; 10, sternites 8 & 9, hind-gut with rectal loop, ventral; 11, sternite 8 of ♀, ventral; 12, ♀ genitalia, lateral. (Scale beside fig. 12 equals 0.5 mm; all figs. same scale). Abbreviations: A, arm; AP, apophysis; B, body of aedeagus; BC, bursa copulatrix; ED, ejaculatory duct; H, hemisternite; L, rectal loop; M, manubrium; O, ostium; OV, oviduct; PL, plates of sternite 8; S, spermatheca; SC, sclerites; SD, spermathecal duct; SG, spermathecal gland; ST, stylus; V, vagina.

EWING I.: 31 in *Olearia lyallii* and *Hebe elliptica*, Johns. ENDERBY I.: 9 in dead branches of *Metrosideros umbellata*, Johns. Total of 62 collected in Nov., Dec., & Jan.

STEWART I.: 21 from Easy Cave, Mokinui I., Big South Cape I., Nelly I. at Port Pegasus, Small Craft Retreat, and Owen I., collected by Dell and Holloway in Jan.

SOUTH ISLAND. Near Dunedin, Otago (holotype only).

TYPE LOCALITY: near Dunedin, Otago. Holotype ♀ in Brit. Mus., Lond.

Ecology. The species of *Pentarthrum* are not host specific. All specimens so far known from Auckland Is. have been obtained in the northern area close to sea level. The great bulk of specimens have been found in dead branches of *Metrosideros umbellata* (Myrtaceae) and *Olearia lyallii* (Compositae).

Remarks: The species was described in 1886 from a single ♀ specimen collected near Dunedin, Otago. No additional specimens have been secured since in the South Island. Subsequently it has been collected in 3 isolated areas, Stewart I., Chatham Is., and Auckland Is. The populations of these 3 major areas are, however, not entirely identical and show sufficient differences to be regarded as good geographical races or subspecies. I am refraining from naming the subantarctic form until specimens of the type subspecies from the South Island are available. The population from Chatham Is. should be known as *Pentarthrum spadiceum auripilum* (Broun).

Subfamily TRYPETINAE

I do not know for certain where to place a few genera of New Zealand Curculionidae that seem to be quite closely inter-related. Authors have referred them to such diverse subfamilies as Cossoninae, Erirhininae, Rhyparosominae, Hylobiinae, and Pissodinae. They all agree in having sclerolepidia, a rectal ring, and parameres. They also agree in being common in leaf litter. As I cannot solve this problem at present I am putting them provisionally in Trypetinae. These genera are *Allaorus* Broun, *Eiratus*[2] Pascoe, *Etheophanus* Broun, *Exeiratus* Broun, *Inososgenes* Broun, *Paedaretus* Pascoe, *Phronira* Broun, and *Stilboderma* Broun.

2. Genus **Exeiratus** Broun, 1914

Exeiratus Broun, 1914, Bull. N. Z. Inst. **1** (2): 128 (type species: *Ex. setarius* Brn.).
Austroinsulus Brookes, 1951, Cape Exp. Ser. Bull. **5**: 92 (type species: *A. turbotti* Brookes).
New Synonymy.

Head globose, densely sculptured. Eyes latero-inferior, transversely ovate, flat, coarsely facetted, with little more than 30 ommatidia. Front between eyes at least as wide as base of rostrum. Rostrum separated from front by a transverse shallow groove, curved, nearly as long as prothorax, tapering from base to insertion of antennae, densely sculptured except near tip; sexual differences mainly in sculpture. Scrobes latero-inferior, invisible in dorsal aspect, upper margin sharp and directed towards upper 1/3 of eyes. Antennae at distal 1/3 or 2/5, scape just reaching front margin of eyes, its distal 1/3 rather strongly thickened and alutaceous; funicle 7-segmented, segment 1 thicker and longer than 2; club

2. *Eiratus* Pascoe, 1877=*Himatiodes* Marshall, 1953. **New Synonymy.**

moderate, 4-segmented, not constricted at sutures, segment 1 almost as long as the rest of club which is uniformly pubescent. Prothorax about as wide as long, truncate at base, proximal angles obtuse, widest beyond middle, distal constriction strong; disc coarsely sculptured, trifoveate; distal portion of prosternum longer than proximal, distal margin emarginate; ocular lobes weak. Scutellum visible, small, round, smooth, bare. Elytra elliptic or ovate, truncate at base up to stria 5, humeral area slightly projected forwards, apex conjointly rounded, dorsum longitudinally and transversely convex, interstriae partly raised, uneven, with obliquely disposed elongate elevations and with a larger tubercle at end of interstria 5. Stria 10 strong only above sterna. Wings vestigial, ovate, wing/elytron ratio about .15, *i. e.* wing 6–7× shorter than elytra. Front coxae narrowly separated, processus meeting and about as wide as funicle. Mid coxae much more widely separated than front coxae. Metasternum short, between mid and hind coxae about as long as diameter of mid coxa; metepisternum very narrow. Hind coxa transverse. Tibiae with strong long uncus arising near dorsal edge; distal comb of mid and hind tibiae short, oblique, distinct. Tarsal segment 3 small, entire, wider than 2; claw segment long, with 2 simple claws.

♂. Tergite 7 without stridulatory files. Tergite 8 half free beyond 8. Sternite 8 with 2 broad triangular plates. Sternite 9 shortly bifurcate, manubrium moderately upcurved. Tegmen with long manubrium, ring complete, parameres long. Aedeagus with short body, dorsal surface sclerotized, ventral surface membranous; apophyses very long, several times longer than main body, their insertion latero-ventral. Internal sac very long, longer than the main body and apophyses taken together, with an enormously long flagellum reaching from base of internal sac to or beyond ostium of main body, and with an elongate ventral ampulla well beyond base of main body of aedeagus.

♀. Sternite 8 with 2 rather weakly sclerotized arms. Hemisternites long, subparallel, without setae, with microtrichia. Styli apical. Bursa copulatrix without sclerites, without invagination at base of oviduct. Spermatheca falciform, spermathecal duct thick throughout, inserted on dorsal surface of bursa copulatrix as shown in figs. 22, 25; spermathecal gland close to spermathecal duct, about as long as proximal 1/2 of spermatheca.

Relationships: *Exeiratus* Broun is quite closely related to other Neozelandic genera found in leaf litter such as *Eiratus* Pascoe and *Paedaretus* Pascoe.

Ecology: The species seem to occur mostly in coastal scrub leaf litter; a few isolated specimens have also been collected under bark of dead trees. No host plants of either larvae or adults have been recorded. The larvae are quite likely to be found in decaying wood.

Geographical distribution: It seems certain that *Exeiratus* is restricted to the extreme south of South Island, Stewart I., Snares Is., Auckland Is., and Chatham Is. It is the most southern genus of the subfamily in the whole hemisphere. Four species are, so far, known to me, 1 from Stewart I. and its adjacent islands and islets, 1 from Chatham Is., 1 from Snares, and 1 from Auckland Is., the latter wrongly recorded also from Stewart I. by Brookes. The type species *E. setarius* Broun was described from SW South Island (Hakapoua); as it is a lowland species it is likely to be the same as that occurring in Stewart I.

Key to species of Exeiratus

Castaneo-rufous, usually with dark markings. Abdomen finely punctate. Segment 2 of funicle less than 2× as long as wide. 3.0–3.2 mm. Snares..... **laqueorum**

Piceous. Abdomen coarsely punctate. Segment 2 of funicle more than 2× as long as wide. 3.60–3.65 mm. Auckland Is. ..... **turbotti**

Exeiratus laqueorum Kuschel, n. sp. Figs. 13, 15–23.

Castaneo-rufous, with or without piceous markings; femora without pale ring.

Head densely and shallowly punctate, alutaceous, hairs very short. Rostrum, from distal margin of epistome to front margin of eyes, about 1.28× shorter than prothorax, and 3.68 (♂) or 4.0 (♀)× longer than its own distal width, moderately curved, densely punctate-striolate, with fine longitudinal ridges mainly in ♂; setae short and thick, semierect, curved, directed towards base of rostrum; distal portion almost smooth, bare; ventral surface in ♂ with a few setae in a furrow contiguous to lower edge of scrobe below antenna. Antennae as in fig. 13. Prothorax as wide as long to 1.07× wider than long, sides strongly rounded, gradually narrowed between maximal width and apical constriction; median fovea at base deep, sometimes continued as a groove, lateral foveae shallow; usually a median abbreviated carina present; disc coarsely punctate, with almost appressed thick setae, intervals shiny. Elytra about 1.33× wider than prothorax, about 1.43–1.45× as long as their maximal width. Striae sulcate, deep, bare. Interstriae slightly wider than striae, shiny, transversely rugose, with one or more rows of irregularly distributed setae, with strong preapical callus on 5, elsewhere a little uneven. Ventral surface finely punctate.

♂. Sternites 8 & 9 as in fig. 20. Tegmen and aedeagus as in figs. 17–19.

♀. Sternite 8 as in fig. 21. Genitalia as in fig. 22; hemisternites entirely sclerotized, fig. 23; spermathecal duct not widened near insertion on bursa copulatrix.

Length 3.0–3.2 mm; width 1.45–1.50 mm.

SNARES IS.: 2♂♂ from tussock grass roots and debris, R. A. Falla; 1 ♂, 2♀♀, 16. XII. 1947, in leaf litter of *Olearia lyallii*, C. A. Fleming.

TYPES: Holotype ♂, 3.1×1.5 mm, XI. 1947, Falla, allotype ♀ and 1 paratype in Dominion Mus., Wellington, 2 paratypes in Entomology Div., D. S. I. R., Nelson.

Ecology: Found in daytime on the ground in litter of tussock grass and *Olearia lyallii*.

Remarks: Separable from the other 3 species of the genus by weakly raised interstriae, finely punctate ventral surface, and lack of a pale ring on femora and characters of genitalia.

Exeiratus turbotti (Brookes) n. comb. Figs. 14, 24–26.

Brookes, 1951, Cape Exp. Ser. Bull. **5**: 62, f. 21 (*Austroinsulus*).

Piceous, swollen part of mid and hind femora except dorsal edge paler. Head and rostrum as in *laqueorum*, rostrum 1.18–1.21× shorter than prothorax, and 3.8–4.0× longer than its own distal width. Antennae as in fig. 14, segment 2 of funicle more than 2× as long as wide. Prothorax 1.02× wider than long, apical constriction abrupt, otherwise similar to *laqueorum*. Elytra 1.38–1.42× wider than prothorax, and 1.52–1.54× longer than the maximal width. Striae sulcate, much finer than interstriae. Dorsum with a deep oblique impression behind proximal 1/3, elevations on interstriae higher than in *laqueorum*. Ventral surface very coarsely punctate. ♂: Unknown. ♀: Sternite 8 as in fig. 24; genitalia as in fig. 25; hemisternites divided by an oblique line, fig. 26, distal portion sclerotized, proximal portion membranous; styli shorter than in *laqueorum*; spermatheca without a little

sclerotized appendix at tip; spermathecal duct gradually widening before joining bursa copulatrix. Length 3.60–3.65 mm; width 1.62–1.67 mm.

AUCKLAND IS. AUCKLAND I.: North Arm, Carnley Harbor, 2♀♀, 26. X. 1944, E. G. Turbott.

TYPE LOCALITY: North Arm, Carnley Harbor, Auckland Is. Holotype ♀ (not ♂ as stated by Brookes!), 3.65×1.67 mm, and paratype ♀ (allotype of Brookes) in Dominion Mus., Wellington.

Ecology: The only 2 specimens so far obtained were 'taken from a dead tree stump' (Turbott).

Remarks. Readily identified by its very dark color, longer segment 2 of the funicle and abrupt constriction of the prothorax. Brookes has mentioned a 3rd specimen of this species from Stewart I., but that specimen belongs to *E. setarius* Broun.

Subfamily CRYPTORHYNCHINAE

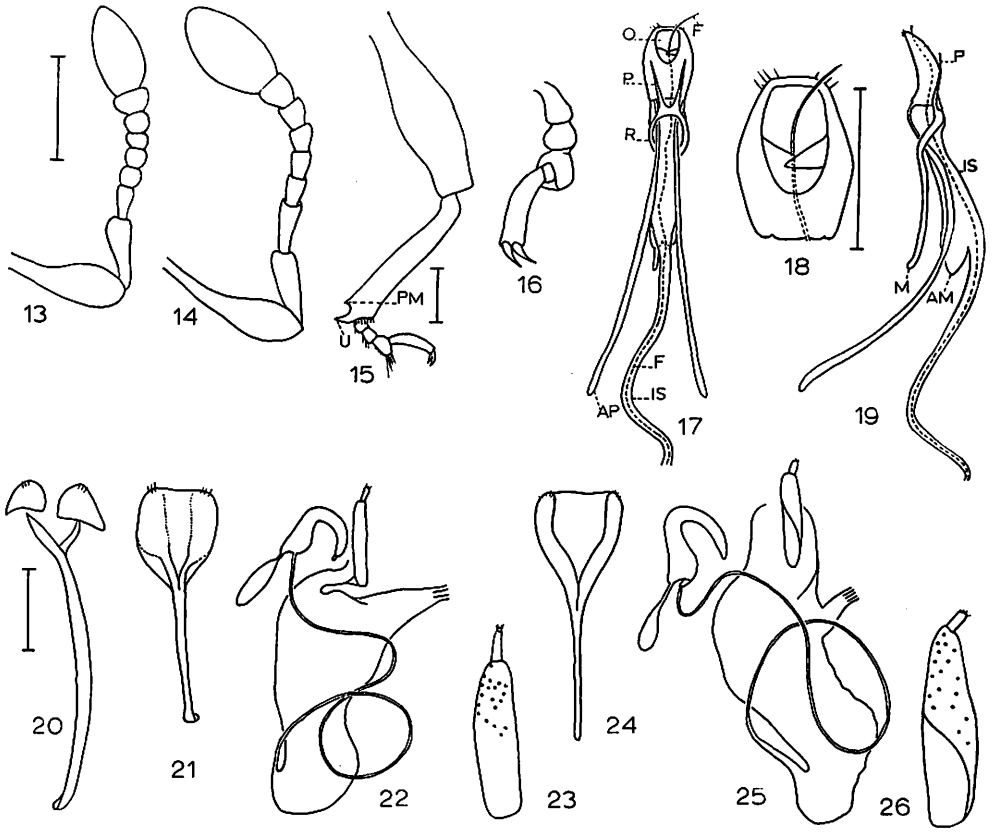
3. Genus **Pachyderris** Broun, 1909

Pachyderris Broun, 1909, Subantarct. Is. N. Z. **1**: 121 (type species: *P. punctiventris* Brn.).
Xenacalles Brn., 1911, Trans. Proc. N. Z. Inst. **43**: 108 (type species: *X. squamiventris* Brn.); 1913, *ibid.* **45**: 146. **New Synonymy.**

Head and rostrum almost continuous. Head in repose exposed beyond prothorax. Eyes lateral, triangular, convex, coarse, with posterior furrow, more than 1/2 covered by ocular lobes. Rostrum slightly shorter than prothorax, moderately curved, slightly depressed. Antennae inserted slightly beyond middle; segment 2 of funicle shorter than 1; segment 1 of club shorter than rest of club. Prothorax shorter or longer than wide, widest at base or at proximal 1/3, distal constriction obsolete. Scutellum round, convex, squamose, as high as or higher than elytra. Elytra triangular in outline, without humeral callus, humeral area, however, rapidly widening and rounded, widest near proximal 1/3. Striae fine, stria 10 complete. Wings vestigial, wing/elytron ratio .10–.33. Femora unarmed, not sulcate. Tibiae not costate, distal comb oblique, uncus dorsal, premucro very small or obsolete in ♂♂, well developed in ♀♀. Tarsi long. Pectoral canal deep throughout, bare, hind wall slightly overhanging. Metasternum between coxae very short, about 1/2 as long as diameter of a mid coxa, without tubercle between mid and hind coxa, but with vertical or slightly overhanging posterior declivity. Metepisternum narrow, squamose, suture distinct. Ventrite 2 much longer than 3.

♂. Plates of sternite 8 large. Sternite 9 strong, with broad irregular arms. Tegmen with short manubrium and incomplete ring; parameres vestigial. Aedeagus depressed, dorsally membranous, setose near tip; apophyses not articulate, joined to latero-ventral angle of main body. Internal sac with heavily chitinized basal sclerite and with additional armature.

♀. Tergite 8 elongate, distal margin broadly rounded and shortly denticulate (fig. 33). Sternite 8 as in fig. 32. Hemisternites undivided, with microtrichia and sometimes with 1 seta; stylus long, apical. Bursa copulatrix with a deep elliptical depression and with internal folds in the depression, the folds forming a weakly chitinized sclerite. Spermathecal duct inserted at base of bursa copulatrix, shorter or longer than bursa copulatrix. Spermatheca falciform, usually with thin appendix at tip. Spermathecal gland small, oval in



Figs. 13–26. *Exeiratus* spp. *E. laqueorum* n. sp. Snares: 13, antenna; 15, left hind leg; 16, hind tarsus; 17, aedeagus, dorsal; 18, main body of aedeagus, dorsal; 19, aedeagus, lateral; 20, sternites 8 & 9 of ♂, ventral; 21, sternite 8 of ♀, ventral; 22, ♀ genitalia, lateral; 23, hemisternite, lateral. *E. turbotti* (Brookes) Auckland Is.: 14, antenna; 24, sternite 8 of ♀, ventral; 25, ♀ genitalia, lateral; 26, hemisternite, lateral. (Scales beside figures equal 0.25 mm. Figures 13, 14, 16 same scale; figs. 15, 17, 19 same scale; figs. 18, 23, 26 same scale; figs. 20–22, 24, 25 same scale.) Abbreviations: AM, ampulla; AP, apophysis; F, flagellum; IS, internal sac; M, manubrium; O, ostium; P, paramere; PM, premucro; R, ring of tegmen; U, uncus.

outline, distant from spermathecal duct.

Relationships: Nothing can be said before the whole cryptorhynchine fauna of New Zealand has been revised. All the 4 species so far known to me are densely squamose, variegated, with large imbricate scales covering the derm except tip of rostrum, antennae, pectoral canal, and tarsi. The sutural interstria has a tuft of long, erect squamiform setae on top of the declivity where this interstria is slightly raised and usually strongly widened; also interstriae 3 & 5 on 1st and 2nd 1/3 of dorsum usually with smaller tufts of similar setae.

Ecology: The flightless adults are nocturnal and are found mainly on dead branches of different trees and shrubs and also in leaf litter of the forest floor.

Geographical distribution. 3 species occur in the South Island, 1 of these extending from

East Otago to Wellington in the North Island, 1 occurring in the Southern Alps from Canterbury to Fiordland, and the 3rd species being found in Westland, Fiordland, Southland, as well as Stewart I., and Auckland Is. The 4th species is endemic to Chatham Is.

Pachyderris punctiventris Broun Figs. 27–35.

Brn., 1909, Subantarct. Is. N. Z. **1**: 121.—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 198.—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 66.

This belongs to the group of species with slightly rounded, not conical prothorax. It differs externally from *squamiventris* Broun (*Xenacalles*) from Chatham Is., by larger size, from *nigricans* Brn. (*Xenacalles*), from the Southern Alps, by finer punctation on rostrum and by a lower vertical posterior wall of the metasternum opposite the hind coxae. All 3 species are similar externally but their genitalia, however, are very distinct, more so in the ♂♂ than in the ♀♀. Wing/elytron ratio about .30, fig. 35. ♂: Sternites 8 & 9 as in fig. 27. Tegmen as in fig. 31. Aedeagus as in figs. 28–30; basal sclerite of internal sac with a ventral distal tooth on each side and without a recurved hook on its dorsal distal end. ♀: Tergite 8 as in fig. 33. Sternite 8 as in fig. 32. Genitalia as in fig. 34; hemisternites with 1 seta; spermathecal duct shorter than bursa copulatrix. Length 3.3–5.1 mm; width 1.4–2.4 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 45 on *Neopanax simplex*, *Metrosideros umbellata* at night, *Myrsine divaricata*, and *Polystichum vestitum*, Johns; *Dracophyllum*, Dumbleton; in Malaise trap, Gressitt; without host plants, Gourlay; Port Ross, 1, Fleming; Carnley Harbor, 1, holotype, Hudson; Musgrave Peninsula, 1, no collector. ROSE I.: 10 on *Metrosideros umbellata*, Johns and *Myrsine divaricata*, Gressitt. EWING I.: 1, Gressitt. ENDERBY I.: 1 on *Metrosideros umbellata*, Johns. Total, 60 specimens collected in Nov., Dec., and Jan.

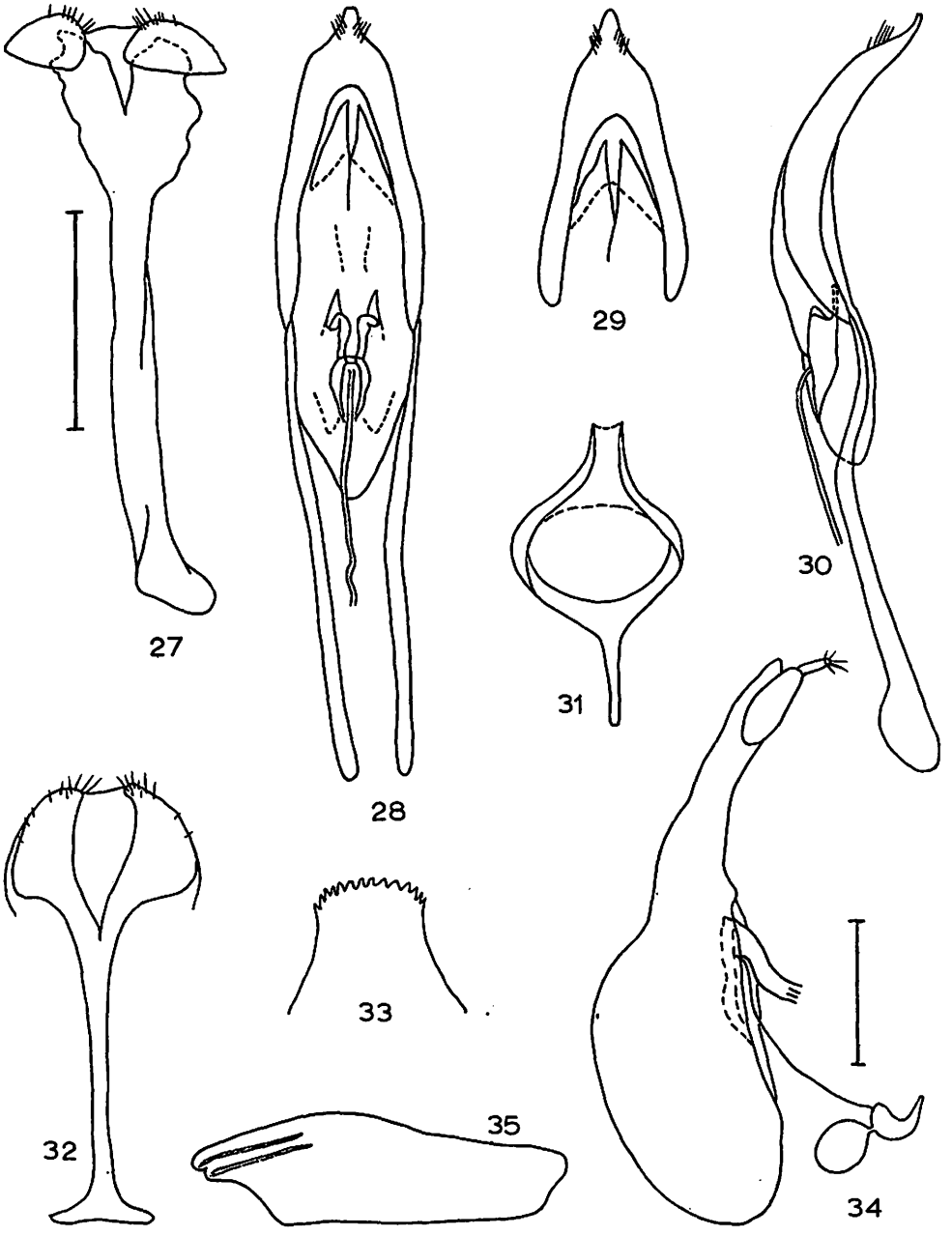
STEWART I. Halfmoon Bay, 3, Fairburn. Christmas Village, foot of Mt. Anglem, 3, Kuschel, Jan. and Mar.

SOUTH ISLAND. Waiho River, Westland, 1. Greenhills, Bluff, 2, Gourlay; Owaka, 2, Gourlay, Jan.

TYPE LOCALITY: Carnley Harbor, Auckland Is. Holotype ♀, 4.6×2.15 mm, XI. 1907, Hudson, in Dominion Mus., Wellington.

Ecology: Most specimens have been beaten off dead branches of *Neopanax simplex* (Araliaceae) and *Metrosideros umbellata* (Myrtaceae).

Remarks: *Xenacalles simplex* Broun, 1914, from SW South Island (Hakapoua) is probably a junior synonym of *punctiventris*, as *nodifer* (Broun) probably is of *triangulatus* (Broun) judging by their descriptions only. Although it is quite difficult to separate *punctiventris* from *nigricans* and *squamiventris* on external characters, the general shape of the aedeagus and the armature of the internal sac are very different in these 3 species. It is interesting to note that the longest wings occur in *punctiventris* with a wing/elytron ratio of .28–.33 and *squamiventris* (Chatham Is.) with .26, while *nigricans* (South Island) has .23 and *triangulatus* (North and South Islands) only .10. As all the species have strongly atrophied wings, their condition of flightlessness must be regarded as a fairly old feature of the group. Furthermore, there seems to be no significant difference in the ratios between the populations of the main islands of New Zealand and those of Auckland Is.



Figs. 27–35. *Pachyderris punctiventris* Broun, Ranui Cove, Auckland Is. 27, sternites 8 & 9 of ♂, ventral; 28, aedeagus, dorsal; 29, apex of aedeagus, dorsal; 30, aedeagus, lateral; 31, tegmen, dorsal; 32, sternite 8 of ♀, ventral; 33, tergite 8 of ♀, distal portion; 34, ♀ genitalia, lateral; 35, right wing of ♂. (Scales besides figs. equal 0.5 mm. Figures 27–33, 35, same scale)

4. Genus **Notacalles** Kuschel, n. gen.

Head and rostrum continuous. Eyes transverse, convex, without a posterior edge or rim, only very slightly covered by ocular lobes when rostrum retracted in pectoral canal. Rostrum curved or almost straight, slightly depressed. Antennae inserted near middle, funicle 7-segmented, segment 1 longer than 2. Prothorax covering head. Scutellum visible or invisible. Elytra without humeral callus, elliptic, stria 10 present near base only; suture with 1 or 2 pairs of granules at base. Wings absent. Pectoral canal deep throughout, bare, mesosternal receptacle open or cavernous, side walls high, hind wall sloping backwards, vertical or overhanging. Metasternum very short, with or without tubercle between mid and hind coxae. Metepisternum visible throughout, very narrow. Suture of 1st 2 ventrites obsolete in middle, ventrites 3 & 4 very short. Femora unarmed, not canaliculate. Tibiae not carinate, with small, simple and oblique distal comb; uncus on or near outer angle, premucro absent. Tarsi short, segment 3 emarginate, much wider than 2; claw segment moderately long.

Sexual dimorphism; rostrum usually thicker, rougher and more setose in ♂♂, sometimes humeral area more setose in ♂♂, no ventral impression in ♂♂.

♂. Sternite 8 with 2 transverse sclerotized plates having 1 or more setae. Sternite 9 Y-shaped, manubrium not upcurved. Tegmen with short thin manubrium, ring incomplete on dorsum, parameres distinct, vestigial or absent. Main body of aedeagus short compared with length of apophyses, ventral surface sclerotized, dorsal surface membranous. Apophysis entirely lateral, articulate, joined by a very fine stalk to the lateroventral angle of aedeagus. Internal sac short with a complex basal sclerite that has bars or laminae and some irregular tubes reaching ostium.

♀. Tergite 8 trapezoidal or triangular, distal margin entire or denticulate. Sternite 8 Y-shaped, manubrium usually with a nodiform apophysis on each side, seldom with a longer transverse apophysis. Hemisternites undivided, entirely sclerotized, with microtrichia, usually without setae. Stylus short, apical. Bursa copulatrix shorter or longer than vagina, without basal sclerite. Spermatheca falciform; spermathecal gland small, globular, distant from spermathecal duct; spermathecal duct inserted on ventral surface in a depression at base of bursa copulatrix.

Type species: *Acalles planidorsis* Kirsch.

Relationships: *Notacalles* belongs to the *Miocalles-Microcryptorhynchus*-complex sensu Zimmerman (1957). Some of the species have actually been included by Zimmerman in *Miocalles* Pascoe. I am not sure whether the external morphological similarity of hundreds of species occurring in the Australasian and Pacific area is the expression of close phylogenetic relationship or rather of a convergent evolution. I have examined members of *Miocalles* Pascoe, as understood by Zimmerman, from Lord Howe, Norfolk and New Caledonia as well as the New Zealand species. The differences that I have encountered in the structures of genitalia seem to be so big that I prefer to group them into smaller units to show what species are in fact closely related instead of bringing together a great number of elements that are only superficially allied. Such a treatment, even if it has to be based mainly on internal structures, would probably serve its usefulness for more accurate biogeographical thoughts. Thus, the dozen or so species of *Notacalles*, all restricted to the Neozelandic fauna, area easily separable by almost entirely exposed eyes, by the presence

of granules at the scutellar area of the elytra, by the presence in the ♂ of a complex basal sclerite in the internal sac and by clearly articulate apophyses, and in the ♀ by the absence of very long transverse apophyses at the end of the manubrium of sternite 8 and by lacking a long spermathecal gland. The described species known to me and to be transferred to *Notacalles* are: *Acalles kronei* Kirsch, *A. multisetosus* Broun, *A. planidorsis* Kirsch, *A. vafer* Broun, *Miocalles piciventris* (Broun) and *M. setifer* (Broun).

Ecology: These small weevils are of nocturnal habits and occur in daytime under logs, stones, under plants, in litter, among mosses and lichens, under loose bark and on dead branches of shrubs and trees. The larvae live in dead twigs and in petioles and main veins of larger leaves. Adults are found on many different Dicotyledons without specific host. They are probably polyphagous. They are often found also on ferns, but it seems doubtful that the larvae would feed in dead fronds.

Geographical distribution. The genus is restricted to the main islands of New Zealand and Subantarctic Islands. None of the 6 subantarctic species is endemic, though *kronei* (Kirsch) and *multisetosus* (Broun) could easily represent good subspecies.

Key to species of Notacalles

1 (8). Base of suture with a single pair of granules. Sides of metasternum with a narrow white line. Pronotum on each side of base without a stripe of dense pale scales. Hind wall of pectoral canal not or very slightly overhanging. ♂♂: Aedeagus bare or with fine hairs, without a strong short seta on middle near tip. ♀♀: Tergite 8 with denticulate distal margin.

2 (5). Sides of metasternum in front of hind coxae without tubercle. Scaling on suture and/or base of interstria 3 & 4 denser than elsewhere. ♂♂: Plates of sternite 8 with a single seta; tip of aedeagus narrow; basal sclerite of internal sac with 2 longitudinal bars. ♀♀: bursa copulatrix much shorter than vagina ..... **planidorsis**-group

3 (4). Scaling on suture not denser than elsewhere. Scutellum usually visible. Derm of elytra bicolored, usually reddish brown with a transverse dark middle area on each elytron, if elytra darkened as a whole then at least suture and base paler. Sexual dimorphism in shape and setae of elytra strong, elytra of ♂ flatter and wider and setae on sides of humeral area much more conspicuous. ♂ and ♀ genitalia as in figs. 36–40, 44–46. 1.55–2.70 mm. Auckland Is., Campbell I., Snares Is., Stewart I. ..... **planidorsis**

4 (3). Scaling on suture very dense. Scutellum usually invisible. Derm of elytra uniformly piceous. No sexual dimorphism apparent in shape or setae of elytra. ♂ and ♀ genitalia as in figs. 41–43, 47–49. 1.35–2.15 mm. Aucklands Is., Campbell I., Stewart I., southern South Island..... **piciventris**

5 (2). Sides of metasternum in front of hind coxae with tubercle (fig. 64). Scaling on suture and base of interstria 3 & 4 not denser than elsewhere. ♂♂: Plates of sternite 8 with 2 setae; tip of aedeagus broad; basal sclerite of internal sac with a transverse plate. ♀♀: bursa copulatrix longer than vagina... **kronei**-group

6 (7). Piceous. Setae on elytra erect. Tarsal segment 3 of front tarsi much narrower than distal width of rostrum. ♂: Aedeagus bare, lateral margins narrow (fig. 51–53). ♀: Tergite 8 trapezoidal with subtruncate distal margin (fig. 58).

1.25–2.05 mm. Auckland Is., Campbell I., South Island..... **kronei**

7 (6). Rufo-castaneous. Setae on elytra decumbent or nearly so. Segment 3 of front tarsi as wide as rostrum at apex. ♂: Aedeagus with fine hairs near tip, lateral margins broad, figs. 56–57. ♀: Tergite 8 triangular, with rounded tip (fig. 61). 1.50–2.10 mm. Auckland Is., Stewart I., South Island..... **latitarsis**

8 (1). Base of suture with 2 pairs of granules. Sides of metasternum with a broad white line. Pronotum with a stripe of dense pale scales on base opposite interstriae 3 & 4. Hind wall of pectoral canal strongly overhanging. ♂♂: Aedeagus with a strong short seta on middle near tip. ♀♀: Tergite 8 with entire distal margin ..... **multisetosus**-group

9 (10). Stripes of pale scales on base of pronotum short, about 1/5 the length of prothorax. All interstriae similarly setose. ♂: Plates of sternite 8 with 1 or 2 setae, lateral margins of aedeagus wider (figs. 67, 68). ♀: spermathecal duct thin, longer than bursa copulatrix (fig. 78). 1.65–2.25 mm. Auckland Is., Campbell I., Stewart I. ..... **suillus**

10 (9). Stripes of pale scales on base of pronotum longer, at least 1/3 of length of prothorax. Even interstriae usually with fewer setae than the uneven ones. ♂: Plates of sternite 8 with 4 or 5 setae; lateral margins of aedeagus narrower, figs. 71, 72. ♀: spermathecal duct thick, shorter than bursa copulatrix (fig. 81). 1.40–2.10 mm. Auckland Is., Campbell I., North and South Island..... **multisetosus**

planidorsis-group

Notacalles planidorsis (Kirsch), n. comb. Figs. 36–40, 44–46.

Kirsch, 1877, Dtsch. Ent. Zschr. Berlin **21**: 172 (*Acalles*).—Krone, *l. c.*, 156 (*Acalles*).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Zealand **78**: 199 (*Acalles planidorsus*, sic!).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 65 (*Acalles*).

All interstriae with short yellow uniformly spread subsquamiform setae with oval tip. Scaling on base of interstria 3 & 4 always denser, a similar patch usually present just opposite on base of prothorax. Other characters mentioned in the key or shown in the figs. 36–40, 44–46. Length 1.55–2.70 mm; width 0.68–1.27 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 89 in forest litter, Gourlay, on *Hebe elliptica*, *Dracophyllum longifolium*, and *Polystichum vestitum*, Gressitt, Johns; Crozier Point, 52 on *Hebe*, *Neopanax simplex*, *Coprosma* and *Poa*, Gressitt, Wise; ex Coelopidae pupa in dried *Durvillea* roots, Gressitt; Tucker Point, 10 on *Hebe*, Gressitt, Wise; high plateau between Krone's Creek and Port Ross, 1 sweeping tussock grass, Krone; west coast opposite Mt. Stoney, 2 on *Cassinia vauvilliersii* and *Hebe*, Gressitt. FRENCH I.: 26 on *Hebe* and *Carex*, Gressitt; without host plants, Gourlay. ROSE I.: 14 on *Hebe elliptica*, Dumbleton. EWING I.: 212 on *Hebe elliptica*, *Olearia lyallii*, *Stilbocarpa polaris* and *Coprosma*, Gressitt, Johns, Wise. ENDERBY I.: 2 on *Cassinia vauvilliersii*, Gressitt, and under log, Wise. Total, 408 specimens collected in Nov., Dec. and Jan.

CAMPBELL I.: Shoal Point, 19 on *Hebe elliptica*, Rennell. Lookout Bay, 21 on *Hebe elliptica*, Gressitt. Beeman Beach and Beeman-Lookout, 2 on *Hebe elliptica*, Gressitt. 42 specimens collected in Dec. and Feb.

SNARES IS.: 86 on *Hebe elliptica*, *Olearia lyallii*, and *Senecio stewartiae* Knox, in Jan. and Feb.

STEWART I. Hidden I. (SW Stewart I.), 1, Dell, Holloway. Owen I. (SE Stewart I.), 5, Dell, Holloway. 6 specimens collected in Jan.

TYPE LOCALITY: high country between Krone's Creek and Port Ross, Auckland Is. Holotype ♀, 2.25×1.05 mm, mounted on card, in good condition, with 6 labels attached to pin: (1) a small gold label for type; (2) Auckland I., Dresden Mus.; (3) *planidorsis* Kirsch; (4) *Acalles planidorsis* Kirsch; (5) a red label 'Type'; (6) *Acalles planidorsis* Kirsch, holotype ♀, added by myself. In Staatliches Museum für Tierkunde, Dresden.

Ecology: No larvae have been found. Adults occur on the ground under logs, stones and even under dry kelp, but are particularly abundant in forest litter and on perennial mostly woody plants. Most specimens have been beaten off *Hebe elliptica* (Scrophulariaceae) and *Olearia lyallii* (Compositae).

Remarks: The *planidorsis*-group of species seems to be confined to the extreme south of New Zealand, hence the presence of 2 species of the group in the Subantarctic Islands is not surprising. *Acalles planidorsis* Kirsch, 1877 was pre-occupied by *Acalles planidorsis* Blanchard, 1851 from Chile. As no author to my knowledge has proposed a new name, no change is now necessary.

Notacalles piciventris (Broun), n. comb. (*Miocalles*) Figs. 41–43, 47–49.

Broun, 1909, Subantarct. Is. N. Z. **1**: 120 (*Acalles*).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Zealand **87**: 199 (*Acalles*, as synonym of *A. kronei* Kirsch).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 64 (*Acalles*, as synonym of *A. kronei* Kirsch).—Zimmerman, 1957, Coleopt. Bull. N. York **11**: 86 (*Miocalles*).

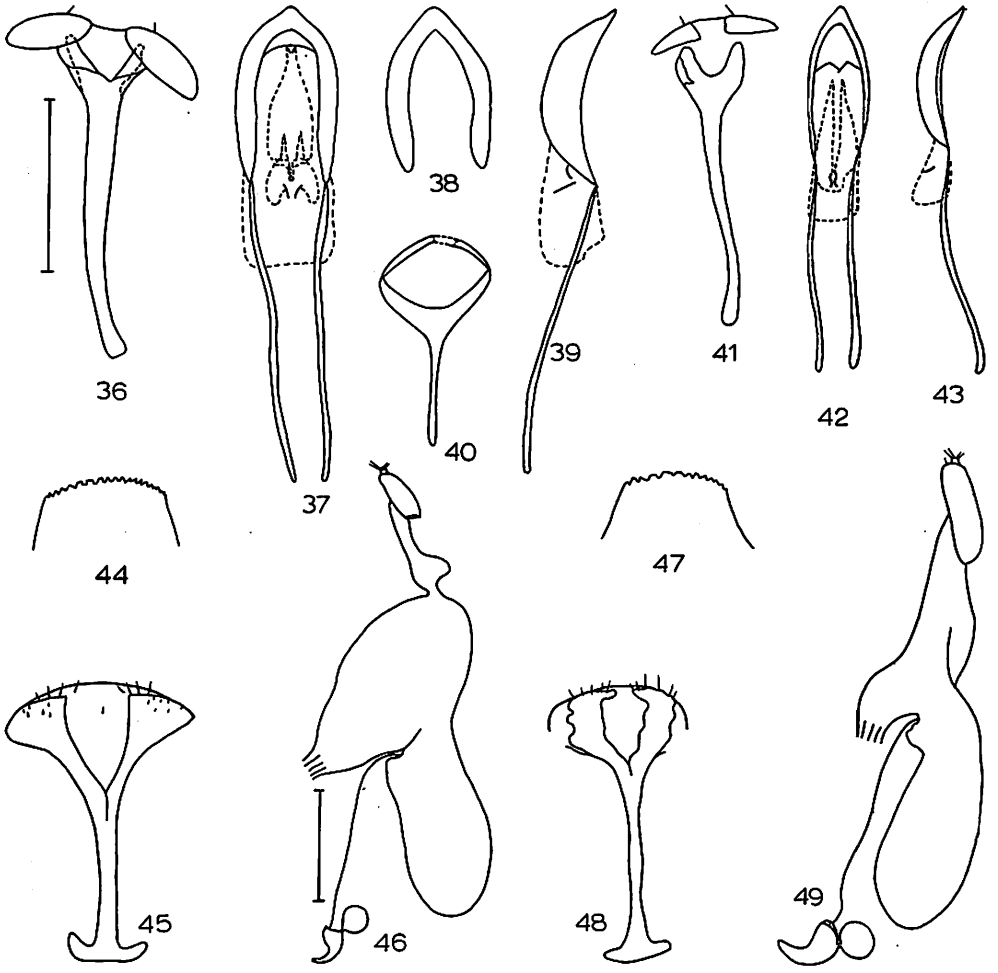
campbellicus Brookes, 1951, Cape Exp. Ser. Bull. **5**: 64, f 22 (*Acalles*). **New Synonymy.**

furvus Broun, 1915, Bull. N. Z. Inst. **1** (4): 339 (*Acalles*). **New Synonymy.**

Derm of elytra piceous throughout. All interstriae with short subsquamiform setae. Scaling always dense on suture, on base of interstria 3 & 4, and on base of prothorax opposite interstria 3 & 4. Internal structures as in figs. 41–43, 47–49. Length 1.35–2.15 mm; width 0.65–0.95 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 79 in forest litter, Gourlay, on *Polystichum vestitum*, *Myrsine divaricata*, *Dracophyllum longifolium*, *Hebe elliptica*, *Neopanax simplex*, *Metrosideros umbellata*, and *Coprosma*, Gressitt, Johns, and in Malaise trap, Gressitt. Crozier Point, 12 on *Polystichum vestitum* (Wise), *Neopanax*, *Hebe* and *Coprosma*, Gressitt; Observation Point, 4 on *Neopanax simplex* and *Myrsine divaricata*, Gressitt; Tucker Point, 4 on *Coprosma* and under stones, Gressitt; west coast opposite Mt. Stoney, 1 on *Cassinia vauvilliersii*, Gressitt; Bivouac, Mt. Eden, 200–400 m, on *Chionochloa*, Gressitt. ROSE I.: 5 on Carex, Gressitt; *Dracophyllum longifolium* and *Metrosideros umbellata*, Johns. ENDERBY I.: 2 on *Cassinia vauvilliersii*, Gressitt. 108 specimens collected in Nov., Dec., & Jan.

CAMPBELL I.: Beeman Camp, 13 on *Dracophyllum scoparium*, *Coprosma*, and *Carex*, Gressitt, Rennell; Beeman Hill, 5 on *Dracophyllum*, Sorensen and *Coprosma*, Gressitt, and swept, Wise; Lookout Bay, 6 on *Coprosma*, Gressitt and sweeping, Rennell; Tucker Cove, 3 on *Dracophyllum*, Gressitt, Wise; without specified locality, 1 (holotype of *A. campbellicus* Brookes). Total, 28 specimens collected in Aug., Nov., Dec. & Feb.



Figs. 36–49. *Notacalles* spp. *N. planidorsis* (Kirsch), Ranui Cove, Auckland Is.: 36, sternites 8 & 9 of ♂ ventral; 37, aedeagus, dorsal; 38, apex of aedeagus, dorsal; 39, aedeagus, lateral; 40, tegmen, dorsal; 44, tergite 8 of ♀; 45, sternite 8 ventral; 46, ♀ genitalia, lateral. *N. piciventris* (Broun), Ranui Cove, Auckland Is.: 41, sternites 8 & 9 of ♂, ventral; 42, aedeagus, dorsal; 43, aedeagus, lateral; 47, tergite 8 of ♀; 48, sternite 8, ventral; 49, ♀ genitalia. (Scales beside figs. equal 0.25 mm. Figs. 36–45, 47–49 same scale).

STEWART I.: Mt. Anglem, 900 m, 4 on *Dracophyllum longifolium*, Kuschel in Jan.

SOUTH ISLAND: Longwood Range, Southland, 3. I. 1913, Philpott.

TYPE LOCALITIES: (1) *piciventris* Broun, Auckland Is.; (2) *campbellicus* Brookes, Campbell I.; (3) *furvus* Broun, Longwood Range, South Island. Types. (1) *Acalles piciventris* Broun in British Museum, London. (2) *Acalles campbellicus* Brookes, holotype ♂, 1.60× 0.75 mm, Campbell I., 1942, Sorensen, in Dominion Mus., Wellington. (3) *Acalles furvus* Broun, lectotype ♀, 1.95×0.87 mm, Longwood Range, I.1913, Philpott, in Entomology Div., D.S.I.R., Nelson.

Ecology: No larvae have been obtained. Adults occur, as in the previous species, on a great variety of plants, in forest litter, and under stones at low levels; some have been found as high as 180 m above sea level on Campbell I. Most specimens have been beaten off *Dracophyllum* (Epacridaceae), *Polystichum vestitum* (Dryopteridaceae), *Myrsine divaricata* (Myrsinaceae), and *Coprosma* (Rubiaceae).

Remarks: The type specimen of *Acalles piciventris* Broun has been checked by Mr. R. T. Thompson of the British Museum with specimens sent for comparison and with the characters contained in the key. I am particularly thankful to Mr. Thompson for his assistance that was all the more desirable as Broun's description was entirely inadequate. The previous published synonymy of *piciventris* Broun by Gourlay (1950) and Brookes (1951) as a junior synonym of *kronei* Kirsch had no possible justification because neither author knew either *kronei* or *piciventris.*

kronei-group

Notacalles kronei (Kirsch), n. comb. Figs. 50–54, 58–60.

Kirsch, Dtsch. Ent. Zschr. Berlin 1877, **21**: 172 (*Acalles Kronii*).—Krone, *l. c.*, 1877, **21**: 156 (*Acalles*).—Hustache, 1936, IN Junk Coleopt. Cat. pars **151**: 122 (*Acalles Kroni*).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 199 (*Acalles*).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 64 (*Acalles kroneii*).

Derm piceous or black, lacking areas of dense scales on elytra, with a small patch of loose white scales at base of pronotum opposite interstria 2 & 3, these patches only narrowly separated in middle. All interstriae with erect subsquamiform setae. Metasternal tubercle small but distinct. Genitalia as in figs. 50–54, 58–60.

Length 1.25–2.05 mm; width 0.65–0.90 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 62 in forest litter, Gourlay, on *Myrsine divaricata, Metrosideros umbellata, Neopanax simplex, Dracophyllum longifolium, Polystichum vestitum*, Johns, and *Coprosma* Gressitt, and in Malaise trap, Gressitt; Ranui Track, 24 on *Cassinia vauvilliersii* and *Dracophyllum longifolium*, Johns; Crozier Point, 1 on *Myrsine divaricata*, Gressitt; Observation Point, 7 on *Cassinia vauvilliersii* and *Myrsine divaricata*, Gressitt; Tucker Point, 3 on *Myrsine divaricata*, Gressitt; Venus Valley, 1 on *Cassinia* ('aus weissbluehendem Compositen-Gestraeuch', Krone); west coast opposite Mt. Stoney, 50-300 m, 2 on *Cassinia vauvilliersii* and *Chionochloa*, Gressitt. FRENCH I.: 7 on *Hebe* and *Myrsine divaricata*, Gressitt and under kelp, Gourlay. OCEAN I.: 20 on *Cassinia vauvilliersii*, Johns. ROSE I.: 3 on *Cassinia vauvilliersii*, Gressitt, *Dracophyllum longifolium*, and *Metrosideros umbellata*, Johns. EWING I.: 3 on *Stilbocarpa polaris, Neopanax simplex*, and *Urtica*, Gressitt. ENDERBY I.: 12 on *Cassinia vauvilliersii* and *Myrsine divaricata* Gressitt, and without host plant (Dell). Total, 145 collected in Nov., Dec., Jan. & Mar.

CAMPBELL I.: Beeman Camp, 2 on *Coprosma*, Gressitt. Beeman Hill, 1 on *Coprosma*, Gressitt. Lookout Bay, 1 on *Coprosma*, Gressitt. Tucker Cove, 3 on *Coprosma* and in Malaise trap, Gressitt. Without specified locality, 1, Sorensen, (paratype ♂, of *Acalles campbellicus* Brookes!) Total, 8 collected in Nov. & Dec.

SOUTH ISLAND. (see remarks below).

TYPE LOCALITY: Venus Valley, Auckland Is. Lectotype ♀, 1.50×0.73 mm, labels attach-

ed to specimen: (1) small gold plate for type; (2) Auckland, Kirsch; (3) *Kronii* Kirsch; (4) *Acalles Kronii* Kirsch; (5) red 'Type' label. As Krone and Kirsch have mentioned more than one specimen I have selected the specimen forwarded by Dr. R. Hertel as lectotype. No date is attached to the type which was collected either towards the end of Dec. 1874 or in the beginning of Jan. 1875. Lectotype in Staatliches Museum für Tierkunde, Dresden.

Ecology: Same as in the 2 previous species. Most specimens obtained on *Cassinia vauvilliersii* (Compositae) and *Myrsine divaricata* (Myrsinaceae).

Remarks: The *kronei*-group has several species in the main islands of New Zealand. I have not studied them in detail yet, but I can, however, say that *Notacalles kronei* is also present at least in the South Island and that *Acalles rafer* Broun and *Miocalles setifer* (Broun) are 2 close relatives of *kronei*. The species described from Auckland Is. had been discovered by the photographer H. Krone and was named after him. Thus the original spelling of the species had to be conformed to the international rules of nomenclature changing it from *Kronii* to *kronei*.

Notacalles latitarsis Kuschel, n. sp. Figs. 55–57, 61–66.

Derm castaneo-rufous, seldom darker, underside often partly or as a whole darker, piceous. All setae of prothorax directed towards front margin, they form weak longitudinal lines of narrower and wider subsquamiform setae; a very narrow transverse band of loose scales on base of prothorax being a little wider in middle. Elytra with decumbent subsquamiform setae on all interstriae, on the uneven interstriae usually more abundant. Outer proximal angle of tibiae with longer and denser setae.

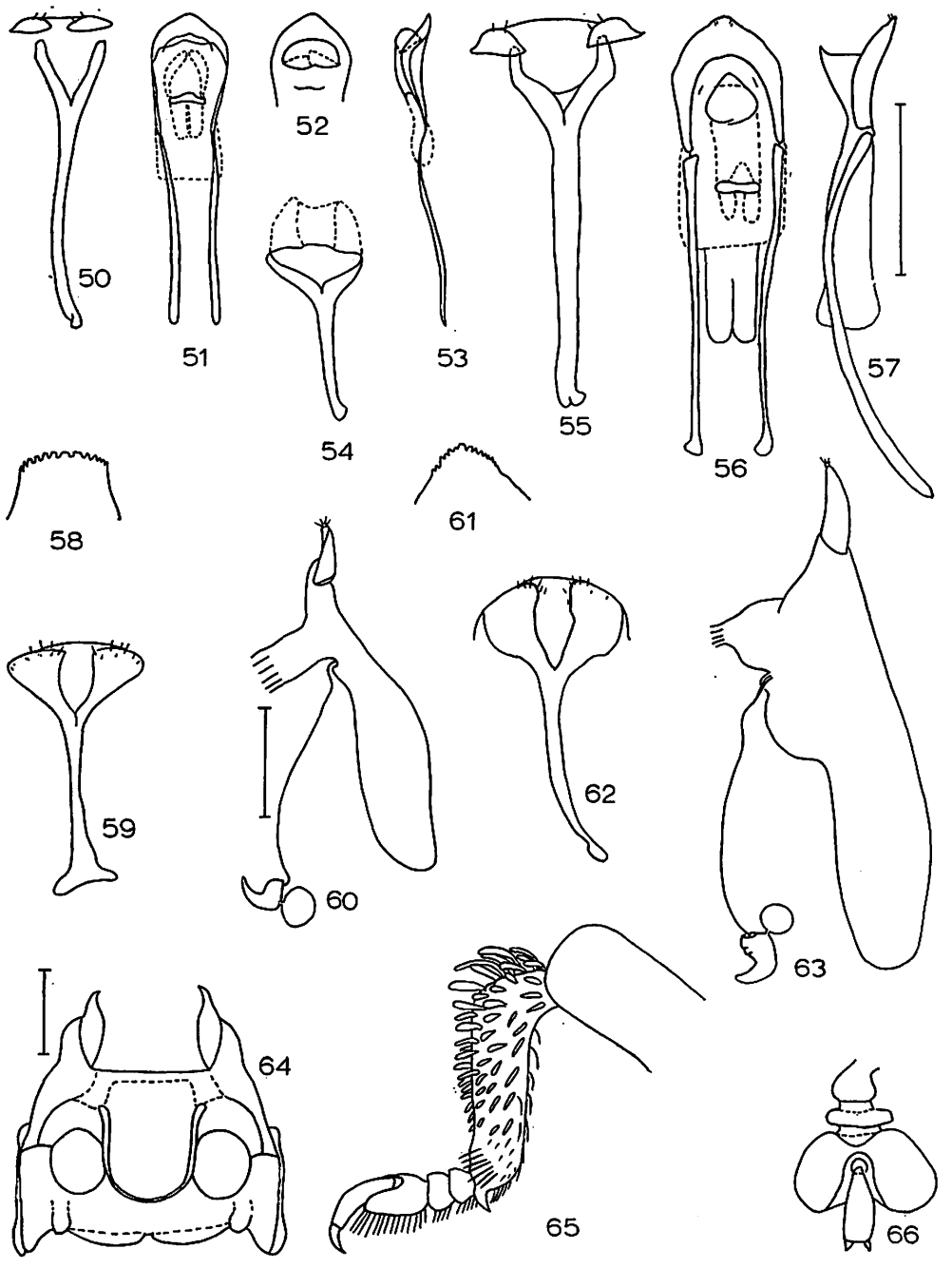
Head nearly dull, somewhat alutaceous, scaling almost covering derm, scales broadly lanceolate. Rostrum slightly curved. Prothorax 1.03–1.08× longer than wide, densely punctate. Scutellum visible, small, deeper than base of elytra, with 2 or 3 white scales. Elytra oblong-ovate, 1.37–1.45× wider than prothorax and 1.34–1.43× longer than their maximal width, sulcate, punctures in the striae fine; interstriae convex, without scales or hairs besides the setae; base of suture with a conical granule on each side of scutellum. Pectoral canal deep throughout, reaching hind margin of mid coxae, hind wall of mesosternal receptacle vertical. Metasternum with a strong tubercle in front of hind coxae (fig. 64). Tibiae short, angulate on dorsal edge near base. Tarsi strongly widened (figs. 65, 66).

♂. Tergite 8 almost entirely covered by 7. Sternite 8 as in fig. 55, with 2 setae. Sternite 9 as in fig. 55, strong. Tegmen without parameres. Body of aedeagus short, with broad lateral margin, apical portion sinuous, with 2 short hairs on each side near tip; apophyses wide at base, about 3× longer than main body. Internal sac with a strong transverse sclerotized plate (figs. 56, 57).

♀. Tergite 8 triangular with narrowly rounded denticulate tip (fig. 61). Sternite 8 as in fig. 62. Bursa copulatrix longer than vagina. Spermatheca as in fig. 63, spermathecal duct slightly shorter than bursa copulatrix.

Length 1.50–2.10 mm; width 0.75–1.00 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 12 in *Metrosideros umbellata* forest litter, Gourlay, Gressitt, Johns, and on *Polystichum vestitum*, Johns; Observation Hill, 1 in tus-



Figs. 50-66. *Notacalles* spp. *N. kronei* (Kirsch), Ranui Cove, Auckland Is.: 50, sternites 8 & 9 of ♂, ventral; 51, aedeagus, dorsal; 52, apex of aedeagus; 53, aedeagus, lateral; 54, tegmen, dorsal; 58, tergite 8 of ♀; 59, sternite 8, ventral; 60, ♀ genitalia, lateral. *N. latitarsis* n. sp., Ranui Cove, Auckland Is.: 55, sternites 8 & 9 of ♂, ventral; 56, aedeagus, dorsal; 57, aedeagus, lateral; 61, tergite 8 of ♀; 62, sternite 8, ventral; 63, ♀ genitalia, lateral; 64, meso- and metasternum, ventral; 65, right hind leg; 66, right front tarsus. (Scales beside figs. equal 0.25 mm. Figs. 50–59, 61, 62, 65, 66 same scale; figs. 60, 63 same scale).

sock, Dumbleton; Observation Point, 1 on *Poa*, Gressitt; Tucker Point, 1 on *Myrsine divaricata*, Gressitt. Total, 15 collected in Nov., Dec., & Jan.

STEWART I.: Crooked Reach, Port Pegasus, 1 in moss, Dell, Holloway. Halfmoon Bay, 1, Brookes, Jan. & Feb.

SOUTH ISLAND.: Kaherekoau Mt., South of Lake Monowai, 760 m, 1 in litter, Townsend in Jan.

TYPE LOCALITY: Ranui Cove, Auckland Is.

Holotype ♂, 1.90 × 0.87 mm, Ranui Cove, 18 m above sea level, in *Metrosideros umbellata* forest floor litter taken at the Lookout, 10. XI. 1954, Gourlay, in Entomology Div., D. S.I.R., Nelson. Allotype ♀ and some paratypes in the same Entomology Div., other paratypes in Dominion Mus., Wellington, in Canterbury Mus., Christchurch, and in Bishop Mus., Honolulu.

Ecology: Most specimens have been found on the ground, particularly in forest litter.

Remarks. Readily separable from all *Notacalles* species by the peculiar tibiae and broad tarsi. The structures of both ♂ and ♀ genitalia place it in the *kronei*-group.

multisetosus-group

Notacalles suillus Kuschel, n. sp. Figs. 67–70, 76–78, 275a.

Derm piceous, tibiae and tarsi castaneous, funicle and club testaceous or rufo-castaneous, club never darker than funicle. All setae subsquamiform and erect, except on abdomen. All interstriae with a row of setae. Base of pronotum opposite interstria 3 with a short stripe of usually erect and very pale scales; this stripe less than 1/4 of total length of prothorax. Sides of metasternum with a broad stripe of dense pale scales, the stripe widening at both ends.

Head with narrow and wide setae. Eyes strongly convex. Rostrum short, thick, curved in ♂, nearly straight in ♀. Prothorax 1.10–1.11× longer than wide, densely punctate. Scutellum visible or invisible, without scales. Elytra oblong-oval, 1.48–1.50× wider than prothorax, 1.35–1.37× longer than their maximal width. Striae usually sulcate, intervals between punctures often as high as the slightly convex interstriae. Base of suture with 2 conical granules on each elytron, one placed at or near the base itself without projecting forwards, the other at an interval usually smaller than diameter of a granule.

♂. Plates of sternite 8 with 1 or 2 setae. Sternite 9 as in fig. 67. Tegmen without distinct parameres. Aedeagus as in fig. 68–70, lateral margins wide.

♀. Tergite 8 truncate, with entire distal margin, fig. 77. Sternite 8 as in fig. 76. Genitalia as in fig. 78, spermathecal duct thin, longer than bursa copulatrix.

Length 1.65–2.25 mm; width 0.85–1.10 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 23 in forest litter, Gourlay, on *Neopanax simplex*, Dumbleton, Gressitt, Johns, *Metrosideros umbellata*, *Myrsine divaricata*, *Dracophyllum longifolium*, *Hebe elliptica*, *Polystichum vestitum*, Johns, and *Coprosma*, and in dried kelp Gressitt; Crozier Point, 8 on *Polystichum vestitum*, *Neopanax simplex* and *Coprosma*, Gressitt; Tucker Point, 3 on *Neopanax*, *Hebe*, and *Coprosma*, Gressitt; Webling Bay, 2 in litter and sweeping, Wise; Hooker Hills, 90-300 m, 1 sweeping, Wise; Grey Duck Creek,

Laurie Harbour, 1, Wise. OCEAN I.: 3 on *Histiopteris incisa*, Johns, *Metrosideros umbellata*, Gressitt, and *Olearia lyallii*, Wise. ROSE I.: 12 on dead *Metrosideros umbellata*, Johns. EWING I.: 6 on *Olearia lyallii*, Johns and under log, Wise. Total, 59 collected in Nov., Dec. & Jan.

CAMPBELL I.: Beeman Camp, 1 on *Coprosma*, Gressitt. Beeman Hill, 2 on *Dracophyllum*, Sorensen. Total of 3 collected in Aug. & Dec.

STEWART I.: Crooked Reach, Port Pegasus, 9 in litter, Dell, Holloway, in Jan.

TYPE LOCALITY: Ranui Cove, Auckland Is.

Holotype ♂, 2.20×1.07 mm, Ranui Cove, 7–12. XI. 1954, Gourlay, allotype ♀ and paratypes in Entomology Div., D.S.I.R., Nelson; other paratypes in Dominion Mus., Wellington, Canterbury Mus., Christchurch, and in Bishop Mus. Honolulu.

Ecology: Same conditions as in the first 3 species of the genus. Most adults have been found on dead branches of *Metrosideros umbellata* (Myrtaceae) and *Neopanax simplex* (Araliaceae).

Remarks: There are several species belonging to the *multisetosus*-group in the New Zealand fauna. They are very similar in external morphological characters whilst the genitalia provide good features for their separation. The present species appears to be undescribed as its occurrence seems to be limited to Stewart I. and Subantarctic Islands. *Acalles albistrigalis* Broun, from Broken River, and *A. praesetosus* Broun, from Invercargill, being probably very close to if not identical with *multisetosus* Broun, are still unknown to me.

Notacalles multisetosus (Broun), n. comb. Figs. 71–75, 79–81.

Broun, 1907, Ann. Mag. Nat. Hist. ser. 7, **19**: 61 (*Acalles*).

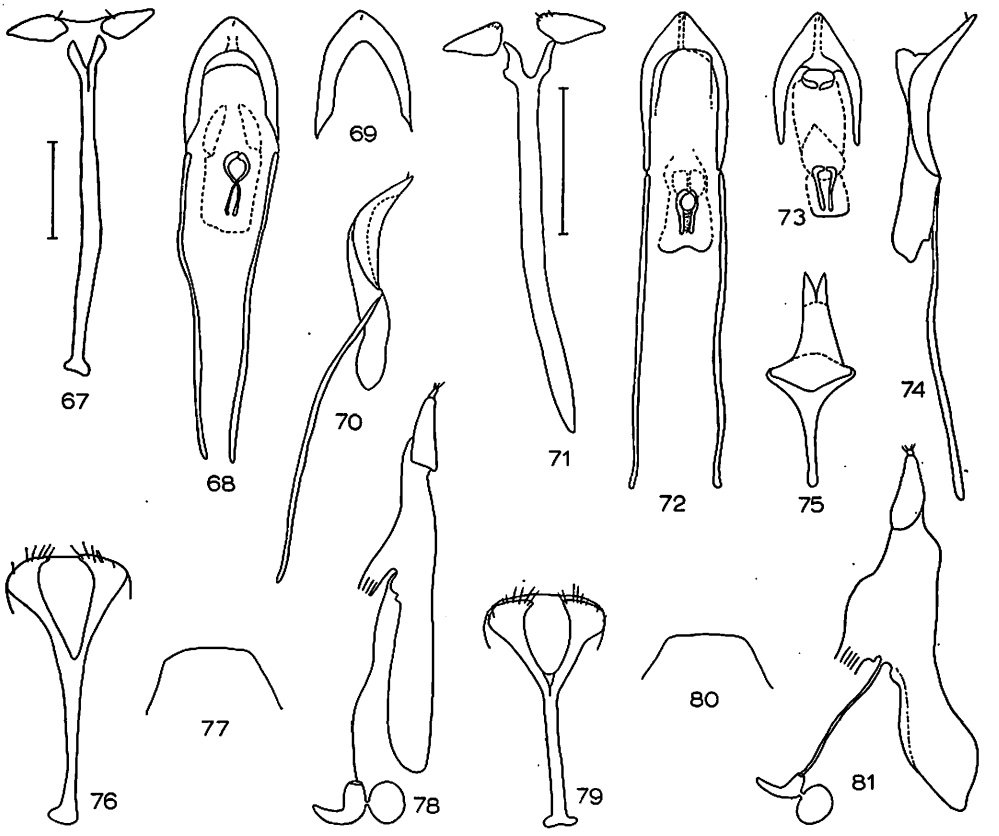
Very similar to *suillus*, the pale pronotal stripes longer, at least 1/3 of length of prothorax, even interstriae with fewer setae than the uneven ones. ♂. Plates of sternite 8 with 4 or 5 setae. Tegmen with distinct parameres. Aedeagus with narrow lateral margins. Fig. 71–75. ♀. Spermathecal duct thick, shorter than bursa copulatrix. Fig. 79–81.

Length 1.40–2.10 mm; width 0.72–1.10 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 43 in forest litter, Gourlay, on *Metrosideros umbellata*, *Myrsine divaricata*, *Neopanax simplex*, *Dracophyllum longifolium*, and *Polystichum vestitum* Johns, and sweeping and in Malaise trap, Gressitt; Ranui Track, 2 on *Dracophyllum longifolium*, Johns; Crozier Point, 3 on *Myrsine divaricata* and in dried kelp Gressitt; Observation Point, 1 on *Myrsine divaricata*, Gressitt; Tucker Point, 2 under stones, Gressitt; Musgrave Penin., Carnley Harbor, 1 in litter, Sorensen. FRENCH I.: 2 on *Myrsine divaricata*, Gressitt. OCEAN I.: 2 on *Histiopteris incisa*, Johns. ROSE I.: 26 on *Metrosideros umbellata* and *Dracophyllum longifolium*, Johns, and *Cassinia vauvilliersii*, Gressitt. ENDERBY I.: 3 on *Myrsine divaricata*, Gressitt, and on the ground, Dell. Total, 85 collected in Nov., Dec., Jan., Mar. & May.

CAMPBELL I. Beeman Camp, 2 on *Carex*, Gressitt and in hut, Wise. Beeman Hill, 2 on *Dracophyllum*, Sorensen, and *Coprosma*, Gressitt. Tucker Cove, 3 on *Coprosma* and *Poa*, Gressitt. Total, 7 collected in Aug., Nov., Dec. & Feb.

TYPE LOCALITY: Invercargill, South Island. Lectotype ♀, 1.90×1.00 mm, Invercargill, in Entomology Div., D.S.I.R., Nelson. North and South Island.



Figs. 67–81. *Notacalles* spp. *N. suillus* n. sp., Ranui Cove, Auckland Is.: 67, sternites 8 & 9 of ♂, ventral; 68, aedeagus, dorsal; 69, apex of aedeagus; 70, aedeagus, lateral; 76, sternite 8 of ♀, ventral; 77, tergite 8; 78, ♀ genitalia, lateral. *N. multisetosus* (Broun), Rose I., Auckland Is.: 71, sternites 8 & 9 of ♂, ventral; 72, aedeagus, dorsal; 73, apex of aedeagus; 74, aedeagus, lateral; 75, tegmen, dorsal; 79, sternite 8 of ♀, ventral; 80, tergite 8; 81, ♀ genitalia, lateral. (Scales beside figs. equal 0.25 mm. Figs. 67, 78, 81 same scale; figs. 68–77, 79, 80 same scale)

Ecology: As in previous species. According to the collected material the most favored plants are *Metrosideros umbellata* (Myrtaceae), *Myrsine divaricata* (Myrsinaceae), *Neopanax simplex* (Araliaceae), and *Dracophyllum* (Epacridaceae).

Remarks: There are obvious variations in this species that need further study. The specimens from the Subantarctic Islands have much shorter setae (the longest setae on elytra about 0.15 mm) than those of the North and South Island (the longest setae on elytra about 0.27 mm). The scales forming the pronotal stripes are erect in the lectotype and in the subantarctic specimens, whilst appressed in North Island individuals. There seems to be no significant difference in genitalia in the populations, therefore I have placed them in *multisetosus* until a detailed study of the whole complex can be undertaken.

Sulfamily EUGNOMINAE

5. Genus **Pactolotypus** Broun, 1909

Pactolotypus Broun, 1909, Subantarct. Is. N. Z. **1**: 119 (type species: *P. striatus* Broun). —Voss, 1937, Arb. Morph. Taxon. Ent. Berlin **4**: 40.—Marshall, 1938, Trans. Proc. Roy. Soc. N. Z. **67**: 328.

Parapactola Voss, 1936, Arb. Morph. Taxon. Ent. Berlin **3**: 121 (type species: *Pactola demissa* Pascoe sec. Voss, non Pascoe,=*P. humeralis* Broun); 1937, *ibid.* **4**: 40 (as syn. of *Pactolotypus*).—Marshall, 1938, Trans. Proc. Roy. Soc. N. Z. **67**: 336 (as syn. of *Stenopactola*).

Stenopactola Broun, 1914, Bull. N.Z. Inst. **1** (3): 236 (type species: *St. prolixa* Broun).—Marshall, 1938, Trans. Proc. Roy. Soc. N. Z. **67**: 328, 336. **New synonymy.**

Head elongate, not constricted near base. Eyes convex, with convex ommatidia, with fine hairs or squamiform setae between ommatidia. Rostrum about as long as head, straight; distal margin of epistome with a transverse row of hairs. Maxillary palpi short. Scape variable in length, usually passing well beyond hind margin of eyes, exceptionally reaching only front margin of eyes. Funicle 7- or 6-segmented. Elytra without humeral callus. Wings entirely absent. Hind femora armed or inermous; hind tibiae curved, all tibiae without mucro. Claws appendiculate.

♂. Tergite 8 unmodified. Sternite 8 with 2 hairy plates separated by a median membrane. Tergite 9 with 2 plates and an articulate manubrium. Tegmen with complete ring and with long and free or partly fused parameres. Aedeagus depressed, dorsal surface weakly sclerotized; apophyses long, joined directly to latero-ventral angle of main body, thin from base to insertion of tegminal membrane. Internal sac without basal sclerite, with very fine armature, ejaculatory duct inserted on ventral surface far beyond base.

♀. Tergite 8 normal, submembranous. Sternite 8 with broad arms and very long manubrium. Hemisternites hidden in a long pouch, delicate, weakly sclerotized, partly subdivided in a proximal and a distal portion; stylus apical, long, cylindrical or slightly tapering. Vagina much longer than bursa copulatrix, no bursal sclerites. Spermatheca blunt at both ends, spermathecal duct short, inserted ventrally at a certain distance from oviduct, spermathecal gland very large, ranunculiform (tadpole-shaped).

Relationships: *Pactolotypus* is the only genus of Eugnominae without a trace of wings. Its closest relative is *Pactola*[3] Pascoe which includes about 12 fully winged species from New Zealand and New Caledonia.

Ecology: No larvae of *Pactolotypus* have been collected. If the habits are similar to those of *Pactola* observed by myself in New Caledonia, the larvae should develop in quite succulent dying shoots such as those provided by Araliaceae and some Scrophulariaceae (Hebe). The adults of all Eugnominae are diurnal and feed on all sorts of pollen. The gut contents of *Pactola* and particularly of *Pactolotypus* show that these 2 genera can also feed on leaves. 12 out of 14 dissected specimens from the Subantarctic Islands had only leaf

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3. *Pactola* Pascoe, 1876=*Macropoda* Montrouzier, 1861 (non Solier, 1835). **New Synonymy.** *Macropoda* Montrouzier is a junior homonym of *Macropoda* Solier. *Macropoda* Montrouzier was established for a group of species from New Caledonia which are congeneric with the New Zealand species of *Pactola* Pascoe.

tissues in their gut-contents while the other two had pollen and leaf tissues as well. The adults are not host specific.

Geographical distribution: The 7 species of *Pactolotypus* so far known to me are restricted to the Neozelandic fauna. Two species occur in the Subantarctic Islands of New Zealand, one is so far endemic, the other is also in the South Island. One species is endemic to Chatham Is., one is restricted to northern North Island, all others are known from the South Island.

KEY TO SPECIES OF PACTOLOTYPUS

Funicle 7-segmented. 1.85–2.80 mm. Auckland Is., Campbell I..... **subantarcticus**
Funicle 6-segmented. 1.90–3.00 mm. Auckland Is., South Island ..... **depressirostris**

Pactolotypus subantarcticus Kuschel, n. sp. Figs. 89–93, 98–101, 275b.

Very variable in color as are all the other species belonging in the same *depressirostris*-group. The diagnostic characters are: Eyes between ommatidia with very fine and very short hairs (fig. 83). Front between eyes about as wide as rostrum at apex. Scape reaching well beyond hind margin of eyes. Funicle 7-segmented (fig. 85). Prothorax longitudinally flat. Elytra more than 1.6× longer than wide. Hind legs as in fig. 87.

♂. Distal margin of ventrite 5 rounded, not emarginate. Sternite 8 as in fig. 92. Sternite 9 as in figs. 92, 93, distal end of manubrium very slightly upcurved. Tegmen as in fig. 89, ring with deep notch due to proximally protruding knobs as shown in figure, this notch, however, wider and the knobs less protruding in Campbell I. specimens; parameres entirely free or partly fused. Aedeagus as in figs. 89–91, pointed, in lateral view rather strongly curved at apex. Internal sac with very fine armature near ostium and arranged as shown in fig. 89.

♀. Tergite 8 very weakly sclerorized except for a very narrow margin (fig. 99). Sternite 8 as in fig. 98 with a broad oval membranous area between the sclerotized arms. Genitalia as in fig. 100, spermathecal gland large, inserted near middle of dorsum of spermatheca.

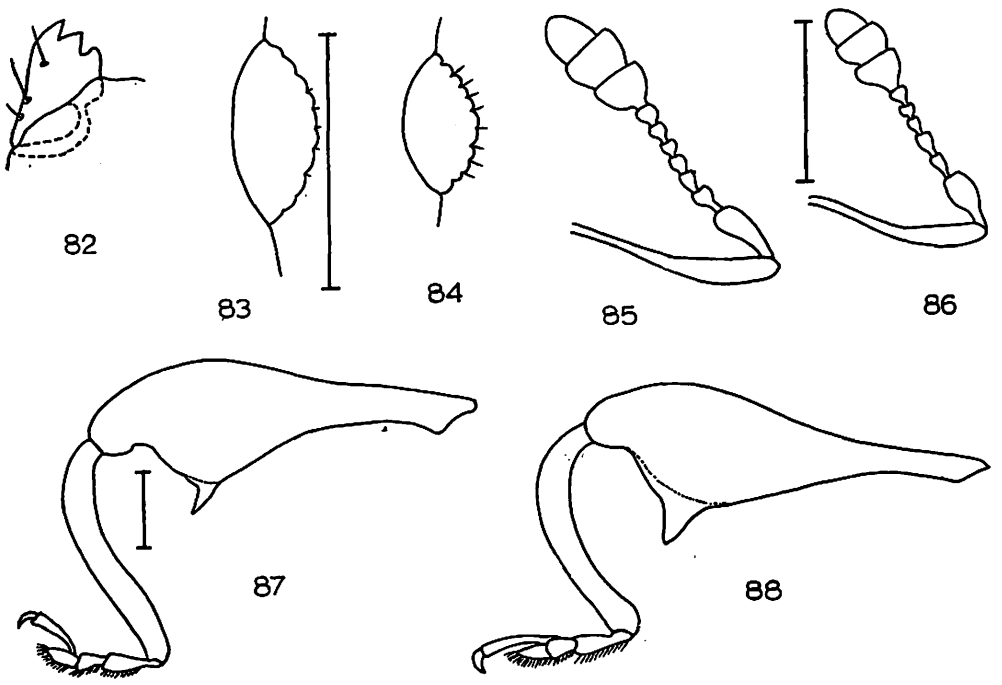
Length 1.85–2.80 mm; width 0.85–1.27 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 10 on *Coprosma*, Gressitt, without host plant, Gourlay, Gressitt; Crozier Point, 13 on *Coprosma*, Gressitt and under dry kelp, Gressitt, Wise; Tucker Point, 2 on *Coprosma*, Gressitt; Bivouac Hill, 420 m, 3 on *Chionochloa* and moss, Gressitt, Musgrave Penin., Carnley Harbor, 1 Fleming; without definite locality, 1, Turbott. ROSE I.: 1 in a rabbit burrow, Gressitt. Total, 31 collected in Nov., Dec. & Jan.

CAMPBELL I.: Beeman Camp, 2–150 m, 34 on *Coprosma*, Gressitt & Rennell, *Dracophyllum*, Rennell, and *Carex*, Gressitt. Beeman Hill, 100–180 m, 6 on *Coprosma*, Gressitt. Lyall-Beeman Saddle, 70 m, 1 on *Dracophyllum*, Gressitt. Lookout Bay, Beach, 2 on *Coprosma*, Gressitt. Tucker Cove, 0–100 m, 12 on *Coprosma*, Rennell, Wise and *Dracophyllum*, Rennell. Total, 55 collected in Feb., May, July, Aug., Nov. & Dec.

TYPE LOCALITY: Ranui Cove, Auckland Is.

Holotype ♂, 2.5×0.87 mm, Ranui Cove, 7–12. XI. 1954, Gourlay, allotype ♀ and paratypes in Entomology Div., D. S. I. R., Nelson, other paratypes in Dominion Mus., Welling-



Figs. 82-88. *Pactolotypus* spp. *P. subantarcticus* n. sp., Musgrave Peninsula, Auckland Is.: 83, right eye; 85, antenna; 87, left hind leg. *P. depressirostris* (Kirsch), French I., Auckland Is.: 82, left mandible, dorsal; 84, right eye; 86, antenna; 88, left hind leg. (Scales beside figs. equal 0.25 mm. Figs. 82-84 same scale; figs. 85, 86 same scale; figs. 87, 88 same scale).

ton, Canterbury Mus., Christchurch, Bishop Mus., Hononolu, and Staatliches Museum für Tierkunde, Dresden.

Ecology: The great majority of the specimens were collected on *Coprosma* (Rubiaceae). It is interesting to note that this species seems to be fairly rare in places where *depressirostris* also occurs whilst it is common on Campbell I.

Remarks: The closest relative of this species is not *depressirostris* (Kirsch) but an undescribed species occurring in North and South Islands on *Hebe* (Scrophulariaceae). As relatively little collecting has been done in the far South of New Zealand it would be premature to state that *P. subantarcticus* will stay as endemic to the Subantarctic Islands. Brookes has mentioned in his paper under *P. depressirostris* a single specimen that actually belongs to this new species.

Pactolotypus depressirostris (Kirsch) Figs. 94–97, 102–104.

Kirsch, 1877, Dtsch. Ent. Zschr. Berlin **21**: 169 (*Cyttalia*).—Krone, 1877, *l.c.* **21**: 156 (*Cyttalia*).—Voss, 1937, Arb. Morph. Taxon. Ent. Berlin **4**: 41.—Marshall, 1938, Trans. Proc. Roy Soc. N. Z. **67**: 336.—Gourlay, 1950, *l. c.*, **78**: 198.

striatus Broun, 1909, Subantarct. Is. N. Z. **1**: 119, pl 5: 5.

As this is very similar to *subantarcticus* I am giving only the main differences. Eyes smaller and more convex, with fine long hairs between ommatidia (fig. 84). Funicle 6-

segmented (fig. 86). Hind legs as in fig. 88 with stronger tooth and more strongly curved tibiae. ♂. Distal margin of ventrite 5 broadly emarginate. Sternite 8 as in fig. 96; sternite 9 as in figs. 96, 97, distal end of manubrium strongly upcurved. Tegmen as in fig. 94, ring with a shallow notch and without knobs. Aedeagus as in figs. 94, 95, with broad tip, in lateral aspect only weakly curved. Armature of internal sac much more extensive and arranged as shown in fig. 94. ♀. Tergite 8 as in fig. 103, more generally sclerotized. Sternite 8 with broader sclerotized arms leaving only a narrow membranous triangle between the arms, fig. 102. Genitalia as in fig. 104, spermathecal gland considerably longer, inserted closer to spermathecal duct. Length 1.90–3.00 mm; width 0.75–1.30 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 48 on *Hebe elliptica*, *Neopanax simplex*, *Myrsine divaricata*, and *Polystichum vestitum*, Johns, and without host plants, Gourlay, Wise; Observation Point, 4 on *Neopanax simplex*, Gressitt; Tucker Point, 3 on *Neopanax simplex*, *Coprosma*, Gressitt, and *Hebe*, Wise; Crozier Point, 22 on *Neopanax simplex*, *Polystichum vestitum*, *Hebe*, and *Dracophyllum*, Gressitt; Venus Valley, 1 beaten off *Hebe* and *Coprosma* scrub, Krone; Grey Duck Creek, Laurie Harbor, 1, sweeping, Wise; without definite locality, 2, Hudson, Turbott. FRENCH I.: 20 on *Hebe*, *Anisotome*, and *Poa*, Gressitt, and without host, Goulay. OCEAN I.: 1 in feathers of a giant petrel, Gressitt. EWING I.: 27 on *Hebe elliptica*, Gressitt, Johns, *Neopanax* and *Polystichum*, Gressitt. Total, 123 collected in Nov., Dec. & Jan.

SOUTH ISLAND: Mt. Hutt, 2, Hall.

TYPE LOCALITY: (1) *depressirostris* Kirsch, Venus Valley, Auckland Is.; (2) *striatus* Broun, Auckland Is., no definite locality. Types. (1) *Cyttalia depressirostris* Kirsch. Lectotype ♀, 3.0×1.3 mm, left tarsi and entire left hind leg lacking; labels attached to specimen: (a) Auckland, Krone; (b) 1855; (c) *Pactolotypus* (Broun) *depressirostris* (Kirsch), D.E.T. 1877, p. 169, Det. G.A.K. Marshall; (4) Typus. As Kirsch has had more than one specimen I have selected the specimen kindly forwarded by Dr. R. Hertel as lectotype. In Staatliches Museum für Tierkunde, Dresden. (2) *Pactolotypus striatus* Broun, in Brit. Mus. Lon.

Ecology: Most of the specimens have been beaten off *Neopanax simplex* (Araliaceae) and *Hebe elliptica* (Scrophulariaceae.)

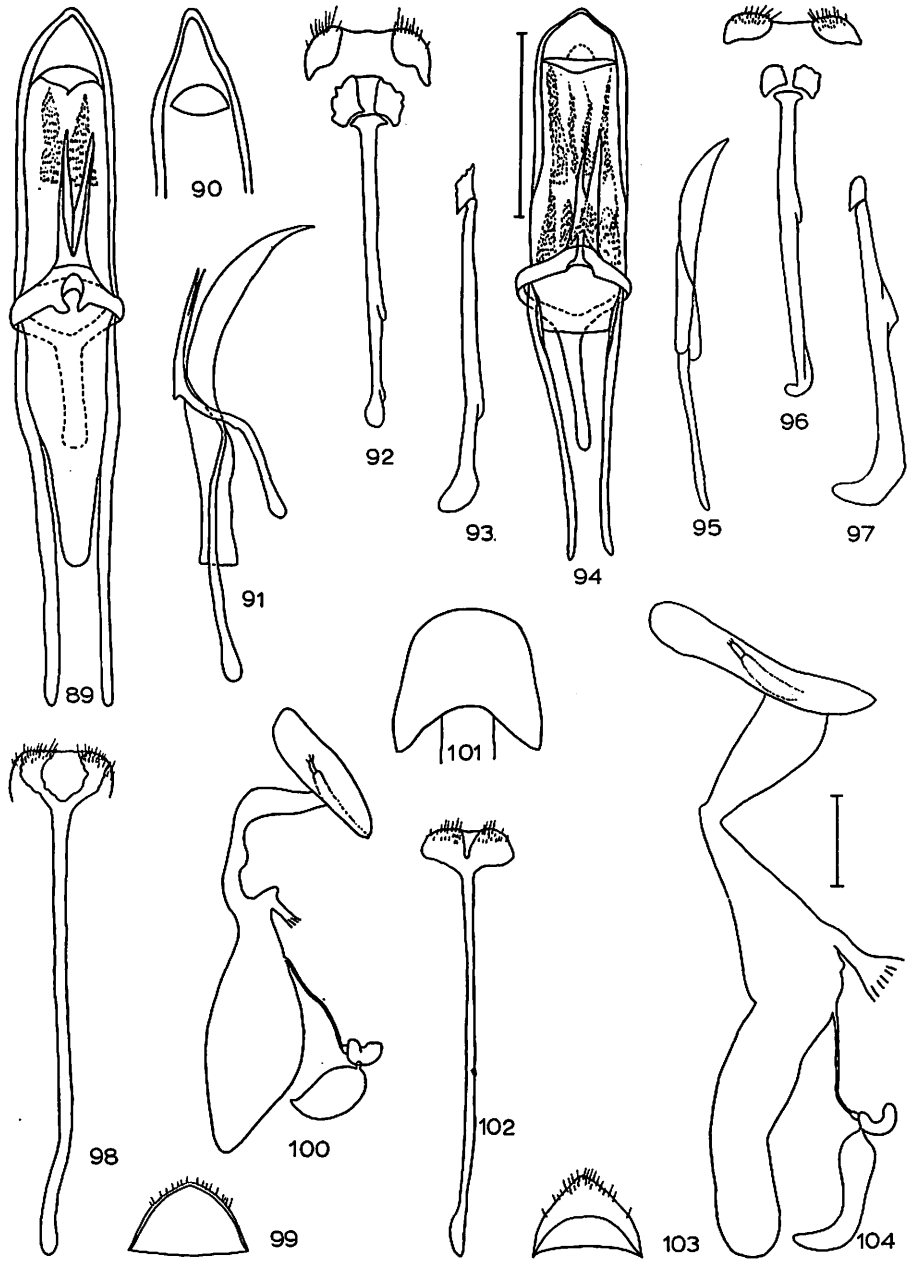
Remarks: *Pactolotypus depressirostris* (Kirsch) is so far the only species having 6 segments to the funicle. The 6-segmented funicle is a quite common feature in Eugnominae. The reduction of segments in this subfamily is due to a fusion of the 3rd & 4th segments and does not necessarily mean a generic character. In order to make sure that the 2 specimens from Mt. Hutt (Canterbury, South Island) were co-specific with those from Auckland Is. I have checked the internal features of the ♀♀ of all *Pactolotypus* species; they provide quite useful specific structures, though less striking than those found in the ♂♂.

Subfamily ERIRHININAE

6. Genus **Baeosomus** Broun, 1904

Baeosomus Broun, 1904, Ann. Mag. Nat. Hist. ser. 7, **14**: 118 (type species: *B. tacitus* Broun).

Bryocatus Broun, 1914, Bull. N. Z. Inst. **1** (3): 218 (type species: *Br. alternans* Broun). **New synonymy.**



Figs. 89-104. *Pactolotypus* spp. *P. subantarcticus* n. sp., Ranui Cove, Auckland Is.: 89, aedeagus, dorsal; 90, apex of aedeagus; 91, aedeagus, lateral; 92, sternites 8 & 9 of ♂, ventral; 93, sternite 9, lateral; 98, sternite 8 of ♀, ventral; 99, tergite 8; 100, ♀ genitalia; 101, pouch of hemisternites, ventral. *P. depressirostris* (Kirsch), ♂ from French I., ♀ from Ranui Cove, Auckland Is.: 94, aedeagus, dorsal; 95, aedeagus, lateral; 96, sternites 8 & 9 of ♂, ventral; 97, sternite 9, lateral; 102, sternite 8 of ♀, ventral; 103, tergite 8 of ♀; 104, ♀ genitalia, lateral. (Scales beside figs. equal 0.25 mm. Figs. 89, 90, 94 same scale; figs. 91-93, 95-104 same scale).

Daylesfordia Oke, 1931, Proc. Roy. Soc. Victoria **43**: 195 (type species: *D. uvida* Oke). **New synonymy.**

Eyes lateral, transverse, not protruding. Secondary scrobe present or absent. Scape just reaching front margin of eyes; funicle with 6 segments, segment 1 much longer than 2; actual segment 7 of funicle very large and tightly joined to club thus forming part of the 5-segmented club (fig. 105). Ocular lobes present or absent. Scutellum invisible. Elytra without humeral callus, humeral width not greater than maximal width of prothorax. Wings absent. Legs short; tarsal segment 3 usually wide; claws simple. Scaling, when present, agglutinated as in most Bagoinae.

♂. Tergite 8 free, not covered by 7. Sternite 9 not articular, Y-shaped, with rather long, thin arms that are thickened at tip, manubrium straight, not upcurved. Tegmen about as long as aedeagus, ring complete on dorsum, laterally not articulate; parameres well developed. Aedeagus depressed, symmetrical, ventral surface sclerotized, dorsal surface membranous; apophyses not forming an angle with main body of aedeagus, distinctly articulate, with a latero-inferior arm articulating with lateral angles of aedeagus and with a dorso-interior arm forming an arched bridge with corresponding arm of opposite apophysis. Internal sac long, usually reaching or passing tip of apophyses, with a basal sclerite that usually becomes flagelliform and with a slightly sclerotized tube at proximal 1/2 of main body; no other armature present. Insertion of ejaculatory duct ventral near base of internal sac.

♀. Tergite 7 variable. Tergite 8 entire, crenulate or strongly denticulate at distal margin. Sternite 8 with 2 widely open sclerotized arms and with short manubrium. Hemisternites long, undivided; styli apical. Bursa copulatrix unarmed, wide. Spermatheca falcate, specifically very different; spermathecal duct usually very long, its insertion on bursa copulatrix at specifically different points, but never at base of oviduct; spermathecal gland very small, usually 1/3 the size of spermatheca.

Relationships: *Baeosomus* and its synonym *Daylesfordia* have been placed by Broun and Oke in Rhyparosominae whilst the other synonym *Bryocatus* Broun in Hylobiinae. *Baeosomus* belongs to a group of 4 genera which look very much like Bagoinae and yet their internal structures are so utterly different from those of the true water-weevils that the similar appearances must be regarded as the result of convergent evolution due to similar habits. Two of the New Zealand genera, *Athor* Broun and an undescribed genus, have functional wings, and the other 2 have no trace of wings. *Baeosomus* and its allies should be placed in Erirhininae.

Ecology: The agglutinated scales (as in Bagoinae) and the roughly surfaced scales of the underside of the body suggest aquatic habits. So far, no species has actually been observed in or on water. What actually has been observed is that they occur in quite damp and mossy sites and thus could frequently be subjected to flooding. They are of diurnal habits feeding on leaves, according to the gut contents, but no plant could be identified. Mr. E. S. Gourlay informed me that he once found a specimen actually chewing on a cushion plant of the genus *Raoulia* (Compositae). Most species are restricted to alpine and subalpine zones.

Geographical distribution: *Baeosomus* has many species in New Zealand, most of them confined to the South Island. One occurs in Chatham Is., one in Campbell I., and one is known from Victoria (SE Australia). The discovery of 1 species on Campbell I. is not

at all surprising.

Remarks: The synonymy of *Daylesfordia* Oke is certain as I have been able to examine 2 specimens of the original series of *D. uvida* Oke and these did not show the slightest generic difference in either external or internal characters.

Baeosomus serripes Kuschel, n. sp. Figs. 105–114.

Derm black throughout, including antennae and legs, covered with a dense coating of agglutinated aeneous scales, except on coxae and middle of metasternum where the scales are free and gray; no pale markings on prothorax or elytra.

Head densely squamose. Front flat, slightly narrower than distal width of rostrum. Eyes transversely ovate, slightly convex. Rostrum, from distal margin of epistome to front margin of eyes, about 3.6× longer than its distal width and about 1.25× shorter than prothorax, gently curved, cylindrical, squamose at base, without scales beyond insertion of antennae, with more or less confluent punctures, some punctures coarse, others fine; no secondary scrobe. Postmentum not protruding ventrally. Prothorax scarcely shorter or longer than wide, moderately rounded on the sides; base arched towards elytra, lateral angles rounded. Disc with dense shallow punctures concealed under scaling, a little irregularly convex, on each side with a rather deep fovea. Ocular lobes absent. Elytra ovate, about 1.3× longer than wide, convex, without nodules, the setae very indistinct. Interstriae 1, 3, 5 & 7 wider and higher at proximal 1/2. Femora thick, tibiae thin, externally straight, internally sinuous and denticulate. Tarsal segment 3 distinctly wider than 2; claw segment moderately long (figs. 106, 107).

♂. Ventrite 5 flat, with very shallow median impression. Tegmen with long manubrium, parameres long, fused at proximal 1/2. Aedeagus parallel, slightly apiculate with short blunt tip. Internal sac reaching beyond tip of apophyses, with long flagellum (figs. 108–111).

♀. Ventrite 5 as in ♂, only less setose. Tergite 7 very slightly emarginate. Tergite 8 with entire distal margin (fig. 112). Genitalia as in fig. 114, insertion of spermathecal duct at upper end of bursa copulatrix.

Length 2.15–2.25 mm; width 1.07–1.10 mm.

CAMPBELL I.: St. Col Ridge, 180–280 m, 1♂, 1♀, XII. 1961, Gressitt; St. Col Peak, 280 m, 1♂, 23. II. 1963, Wise.

TYPE LOCALITY: St. Col Ridge, Campbell I.

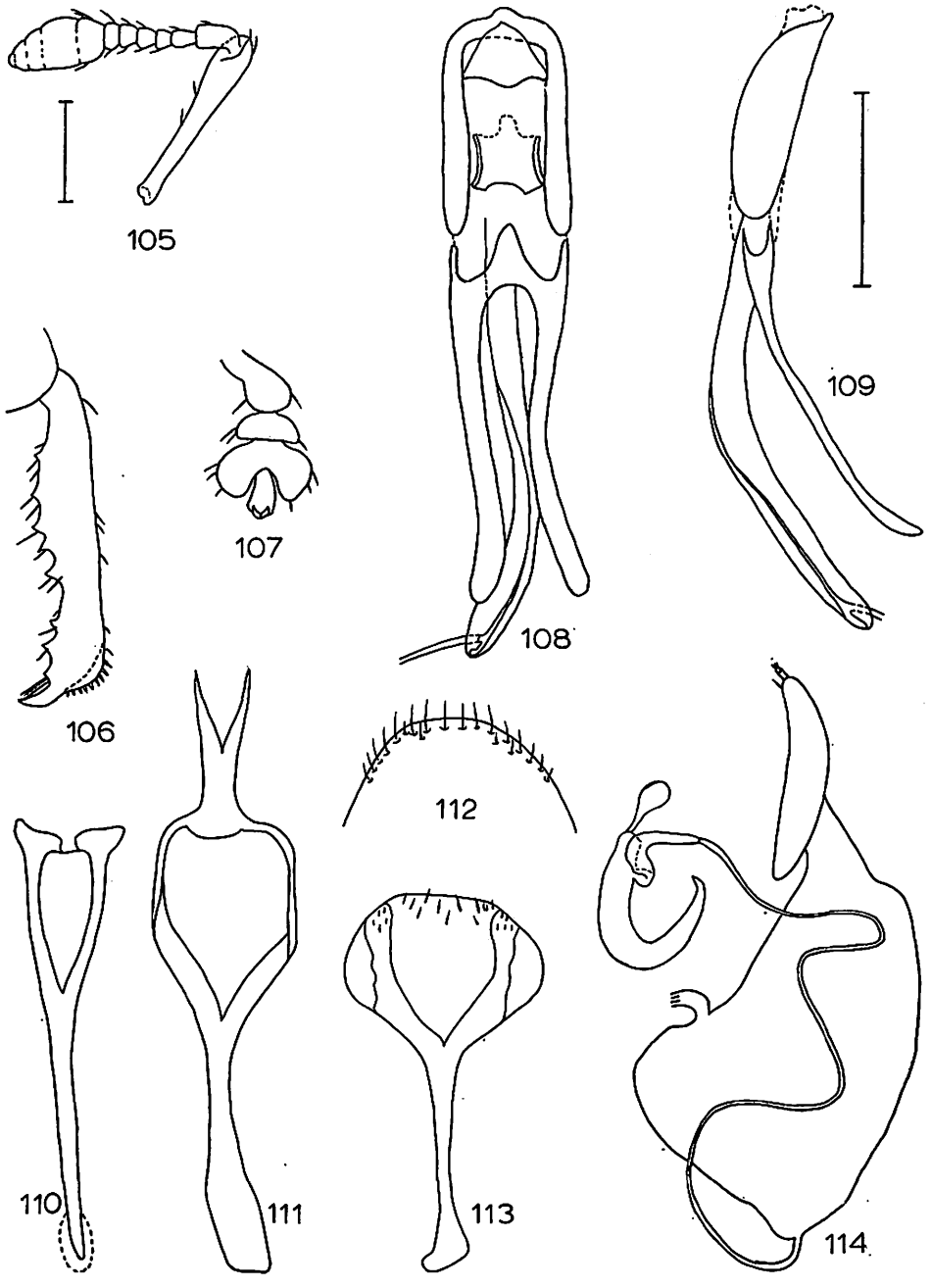
Holotype ♂, 2.15×1.07 mm, St. Col Ridge, 180–280 m, XII.1961, Gressitt, in Entomology Div., D.S.I.R., Nelson. Allotype ♀ and 1 paratype in Bishop Museum. Honolulu.

Ecology: All 3 specimens obtained in Berlese funnel out of moss samples.

Remarks: Many species are hard to separate on external morphological characters, but the present species is unique in having denticulate tibiae.

7. Genus **Peristoreus** Kirsch, 1877

Peristoreus Kirsch, 1877, Dtsch. Ent. Zschr. Berlin **21**: 170 (type species: *P. innocens* Kirsch). —Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 197.



Figs. 105–114. *Baeosomus serripes* n. sp., Campbell I.: 105, antenna; 106, left front tibia; 107, right front tarsus, ventral; 108, aedeagus, dorsal; 109, aedeagus, lateral; 110, sternite 9 of ♂, ventral; 111, tegmen, dorsal; 112, tergite 8 of ♀; 113, sternite 8, ventral; 114, ♀ genitalia. (Scales beside figs. equal 0.25 mm. Figs. 105–107 same scale; figs. 108–114 same scale.)

Dorytomodes Marshall, 1926, Ann. Mag. Nat. Hist. ser. 9, **18**: 9 (type species: *Dorytomus aciphyllae* Broun).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 197 (synonymy established).

It it not possible to give a description of this genus without studying all the species and those of several closely related genera.

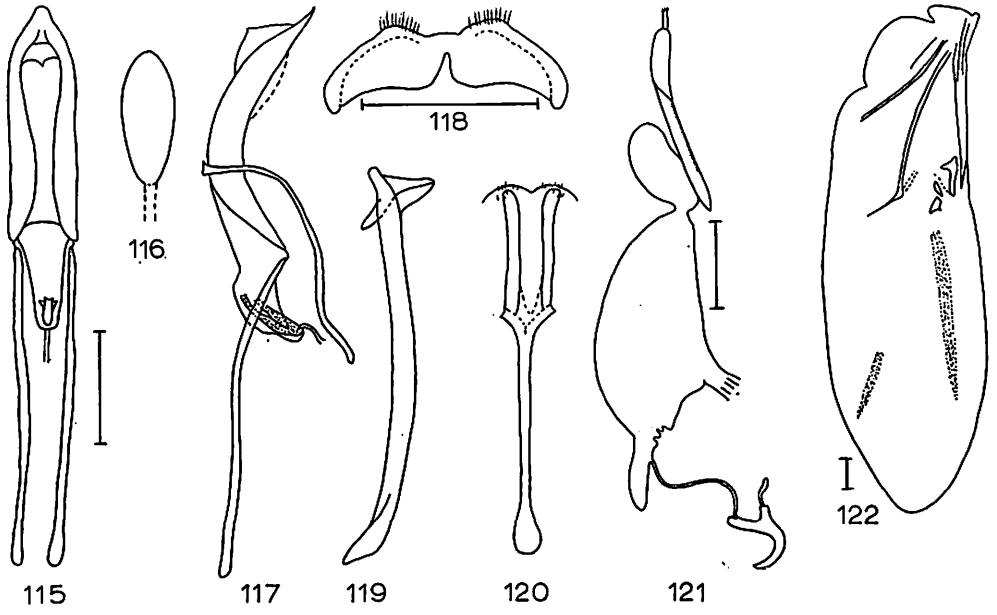
Ecology: The representatives of the genus are host specific being usually confined to a species or group of species within a genus of plants. Most larvae seem to live either in the main rhachides of the inflorescences or in fruits. The range of host plants is extremely varied as species occur in Dicotyledons and monocotyledons as well. The adults are diurnal and feed on leaves, flowers, and also pollen of the same plants as the larvae.

Geographical distribution: *Peristoreus* is restricted to New Zealand. The only species present in the Subantarctic Islands was thought to be endemic but lately has been discovered also in Stewart I.

Peristoreus innocens Kirsch Figs. 115–121, 275c.

Kirsch, 1877, Dtsch. Ent. Zschr. Berlin **21**: 171.—Krone, 1877, *Ibid.*, **21**: 156.—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 197.—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 63.

dracophyllae Broun, 1909, Subantarct. Is. N. Z. **1**: 118, pl. 3 : 6 (*Erirhinus*).—Hudson, 1909, *Ibid.* **1**: 61 (*Erirhinus*).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **87**: 197 (synonymy stated).



Figs. 115–122. *Peristoreus innocens* Kirsch, Rose I., Auckland Is.: 115, aedeagus, dorsal; 116, membranous 'window' on ventral surface of aedeagus; 117, aedeagus, lateral; 118, sternite 8 of ♂, ventral; 119, sternite 9 of ♂; 120, sternite 8 of ♀, ventral; 121, ♀ genitalia, lateral; 122, right wing. (Scales beside figs. equal 0.25 mm. Figs. 115–117, 119, 120 same scale).

♂. Sternite 8 as in fig. 118, plates fused at their distal portion. Sternite 9 as in fig. 119, strongly upcurved in lateral aspect. Tegmen not articulate, without parameres. Aedeagus as in figs. 115, 117, dorsal surface submembranous along the median line, ventral surface with a large membranous area as in fig. 116; tip apiculate; apophyses long, slender, clearly articulate to the main body. Internal sac with a very strong sclerite, with a dorsal and a ventral portion, the latter divergent distally and showing in dorsal aspect of the sclerite as lateral wings. ♀. Sternite 8 as in fig. 120, the 2 sclerotized arms long and parallel. Hemisternites long, with a distal sclerotized area and with a ventral rod at proximal portion when seen in lateral view; with a strong seta at apex on inner margin (hidden by stylus on the figure); stylus apical, long, with a few short setae. Bursa copulatrix with a narrow apical portion. Spermatheca as in fig. 121, spermathecal duct short, inserted ventrally near base of narrowed portion of bursa. Length 2.0–3.1 mm; width 0.85–1.30 mm.

AUCKLAND IS. AUCKLAND I: Venus Valley, 1 on *Dracophyllum longifolium*, Krone; Ranui Cove, 166 on *Dracophyllum longifolium*, Gourlay, *Hebe elliptica* and *Metrosideros umbellata*, Johns; and in Malaise trap Gressitt; Ranui Track, 3 on *Dracophyllum longifolium*, Johns; Observation Point, 4 on *Dracophyllum* and *Poa*, Gressitt, and sweeping Wise; Hooker Hills, 400 m, 1 on *Dracophyllum longifolium*, Wise; Bivouac, Mt. Eden, 400 m, 2 on *Chionochloa*, Gressitt; Summit Mt. Eden, 1, Tames; Port Ross, 4 on *Dracophyllum*, Hudson; Carnley Harbor, 5 on *Dracophyllum*, Hudson; Musgrave Peninsula Carnley Harbor, 1 Wenham. OCEAN I.: 4 on *Dracophyllum longifolium*, Gressitt, Wise. ROSE I.: 16 on *Dracophyllum longifolium*, Johns. ENDERBY I.: 2 among moss, Dell. ADAMS I.: 3, Turbott. Total, 213 collected in Sept. Nov., Dec., Jan. & Mar.

CAMPBELL I.: Beeman Camp, 2–50, 60 on *Dracophyllum*, Gressitt & Rennell; Beeman Pt., 5 on *Dracophyllum scoparium*, Wise. Total, 65 in Dec. and Feb.

SNARES IS.: 2 without further details.

STEWART I.: Mt. Anglem, 800–900 m, 8 on *Dracophyllum longifolium*, Kuschel in Jan.

TYPE LOCALITIES: (1) *innocens* Kirsch, Venus Valley, Auckland Is. (2) *dracophyllae* Broun, Carnley Harbour, Auckland Is. Types. (1) *Peristoreus innocens* Kirsch: Lectotype ♀, 3.1×1.30 mm, Venus Valley, in Staatliches Museum für Tierkunde, Dresden. (2) *Erirhinus dracophyllae* Broun: Lectotype ♀, 2.7×1.15 mm, Carnley Harbor, in Dominion Mus., Wellington.

Ecology: This species, like several others of New Zealand, is associated with *Dracophyllum* of the *longifolium*-complex. *Dracophyllum longifolium* occurs in NW Stewart I. from sea level to the top of the mountains but the weevil was found only at the highest levels of Mt. Anglem. The adults are particularly abundant on flowering shrubs of *Dracophyllum* and seem to feed primarily on pollen according to the gut contents of the dissected specimens. The larvae will most likely be found in the main flower stem.

Remarks: The species was previously known from Auckland Is. only.

8. Genus **Notinus** Kuschel, n. gen.

Head small, globose. Front between eyes as wide as rostrum. Eyes lateral, transverse, oval, slightly protruding. Rostrum subcylindric. Scrobes lateral, with sharp dorsal edge, directed towards lower 1/2 of eyes; no secondary scrobe. Antennae a little beyond middle; scape reaching front margin of eyes; funicle 7-segmented, segment 1 longer than 2; club

4-segmented. Prothorax rounded, widest near middle, laterally constricted in front, without ocular lobes. Scutellum visible, very small, punctiform. Elytra elongate-ovate, without humeral callus, with 10 complete striae, interstriae without knobs or tubercles. Wings much atrophied, obovate, without veins, wing/elytron ratio about .13 (fig. 139). Prosternum without canal, its distal portion very short, not longer than proximal portion. Metasternum very short, much shorter between mid and hind coxae than diameter of a mid coxa. Femora unarmed. Tibiae with very small mucro. Tarsal segment 3 wide, deeply bilobed; claw segment rather short, claws with laminiform expansion at base.

♂. Sternite 8 with 2 free plates. Tegmen without parameres. Apophyses articulate. Basal sclerite strong, ejaculatory duct inserted at the base.

♀. Sternite 8 with 2 short and widely open sclerotized arms. Spermatheca very thick.

Type species: *Notinus aucklandicus* n. sp.

Relationships: This belongs to the *Peristoreus—Neomycta* group of New Zealand Erirhininae, but it is hard to say more about the relationships without a monographic study of the whole group. The other known genera of this group with flightless species are *Abantiadinus* Schenkling (*Abantiades* Broun, non Schaeffer) and *Stilbopsis* Broun, the former with tuberculate elytra, with long lineal wings and a wing/elytron ratio of about .5, whilst the latter entirely lacks wings and is very smooth and very convex. Externally *Notinus* resembles a flightless *Peristoreus* Kirsch and internally it seems to be closer to *Neomycta* Pascoe.

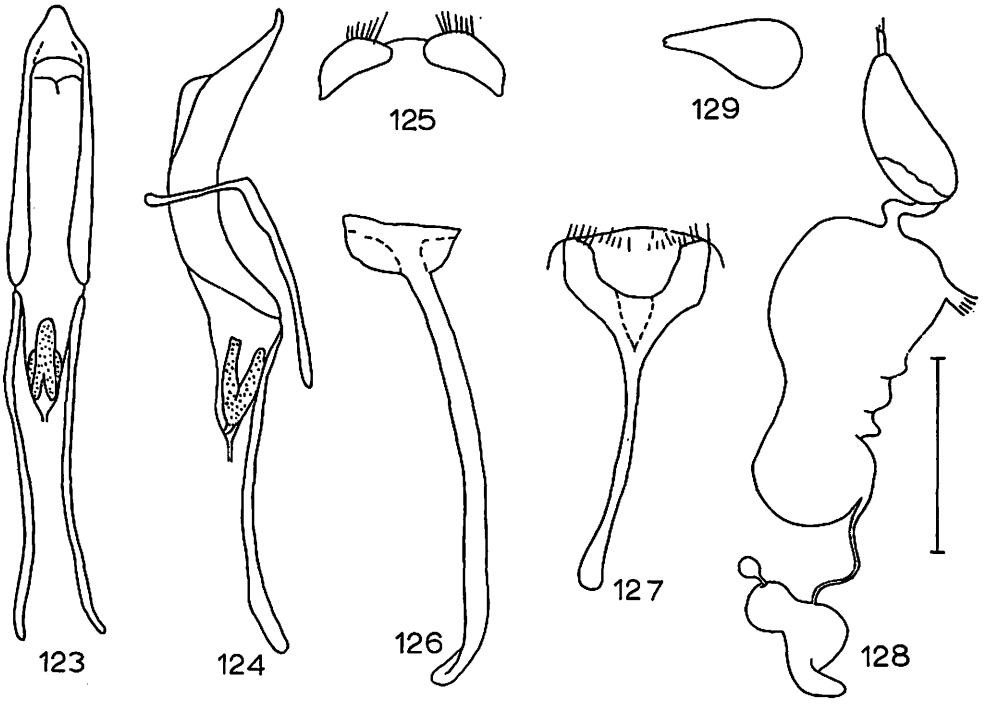
Ecology: The habits of this little flightless weevil are unknown, but they should be similar to those of the other members of the group. The adult should be diurnal occurring on the same plant as the larvae and feeding on soft leaves, flowers and pollen. The gut content of 2 dissected specimens was leaf tissue.

Geographical distribution: This genus is so far endemic to Auckland Is., but it is highly probable that it will be found also in the main islands of New Zealand once thorough collecting is undertaken in the southern portion of the country.

Notinus aucklandicus Kuschel, n. sp. Figs. 123–129.

Color of derm variable, dorsal surface paler than ventral surface, head, pronotum, elytra and legs testaceous, pronotum and elytra often with some dark markings, at least tip of rostrum and sterna piceous. Vestiture scanty, elytra with short erect subsquamiform setae.

Head dull, alutaceous, with fine and scarce shallow punctures each bearing a lineal scale. Front between eyes 1.28× wider than distal width of rostrum. Eyes slightly more convex than head. Rostrum in ♂ usually a little shorter than prothorax, in ♀ a little longer than prothorax, about 3.33–3.46× longer than the distal width, very gently curved, alutaceous and very shallowly striolate from base to a little beyond insertion of antennae, the apex shiny with a few coarser punctures towards lateral margins. Scape very strongly curved at tip; last segments of funicle strongly transverse. Prothorax 1.12–1.19× wider than long, more transverse in ♂ than in ♀, sides rounded, widest at or beyond middle. Pronotum longitudinally flat, transversely convex, alutaceous, coarsely punctate, with scanty lineal scales. Scutellum black, bare, punctiform, as high as or lower than elytra. Elytra 1.39–1.44× wider than prothorax and 1.39–1.46× longer than their maximal width. Striae sulciform. Suture usually raised and cariniform at scutellar area. Interstriae convex, with



Figs. 123–129. *Notinus aucklandicus* n. sp., Ranui Cove, Auckland Is.: 123, aedeagus, dorsal; 124, aedeagus, lateral; 125, sternite 8 of ♂; 126, sternite 9 of ♂, ventral; 127, sternite 8 of ♀, ventral; 128, ♀ genitalia, lateral; 129, right wing. (Scale beside fig. 128 equals 0.25 mm. All figs. same scale).

a single row of very short erect subsquamiform setae and with a few hairs or lineal scales between some setae. Femora short, thick, slightly swollen, without trace of tooth.

♂. Sternite 8 as in fig. 125, the 2 plates widely separated by a median membrane. Sternite 9 as in fig. 126, rather thin, with upcurved manubrium. Aedeagus as in figs. 123, 124. Basal sclerite strongly chitinous, with a dorsal tube and a ventral bar having lateral expansions.

♀. Sternite 8 as in fig. 127. Hemisternites broad, with a small dorso-basal membranous portion, without setae; stylus apical, long, cylindrical. Spermatheca usually thick (fig. 128), with short thin tip and with a very thick appendix holding a very small spermathecal gland. Spermathecal duct short, expanded before insertion on bursa copulatrix at its ventral surface near tip.

Length 1.80–2.25 mm; width 0.90–1.10 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, 8 in forest litter, Gourlay, on *Coprosma*, Gressitt, *Myrsine divaricata* and *Polystichum vestitum*, Johns; Crozier Point, 5 on *Coprosma* and *Hebe*, Gressitt; Observation Point, 1, no host plant, Gressitt; Tucker Point, 10 on *Coprosma* and *Neopanax* and under stones, Gressitt; Bivouac – Mt. Eden, 200–400 m, 1 on *Chionochloa*, Gressitt. EWING I.: 2 on *Metrosideros umbellata* and sweeping *Bulbinella* and *Carex*, Gressitt. Total, 27 collected in Nov., Dec. & Jan.

TYPE LOCALITY: Ranui Cove, Auckland Is.

Holotype ♂, 1.90×0.98 mm, Ranui Cove, 7–12. XI. 1954, Gourlay, allotype ♀ and paratypes in Entomology Div., D. S. I. R., Nelson, other paratypes in Dominion Mus., Wellington, Canterbury Mus., Christchurch, Bishop Mus., Honolulu, and British Museum, Lond.

Ecology: This species has been found in the bush and on the ground near the coast. Although most specimens were beaten from *Coprosma* (Rubiaceae) some have occurred on several quite unrelated plants, so nothing definite can be said about the true host plant.

Remarks: The presence of *Notinus aucklandicus* as an endemic genus and species in the Subantarctic Islands is an unsolved problem at present because we do not know the exact host plant of this weevil. If the host plant were an endemic genus, like *Stilbocarpa* (Araliaceae) or *Pleurophyllum* (Compositae) or in a genus with endemic species, like *Coprosma* (Rubiaceae) or *Celmisia* (Compositae), then probably the weevil could have survived the rigorous conditions of the glaciations.

Subfamily RHYPAROSOMINAE

As many genera of New Zealand Curculionidae have been placed in Rhyparosominae, I have examined a ♂ and a ♀ of *Rhyparosomus mashunus* Marshall, from S. Rhodesia, kindly forwarded by Mr. R. T. Thompson. I am hopeful that I am correctly interpreting the subfamily characters, but I would not like to venture a re-definition of the whole subfamily on such scanty material inasmuch as other closely related subfamilies, particularly Rhytirhininae, also ought to be examined on their external and internal structures. I would like to mention in this connection that Listroderini, hitherto put in Cylydrorhininae, agree very well with the characters of Rhyparosominae and should, therefore, be transferred to this subfamily while Cylydrorhininae, though still listed as Phanerognatha, are in fact true Adelognatha according to their adult and larval characters. The examined Australian and New Zealand genera which will stay in or should be transferred to Rhyparosominae are:

Genera	Position in Junk Coleopt. Catalogus
Anorthorhinus Blackburn	Erirhininae
Aphela Pascoe	Amalactinae, Cossoninae
Cisolea Oke	Rhyparosominae
Desiantha Pascoe	Erirhininae
Dryopais Broun	Erirhininae
Gromilus Blanchard	Cylydrorhininae
Liparogetus Broun	Cylydrorhininae
Mandalotina Oke	Leptopiinae
Neosyagrius Lea	Rhyparosominae
Nestrius Broun	Rhyparosominae
Notiomimetes Wollaston	Cossoninae
Psaldus Pascoe	Cossoninae
Wollastonicis Lea	Cossoninae
Xerostygnus Broun	Erirhininae

For further information on other 'Rhyparosominae' see next subfamily Phrynixinae.

9. Genus **Gromilus** Blanchard, 1853

Gromilus Bld., 1853, Voy. Pôle Sud **4**: 208 (type species: *Gr. insularis* Bld.).
Clypeorhynchus Sharp, 1883, Ent. Mon. Mag. **20**: 26 (type species: *Cl. gracilipes* Sh.).— Broun, 1893, Man. N. Z. Coleopt. **1893** (5): 1210. **New Synonymy.**
Dacnophylla Broun, 1893, *Ibid.* **1893** (7): 1471 (type species: *D. setosa* Broun). **New Synonymy.**
Hycanus Br., 1905, Ann. Mag. Nat. Hist. ser. 7, **15**: 545 (type species: *H. cockaynei* Br.); 1909, Subantarct. Is. N. Zealand **1**: 115. **New Synonymy.**
Phygothalpus Broun, 1913, Trans. Proc. N. Z. Inst. **45**: 117 (type species: *P. sulcicollis* Br.). **New Synonymy.**
Pseudohycanus Brookes, 1951, Cape Exp. Ser. Bull. **5**: 57 (type species: *Ps. fallai* Br.). **New Synonymy.**
Stilbodiscus Broun, 1909, Subantarct. Is. N. Zealand **1**: 117 (type species: *St. setarius* Broun). **New Synonymy.**

Eyes large, transverse, coarsely facetted, seldom more convex than head, with or without surrounding groove. Front with distinct or obsolete median fovea. Rostrum moderately long. Scrobes lateral, directed towards middle of eyes, deep for more than 1/2 the length, obsolete in front of eyes, invisible in dorsal aspect except for a short portion at insertion of antennae. Pterygia usually well developed and protruding. Epistome flat to strongly convex, without sharp basal edges or margins. Furrow of genal suture deep and long, usually continued under pterygia. Mandibles with a single long seta. Scape scarcely reaching to or extending beyond hind margin of eyes; segment 1 of funicle distinctly longer than 2; club elongate, pointed, well separated from last segment of funicle, with 2 deep and 1 very faint suture. Prothorax widest near distal 1/3, with median furrow or depression; base slightly rounded, high above mesothoracic peduncle, its upper edge overlapping the sloping base of elytra; ocular lobes broad, slightly or strongly protruding. Scutellum visible or invisible. Elytra without humeral callus. Wings strongly reduced, broadly ovate or obovate, in general outline roughly as in fig. 158, wing/elytron ratio below .2, thus wings at least 5× shorter than elytra. Metasternum between mid and hind coxae shorter than diameter of mid coxa. Metepisternum very narrow, metepisternal suture distinct throughout. Mucro and 1 spur present in fore and mid tibiae.

♂. Sternite 8 divided into 2 triangular plates. Sternite 9 very strong, irregular. Parameres absent. Aedeagus symmetrical. Internal sac entirely lying inside main body of aedeagus, with a strong and diversified basal sclerite apart from other armature.

♀. Sternite 8 with 2 sclerotized arms. Hemisternites usually long, roughly of triangular outline; styli present, usually with 4 long setae. Bursa copulatrix with a pair of big and complex sclerites at insertion of spermathecal duct, additional sclerites sometimes present.

Relationships: The abundant material of more than 40 species of the *Gromilus-Clypeorhynchus* complex of genera available to me shows that no clear-cut distinction can be made between the previously erected genera as the morphological and anatomical features are gradually changing from one end of the complex to the other. *Gromilus* is most closely related to 2 other genera of Rhyparosominae of New Zealand. One is *Liparogetus* Broun which has about 10 species, all confined to the southern half of South Island and mainly to the alpine zone. Apart from a different habitus it shows a quite different evolutionary

line in the reduction of the wings which are very narrow, and of lineal order. The other genus is *Nestrius* Broun which is more remotely related to *Gromilus.*

Ecology: *Gromilus*, like all Rhyparosominae, has nocturnal habits. The adults hide in daytime under stones, logs, leaf litter and at the base of low growing plants. No food plants have been identified in the field for either larvae or adults of the subantarctic species, but the gut contents of a certain number of adults have shown remains of some Dicotyledons, such as *Tillaea* (Crassulaceae), *Colobanthus* (Caryophyllaceae), and other genera of plants that could not be identified any further. It seems certain that the species of *Gromilus* of the Subantarctic Islands of New Zealand do not feed on ferns. It might be said in this connection that *Gromilus* is one of those rare cases in the Curculionidae that have some species that are attached to dicotyledons and others to ferns. Larvae of *Gromilus* have been collected in Auckland and Campbell Is.; they are hypogeous living upon roots of some unidentified herbs.

Geographical distribution: *Gromilus* is an endemic genus to the Neozelandic fauna. There are 44 species amongst the nearly 2000 specimens so far examined of this genus. Four species are restricted to North Island, 30 to South Island and Stewart I., a further 4 occur on both North and South Islands, and 6 species are confined to the Subantarctic Islands of New Zealand. Snares and Campbell Is. each have 1 endemic species, Auckland Is. have 2 endemic species, 2 species occur on Auckland Is. as well as on Campbell I., but their populations are distinct at a subspecific level, and 1 of these species is also present on Antipodes with a subspecies of its own. All the species of the Subantarctic Islands seem to occur from the supralittoral zone up to the top of the ranges and mountains without showing significant differences between the populations of lowland and high country. *Gromilus fallai* and *G. veneris veneris* from Auckland Is. appear to be an exception because they are known from the lowlands only, but this is most likely due to the lack of better exploration of the other areas of the islands.

Key to species of Gromilus

1 (14). Dorsal surface of rostrum transversely convex, close behind insertion of antennae. Mucro of hind tibiae of ♂♂ usually longer and stronger than spur.

2 (3). Pterygia feebly protruding (fig. 159). Setae on elytra thick, squamiform, slightly raised and strongly curved. Vestiture mostly of lineal scales. 4.3–5.3 mm. Snares Is. ..... **laqueorum**

3 (2). Pterygia strongly protruding (fig. 160). Setae on elytra bristle-like, erect or semierect. Vestiture mainly or entirely of fine hairs.

4 (9). Emargination of tarsal segment 3 weak, lobes not longer than 1/3 of length of whole segment in ventral aspect. Pronotum usually with very obsolete punctures. Elytra shorter, very rarely a little more than 1.7× longer than wide (mainly in Antipodes specimens).

5 (6). Furrow of genal suture of rostrum extending at least as far as distal end of pterygia. ♂: basal sclerite of internal sac distinctly tapering. ♀: lateral lobes of bursal sclerite more exposed beyond median fold. 3.9–5.7 mm. Auckland Is. ..... **insularis insularis**

6 (5). Furrow of genal suture of rostrum not extending as far as distal end of pterygia. ♂: basal sclerite of internal sac not or very slightly tapering.

♀ : lateral lobes of bursal sclerite less exposed beyond median fold.

7 (8). Elytral hairs distinct and more abundant. Larger race. 4.5–6.0 mm. Campbell I. ..... **insularis robustus**

8 (7). Elytral hairs indistinct and scanty. Smaller race. 3.5–4.5 mm. Antipodes. ... . **insularis antipodarum**

9 (4). Emargination of tarsal segment 3 deep, lobes 1/2 length of whole segment in ventral aspect. Pronotum always with distinct punctures. Elytra more elongate, very rarely a little less than 1.8× longer than wide.

10 (11). Only distal part of rostrum shiny, proximal part of rostrum and front dull, alutaceous, with or without very obsolete punctures. Tarsal segment 3 small, with short lobes. ♂ : aedeagus in lateral aspect with short tip (fig. 144), basal sclerite of internal sac with distal arm arched (fig. 142). ♀ : sternite 8 with long manubrium; bursal sclerite roughly as in fig. 176. 4.2–6.5 mm. Campbell I. ..... **exiguus**

11 (10). Entire rostrum and front shiny, strongly punctate. Tarsal segment 3 large, with long lobes. ♂ : aedeagus in lateral aspect with long tip (fig. 147); basal sclerite of internal sac with distal arms not arched. ♀ : sternite 8 with short manubrium (fig. 182).

12 (13). Pronotum with a complete or interrupted median furrow, dull, only median furrow partly shiny. 5.8–7.3 mm. Auckland Is. ..... **veneris veneris**

13 (12). Pronotum with a broad shiny median depression. 6.1–8.0 mm. Campbell I. ... . **veneris setarius**

14 (1). Dorsal surface of rostrum transversely concave due to a median depression close behind insertion of antennae. Mucro of hind tibiae of ♂♂ smaller than spur.

15 (16). Scape thin except thickened distal portion. Tarsal segment 3 small. ♂ : ostium of aedeagus with a bicuspid dorsal plate; internal sac without armature between basal sclerite and ostium (fig. 151). ♀ : bursal sclerite oval in outline (fig. 184). 3.75–5.10 mm. Auckland Is. ..... **frontalis**

16 (15). Scape thick, cylindrical from near base. Tarsal segment 3 large. ♂ : ostium of aedeagus without a bicuspid dorsal plate; internal sac with additional armature between basal sclerite and ostium (fig. 154). ♀ : bursal sclerite rhomboidal in outline (fig. 187). 6.4–7.4 mm. Auckland Is. ..... **fallai**

Gromilus laqueorum Kuschel, n. sp. Figs. 130–132, 159, 162–164.

Piceous, dull, legs and antennae castaneous. Rostrum, prothorax and elytra with appressed yellow hairs or lineal scales, these more condensate on humeral area and in some small rather indistinct spots particularly on distal 1/2 of elytra. Setae of interstriae short, clavate, strongly curved.

Head punctate, slightly granulo-verrucose, intervals alutaceous. Proximal part of rostrum dull, distal part rugoso-punctate. Pterygia very weakly protruding beyond lateral margins of rostrum (fig. 195). Furrow of genal suture extending as far as distal end of pterygia. Scape sinuous, thin and shiny at its proximal 1/2, then thickened and alutaceous, reaching or just passing hind margin of eyes. Prothorax very slightly wider than long to a very little longer than wide, longitudinally and transversely convex, with a broad unin-

terrupted median furrow; vestiture nearly uniform, sparse; punctures obsolete, with an incomplete rim; derm completely dull. Scutellum very small in the bottom of a rather deep scutellar depression of the elytra, its tip rounded. Elytra 1.5–1.55× wider than prothorax, 1.35–1.53× longer than their maximal width; basal slope high, vertical. Striae fine, usually stronger near base than on or beyond middle. Interstriae broad, dorsal ones with about 3 or 4 rows of hairs or scales, each hair or scale on distal side of a granule; derm dull, alutaceous. Wing/elytron ratio .19. Ventral surface moderately shiny, almost smooth and nearly bare. Hind tibiae of ♂ with mucro stronger and longer than spur.

♂. Aedeagus as in figs. 130–132.

♀♀. Sternite 8 as in fig. 164, hemisternites and sclerite of bursa copulatrix as in figs. 162, 163.

Length 4.3–5.3 mm; width 1.95–2.40 mm.

SNARES IS.: 1♂, 8♀♀, XI./XII. 1947, R. A. Falla; 2♀♀, 1. XII. 1947, Fleming.

TYPE LOCALITY: Snares Is.

Holotype ♂, 4.5×2.15 mm, 1. XII. 1947, Fleming, allotype and paratypes in Dominion Mus., Wellington, other paratypes in Entomology Div., D.S.I.R., Nelson, and Bishop Museum, Honolulu.

Ecology: All specimens obtained in leaf litter samples taken at the base of tussock.

Remarks: This species, though quite distinct because of the weak pterygia and the decumbent setae, still belongs to the *insularis*-group of species of *Gromilus* according to the ♂ and ♀ genitalia. The closest known relative is *Gromilus insularis* Blanchard, but there is another very close species from Stewart I. which is still undescribed.

Gromilus insularis Blanchard

This is one of the 2 species which occur on both Auckland and Campbell Islands showing clear differences between the populations. A 3rd geographical race of this species is on the Antipodes Is.

Gromilus insularis insularis Blanchard Figs. 133–135, 157, 160, 165–167.

Bld., 1853, Voy. Pôle Sud **4**: 208, pl. 14: 11.—1950, Gourlay, Trans. Proc. Roy. Soc. N. Z. **78**: 196 (*Steriphus*).

cockaynei Broun, 1905, Ann. Mag. Nat. Hist. ser. 7, **15**: 546 (*Hycanus*); 1909, Subantarct Is. N. Z. **1**: 116 (*Hycanus*).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 56 (*Hycanus*).

opacus Kirsch, 1877, Dtsch. Ent. Zschr. Berlin **21**: 169 (*Steriphus*).—Krone, 1877, *Ibid.* **21**: 156 (*Steriphus*).

Apart from the differences already given in the key there is little else to separate this subspecies from that of Campbell I. Wing/elytron ratio .14–.16 (figs. 133–135, 157, 160, 165–167). Length 3.9–5.7 mm; width 1.70–2.35 mm.

AUCKLAND IS. Apparently generally distributed, found so far on Auckland I., French I., Rose I., Ocean I., Ewing I., Enderby I., Dundas I., and Adams I. Total, 126 specimens collected during all four seasons.

TYPE LOCALITY: (1) *insularis* Blanchard, Port Ross, Auckland Is. (2) *cockaynei* Broun, without definite locality, Auckland Is. (3) *opacus* Kirsch, Rose I., Auckland Is. Types. (1)

Gromilus insularis Blanchard, probably in the Laboratoire d'Entomologie, Paris. (2) *Hycanus cockaynei* Broun, in Brit. Mus., Lond. (3) *Steriphus opacus* Kirsch, lectotype ♂, 4.7×1.95, 21. I. 1875, Rose I., Auckland Is., Krone, in Staatliches Museum für Tierkunde, Dresden. This specimen was generously forwarded for examination by Dr. R. Hertel. A lectotype label was added by me. Genitalia and abdomen kept in glycerine in a small vial attached to the pin.

Ecology: Nocturnal weevil found in daytime hiding under stones, logs, and particularly under herbs (*Anisotome*, *Stilbocarpa*, *Acaena*, *Urtica*).

Remarks: The identification of this species as *insularis* Blanchard remains doubtful until the type has been examined. I have followed Gourlay who has considered *cockaynei* Broun and *opacus* Kirsch as synonyms of *insularis* Blanchard. The original description, however, is so vague that Blanchard could just as well have had *frontalis* Broun or *veneris* Kirsch. Mr. R. T. Thompson was kind enough to examine the type of *Hycanus cockaynei* Broun.

Gromilus insularis robustus (Brookes), n. comb. Figs. 136–138, 168–170.

Brookes, 1951, Cape Exp. Ser. Bull. **5**: 56, f 17(*Hycanus*, as species).

Furrow of genal suture distinctly shorter than in *insularis* s. str. otherwise just as variable in size, color, vestiture, sculpture. Genitalia as in figs. 136–138, 168–170. Wing/elytron ratio .14–.16. Length 4.5–6.0 mm; width 1.80–2.45 mm.

CAMPBELL I.: found so far in Courrejolles, Windlass Bay, Beeman Hill, Tucker Cove, Lookout Bay, Rocky Bay, Shoal Point, but probably all over the island. Total, 70 specimens collected throughout the year.

TYPE LOCALITY: Campbell I., no further details. Holotype ♂, 4.7×2.0 mm, 1943, Campbell I., Sorensen, in Dominion Mus., Wellington.

Ecology: As in the previous subspecies, very common on the ground, probably spread all over the island, usually found under *Tillaea moschata*, at the base of *Stilbocarpa polaris*, and also in the cushions of *Colobanthus*. Larvae have been secured around the roots of *Tillaea moschata* (Crassulaceae).

Remarks: Brookes has mentioned a single specimen only, the holotype, from Campbell I., although he had actually a dozen specimens. Six of these he placed as paratypes in his *Stilbodiscus exiguus*, and the other 5 he left unidentified.

Gromilus insularis antipodarum Kuschel, n. subsp. Figs. 139–141, 171–173.

A geographical form of small specimens, their average size being about 1 mm below the average of the other 2 races. The integument is apparently paler as a whole, the sculpture more obsolete particularly on prothorax and interstriae. Elytra more elongate, usually between 1.65 and 1.75× longer than wide, their appressed hairs very sparse and very fine. Wing/elytron ratio .14. Genitalia as in figs. 139–141, 171–173.

Length 3.5–4.5 mm; width 1.5–2.0 mm.

Antipodes Is. Plateau above Ringdove Bay, 12, 8. XI. 1950, Dell, from *Pleurophyllum* and tussock; same place, 19, 9. XI. 1950, Turbott, in leaf litter taken amongst *Pleurophyllum*. Top of slopes above Ringdove Bay, 14, 9–10. XI. 1950, Turbott, in leaf litter under *Poa litorosa* and *Polystichum vestitum*. Total, 45 specimens.

TYPE LOCALITY: top of slopes above Ringdove Bay, Antipodes Is.

Holotype ♂, 4.3×1.75 mm, top of slopes above Ringdove Bay, ex leaf litter from under *Poa litorosa* and *Polystichum vestitum*, 10. XI. 1950, Turbott, allotype ♀ and paratypes in Dominion Mus., Wellington, other paratypes in Entomology Div., D.S.I.R., Nelson, in Canterbury Mus., Christchurch, and in Bishop Mus. Honolulu.

Ecology: A ground weevil living on coastal and lower montane herbfield and in tussock grass, found associated with *Pleurophyllum criniferum* (Compositae) and *Poa litorosa* (Gramineae).

Remarks: In both external and internal features, this form is closer to Campbell I. populations than to those of Auckland Is.

Gromilus exiguus (Brookes), n. comb. Figs. 142–144, 174–176, 275d.

Br., 1951, Cape Exp. Ser. Bull. **5**: 59, f 19 (*Stilbodiscus*). *bifoveatus* Br., 1951, *Ibid.* **5**: 60, f 20 (*Stilbodiscus*). **New Synonymy.**

Front and proximal part of rostrum dull, alutaceous, punctures obsolete, distal part shiny. Scape thin. Sculpture on pronotum very apparent on alutaceous integument. Elytra elongate, usually more than 1.8× longer than wide. Tarsal segment 3 small, deeply lobed. Wing/elytron ratio .12–.14. ♂. Aedeagus as in figs. 142–144. ♀. Sternite 8 with long manubrium (fig. 176). Hemisternites and bursal sclerite as in figs. 174, 175. Length 4.2–6.5 mm; width 1.7–2.5 mm.

Campbell I., common all over the island from coast to highland. Total of 133 specimens collected throughout the year.

TYPE LOCALITY: Campbell I., without specified locality. Type. (1) *Stilbodiscus exiguus* Brookes: Holotype ♂, 5.1×1.9 mm, no date, no definite locality, Campbell I., Sorensen, in Dominion Mus., Wellington. (2) *Stilbodiscus bifoveatus* Brookes: Holotype ♀ (not ♂, as stated by Brookes!), 6.0×2.25 mm, 7. XI. 1944, under wet sacks, Station 3, Campbell I., prob. Sorensen, in Dominion Mus., Wellington.

Ecology: A ground weevil common from coast to highland, found in daytime mainly under stones and at the base of herbs.

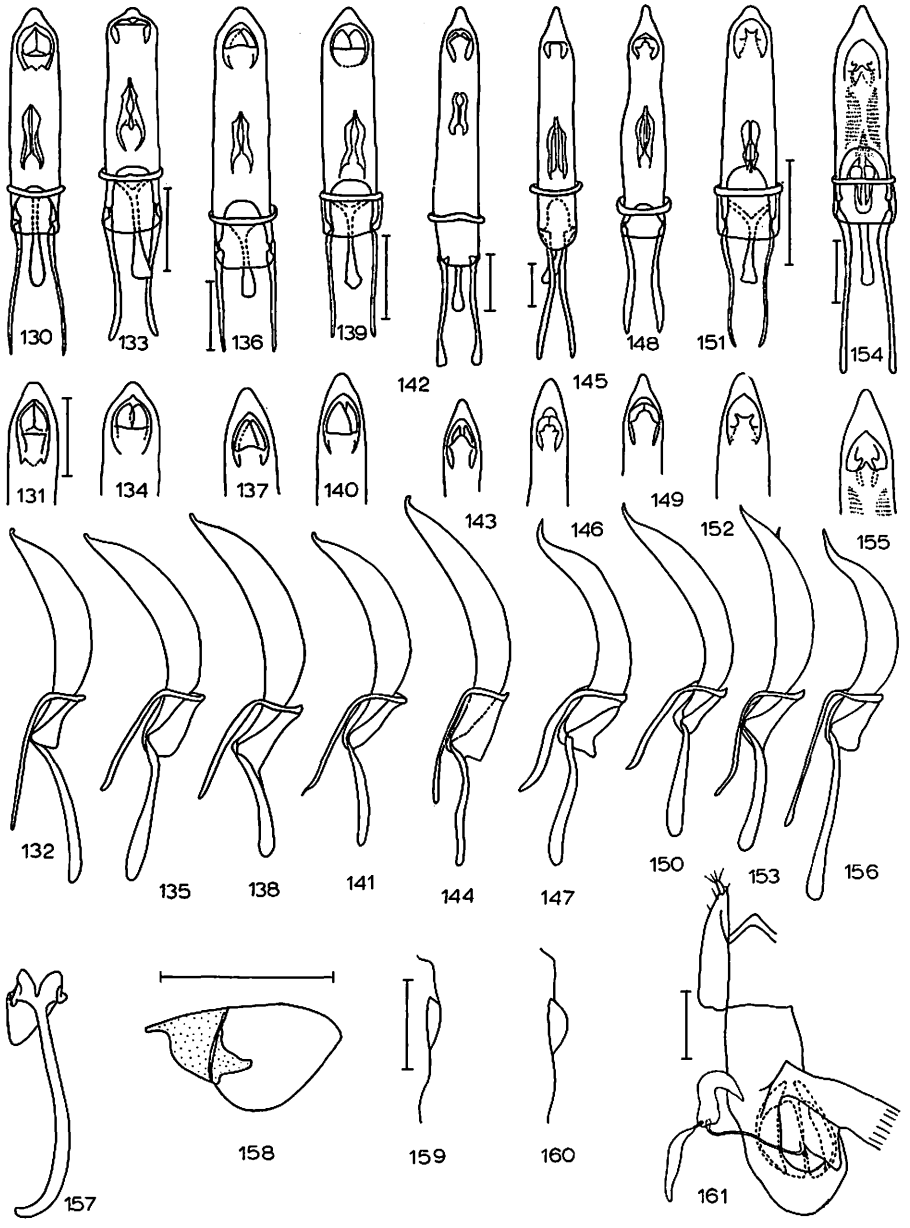
Remarks: Brookes has based his description of *exiguus* on a dozen specimens belonging to 2 different species, 6 of these (including holotype) being small specimens of the present species, the other 6 being large specimens of *insularis robustus* (Brookes). The name *exiguus* is quite inappropriate for this rather large species, but, unfortunately, has to be kept as its synonym *bifoveatus* has become a homonym of *G. bifoveatus* (Broun) described under the synonymous genus *Clypeorhynchus*.

Gromilus veneris (Kirsch)

This species also shows remarkably distinct geographical races on Auckland Is. and Campbell I. It has the general appearance of *exiguus* (Brookes), but is larger as a rule and readily separable by its shiny and strongly sculptured front and rostrum and by the larger tarsal segment 3 apart from distinct genitalia.

Gromilus veneris veneris (Kirsch), n. comb. Figs. 145–147, 161, 177–179.

Kirsch, 1877, Dtsch. Ent. Zschr. Berlin **21**: 168 (*Steriphus*).—Krone, 1877, *Ibid.* **21**: 156



Figs. 130–161. *Gromilus* spp. Dorsal, apical, and lateral aspect of aedeagi of: 130–132, *G. laqueorum* n. sp., Snares; 133–135, *G. insularis insularis* Blanchard, Rose I., Auckland Is., (holotype of *opacus* Kirsch); 136–138, *G. insularis robustus* (Brookes), Campbell I.; 139–141, *G. insularis antipodarum* n. ssp., Antipodes Is.; 142–144, *G. exiguus* (Brookes), Beeman Hill, Campbell I.; 145–147, *G. veneris veneris* (Kirsch), Ranui Cove, Auckland Is.; 148–150, *G. veneris setarius* (Broun), Tucker Cove, Campbell I.; 151–153, *G. frontalis* (Broun), Ranui Cove, Auckland Is.; 154–156, *G. fallai* (Brookes), Ocean I., Auckland Is.; 157, sternite 9 of ♂ of *i. insularis*, ventral; 158, right wing of *veneris setarius*; 159, pterygia of *laqueorum*; 160, pterygia of *i. insularis*; 161, ♀ genitalia of *v. veneris*, Rose I., ventral. (Scales beside figs. equal 0.5 mm. Figs. 130–132 same scale; figs. 133–135, 157 same scale; figs. 136–138 same scale; 139–141 same scale; 142–144 same scale; 145–150 same scale; 151–153 same scale; 154–156 same scale; 159, 160 same scale.)

(*Steriphus*).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 197 (*Steriphus*).

Sculpture on rostrum and front finer and shallower than in the other race. Pronotum with shallow median furrow that often is interrupted in the middle, the whole pronotum dull, although the distal part of the median furrow could be shiny. Wing/elytron ratio .16 (figs. 145–147, 161, 177–179). Length 5.8–7.3 mm; width 2.10–2.75 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, Crozier Point, Bivouac Hill, Giants Archway. Also, French I., Ocean I., Rose I., Ewing I. Total, 21 specimens collected in Nov., Dec. & Jan.

TYPE LOCALITY: South coast of Rose I., Auckland Is. Lectotype ♂, 5.8×2.1 mm, 21. I. 1875, Rose I., on open peat, Krone, in Staatliches Museum für Tierkunde, Dresden, kindly forwarded by Dr. R. Hertel for examination. A lectotype label added by me.

Ecology: Apparently rather rare, found from supralittoral zone up to 430 m. Most specimens have been obtained in the supralittoral zone under boulders near *Cotula plumosa* (Compositae), *Poa litorosa* (Gramineae), and *Anisotome latifolia* (Umbelliferae).

Gromilus veneris setarius (Broun), n. comb. Figs. 148–150, 158, 180–182, 275e.

Broun, 1909, Subantarct. Is. N. Z. **1**: 118, pl 5: 6 (*Stilbodiscus*, as species).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 59 (*Stilbodiscus*, as species).

Sculpture on rostrum and front coarser than in *veneris* s. str. Pronotum usually broadly flattened or depressed along the median line, particularly so on the distal 1/2, shiny at least on this depressed area. Wing/elytron ratio .12–.13. ♂. Aedeagus as in figs. 148–150. ♀. Sternite 8 as in fig. 182. Hemisternite and bursal sclerite as in figs. 180, 181. Length 6.1–8.0 mm; width 2.25–3.00 mm.

CAMPBELL I.: very common from sea shore up to the highlands existing all over the island. Total of 160 specimens collected all through the year.

TYPE LOCALITY: Campbell I., without definite locality. Holotype ♂, Campbell I., in the Brit. Mus., Lond.

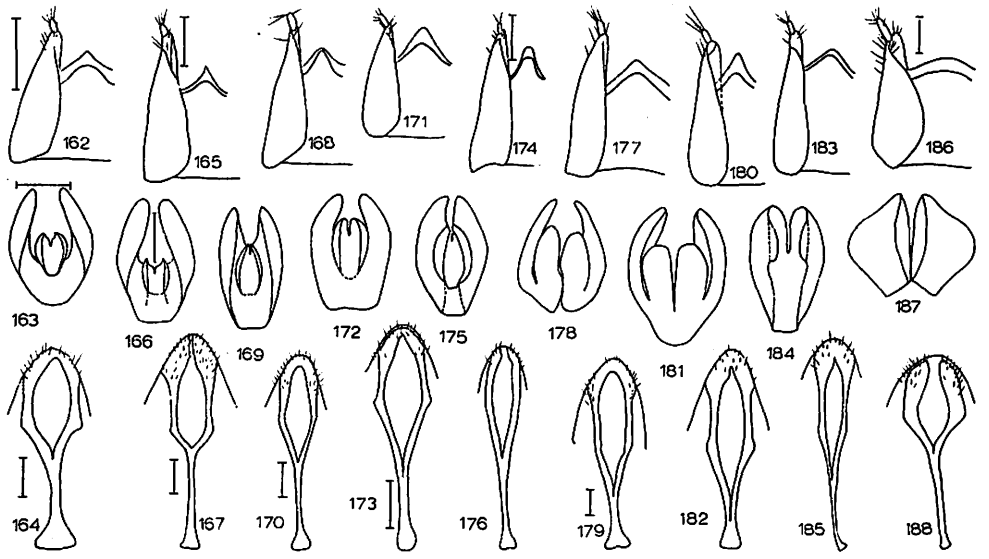
Ecology: A ground weevil hiding at daytime under stones and at the base of herbs, mainly of *Poa* (Gramineae) and *Bulbinella* (Liliaceae). Occurs from the supralittoral zone to the highlands.

Gromilus frontalis (Broun), n. comb. Figs. 151–153, 183–185.

Br., 1909, Subantarct. Is. N. Z. **1**: 116 (*Hycanus*).—Hudson, 1909, *Ibid.* **1**: 61 (*Hycanus*).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 56 (*Hycanus*).

Black or piceous, dull, legs and antennae ferruginous. Appressed hairs on elytra very short and fine, lacking erect setae on interstriae 2 & 4 except at base and on declivity. Rostrum with a median depression close behind insertion of antennae, proximal portion with an elongate latero-dorsal impression, partly shiny, partly dull, proximal portion of rostrum shiny. Scape thin to beyond middle, then thickening. Mucro of hind tibiae of ♂ smaller than spur. Tarsal segment 3 small. Wing/elytron ratio .13–.14. ♂. Aedeagus as in figs. 151–153. ♀. Sternite 8, hemisternite, and bursal sclerite as in figs. 183–185. Length 3.75–5.10 mm; width 1.60–2.15 mm.

AUCKLAND IS. AUCKLAND I.: Ranui Cove, Lindley Point, Dea's Head, Terror Cove,



Figs. 162–188. ♀♀ of *Gromilus* spp. Ventral aspect of hemisternite, bursal sclerite, and sternite 8 of 162–164. *G. laqueorum* n. sp., Snares; 165–167, *G. insularis insularis* Blachard, Dundas I., Auckland Is.; 168–170, *G. insularis robustus* (Brookes), Lookout Bay, Campbell I.; 171–173, *G. insularis antipodarum* n. ssp., Antipodes Is.; 174–176, *G. exiguus* (Brookes), Tucker Cove, Campbell I.; 177–179, *G. veneris veneris* (Kirsch), Rose I., Auckland Is.; 180–182, *G. veneris setarius* (Broun), Tucker Cove, Campbell I.; 183–185, *G. frontalis* (Broun), Ranui Cove, Auckland Is.; 186–188, *G. fallai* (Brookes), Adams I., Auckland Is. (Scales beside figs. equal 0.25 mm, Figs. 162, 171, 172, 183, 184 same scale; figs. 165, 168, 175 same scale; 164, 169, 177, 178, 180, 181, 185 same scale; 173, 187 same scale; 170, 176 same scale; 179, 182, 188 same scale.)

Webling Bay, Bleak Hill, Mt. Eastern, west coast opposite Mt. Stoney, Bivouac Peak, Mt. Eden. Ocean I. Rose I. Ewing I. Enderby I. Adams I. Total, 119 specimens collected from Nov.–Mar.

TYPE LOCALITY: Enderby I. Holotype in Brit. Mus., Lond.

Ecology: Common from supralittoral zone to tops of ranges. Usually found in daytime under logs, stones, in leaf litter, and at the base of plants.

Remarks: This is the only species from the Subantarctic Islands that has a bicuspid plate above the ostium of the aedeagus, a feature that is most common in extra-subantarctic species of the genus and in *Liparogetus*.

Gromilus fallai (Brookes), n. comb. Figs. 154–156, 186–188.

Br., 1951, Cape Exp. Ser. Bull. 5: 58, f 18 (*Pseudohycanus*).

Black or piceous, legs and antennae piceous. Appressed hairs on elytra small, fine, abundant. Dorsal surface of rostrum with strongly raised lateral margins above insertion of antennae, distal part shiny, proximal part moderately shiny, with obsolete punctures. Front shiny, punctate. Scape thick, cylindrical from very near the base to the apex. Hind tibiae of ♂ with a very small mucro. Tarsi long, segment 3 large and deeply lobed, claw segment long. Wing/elytron ratio .18. ♂. Aedeagus as in figs. 164–156, with additional ar-

mature. ♀. Sternite 8, hemisternite, and bursal sclerite as in figs. 186–188. Length 6.4–7.4 mm; width 2.7–3.2 mm.

AUCKLAND IS. AUCKLAND I.: Mt. Eden. Rose I. Ocean I. Adams I. Total, 12 specimens collected from Dec.–Feb.

TYPE LOCALITY: Adams I. Holotype ♂, 6.6×2.8 mm, 2. XI. 1944, Falla, in Dominion Mus., Wellington.

Ecology: Found in daytime under stones and logs, at the base of *Stilbocarpa polaris* and *Acaena minor*.

Remarks: A most remarkable species because of the cylindrical scape and, in the ♀, because of the rhomboidal bursal sclerite.

10. Genus **Nestrius** Broun, 1893

Nestrius Broun, 1893, Mn. N. Z. Coleopt. **1893** (7): 1480 (type species: *N. serripes* Br.).

Drymaria Br., 1909, Ann. Mag. Nat. Hist. ser. 8, **4**: 56 (type species: *Dr. cilipes* Br.).— Marshall, 1926, *Ibid.*, ser. 9, **18**: 14 (as syn. of *Nestrius* Br.).

Phyllodytes Br. (non Wagler 1830), 1893, Man. N. Z. Coleopt. **1893** (7): 1479 (type species: *Ph. foveatus* Br.).

Phyllodytesius Schenkling, 1929, IN Junk Coleopt. Cat. pars **106**: 57 (nom nov. for *Phyllodytes* Br., non Wagler). **New Synonymy.**

Plotnus Br., 1893, Man. N. Z. Coleopt. **1893** (7): 1481 (type species: *Pl. ovithorax* Broun). **New Synonymy.**

Proboscocoelus Broun, 1909, Ann. Mag. Nat. Hist. ser. 8, **4**: 55 (type species: *Pr. sculpturatus* Broun). **New Synonymy.**

Eyes small to very small, flat or slightly convex, rounded or transverse, lateral. Fovea of front obsolete. Rostrum moderately long, thick. Scrobes shallow and wide, with ill-defined margins, directed towards eyes. Pterygia well developed. Mandibles with 2 or 3 long setae. Scape passing well beyond eyes, rather thick and gradually widening; segment 1 of funicle longer than 2; club nearly compact, with a single more distinctly visible suture beyond middle. Prothorax usually wider beyond middle, base truncate or slightly arched, with very weak or absent ocular lobes; disc very coarsely punctate. Scutellum invisible. Elytra without humeral callus, basal margin rather sharp and high above mesothoracic peduncle. Wings highly atrophied, broad, wing/elytron ratio about .10. Metepisternal suture absent. Front tibiae with a row of short bristles at distal 1/2 or 1/3 of their lower edge. Fore and mid tibiae in both sexes and also hind tibiae in ♂♂ with mucro and spur, hind tibiae of ♀♀ without mucro but with spur.

♂. Parameres very rudimentary or absent. Basal sclerite of internal sac present, exposed base of main body of aedeagus. Aedeagus symmetrical or asymmetrical, its shape specifically different.

♀. Sternite 8 entirely sclerotized but with the 2 arms present as darker struts. Hemisternites long and narrow, undivided; styli apical, well developed, compressed, with long setae. Bursa copulatrix long, with or without armature. Spermathecal duct inserted in a depression of bursa near base of oviduct, moderately long. Spermatheca falciform, spermathecal gland near spermathecal duct.

Relationships: This genus could be regarded as intermediate between the Neozelandic

Gromilus Blanchard and the Patagonian *Falklandius* Enderlein but with obviously closer links to the former. Broun placed the 11 species he described in 5 genera distributed over the subfamilies Otiorhynchinae and Rhyparosominae. A close examination of more than a thousand specimens of the 27 species seen by myself has revealed that no generic subdivision can satisfactorily be achieved.

Ecology: It is well known by New Zealanders that *Nestrius* species are constantly found in leaf litter throughout the year. No adults have ever been observed feeding either at night or in daytime. *Nestrius* is certainly an important element in the leaf litter fauna of New Zealand. The larvae should be hypogeous, ectophytic, feeding upon roots of quite different plants. The gut contents of the adults of more than 10 species have been sent to Dr. B. H. Hercus in order to find out what kind of plants they were feeding on. Her findings were that all the vegetable material belonged definitely to Dicotyledons.

Geographical distribution: *Nestrius* is endemic to the New Zealand fauna occurring on both main islands, on Stewart I. and Snares Is. The species are fairly restricted in their distribution as is to be expected in flightless and leaf litter inhabiting weevils. Of the 27 species so far known to me, 6 occur in the North Island (2 endemic), 23 in the South Island, 2 in Stewart I., and 1 on Snares Is. The Subantarctic Islands of New Zealand have a single species which is on Snares and shows a close relationship with an undescribed species from Stewart I. The other species that I am reporting below from the Auckland Is. is certainly not native to the islands.

Key to species of Nestrius

Interstria 4 at base without a dentiform projection extending on to basal angles of prothorax. Multifid hairs on rostrum, front, sides of pronotum, and humeral area very scarce or absent. Setae very short, those on elytral declivity about 0.06 mm. long. 2.8 mm. Snares Is. ..... **laqueorum**

Interstria 4 at base with a strong dentiform projection extending on to basal angles of prothorax. Multifid hairs on rostrum, front, sides of pronotum, and humeral area abundant. Setae of elytra long, those on declivity about 0.15 mm. long. 3.8–4.5 mm. Auckland Is. (doubtful record), North Island of New Zealand ..... **bifurcus**

Nestrius laqueorum Kuschel, n. sp. Figs. 189–192, 200.

Derm dark castaneous, elytra slightly variegate with faint darker markings. Appressed hairs scanty, bifid or multifid hairs very rare. Setae short and broad, especially those on elytra, their length on elytral declivity about 0.06 mm.

Eyes convex, granulose, small, about 20 ommatidia per eye. Rostrum, from distal margin of epistome to front margin of eyes, about 1.64× longer than its apical width, its upper surface in lateral view only slightly more curved than its ventral surface; proximal portion dull, with 2 median ridges; distal portion shiny and smooth except at its base. Pterygia slightly projecting beyond lateral margins of rostrum. Mandibles with 2 long setae. Segment 1 of funicle much longer than 2, about 1.65–1.80× longer, last segments distinctly transverse. Club oval, about 1.50–1.55× longer than wide, rounded at base. Prothorax as long as wide to 1.03× longer than wide, lateral margins strongly and uniformly rounded, widest at middle. Disc convex, the coarse punctures round, their intervals not ridged and without deep smaller punctures. Ocular lobes absent. Elytra broadly elliptical, 1.44–

1.50× wider than prothorax, and about 1.50× longer than their maximal width; humeral zone rounded and widening, then subparallel, and finally broadly rounded; declivity steep, almost vertical. Interstriae 2 & 4 not raised at base; decumbent hairs irregularly distributed on interstriae with alternating small bare and pubescent areas. Mucro of hind tibiae of ♂ shorter than spur. Tarsi short, segment 3 very small, slightly wider than 2, not bilobed. Ventrite 1 with a single row of coarse punctures at basal and apical margins, elsewhere as in other segments with very fine shallow punctures, all abdominal hairs decumbent or nearly so.

♂. Tergite 7 broadly emarginate. Parameres absent. Aedeagus as in figs. 189–191, its tip apiculate, acute; dorsal surface less sclerotized than lateral margins. Basal sclerite rather large, lying between bases of apophyses; walls of internal sac with fine short spines.

♀. Unknown.

Length 2.8 mm; width 1.20–1.25 mm.

SNARES IS.: 2♂♂, XI. 1947, Falla.

TYPE LOCALITY: Snares Is.

Holotype ♂, 2.8×1.25 mm, XI. 1947, Falla, in Dominion Mus., Wellington; paratype ♂ in Entomology Div., D. S. I. R., Nelson.

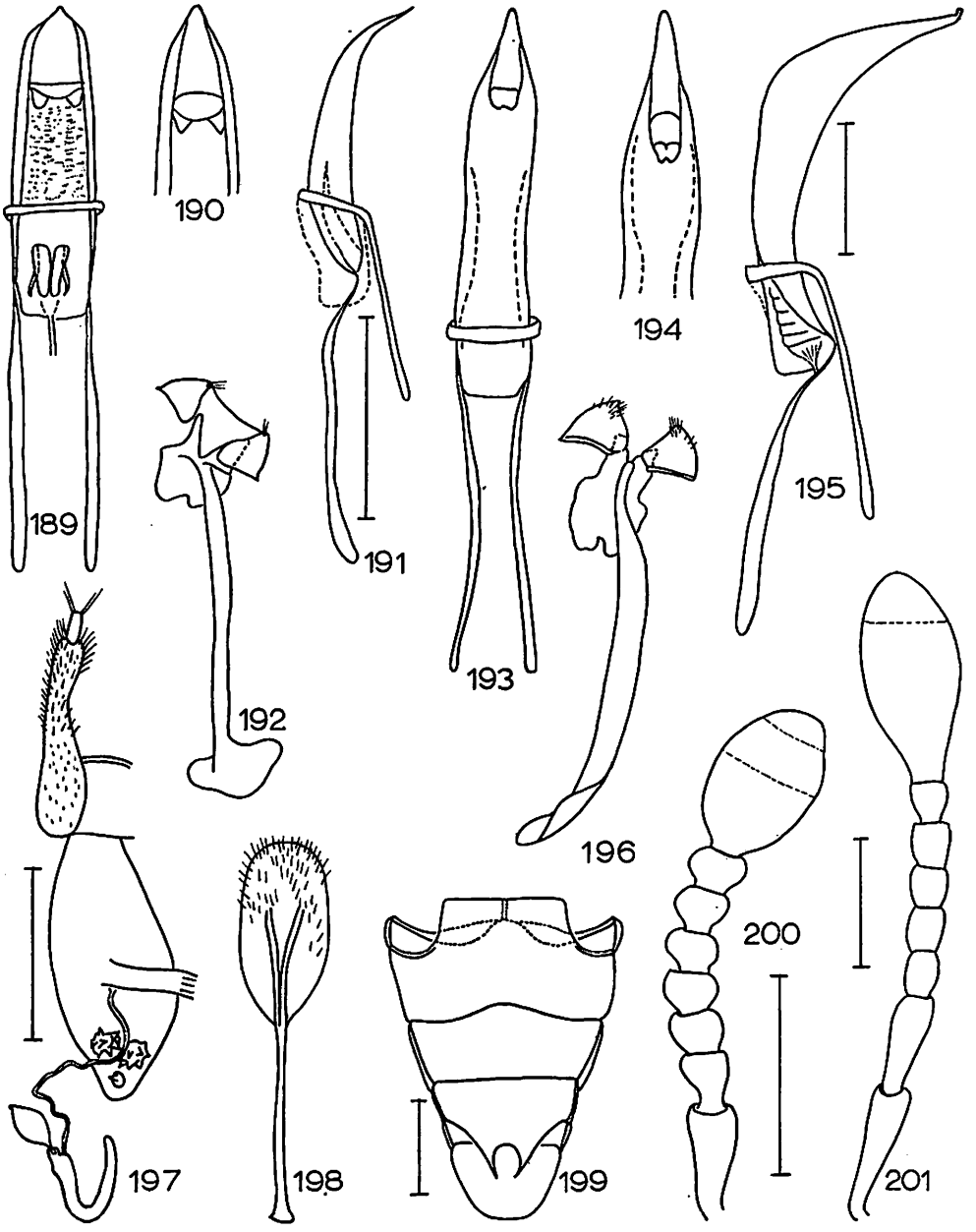
Ecology: The 2 specimens were obtained from a leaf litter sample taken at the base of tussock grass.

Remarks: Characterized by round prothorax, ventrally curved rostrum, very small and entire tarsal segment 3, and very short setae. Its closest relative is an undescribed species from Stewart I.

Nestrius bifurcus Kuschel, n. sp. Figs. 193–199, 201.

Derm dark castaneous or piceous, swollen part of femora paler. Appressed hairs scanty, denser on rostrum in front of eyes and on humeral area; bifid or multifid hairs abundant. Setae long, those on elytral declivity about 0.15 mm long.

Eyes small, convex, granulose, 18 to 21 ommatidia per eye. Rostrum, from distal margin of epistome to front margin of eyes, 2.05–2.27× longer than its apical width, moderately curved; dorsal surface with 2 ridges, these more distinct between insertion of antennae. Pterygia moderately projecting beyond margins of rostrum. Mandibles with 3 long setae. Segment 1 of funicle 1.14–1.40× longer than 2, the last segment about as long as wide, not transverse; club elongate, 2.0–2.2× longer than wide, its base slightly pedunculate. Prothorax 1.10–1.17× longer than wide, widest beyond middle. Disc very coarsely punctate, intervals often sharply ridged and with additional smaller punctures. Ocular lobes very weak. Elytra elongate, 1.23–1.46× broader than prothorax, and 1.61–1.74× longer than their maximal width; humeral area widening in straight line, declivity moderately sloping. Interstria 2 with a small tubercle at base, interstria 4 with a strong tooth protruding on to basal angles of prothorax and visible in lateral aspect as a dentiform process. Lower edge of tibia with long setae, hind tibiae with more than 20 setae which are 2.5× longer than those on the dorsal edge. Mucro of hind tibiae of ♂♂ rudimentary or very small. Tarsi slender, segment 3 distinctly wider than 2, not distinctly bilobed but slightly emarginate. Front claw segment normal. Ventrites 1 & 2 coarsely punctate at least on sides. All ventrites with longer semierect setae in ♂♂ and with decumbent short hairs in ♀♀.



Figs. 189-201. *Nestrius* spp. *N. laqueorum* n. sp., Snares: 189, aedeagus, dorsal; 190, apex of aedeagus; 191, aedeagus, lateral; 192, sternites 8 & 9 of ♂, ventral; 200, antenna. *N. bifurcus* n. sp., ♂ from Rimutaka Range, North Island, ♀ from Auckland Is.: 193, aedeagus, dorsal; 194, apex of aedeagus; 195, aedeagus lateral; 196, sternites 8 & 9 of ♂, ventral; 197, ♀ genitalia, ventral; 198, sternite 8, ventral; 199, abdomen of ♀; 201, antenna. (Scales beside figs. 191, 195, 197, 199 equal 0.5 mm; beside figs. 200, 201 equal 0.25 mm. Figs. 189-192 same scale; figs. 193-196 same scale; figs. 197, 198 same scale).

Ventrite 3 in ♀ projected distally into a bifurcate lamina, its tips reaching slightly beyond middle of ventrite 5 (fig. 199); ventrite 5 of ♀ not notched at distal margin.

♂. Tergite 7 broadly emarginate. Sternites 8 & 9 as in fig. 196. Parameres absent. Aedeagus as in figs. 193–195, its dorsal and ventral surface strongly sclerotized, with a broad shallow median groove on dorsal surface.

♀. Tergite 8 feebly emarginate. Sternite 8 as in fig. 198. Genitalia as in fig. 197, hemisternites very hairy; bursa copulatrix with 3 spiny sclerites near the end, 1 small, 2 larger.

Length 3.8–4.5 mm; width 1.50–1.75 mm.

AUCKLAND IS. (doubtful record), without definite locality, 1 ♀, XII. 1944, Turbott.

NORTH ISLAND. Rimutaka Range, 1♂, 1♀, X. 1949, O'Connor. Wainuiomata, 1♂, XI. 1930, Hudson.

TYPE LOCALITY: Wainuiomata, near Wellington, North Island.

Holotype ♂, 4.5×1.75 mm, Wainuiomata, XI. 1930, Hudson, allotype ♀ and a paratype ♀ in Dominion Mus., Wellington, 1 pararype ♂ in Entomology Div., D. S. I. R., Nelson.

Ecology: All specimens obtained in leaf litter.

Remarks: *Nestrius bifurcus* belongs to a group of 5 species that have the 3rd ventrite in the ♀ prolonged into a lamina. In 1 species, *N. hudsoni* Marshall, from Wellington area and Marlborough district, the lamina is trifurcate whilst in the other 4 it is bifurcate. The new species can readily be identified by the dentiform projection at the base of the interstria 4 and by the subentire tarsal segment 3, both characters being taken together. The ♂ has a very specific aedeagus, and the ♀ has quite unique genitalia in that the hemisternites are extensively and unusually hairy and the bursa copulatrix has spiny sclerites near its end.

There is no doubt about identifying the Auckland Is. specimen with those of the Wellington area. The group of *Nestrius* which *N. bifurcus* belongs to is, so far, restricted to southern North Island and to northern South Island. It is virtually certain that the group is not represented in southern South Island or Stewart I. Therefore, the presence of *N. bifurcus* on Auckland Is. cannot be assumed to be natural. There are 2 possible explanations for the specimen being reported from Auckland Is.: (1) that the species actually has arrived in Auckland Is. by some accident, most likely taken by man in a boat, (2) or that the only known specimen from the Auckland Is. has been wrongly labelled. It would be better to question, so far, the presence of *Nestrius bifurcus* for Auckland Is. till additional material has been secured. (See also remarks under *Phrynixus thoracicus*).

PHRYNIXINAE Kuschel, n. subfam.

Head globose. Eyes moderate in size, but usually small to very small, sometimes absent, lateral or latero-dorsal, with strongly convex ommatidia or some or all ommatidia flat and glassy. Rostrum moderately long, curved; epistome without distinct posterior margins. Mandibles decussate, with 2 or 3 teeth and with 1 short seta. Scrobes very shallow to deep, parallel to rostrum or directed towards gular angle. Insertion of antennae at distal 1/3 or 2/5. Scape reaching front margin of eyes. Funicle with 7–5 segments, segment 1 usually longer than 2. Club 4-segmented, sutures distinct or indistinct. Prothorax widest at or

beyond middle. Ocular lobes absent or present. Scutellum usually invisible. Elytra without humeral callus. Wings vestigial or absent. Prosternum not excavated. Metasternum very short. Metepisternal suture without sclerolepidia. Trochanter usually without an erect seta. Femora unarmed. Tibiae with uncus or mucro on internal angle, when absent then 2 spurs present; without ascendant comb; premucro absent. Tarsi lineal, narrow, seldom with segment 3 slightly wider than 2, soles spongiose, not bristly; segment 3 entire, truncate at tip or slightly emarginate, exceptionally bilobed. Claw segment long, claws free and simple, with short basal seta. Hindgut with rectal ring.

♂♂. Tergite 8 very slightly exposed beyond sternites 7 & 8 with 2 separate plates, having few very short setae; median membrane with microtrichia. Sternite 9 not articulate, with 2 symmetrical arms and with sclerotized lobe; manubrium upcurved. Tegmen moderate in size, ring not articulate laterally, parameres well developed, pubescent or setose. Aedeagus depressed, main body much shorter than apophyses; dorsal surface membranous, ventral surface sclerotized, usually forming a broad ventral plate; apex bare, broadly rounded or slightly emarginate, not apiculate, *i. e.* apex not suddenly narrowed to form a projection. Internal sac well exposed beyond base of main body, usually with basal sclerite which consists of sclerotized folds and not of strongly sclerotized bars or tubes; other armature sometimes present.

♀♀. Sternite 8 with 2 sclerotized arms, with few very short setae and with abundant microtrichia on median membrane. Hemisternites sclerotized; styli apical, usually thick and short, with numerous very short apical setae. Bursa copulatrix with a simple or double cochleariform sclerite in an invagination of ventral surface, seldom without sclerite. Insertion of spermathecal duct at or near base of oviduct at base of sclerite; oviduct bent into invagination of bursa. Spermatheca falciform, with thick base. Spermathecal gland distant from spermathecal duct.

Sculpture and vestiture. The great majority of species with tubercles, or nodules, or other asperities on pronotum and elytra and often also with tufts of multifid hairs or scales; antennae and tarsi often with pruinose-sericeous vestiture.

Type genus: *Phrynixus* Pascoe

Relationships: Although most of the genera to be included here have been placed in Rhyparosominae the internal structures show that Phrynixinae are quite close to Hylobiinae. Phrynixinae can readily be separated from Hylobiinae by the lack of a bare corbel carina. Some fern Phrynixinae resemble very much the Rhyparosominae of ferns, but the former can be separated from the latter by the short seta on mandibles and claws, by the presence of parameres in the ♂♂, and by numerous short setae on the tip of the styli in the ♀♀.

Ecology: All known Phrynixinae are flightless and of nocturnal habits. They occur mainly in forests and dense bush of temperate and cold climates. The habits of the larvae are of 2 different types. Those of 1 group develop in decaying wood and their adults are usually found in leaf litter and under logs in daytime while nothing is known about their food plants. The 2nd group lives in the stipites (petioles) of ferns and their adults hide in daytime in the stock or at the base of the plant while feeding at night upon the pinnae of the fronds.

Geographical distribution: This subfamily occurs in SE Australia, Tasmania, New Zealand, Subantarctic Islands of New Zealand, on the mountains of New Caledonia, and in

southern Chile. No genera have yet been described from New Caledonia or Chile.

Remarks: It seems advisable to give a full list of the genera that belong to Phrynixinae which, with few exceptions, have been under Rhyparosominae. When the previous subfamily has been other than Rhyparosominae it is mentioned in brackets after the name of the genus.

Genera to be transferred to Phrynixinae: *Abrotheus* Broun, *Allaorops* Br., *Allostyphlus* Br., *Amphiskirra* Br., *Araeoscapus* Br., *Astyphlus* Br., *Bradypatae* Br., *Chamaepsephis* Br., *Cuneopterus* Sharp, *Dermotrichus* Shp., *Dinichus* Pascoe, *Dolioceuthus* Broun, *Erymneus* Pascoe, *Halliellara* Schenkling, *Hectaeus* Broun (Cossoninae), *Idus* Br. (Cossoninae), *Lithocia* Br., *Megacolabus* Br., *Pachyprypnus* Br., *Phemus* Br., *Phrynixodes* Br., *Phrynixus* Pascoe, *Rachidiscodes* Broun, *Rachidiscus* Br., *Rystheus* Br., *Styphlotelus* Br., and *Syagrius* Pascoe.

The other genera described as Rhyparosominae have already been mentioned elsewhere in this paper, with the exception of *Bantiades* Broun and *Memes* Broun which are to be transferred to Hylobiinae.

11. Genus **Notonesius** Kuschel, n. gen.

Head globose, not constricted laterally, slightly depressed on dorsum between posterior margins of eyes. Front between eyes about as wide as rostrum at apex. Eyes not protruding, lateral, transverse, broadly elliptical, small, most ommatidia convex, those on hind and lower margin flattened and apparently not functional. Rostrum subcylindric, curved, without carinae. Scrobes invisible in dorsal aspect, directed towards gular angle, subcontiguous underneath, deep, dorsal edge directed below lower angle of eyes. Mandibles without long setae. Prementum bare. Antennae inserted a little in front of middle. Scape reaching eyes. Funicle 7-segmented, segment 1 much longer than 2, segments 3–7 strongly transverse, all segments setose. Club 4-segmented, segment 1 smaller than 2 and loosely joined to rest of club. Prothorax longer than wide, widest beyond middle, convergent towards base and apex, distal constriction moderate on sides. Disc transversely convex, without tubercles or asperities, with shallow median furrow. Ocular lobes absent. Scutellum invisible. Elytra oblong-elliptical, base in concave arch, suture not projected towards prothorax. Ten complete striae, stria 10 very fine and very close to elytral margin for more than proximal 1/2. Interstriae convex, not projected forwards at base, without tubercles. Wings absent. Prosternum in front of coxae longer than behind them, front coxae contiguous, mid coxae very close, mesosternal process very narrow. Metasternum between mid and hind coxae much shorter than width of a middle coxa. Metepisternal suture weak in front, invisible behind. Abdomen not pyriform, ventrites gradually narrowing from base to apex; suture between ventrites 1 & 2 complete, arched in middle, 3 & 4 taken together at least as long as 2. Trochanter without long erect seta. Femora unarmed, moderately clavate. Tibiae nearly straight, with small mucro on internal angle. Tarsi narrow, lineal, segment 3 about as wide as 2, entire, its sole with vestiture on lateral and distal margins; claw segment widening towards apex, claws free, simple, moderate. Vestiture: very scanty, without multifid hairs and without tufts.

♂. Tergite 7 covering most of 8. Sternite 8 with 2 separate plates, setae very few and very short. Sternite 9 strong, upcurved, with thick arms and a large sclerotized lobe. Tegmen not articulate, parameres long, pubescent. Aedeagus with very short body and very long apophyses, these not articulate at base; dorsal surface of aedeagus membranous,

ventral surface membranous on sides, a broad median area softly sclerotized forming a long ventral plate. Internal sac long, without basal sclerite, but with dense fine armature on the walls. ♀. Unknown.

Type species: *Notonesius aucklandicus* n. sp.

Relationships: All the external and internal structures point towards Phrynixinae where it belongs, and more particularly to the group feeding upon ferns. There is no described genus that I know of which is at all closely related to *Notonesius*.

Ecology: The only specimen discovered on Auckland Is. was found in a leaf litter sample. It is almost certain that *Notonesius* is linked as larva and adult to ferns. The intestinal tract of the single available specimen had no vegetable matter, therefore it was not possible to prove the above assumption.

Geographical distribution: So far endemic on Auckland Is. As the gap between the known genera of Phrynixinae living on ferns and *Notonesius* is quite considerable, it is most likely that some other genera and species will be discovered in southern areas of the main islands of New Zealand thus narrowing the existing gap between the genera.

Notonesius aucklandicus Kuschel, n. sp. Figs. 208, 209, 216.

Derm rufo-testaceous, shiny and slightly coriaceous on dorsum and legs dull and alutaceous on ventral surface. No hairs visible on body except under high magnification.

Head very finely punctate. Front with slight median depression, between eyes as wide as rostrum at apex. Rostrum, from distal margin of epistome to front margin of eyes, 1.37× shorter than prothorax, and 2.75× longer than its own distal width, slightly tapering a short distance at base, then cylindric, densely and finely punctate, striolate-punctate beyond antennae, with a rather indistinct smooth median line. Scape clavate at distal 1/3, the stalk smooth, the swollen part striolate-punctate. Funicle setose, segment 1 thick, much longer than 2, 3–7 strongly transverse. Club a little longer than the preceding 6 segments of the funicle, 1.8× longer than wide, oblong-ovate with broadly rounded or subtruncate base and with subacute tip: segmentation very apparent, especially between segment 1 & 2, segment 1, 1.2× shorter than 2, the last 2 segments taken together longer than 2. Prothorax 1.08× longer than wide, widest beyond middle, distal constriction slight on sides, obsolete on dorsum; base reclinate, leaning against basal slope of elytra, arched, with sharp edge; disc with slight longitudinal convexity and with stronger transverse convexity, with a shallow median groove becoming obsolete towards apex; sculpture coriaceous, with fine and very irregular grooves, the intervals between the grooves very shiny and with scattered fine punctures each bearing a fine short hair. Elytra 1.42× wider than prothorax and 1.66× longer than their maximal width, elongate-elliptic, strongly arched at base. Striae sulcate, stria 4 with 27–29 punctures. Interstriae slightly convex, finely coriaceous, with a single row of very fine punctures, 3 & 5 wider and more convex at base with 4 narrower between them. Prosternum shiny, tubular at apex, descending towards coxae. Mesosternal process very narrow, not wider than funicle. Metasternum 1/2 as long as diameter of a mid coxa, alutaceous, with a few obsolete punctures on sides. Metepisternum impunctate. Abdomen alutaceous, with very scattered, fine and shallow punctures, hairs very fine and short, sparse, more dense near distal margin of ventrite 5. Femora finely punctate at base, transversely coriaceous on swollen part, with very fine short hairs. Tibiae straight, alutaceo-

coriaceous, lower edge on distal 1/2 with scattered short bristles; mucro small, forming an obtuse angle with lower edge of tibiae.

♂. Tergite 7 truncate. Sternites 8 & 9 as in fig. 216. Tegmen as in fig. 208, with long pubescent parameres. Aedeagus as in figs. 208, 209, internal sac wider at base, with longitudinal folds, and with fine spinules distributed as shown in fig. 208.

Length 3.30 mm; width 1.35 mm.

AUCKLAND IS. ADAMS I.: 1♂, 13. XI. 1954, Gourlay.

TYPE LOCALITY: Adams I., Auckland Is.

Holotype ♂, data as above, in Entomology Div., D. S. I. R., Nelson.

Ecology: No data, but probably like other fern weevils of this subfamily it hides at the bases of fronds in the daytime and feeds at night. The most likely ferns for this species would be *Blechnum* and *Polystichum*.

12. Genus **Phrynixus** Pascoe, 1875

Phrynixus Pasc., 1875, Ann. Mag. Nat. Hist. ser. 4, **16**: 221 (type species: *Ph. terreus* Pasc.).

It is not possible to define this genus without a critical study of all the closely related genera described by Pascoe, Sharp and Broun.

Ecology: The larvae of *Phrynixus* live in decaying wood. Adults have nocturnal habits and are to be found in forest and bush litter from sea level up to the alpine zones. Nothing is known about host plants. It seems that both larvae and adults have no special preferences.

Geographical distribution: *Phrynixus* is a New Zealand genus with numerous species. Some species have been described from SE Australia, but these need further study before we can say anything about their true relationships.

KEY TO SPECIES OF PHRYNIXUS

1 (2). Funicle with segments 3–7 setose. Club broadly ovate. Elytra with scattered short spines in addition to the usual tufted tubercles or knobs. Wings vestigial. 3.6–4.8 mm. Campbell I., Chatham I., North and South Islands.....**astutus**-complex

2 (1). Funicle with only segment 7 setose. Club oblong-obovate. Elytra without spines apart from the usual tufted tubercles or knobs. Wings absent.

3 (4). Prothorax much wider (1.1×) than long, the sides strongly rounded. Base of interstria 3 neither raised nor thickened. Derm of pronotum and elytra very glossy. 3.5–4.5 mm. Snares Is. ..... **laqueorum**

4 (3). Prothorax about as long as wide, sides nearly parallel in proximal 1/2. Base of interstria 3 thickened and raised. Derm of pronotum and elytra dull, slightly shiny on middle of dorsum only. 3.0–3.5 mm. Auckland Is. (doubtful) North Island of New Zealand..... **thoracicus**

Phrynixus astutus-complex Figs. 202, 203, 210, 211, 217–219, 223, 224.

Phrynixus astutus Pascoe, 1876, Ann. Mag. Nat. Hist. ser. 4, **17**: 59.

Unfortunately, I am forced to leave the 3 specimens from Campbell I. under the general heading of *astutus*-complex as the confusion in the literature could not satisfactorily be

solved without examining the entire type material. ♂ and ♀ genitalia of Campbell I. specimens are given in the figs. 202, 203, 210, 211, 217–219, 223, 224. Length 3.6–4.8 mm; width 2.0–2.5 mm.

Campbell I.: 3, Fleming.

Remarks: The dorso-lateral margin of the aedeagus is unusually broad in the single available ♂ from Campbell I. compared with that in specimens I have examined from elsewhere.

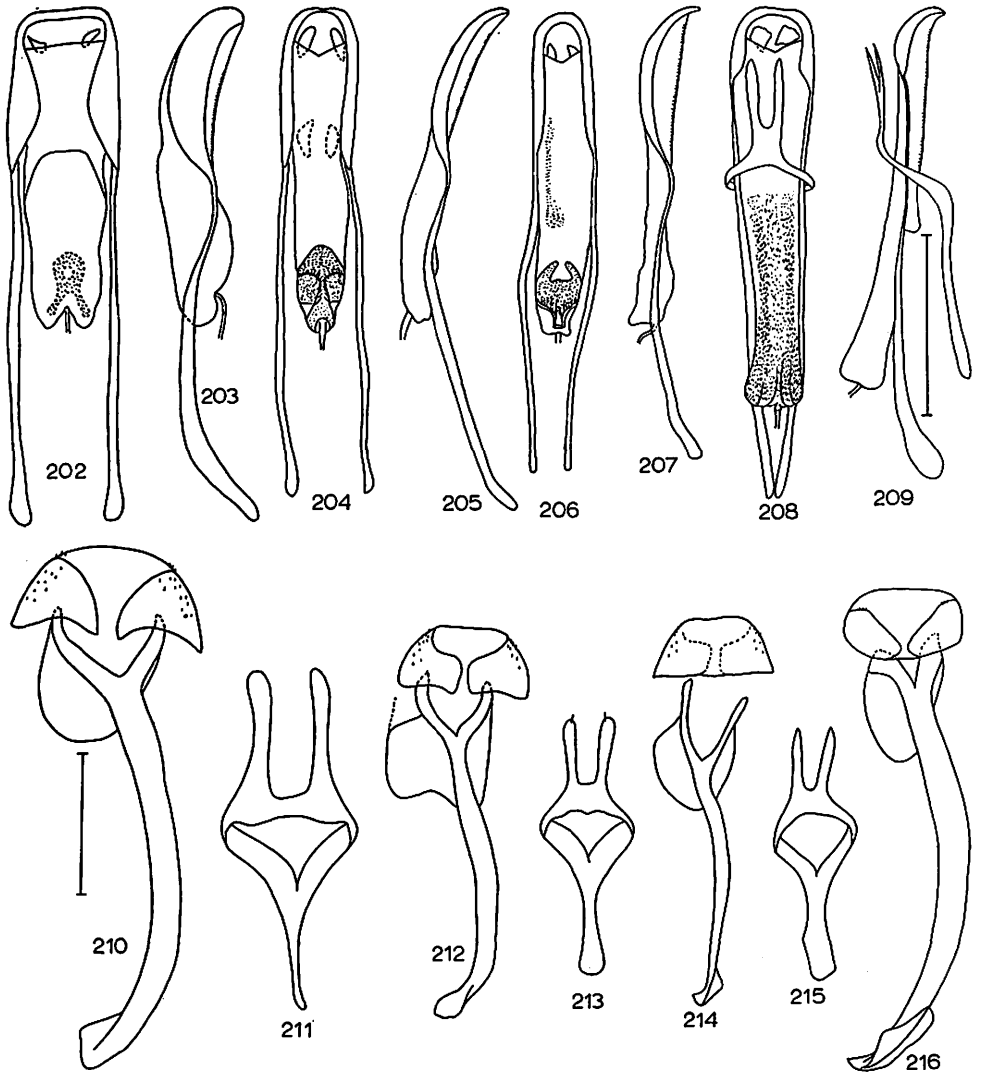
Phrynixus laqueorum Kuschel, n. sp. Figs. 204, 205, 212, 213, 220–222, 225.

Derm piceous, very shiny, antennae, tarsi, part of rostrum and of legs castaneous.

Eyes moderately protruding. Front between eyes 1.20–1.33× narrower than distal width of rostrum, shortly tufted. Rostrum in ♂♂ very slightly shorter than prothorax, 3.7× longer than its distal width, in ♀♀ 1.15× longer than prothorax and 4.5× longer than its distal width; curved, densely squamose, setae short, not tufted, but with a small short tuft on each side just above insertion of antennae. Scape not granulose, covered with scattered scales. Funicle thin, very shiny, with very few fine hairs, only segment 7 setose. Club oblong-obovate, cuneate or slightly pedunculate at base. Prothorax about 1.1× wider than long, sides strongly rounded, disc evenly convex, without depressions and without tubercles, moderately punctate, intervals very glossy. The multifid hairs or scales partly raised forming small tufts. Elytra 1.32–1.46× wider than prothorax, and 1.31–1.37× longer than their maximal width, transversely and longitudinally convex, with a very shallow scutellar depression, truncate at base between protruding basal calli of interstria 5. Striae fine, punctate, intervals as high as interstriae. Interstriae about 2× as wide as striae, very smooth and shiny, without granules or tubercles, with scattered scales not concealing derm and with numerous tufts of setae. Wings absent. Abdomen dull, alutaceous, very finely punctate throughout, suture between ventrites 1 & 2 complete, fine on middle, deep on sides. Legs not pruinose-sericeous, without long setae, femora clavate, tibiae dorsally arched, ventrally sinuous; front tibiae with about 5 short bristles on ventral edge on distal 1/3, all tibiae with rather strong mucro continuous with lower edge of tibiae, stronger in ♂♂ than in ♀♀. Tarsal segment 3 very slightly wider than 2.

♂. Tergite 7 almost entirely covering 8, distal margin weakly emarginate. Tergite 8 truncate but with a very slight emargination in middle. Sternite 8 as in fig. 212, with extremely short setae near latero-apical end of plates, the wide portion of membrane with dense microtrichia. Sternite 9 as in fig. 212. Parameres without pubescence but with setae (fig. 213). Aedeagus as in figs. 204, 205, dorsal surface membranous, ventral surface with a wide softly sclerotized median plate reaching distally as far as plates of ostium and proximally almost as far as apical end of basal sclerite, broadly rounded at tip, truncate at base. Apophyses continuous with aedeagus. Internal sac with a complex basal sclerite as shown in fig. 204.

♀. Tergites 7 & 8 as in fig. 225, distal margin of latter very finely crenulate. Sternite 8 as in fig. 220, the arms broad but laterally without sharp lines; setae extremely short. Hemisternites subcontiguous, undivided, without setae; styli apical with papillae, without setae. Bursa copulatrix with a long cochleariform sclerite, in the hollow of sclerite lies the oviduct, which is shown evaginated in fig. 221. Spermatheca with short projection at insertion of duct.



Figs. 202–216. Phrynixinae, ♂♂. *Phrynixus astutus*-complex, Campbell I.: 202, aedeagus, dorsal; 203, aedeagus, lateral; 210, sternites 8 & 9, ventral; 211, tegmen, dorsal. *Phrynixus laqueorum* n. sp., Snares: 204, aedeagus, dorsal; 205, aedeagus, lateral; 212, sternites 8 & 9, ventral; 213, tegmen, dorsal. *Phrynixus thoracicus* (Broun), Auckland Is.: 206, aedeagus, dorsal; 207, aedeagus, lateral; 214, sternites 8 & 9, ventral; 215, tegmen, dorsal. *Notonesius aucklandicus* n. sp., Adams I., Auckland Is.: 208, aedeagus, dorsal; 209, aedeagus, lateral; 216, sternites 8 & 9, ventral. (Scales beside figs. equal 0.5 mm. Figs. 202–207, 210–215 same scale; figs. 208, 209, 216 same scale).

Length 3.5–4.5 mm; width 1.8–2.2 mm.

SNARES IS.: 7♂♂, 3♀♀, Falla, Fleming, XI., XII. 1947.

TYPE LOCALITY: Snares Is.

Holotype ♂, 3.5×1.85, Snares, XI. 1947, from tussock roots and debris, Falla, allotype ♀ and paratypes in Dominion Mus., Wellington. Other paratypes in Entomology Div., D. S. I. R., Nelson, and Bishop Mus., Honolulu.

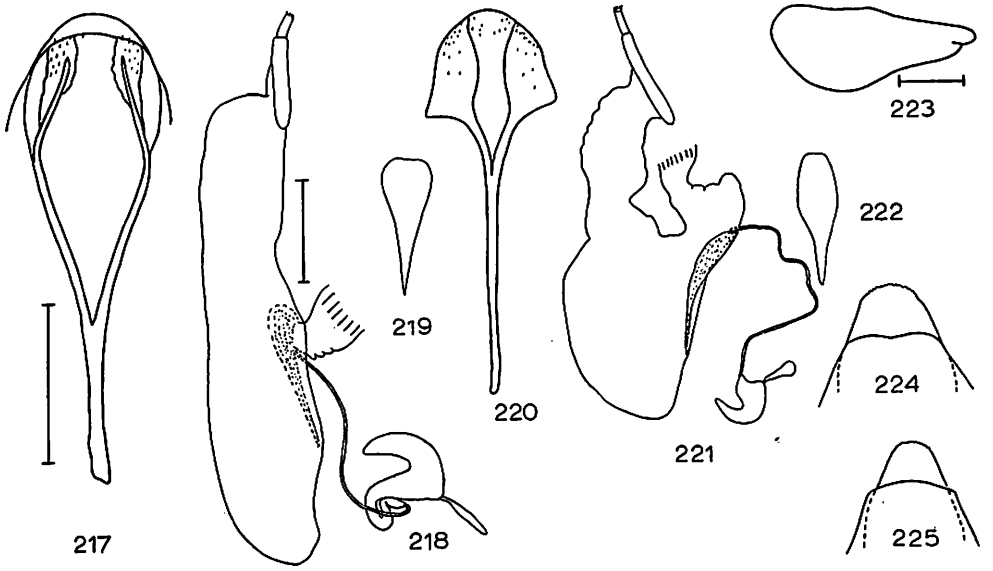
Ecology: All specimens were obtained at the base of tussock.

Remarks: So far, I have not seen close relatives of this species from the main islands of New Zealand. The general facies is not unlike that of *Ph. squamalis* Broun from northern South Island. Very striking characters of the new species are the very glossy derm that can be seen through the vestiture and also the lack of a basal impression on the pronotum.

Phrynixus thoracicus (Broun), n. comb. Figs. 206, 207, 214, 215.

Br., 1893 Man. N. Z. Coleopt. **1893** (7): 1474 (*Chamaepsephis*); 1893, Ann. Mag. Nat. Hist. ser. 6, **12**: 300 (*Araeoscapus*, No. 2553).
curvirostris Br., 1921, Bull. N. Z. Inst. **1** (7): 639 (*Dermotrichus*). **New Synonymy.**
fasciculatus Br., 1910, *Ibid.* **1** (1): 62 (*Araeoscapus*). **New Synonymy.**
mucronatus Br., 1910, *Ibid.* **1** (1): 63 (*Araeoscapus*). **New Synonymy.**
obscurus Br., 1893, Man. N. Z. Coleopt. **1893** (7): 1475 (*Chamaepsephis*); 1893, Ann. Mag. Nat. Hist. ser. 6, **12**: 300 (*Araeoscapus*, No. 2554). **New Synonymy.**
remotus Brookes, 1951, Cape Exp. Ser. Bull. **5**: 54, f 16 (*Phrynixus*). **New Synonymy.**

The single specimen described by Brookes as *Phrynixus remotus* from Auckland Is. has exactly the same data as the *Nestrius bifurcus* specimen mentioned above under this species.



Figs. 217–225. *Phrynixus* spp., ♀♀. *Ph. astutus*-complex, Campbell I.: 217, sternite 8, ventral; 218, genitalia, lateral; 219, bursal sclerite ventral; 223, left wing; 224, tergites 7 & 8. *Ph. laqueorum* n. sp., Snares: 220, sternite 8, ventral; 221, genitalia, lateral (bursal sclerite evaginate); 222, bursal sclerite, ventral; 225, tergites 7 & 8. (Scales beside figs. 217, 218 equal 0.5 mm; beside fig. 223 equals 0.1 mm. Figs. 217, 220 same scale; figs. 218, 219, 221, 224, 225 same scale).

It is probable that both specimens have been obtained out of a leaf litter sample from an area near Wellington, North Island and wrongly labelled as being from Auckland Is. It is clear that *remotus* Brookes is a North Island species which has been described several times by Broun. The ♂ genitalia of the Auckland Is. specimen are figured in this paper (figs. 206, 207, 214, 215). Length 3.0–3.6 mm; width 1.50–1.75 mm.

AUCKLAND IS.: No definite locality or date, 1♂, 1944, Turbott.

NORTH ISLAND: Common species throughout south of parallel 37.

TYPE LOCALITIES AND TYPES: (1) *curvirostris* Broun, Wadestown, Wellington, in Brit. Mus., Lond. (2) *fasciculatus* Broun, Waimarino, BMNH. (3) *mucronatus* Broun, Waimarino, BMNH. (4) *obscurus* Broun, Mt. Pirongia, BMNH. (5) *remotus* Brookes, 3.0 × 1.55 mm, Auckland Is., in Dominion Mus., Wellington. (6) *thoracicus* Broun, Mt. Pirongia, BMNH.

Ecology: Common in forest litter from lowland up to 1000 m and higher.

Remarks: I am very thanklul to Mr. R. T. Thompson for helping to sort out synonymy of this species.

Subfamily LEPTOPIINAE

13. Genus **Platyomida** White, 1846

Platyomida White, 1846, Voy. Erebus aud Terror **11**: 14 (type species: *Pl. binodis* White). —Sharp, 1886, Trans. Roy. Dublin Soc. ser. 2, **3**: 415.—Broun, 1893, Man. N. Z. Coleopt. **1893** (5): 1186 (note).

Empaeotes Pascoe, 1876, Ann. Mag. Nat. Hist. ser. 4, **18**: 59 (type species: *Em. crispatus* Pascoe).—Broun, 1893, Man. N. Z. Coleopt. **1880** (1): 441.—Sharp, 1886, Trans. Roy. Dublin Soc. ser. 2, **3**: 415.

Eurynotia Broun, 1893, Man. N. Z. Coleopt. **1880** (1): 440 (type species: *E. pulcherrima* Broun).—Sharp, 1886, Trans. Roy. Dublin Soc. ser. 2, **3**: 415.

Rostrum distinctly longer than wide, length from distal margin of epistome to front margin of eyes. Scrobes narrow, directed towards lower 1/2 of eyes. Prementum bare. Pronotum with a broad median furrow. Margins of ventrite 5 with a very sharp edge throughout.

♂. Internal sac exposed beyond base of main body of aedeagus.

♀. Sternite 8 symmetrical, notched or excised at tip, with long setae.

Relationships: There are several close relatives in the faunas of New Zealand and New Caledonia.

Ecology: Apparently confined to forests and bush. The larvae are subterraneous, ectophytic, and polyphagous. The adults occur on trees and shrubs and are nocturnal.

Geographical distribution. Restricted to New Zealand and adjacent islands, including Snares and Chatham Is.

Platyomida brevicornis australis Kuschel, n. subsp. Figs. 226–234.

Elevations on interstria 3 & 5 at end of dorsum low, nodules absent on upper part of elytral declivity and on proximal 1/2 of interstria 7 as well. Wing/elytron ratio .26.

♂. Sternite 9 as in figs. 229, 230, very thick and strongly upcurved. Aedeagus as in

figs. 226, 227, tip broad, spatulate. Internal sac almost reaching middle of apophyses, with a dorso-apical bulb at insertion of ejaculatory duct; walls with very small broad spicules, these more dense at base and at a short distance from base.

♀. Sternite 8 as in fig. 234, symmetrical. Hemisternites as in figs. 231, 232, brad in lateral aspect, the distal part with slight trace of an apico-ventral lobe, the proximal part with a strongly sclerotized ventral stripe. Bursa copulatrix folded and invaginated along ventral surface, without armature. Spermathecal duct very long and thin, its bursal end strongly expanded, inserted near base of oviduct. Spermatheca as in fig. 231, but general shape individually quite variable.

Length 11.6–14.3 mm; width 4.4–6.1 mm.

SNARES IS.: 1♂, 15. XI. 1907, Hudson.; 3♂♂, 1♀, 31. I. 1961, Knox.

TYPE LOCALITY: Snares Is.

Holotype ♂, 12.0×4.4 mm, 31.I.1961, Knox, and allotype ♀ in Canterbury Mus., Christchurch, paratypes in Entomology Div., D.S.I.R., Nelson and Dominion Mus., Wellington.

Ecology: Collected on *Olearia lyallii* (Compositae).

Remarks: *Platyomida brevicornis brevicornis* Broun, 1904 was described from a single specimen from Puysegur Point, SW South Island. It occurs also in Bluff, Halfmoon Bay, Mt. Anglem, and Chatham Is. The armature of the internal sac in the ♂ and the ♀ genitalia are specific, therefore I do not hesitate in regarding the population of Snares Is. as a simple geographical race of *brevicornis*, although the tip of the aedeagus is very different in these 2 subspecies being narrow and apiculate in *brevicornis* s. str., and broad and spatulate in *australis*. I wish to thank Mr. R. T. Thompson for examining the type of *brevicornis* Broun. The Chatham Is. specimens have been described as *Platyomida versicolor* Broun, 1911.

14. Genus **Heterexis** Broun, 1909

Heterexis Br., 1909, Subantarct. Is. N. Z. **1**: 113 (type species: *H. sculptipennis* Br.).
Campbellorhinus Brookes, 1951, Cape Exp. Ser. Bull. **5**: 50 (type species: *C'rhinus seticostatus* Br.). **New Synonymy.**

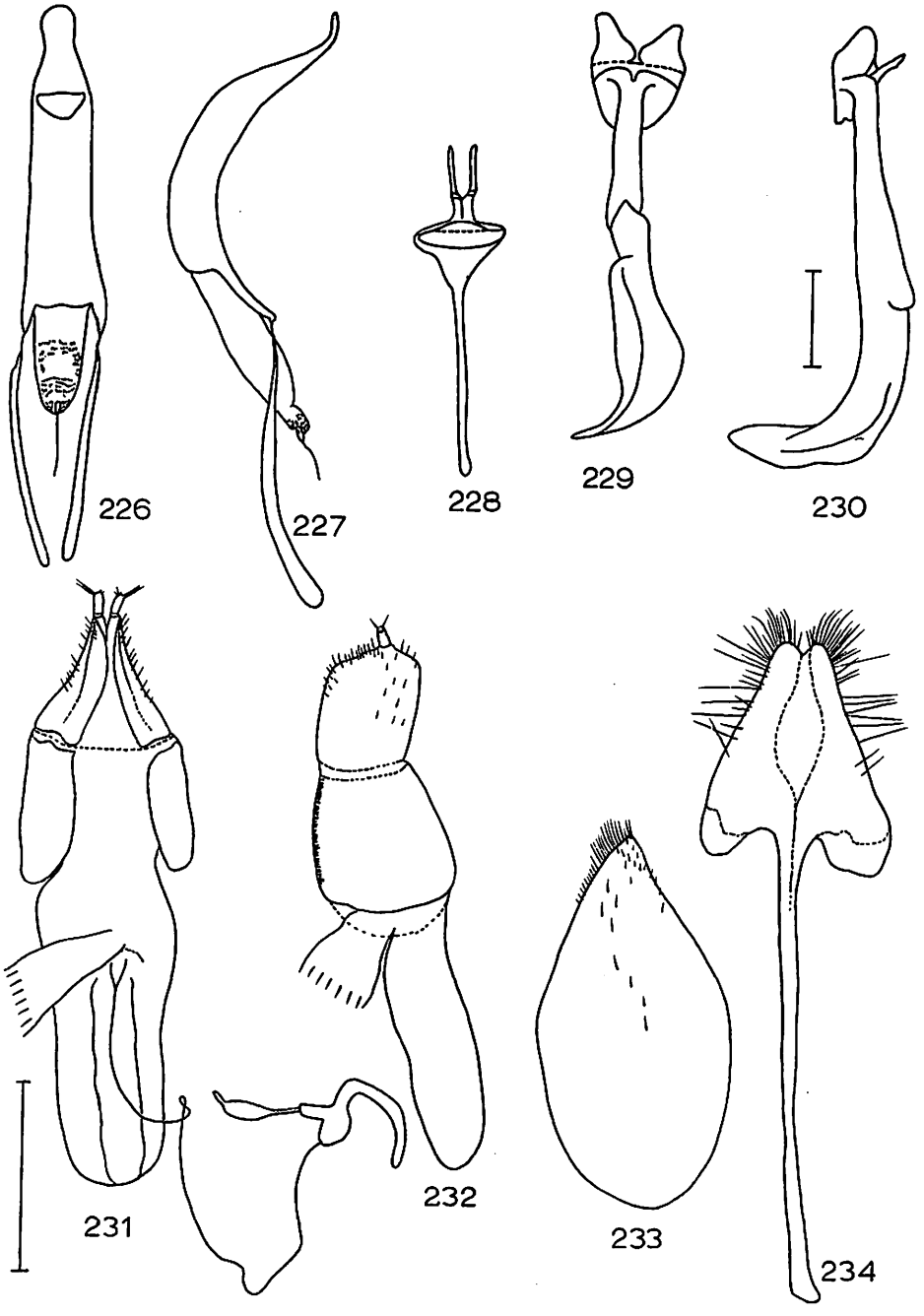
Rostrum very thick and short, very slightly longer than wide. Scrobes strongly widened and directed downwards below lower angle of eyes. Prementum bare. Pronotum with a broad continuous or interrupted median furrow. Margins of ventrite 5 without a sharp edge.

♂. Internal sac contained in main body of aedeagus, not exposed beyond base.

♀. Sternite 8 symmetrical, acute at tip, with short setae.

Relationships: All 3 genera of Leptopiinae which are endemic to the Subantarctic Islands of New Zealand show clear relationships with *Platyomida* White in having in common broad hemisternites that lack sclerotized struts and in having a short vagina and a short bursa copulatrix. *Heterexis* shares with *Platyomida* also a bare prementum, but differs by having a very short rostrum, strongly widening scrobes that are directed downwards, a non-exposed internal sac in the ♂, and an acute sternite 8 in the ♀.

Ecology: Ground weevils of nocturnal habits found in daytime under stones and other objects, and particularly at the base of plants. The larvae are subterraneous living upon roots.



Figs. 226-234. *Platyomida brevicornis australis* n. spp., Snares; 226, aedeagus, dorsal; 227, aedeagus, lateral; 228, tegmen, dorsal; 229, sternite 9 of ♂, ventral; 230, sternite 9, lateral; 231, ♀ genitalia, ventral; 232, *idem*, lateral; 233, tergite 7, lateral; 234, sternite 8, ventral. (Scales beside figs. equal 1.0 mm. Figs. 226-230 same scale; figs. 231-234 same scale.)

Geographical distribution: The 2 species are confined to Auckland and Campbell Is. with 1 species on each.

KEY TO SPECIES OF HETEREXIS

Derm black. Rostrum not carinate. Scales on dorsum of elytra piliform, linear, or lanceolate. ♂: aedeagus as in figs. 235, 236. ♀: ventrite 5 deeply excised. Larger species. 13.8–18.5 mm. Auckland Is. ..... **sculptipennis**

Derm fuscous or piceous. Rostrum carinate. Scales on dorsum of elytra ovate. ♂: aedeagus as in figs. 243, 244. ♀: ventrite 5 slightly emarginate. Smaller species. 8.8–11.7 mm. Campbell I. ..... **seticostatus**

Heterexis sculptipennis (Brookes) Broun, 1909 Figs. 235–242.

Brn., 1909, Subantarct. Is. N. Z. 1: 114.—Brookes, 1951, Cape Exp. Ser. Bull. 5: 53.

Derm very black. Scales on dorsum of elytra piliform, linear or lanceolate. Rostrum without median carina. Elytra nodulose, the dorsal uneven interstriae costate mainly on proximal 1/2, also the even interstriae often nodulose. Ventrite 5 of ♀ deeply excised. Wing/elytron ratio .16. ♂: Sternite 9 as in figs. 238, 239, moderately upcurved. Aedeagus long, parallel, transversely convex, the tip broad and rounded; apophysis directly attached to main body, strongly sinuous; internal sac hidden in the strongly sclerotized aedeagus (figs. 235, 236). ♀: Sternite 8 symmetrical, apiculate and acute (fig. 242). Hemisternites as in figs. 240, 241, tip rounded, styli moderately long; bursa copulatrix longitudinally depressed on ventral surface; spermathecal duct short with thickened walls, its bursal end not expanded; spermatheca as in fig. 241, but shape a little variable. Length 13.8–18.5 mm; width 5.3–8.7 mm.

AUCKLAND IS. AUCKLAND I.: Wilkes Peak, elytra only. ADAMS I.: 18 obtained at all altitudes in Aug., Sept., Nov., & Feb.

TYPE LOCALITY: Adams I., Auckland Is. Lectotype ♂, 15.0×6.1 mm, Adams I., 18.XI. 1907, Speight in Dominion Mus., Wellington.

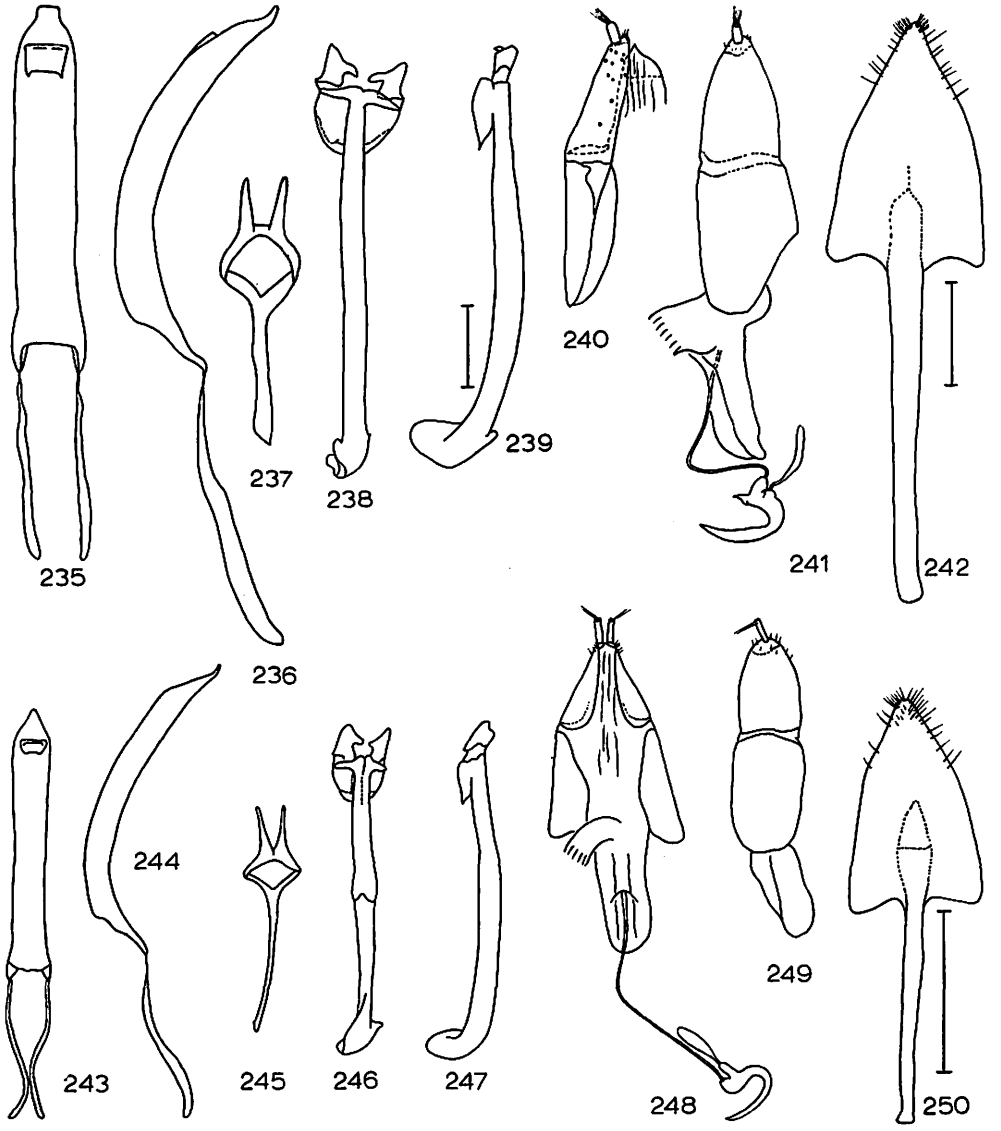
Ecology: Common under stones and at the base of plants from lowland to the high ranges in Adams I.

Remarks: This is probably the only species that shows a limited range of distribution in the Auckland Is., being so far restricted to Adams I. and to the southern Auckland I. (main island). Brookes has suggested that the elytra found on Wilkes Peak, South Auckland I. could have been carried by a bird. As this seems to be very unlikely, I assume that the species actually occurs on the southern main island.

Heterexis seticostatus (Brookes), n. comb. Figs. 243–250, 275f.

Brookes, 1951, Cape Exp. Ser. Bull. 5: 50, f 14 (*Campbellorhinus*).

Derm fuscous or piceous. Scales on dorsum of elytra ovate. Rostrum with a fine median carina. Elytra with uneven interstriae raised and slightly nodulose on distal part, the even interstriae not at all nodulose. Ventrite 5 of ♀ weakly emarginate at tip. Wing/elytron ratio .10. ♂: Sternite 9 as in figs. 246, 247. Aedeagus as in figs. 243, 244, apiculate and acute at tip. ♀: Sternite 8 as in fig. 250; genitalia as in figs. 248, 249. Length 8.8–11.7 mm; width 3.5–5.3 mm.



Figs. 235–250. *Heterexis* spp. *H. sculptipennis* Broun, Adams I., Auckland Is.: 235, aedeagus, dorsal; 236, *idem*, lateral; 237, tegmen, dorsal; 238, sternite 9 of ♂, ventral; 239, *idem*, lateral; 240, hemisternite, ventral; 241, genitalia, lateral; 242, sternite 8 of ♀, ventral. *H. seticostatus* (Brookes), Campbell I.: 243, aedeagus, dorsal; 244, *idem*, lateral; 245, tegmen, dorsal; 246, sternite 9 of ♂, ventral; 247, *idem*., lateral; 248, ♀ genitalia, ventral; 249, *idem*., lateral; 250, sternite 8 of ♀, ventral. (Scales besides figs. equal 1.0 mm. Figs. 235–239 same scale; figs. 240–247 same scale; 248–250 same scale.)

CAMPBELL I.: Windlass Bay, St. Col Peak Ridge, Yvon Villarceau Peak region, Tucker Cove, Garden Cove, and Lookout Bay. Total, 96 specimens found in most months of the year.

TYPE LOCALITY: Windlass Bay, Campbell I. Holotype ♂, 9.1×3.7 mm, Windlass Bay, 22. XI. 1947, Sorensen, in Dominion Mus., Wellington.

Ecology: It seems to be particularly common at the base of *Bulbinella rossii* (Liliaceae).

Remarks: This is the only adelognathous curculionid endemic to Campbell I. Although its general appearance is quite striking and different from that of *H. sculptipennis* these 2 species are actually very closely related.

15. Genus **Oclandius** Blanchard, 1853

Oclandius Bld., 1853, Voy. Pôle Sud **4**: 202 (type species: *O. cinereus* Bld.).
Aucklandius Gemminger & Harold, 1871, Cat. Coleopt. **8**: 2242 (emend.).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 194.
Catodryobius Broun, 1909, Subantarct. Is. N. Z. **1**: 108 (type species: *C. vestitus* Br.).
Inocatoptes Br., 1902, Trans. Proc. N. Z. Inst. **34**: 178 (type species: *I. incertus* Broun); 1909, Subantarct. Is. N. Z. **1**: 112. **New Synonymy.**

Rostrum short and thick. Scrobes wide, directed towards lower angle of eyes. Lateral genal suture visible as a proximal foveiform impression. Prementum with a pair of setae. Pronotum at least partly raised along median line, without a median furrow. Front and mid tibiae with mucro and spurs.

♂. Aedeagus with a sloping flat surface on each side. Internal sac exposed beyond base of main body, without a basal sclerite; ejaculatory duct thin, not coiled.

♀. Sternite 8 strongly asymmetrical. Hemisternites broad. Bursa copulatrix with a ventral longitudinal invagination, without ampulla at spermathecal duct insertion; spermathecal duct thin at both ends, inserted a short distance from base of oviduct.

Relationships: Related as a whole to *Platyomida* and *Heterexis*, but readily separable by the presence of a pair of setae on the prementum and by the internal features in both sexes.

Ecology: The species of Snares Is. seems to have very much the same habits as those of *Platyomida* in that the adults occur on woody plants, on trees and shrubs, whilst the other 2 species seem to be strictly confined to the ground occurring under stones, and logs and at the base of plants. The larvae are in the soil, usually at a depth of 5–30 cm. Only those of *C. cinereus* have been collected so far. They were feeding upon the roots of *Bulbinella rossii* (Liliaceae).

Geographical distribution: The 3 species of this genus are restricted to the Subantarctic Islands. One is endemic on Snares Is., 1 is confined to Auckland Is., and the 3rd is common to Auckland and Campbell Is.

KEY TO SPECIES OF OCLANDIUS

1 (4). Segment 7 of funicle not transverse, fig. 268. Elytra of ♂♂ shorter, not more than 1.8× longer than wide. ♀♀ smaller, the hemisternites with an apicoventral lobe.
2 (3). Derm dull. Rostrum distinctly carinate along median line and with a longitudinal depression on each side of carina. Mandibles usually with 3 or 4 long setae. 11.5–16.0 mm. Snares Is. ..... **vestitus**

3 (2). Derm shiny. Rostrum with a smooth not distinctly raised median line, without a longitudinal impression on each side of median line. Mandibles usually with 5 or more long setae. 12.1–18.1 mm. Auckland Is., Campbell I. ..... **cinereus**

4 (1). Segment 7 of funicle strongly transverse, fig. 269. Elytra of ♂♂ very elongate, more than 1.9× longer than wide. ♀♀ larger, the hemisternites with rounded tip, without an apico-ventral lobe. 17.5–23.4 mm. Auckland Is. ... **laeviusculus**

Oclandius vestitus (Broun), n. comb. Figs. 251–254, 262, 263.

Broun, 1909, Subantarct. Is. N. Z. **1**: 109, pl. 3: 10 (*Catodryobius*).—Hudson, 1909, *Ibid.* **1**: 58 (*Catadryobius*, sic.).

Derm dull. Rostrum thinner than in the other species, the pterygia more strongly rounded and laterally protruding, thus latero-apical angle of rostrum rounded; distinctly carinate along the median line and with a longitudinal impression on each side of carina. Mandibles with 3 or 4 long setae. Prementum with a pair of very short setae. Antennae usually reaching beyond margins of eyes. Prothorax uniformly squamose, punctate-coriaceous, with a distinctly raised median line at least on distal 1/2. Elytra with semierect setae on all interstriae, setae a little tufted on interstria 3, 5, & 7. Wing/elytra ratio .12. ♂: Sternite 9 as in fig. 254, with very long manubrium. Aedeagus as in figs. 251, 252, the tip rather broad. ♀: Sternite 8 as in fig. 263. Hemisternites as in fig. 262, spermathecal duct relatively short. Length 11.5–16.0 mm; width 4.9–7.0 mm.

SNARES IS.: 20 collected from Nov.–Feb. by Fleming, Hudson, and Knox.

TYPE LOCALITY: Snares. Holotype in Brit. Mus., Lond.

Ecology: This species is found on *Olearia lyallii* (Compositae) together with *Platyomida brevicornis australis*. It thus seems to have very different habits from those of the other 2 species of the genus which are strictly ground inhabitants.

Remarks: It is a distinct species, but very close to *O. cinereus* Blanchard from Auckland Is. and Campbell I.

Oclandius cinereus (Blanchard), 1853 Figs. 255–258, 264, 265, 268, 275g.

Bld., 1853, Voy. Pôle Sud **4**: 203, pl. 13: 17 (*Ryssocarpus* on plate).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 194 (*Aucklandius*).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 45 (*Aucklandius*).

aterrimus aterrimus Brookes, 1951, *Ibid.* **5**: 48 f 13 (*Aucklandius*). **New Synonymy.**

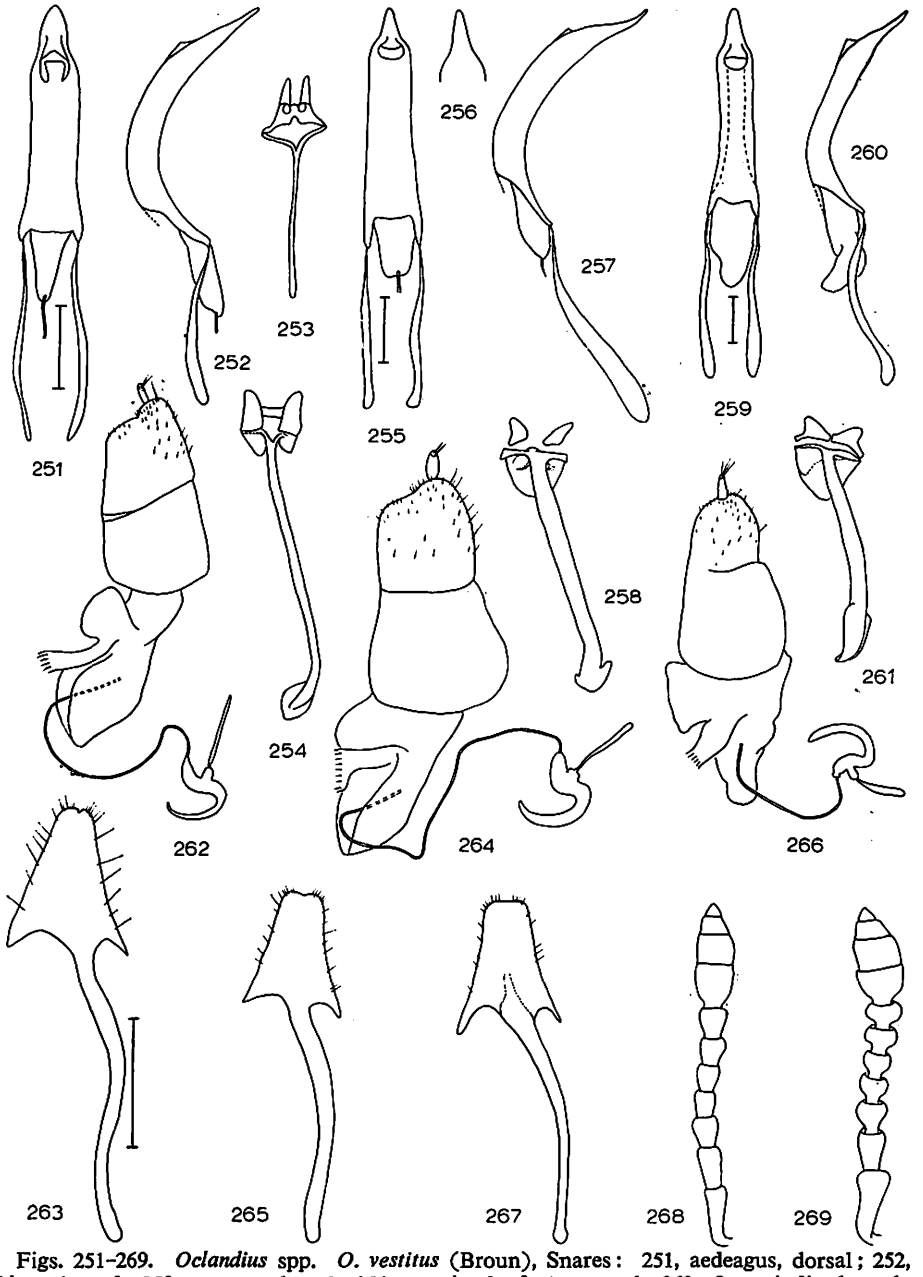
aterrimus aucklandicus Br., 1951, *Ibid.* **5**: 49 (*Aucklandius*). **New Synonymy.**

benhami Broun, 1909, Subantarct. Is. N. Z. **1**: 110 (*Catodryobius*).—Hudson, 1909, *Ibid.* **1**: 60 (*Catadryobius*, sic!).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 45 (*Aucklandius*).

cupreosus Br., 1951, *Ibid.* **5**: 47, f 12 (*Aucklandius*). **New Synonymy.**

erubescens Broun, 1909, Subantarct. Is. N. Z. **1**: 111, pl. 3: 1 (*Catodryobius*).—Hudson, 1909, *Ibid.* **1**: 61 (*Catadryobius*, sic!).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 45 (*Aucklandius*).

incertus Broun, 1902, Trans. Proc. N. Z. Inst. **34**: 178 (*Inocatoptes*); 1909, Subantarct. Is. N. Z. **1**: 113 (*Inocatoptes*).—Hutton, 1902, Trans. Proc. N. Z. Inst. **34**: 175 (*Inocatoptes*).—Gourlay, 1950, *Ibid.* **78**: 196 (*Inocatoptes*).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 53 (*Inocatoptes*). **New Synonymy.**



Figs. 251–269. *Oclandius* spp. *O. vestitus* (Broun), Snares: 251, aedeagus, dorsal; 252, *idem.*, lateral; 253, tegmen, dorsal; 254, sternite 9 of ♂, ventral; 262, ♀ genitalia, lateral; 263, sternite 8 of ♀, ventral. *O. cinereus* Blanchard, Ranui Cove, Auckland Is.: 255, aedeagus, dorsal; 256, *idem*, apex; 257, *idem*, lateral; 258, sternite 9 of ♂, ventral; 264, ♀ genitalia, lateral; 265, sternite 8 of ♀, ventral; 268, antenna. *O. laeviusculus* (Broun), ♂ from Summit Dome, Adams I., ♀ from Disappointment I., Auckland Is.: 259, aedeagus, dorsal; 260, *idem*, lateral; 261, sternite 9 of ♂, ventral; 266, ♀ genitalia, lateral; 267, sternite 8 of ♀, ventral; 269, antenna. (Scales beside figs. equal 1.0 mm. Figs. 251–254, 265, 266, 268, 269 same scale; figs. 255–258, 267 same scale; figs. 259–261 same scale; figs. 262–264 same scale).

sorenseni Br., 1951, Cape Exp. Ser. Bull. **5**: 46, f 11 (*Aucklandius*). **New Synonymy.**
tetricus Broun, 1909, Subantarct. Is. N. Z. **1**: 110, pl. 3: 11–13 (*Catodryobius*).—Hudson, 1909, *Ibid.* **1**: 60 (*Catadryobius*, sic!)—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 45 (*Aucklandius*).

Derm piceous or black. Rostrum thick, widening very little at tip, pterygia visible from above but not or very slightly protruding, latero-apical angle of rostrum forming a right angle; median line smooth, not raised, without longitudinal impression on each side of median line. Mandibles with 5 or more long setae. Prementum with a pair of long setae. Scape seldom reaching beyond hind margin of eyes; all segments of funicle longer than wide. Prothorax with fine scattered punctures, disc with fine sparse scales, lateral margins with vitta of larger and denser scales, distal 1/2 of median line slightly and broadly raised, disc usually with a rounded or transverse depression on middle of each side. Elytra of ♂♂ less than 1.8× longer than wide, often interstria 3, 5 & 7 convex or raised; setae indistinct, or sometimes distinct on uneven interstriae only, but not clearly tufted. Wing/elytron ratio .14–.16. ♂: Sternite 9 as in fig. 258, with thick short manubrium. Aedeagus as in figs. 255–257, its dorsal surface in lateral aspect gently curved also in middle, distal part apiculate, narrow, subject to individual variations. ♀: Sternite 8 as in fig. 265, distal margin either gently emarginate, or truncate, or rounded. Hemisternites very broad, the distal portion with a broad apico-ventral lobe. Spermathecal duct long, rather thin; spermatheca somewhat variable at insertion of duct and gland, fig. 264. Length 12.0–18.8 mm; width 4.8–8.7 mm.

AUCKLAND IS. Generally spread on islands and islets, found so far on Auckland I. (main island), Ocean I., Rose I., Ewing I., Enderby I., and Adams I. Total, 116 specimens collected from Aug.–Feb.

CAMPBELL I. Also generally distributed on the island. Total of 256 specimens.

TYPE LOCALITIES AND TYPES: (1) *aterrimus aterrimus* Brookes: holotype ♂, 16.1×6.6 mm, Mt. Puiseux, Campbell I., 24. I. 1943, Sorensen, in Dominion Mus., Wellington. (2) *aterrimus aucklandicus* Brookes: holotype ♂, 15.1×6.6 mm, Dome, 640 m, Adams I., Auckland Is., 18. XI. 1944, Turbott, in Dominion Mus., Wellington. (3) *benhami* Broun: holotype ♂, Enderby I., Auckland Is., 27.XI.1907, Benham, in Brit. Mus., Lond. (4) *cinereus* Blanchard: Auckland Is. (Port Ross), probably in Laboratoire d'Entomologie, Paris. (5) *cupreosus* Brookes: holotype ♂, 14.8×6.0 mm, Mt. Honey, Campbell I., 1.I.1943, Sorensen, in Dominion Mus., Wellington. (6) *erubescens* Broun: holotype ♂, 14.3×5.8 mm, Carnley Harbor, Auckland Is., 20. XI. 1907, Benham, in Dominion Mus., Wellington. (7) *incertus* Broun: holotype ♀, about 15.0–6.7 mm (a very teneral specimen with crushed elytra), highland at the head of Port Ross, Auckland Is., I. 1901, Butler, in Canterbury Mus., Christchurch. (8) *sorenseni* Brookes: holotype ♂, 15.1×6.0 mm, Head of Tucker Cove, 20 m, Perseverance Harbor, Campbell I., 10. XI. 1945, Sorensen, in Dominion Mus., Wellington. (9) *tetricus* Broun: Carnley Harbor, Auckland Is., 17–20. XI. 1907, Hudson, in Brit. Mus. Lond.

Ecology: A very common species occurring from supralittoral zone to highlands throughout Auckland and Campbell islands. It is probably a more or less polyphagous species, but has commonly been found associated with *Bulbinella rossii* (Liliaceae), a broad-leafed summer green perennial herb which is abundant in open moist situations. The adults feed upon the leaves of this plant at night and hide at the base in daytime. Larvae and pu-

pae have been secured around the rootstock of *Bulbinella rossii* as deep as 30 cm in the soil in both Auckland and Campbell Is.

Remarks: The number of synonyms could suggest a high degree of variation in this species. As a matter of fact, the range of variation is absolutely normal for large species inhabiting cold climates. A comparison of the populations of Auckland Is. with those of Campbell I. do not show any significant difference. The only slight difference, from a statistical point of view, is that the vestiture on the dorsum of the elytra consists mostly of scales in the Auckland Is. specimens whereas it is mostly of hairs in a large number of Campbell I. specimens. As a whole the vestiture is more variable in Campbell I. specimens than in Auckland Is. ones. Very hairy and very scaly specimens occur together under the same plant on Campbell I. as abundant recent collecting has clearly shown.

Oclandius laeviusculus (Broun), n. comb. Figs. 259–261, 266, 267, 269.

Br., 1902, Trans. Proc. N. Z. Inst. **34**: 179 (*Lyperobius*); 1909, Subantarct. Is. N. Z. **1**: 114 (*Heterexis*).—Hutton, 1902, Trans. Proc. N. Z. Inst. **34**: 175 (*Lyperobius*).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 54 (*Heterexis*).

grandis Broun, 1909, Subantarct. Is. N. Z. **1**: 112, pl. 3: 15 (*Catodryobius*).—Hudson, 1909, *Ibid.* **1**: 61 (*Catadryobius*, sic!).—Gourlay, 1950, Trans. Proc. Roy. Soc. N. Z. **78**: 195 (*Aucklandius*).—Brookes, 1951, Cape Exp. Ser. Bull. **5**: 46 (*Aucklandius*). **New Synonymy.**

Very close to *cinereus*. Last segments of funicle broader and more distinctly stalked at least the 7th transverse, fig. 269. ♂♂ more elongate, always more than 1.8×, usually more than 1.9× longer than wide. Smallest ♀♀ more than 20 mm long. The squamose vestiture distinctly narrower, scales mostly piliform, others of lineal or lanceolate order. Setae of elytra longer, loosely tufted. Wing/elytron ratio .12. ♂: Sternite 9 as in fig. 261. Aedeagus as in figs. 259, 260, its dorsal surface in lateral aspect slightly depressed in middle, with or without a longitudinal groove. ♀: Sternite 8 as in fig. 267. Distal portion of hemisternites rounded, without an apico-ventral lobe; spermathecal duct short (fig. 266). Length 17.0–23.4 mm; width 6.8–10.8 mm.

AUCKLAND IS. Found so far on Ewing I., French I., Adams I., and Disappointment I. Total, 37 specimens collected from Nov.–Jan.

TYPE LOCALITY: highland of Adams I., Auckland Is. Types. (1) *laeviusculus* Broun: highlands of Adams I., I.1901, Bollans, in Brit. Mus., Lond. (2) *grandis* Broun: holotype ♀, 21.7×9.5 mm, Disappointment I., Auckland Is., 28.XI.1907, Browne, in Dominion Mus., Wellington.

Ecology: A ground species found from the supralittoral zone to the highlands under logs and stones, but more commonly under *Pleurophyllum* (Compositae), *Stilbocarpa* (Araliaceae), and *Anisotome* (Umbelliferae).

Remarks: It is interesting that this species has, so far, not been collected on the main island of the Auckland Is.

16. Genus **Catodryobiolus** Brookes, 1951

Catodryobiolus Br., 1951, Cape Exp. Ser. Bull. **5**: 51 (type species: *C. antipoda* Br.).

Rostrum short and thick. Scrobes wide, directed towards lower angle of eyes. Lateral

genal suture visible as a long sinuous furrow almost reaching tip of rostrum. Prementum with a pair of setae. Pronotum at least partly raised along the median line without a broad median furrow. Front and middle tibiae with mucro without spurs.

♂. Aedeagus evenly convex on dorsal surface, without a sloping flat surface on each side. Internal sac contained in main body of aedeagus, not exposed beyond base of main body, with a long strong basal sclerite. Ejaculatory duct very thick and coiled.

♀. Sternite 8 as in fig. 274, symmetrical. Hemisternites broad. Bursa copulatrix without a ventral longitudinal invagination, with an ampulla at spermathecal duct insertion. Spermathecal duct gradually and strongly thickening towards its bursal end.

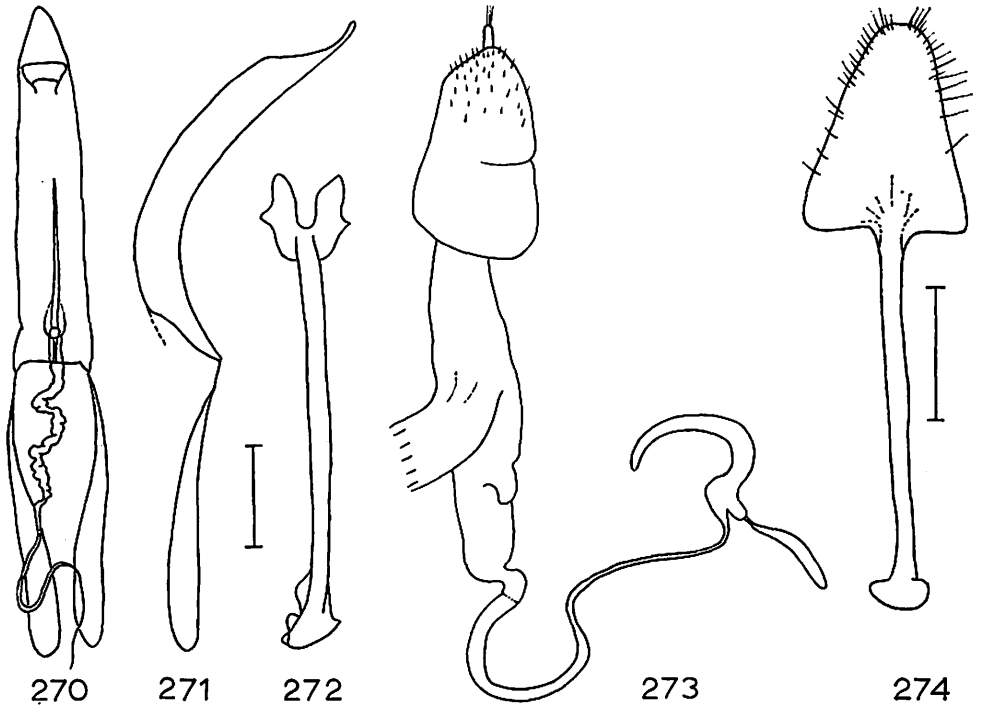
Relationships: Related to *Oclandius* Blanchard and differing mainly by the very peculiar internal genitalic structures.

Ecology: A ground weevil with the same ecological requirements as *Oclandius* and *Heterexis*.

Geographical distribution: Endemic to Auckland and Campbell islands.

Catodryobiolus antipoda Brookes, 1951 Figs. 270–274, 275h.

Br., 1951, Cape Exp. Ser. Bull. **5**: 52, f 15.



Figs. 270–274. *Catodryobiolus antipoda* Brookes, Auckland Is.: 270, aedeagus, dorsal; 271, *idem.*, lateral; 272, sternite 9 of ♂, ventral; 273, ♀ genitalia, lateral; 274, sternite 8 of ♀, ventral. (Scales beside figs. equal 0.5 mm. Figs. 270–272 same scale; figs. 273, 274 same scale.)

Derm fuscous. Vestiture with appressed hairs and with lineal or lanceolate scales; elytra with loosely tufted setae on weak elevations. Rostrum with a fine median carina. Pterygia and scrobes visible in dorsal aspect. Scape reaching beyond hind margin of eyes. Prothorax alutaceous with a sharp median carina abbreviated at base and apex. Wing/elytron ratio .12–.13. ♂: Sternite 9 as in fig. 272. Aedeagus as in figs. 270, 271, basal sclerite strongly chitinous, subuliform with swollen base. ♀: Sternite 8 as in fig. 274. Genitalia as in fig. 273. Length 6.5–10.0 mm; width 2.7–4.8 mm.

AUCKLAND IS. 17 from Ocean I., Ewing I., and Adams I.

CAMPBELL I.: Windlass Bay, St. Col Peak Ridge, Shoal Point, Tucker Cove, and Ve-

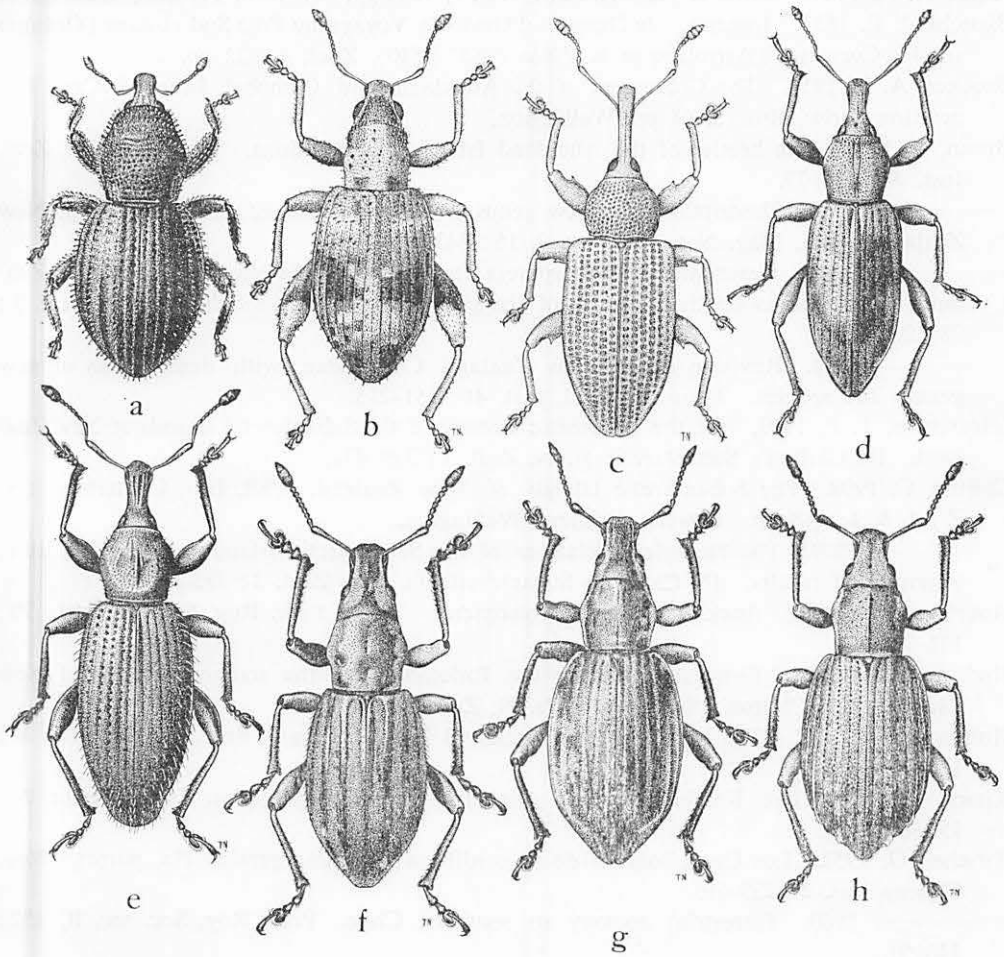


Fig. 275. a, *Notacalles suillus* Kuschel n. sp., ♀, Ranui Cove, Auckland Is.; b, *Pactolotypus subantarcticus* Kuschel n. sp., ♂, Beeman Camp, Campbell I.; c, *Peristoreus innocens* Kirsch, ♂, Ranui Cove, Auckland Is.; d, *Gromilus exiguus* (Brookes), ♂, Beeman Hill, Campbell I. (setae on body omitted); e, *Gromilus veneris setarius* (Broun), ♂, Tucker Cove, Campbell I.; f, *Heterexis seticostatus* (Brookes), ♂, Garden Cove, Campbell I.; g, *Oclandius cinereus* Blanchard, ♀, Mt. Honey, Campbell I.; h, *Catodryobiolus antipoda* Brookes, ♀, Ewing I., Auckland Is.

nus Bay. Total of 15 specimens.

TYPE LOCALITY: Ocean I., Auckland Is. Holotype ♂, 8.9×3.7 mm, Ocean I., Auckland Is., IV. 1944, Turbott, Dominion Mus., Wellington.

Ecology: Most specimens have been found under logs of *Metrosideros umbellata* and *Olearia lyallii*, under *Stilbocarpa* and *Acaena*, but some specimens have been taken off *Olearia lyallii*, at night.

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