

# NEW ZEALAND SPIDERS OF THE FAMILY OONOPIDAE

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## ABSTRACT

THE FAMILY Oonopidae is recorded from New Zealand for the first time. Twenty-nine forms are described as new. The genus *Subantarctia* Forster, 1945, is transferred to this family and four further genera *Ascuta*, *Duripelta*, *Pounamua* and *Kapitia* are established. Two structures which do not appear to have been previously found in spiders are recorded. The 'tarsal tubercle' which is found near the disto-dorsal surface of each pedal tarsi is usually a small tubercle with a long median bristle and a number of smaller accessory bristles. The 'tarsal thorns' are two small, but strong, bristles on the dorsal surface of the tarsus immediately behind the onychium. All New Zealand genera other than *Kapitia* possess cheliceral teeth and a definite tarsal claw on the female pedipalp, characters which are normally absent in Oonopid spiders.

## INTRODUCTION

The family Oonopidae has not previously been recorded from New Zealand, although *Ariadna septemcincta* (Urquhart) was originally placed by Urquhart (1891) into *Oonopo*. No specimens belonging to this family were to be found in collections prior to 1940 when the first serious investigation into the nature of the New Zealand leaf-mould fauna was commenced by Dr J. T. Salmon. From 1940 onwards some hundreds of specimens have been obtained and from these twenty-nine forms are described below. A number of species which are represented only by females in the present collection have not been described, and in view of the many areas not covered by the collection studied it is probable that the total fauna, when recorded, will approach forty.

The spiders have been found mainly in forest floor debris (referred to as 'leaf-mould' in the present paper) but have also been collected in moss, from both the forest floor and the trunks of trees. Although female spiders of all genera are occasionally found enclosed within silken cocoons while guarding egg sacs, only *Subantarctia* appears to live permanently in silken tubes. These

tubes, which are found on the undersurfaces of rocks and logs, are usually so flimsy in structure that the spider can be seen easily within them. Adults of both sexes of *Subantarctia florum* n.sp. have been found within tubes.

The genera *Ascuta*, *Duripelta*, *Pounamua* and *Subantarctia* possess a number of characters which are usually lacking in typical Oonopids. The chelicerae are provided with strong teeth, the palp of the female has a terminal claw and the maxillae are usually parallel or nearly so. It was the presence of these characters as well as a general external resemblance to the Dysderids which made me decide to place *Subantarctia* Forster, 1955, originally into the Dysderidae, in spite of the strongly bipectinate tarsal claws. However, after a close study of the spiders recorded below, I have concluded that this genus together with *Ascuta*, *Duripelta* and *Pounamua* would be better grouped together in the Oonopidae. *Subantarctia* appears to be related to *Tasmanoops* Hickman from Tasmania, the main differences being the presence of pedal spines in *Tasmanoops* and the absence of a claw on the female pedipalp.

*Oonopinus mollipes* Hickman from Tasmania is possibly related to the New Zealand species which I have placed in *Pounamua*; the obvious characters separating them are the presence of cheliceral teeth and a claw on the female palp in the New Zealand forms. The establishment of the genus *Duripelta* raises the question of the need for an overall revision of the Oonopidae where the present division into two sub-families, the Oonopinae and Gamasomorphinae is based on the absence or presence of abdominal scutes. *Duripelta*, which has prominent abdominal scutes, shows little relationship with the genera usually placed in the Gamasomorphinae and is undoubtedly closely related to *Ascuta* in which scutes are entirely absent.

Two special structures are found on the tarsi of all species of *Duripelta*, *Ascuta*, *Pounamua* and *Subantarctia*. These have been referred to in the present paper as the 'tarsal tubercle' and the 'tarsal thorns', and do not seem to have been recorded previously.

The tarsal tubercle is situated on the dorsal surface of each pedal tarsus immediately before the distal slope where the tarsal segment slopes down to the onychium. The typical form of the organ (Fig. 49) is a low tubercle with a smooth median bristle and a number (usually 2-5) of small accessory bristles. The median bristles of legs 1 and 2 are usually of a comparable size and in many species longer than the corresponding bristles of legs 3 and 4. Although situated in a position similar to the 'papille tarsale' recorded by Machado (1951) in the Ochyroceratidae, the 'tarsal tubercle' differs considerably in structure.

The 'tarsal thorns' are two small stout bristles placed on the disto-dorsal surface of each tarsus immediately in front of the onychium. Both of these structures are present in two Tasmanian species examined, *Tasmanoops alipes* Hickman and *Oonopinus mollipes* Hickman.

ACKNOWLEDGMENTS: I am indebted to Dr V. V. Hickman, University of Tasmania, for specimens of Tasmanian Oonopids and many helpful comments, and to the numerous individuals whose names are recorded with the specimens they have obtained for this study.

## SYSTEMATICS

## Family Oonopidae

Genus *SUBANTARCTIA* Forster, 1955Type species *Subantarctia turbotti* Forster, 1955 (o.d.)***Subantarctia dugdalei* n.sp.**

FIGS. 1-8

## MALE:

*Measurements* (in millimetres)

Carapace: Length 1.870, Width 1.275

Abdomen: Length 2.125, Width 1.340

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.104	0.476	0.854	0.900	0.490	3.824
Leg 2	1.244	0.490	0.960	0.905	0.504	4.103
Leg 3	0.868	0.364	0.560	0.660	0.308	2.760
Leg 4	1.069	0.420	0.770	0.914	0.322	3.495
Palp	0.364	0.210	0.210		0.280	1.064

*Colour:* Carapace and sternum dark reddish-brown, appendages pale orange. Abdomen uniformly white.

*Carapace:* Relatively low, level from eyes to  $2/3$  of length where it slopes down to the posterior margin. Width in front equal to  $1/2$  of greatest width between coxae 2, where ratio of length to width = 22 : 15.

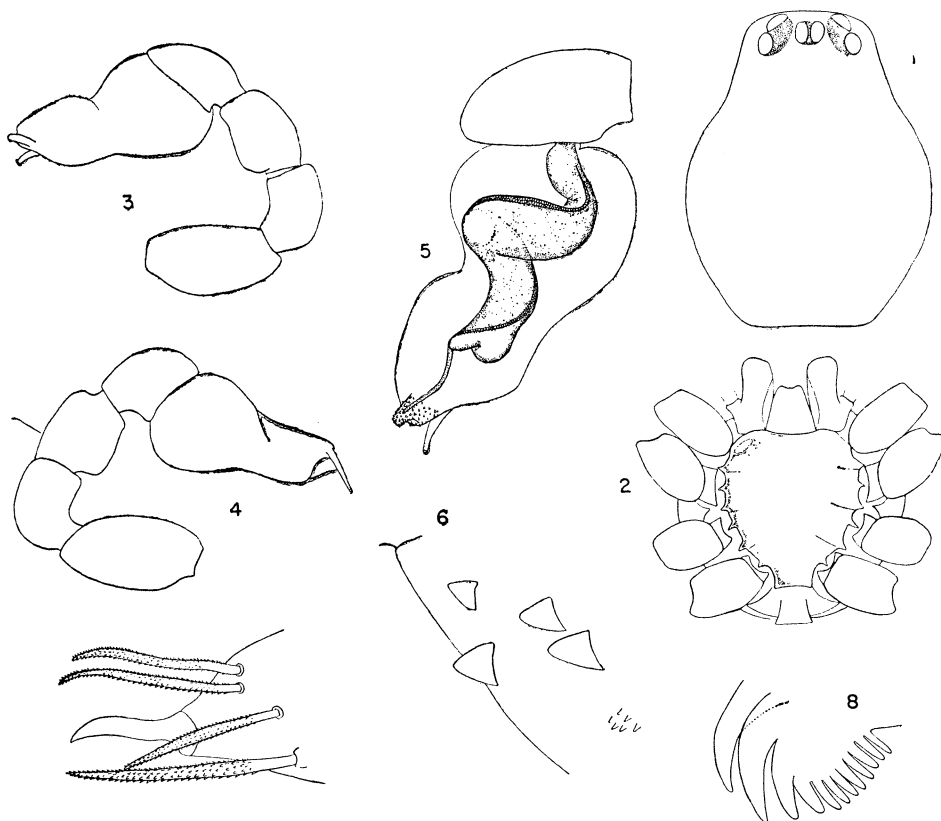
*Eyes:* The eye group occupies  $2/3$  of the width of the head. Posterior row strongly recurved. Ratio of ALE:PME:PLE = 16:15:15. PME contiguous, lateral eyes contiguous. ALE are separated by  $8/15$  and PLE by  $11/15$  of the width of a PME from the PME. The ALE are separated from each other by twice the width of a PLE. The PLE are separated from each other by  $43/15$  of the width of a PME. Clypeus is equal to  $2/5$  of the diameter of an AME.

*Chelicerae:* Vertical, without lateral boss. Furrow with four strong, broad teeth (Fig. 6), two on each margin. A double row of hairs on the prolateral surface form a scopula, of which the hairs of the more ventral row are serrate while the other row is smooth.

*Maxillae:* Almost parallel. Slightly more than twice as long as width at base. Palp inserted at  $2/5$  where the maxilla is constricted to  $1/2$  of the width at the base. Beyond the palp the outer margin expands but the inner margin is straight. There is scopula of white hairs and a serrula present.

*Labium:* Free, wider at base than it is long in ratio of 7:6, outer margins gently curved, converging slightly. Anterior margin with shallow notch.

*Sternum:* Longer than wide in ratio of 10:9, slightly convex near lateral margin but relatively flat on the median surface. There is a definite ridge extending around the lateral and posterior margins which encloses an elongate pit at the level of the first pair of coxae. This ridge extends out on the lateral



FIGS. 1-8. *Subantarctica dugdalei* n.sp. Fig. 1; Carapace and eyes of female. Fig. 2; Ventral surface of cephalothorax of male showing marginal ridge on sternum and pit near anterior corner. Fig. 3; Prolateral view of male palp. Fig. 4; Retrolateral view of male palp. Fig. 5; Prolateral view of genital bulb showing receptaculum seminis. Fig. 6; Cheliceral teeth of male. Fig. 7; Distal portion of female pedipalp. Fig. 8; Lateral expansion of outer claw, leg 1 of female.

extensions which are present both at the level of and between the coxae (Fig. 2). The posterior margin is broadly obtuse, separating coxae 4 by a distance equal to slightly more than their width.

**Legs:** 2.1.4.3 closely clothed with small fine hairs. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2, tibia, 2 at  $\frac{1}{2}$ , metatarsus 1 subdistal; Legs 3 and 4, tibia 3 (1, 2) at  $\frac{1}{3}$ , metatarsus 1 subdistal. Tarsus narrow proximally swelling evenly distally where the width of the segment is twice that at the base. Tarsal tubercle present as a low mound with a small median bristle which is not as long as the mound is high. Two distal 'thorns' are present. Onychium well developed with thick ventral scopula of ciliate hairs. Two claws, homogeneous, flattened dorso-ventrally and strongly pectinate on both margins. The teeth on the inner margin are small and even, numbering from 15-18. The outer margin is somewhat expanded with 4-5 large teeth followed by 10-11 smaller or more regular teeth (Fig. 8). The relative lengths



of the coxae are 1.2.4.3, the first coxa being almost twice as long as wide while the third coxa is as wide as it is long.

*Palp* (FIGS. 3-5): Relatively stout. Tibia lightly clothed with serrate hairs, other segments, particularly the tarsus, more heavily clothed with similar hairs. Tibia with a single trichobothrium at 1/3 of its length. Genital bulb twice as long as it is wide at the base, constricted at about half of its length. There is a small denticulate embolus on the distal surface and a longer tubular conductor. There are no external lobes present. The receptaculum seminis is slightly convoluted as shown in Fig. 5, with a well-defined sieve plate running the entire length.

*Abdomen*: Ovoid, closely clothed with short hairs. The two pairs of spiracles are clearly visible and are separated by a distance equal to 1/18 of the length of the abdomen. Six spinnerets in a compact group with small colulus.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 1.785, Width 1.275

Abdomen: Length 2.394, Width 1.615

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.169	0.490	0.896	0.934	0.490	3.979
Leg 2	1.339	0.504	0.979	0.949	0.504	4.275
Leg 3	0.909	0.420	0.560	0.688	0.350	2.928
Leg 4	1.214	0.448	0.882	0.994	0.392	3.930
Palp	0.392	0.196	0.266		0.490	1.344

Similar to male. The eyes are all equal in size but are situated as in male. The pedipalp is clothed with serrate hairs. Tibia with three trichobothria in a group at 1/3 of the length of the segment. Tarsal claw strong, slightly curved distally, smooth (Fig. 7).

*Types*: Holotype male: Deans Bush, Christchurch, Canterbury, 22 December 1949, J. Halldane (C.M.A. 1185, S1.298). Allotype female, same data (C.M.A. 1186, S1.299). Paratype female. Deans Bush, 19 December 1949, J. Halldane and J. S. Dugdale (C.M.A. 1187). Paratype at Deans Bush, beaten from foliage, 23 December, 1952, J. S. Dugdale (C.M.A. 1188).

*Records*: Lake Janet, Canterbury, from moss, 1 May, 1949, R. R. Forster, 1 male, 5 immature (C.M.A. 1197).

*Remarks*: The type species of *Subantarctia* is known only from female specimens and it is difficult to find any characters by which this species or in fact any of the four species described in the present paper may be separated from it. However, in view of the degree of speciation shown by the male palp of the four species described below, it will undoubtedly prove to be easily separated when the male is discovered. *S. dugdalei* is separated from the remaining three species described below by the absence of an external lobe on the genital bulb in the male.

**Subantarctia fiordensis** n.sp.

FIGS. 9-15

## MALE:

*Measurements* (in millimetres)

Carapace: Length 1.248, Width 0.988

Abdomen: Length 1.404, Width 0.884

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.882	0.322	0.632	0.604	0.420	2.860
Leg 2	0.896	0.336	0.700	0.700	0.406	3.038
Leg 3	0.646	0.280	0.434	0.518	0.280	2.158
Leg 4	0.840	0.294	0.618	0.699	0.308	2.759
Palp	0.266	0.158	0.196		0.172	0.792
Chelicera	0.420					

*Colour:* Carapace, sternum and chelicerae bright reddish-brown, legs and palps paler. Abdomen uniform creamy-white with no markings.

*Carapace:* Surface finely shagreened, without fovea, evenly curved in front, widening sharply behind the eyes, where at the level of the second pair of legs the ratio of length:width=5:4. Viewed from the side the carapace rises gently behind the eyes to 3/5 of its length where it slopes steeply down to the posterior margin.

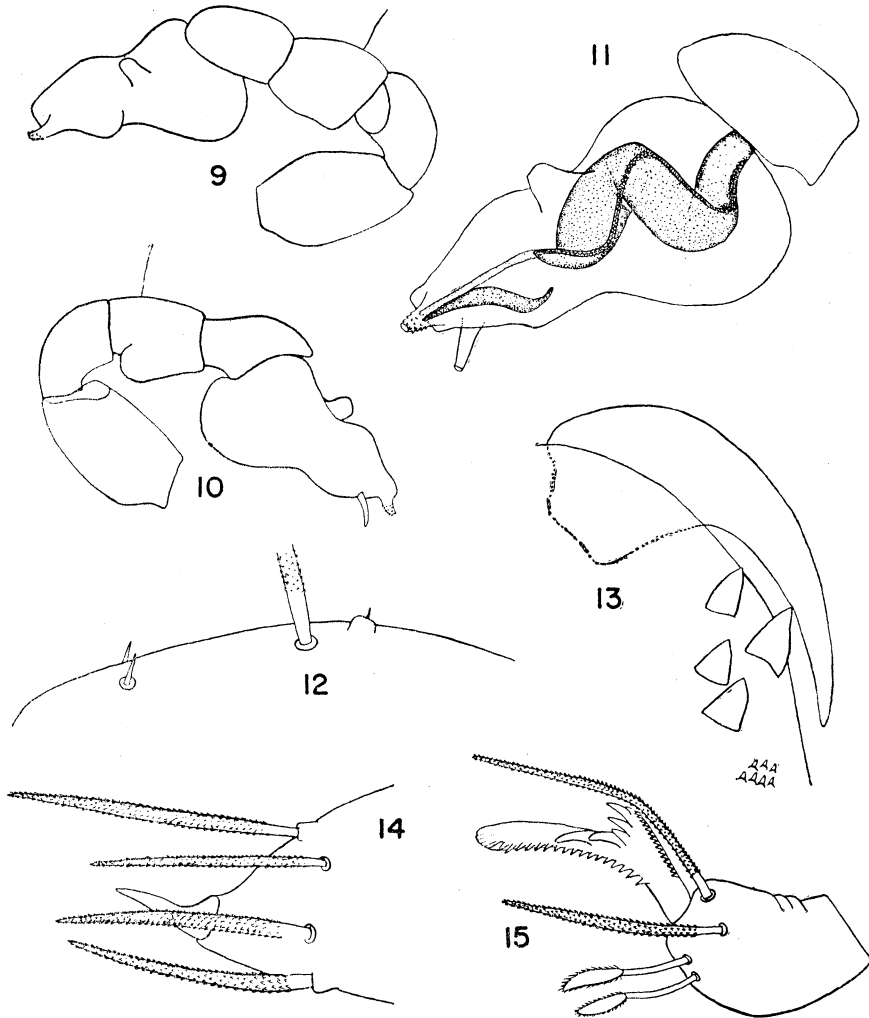
*Eyes:* Six eyes, homogeneous, occupying 11/14 of the width in the head region. Ratio of ALE:PME:PLE=12:14:14. The ALE are situated on a low tubercle which extends to the anterior margin of the PLE. The median eyes are contiguous while the lateral eyes are sub-contiguous. The ALE are separated from each other by 25/14 and from the PME by 4/14 of the width of PME. The PLE are separated from each other by 32/14 and from the PME by 7/14 of the diameter of a PME. Clypeus equal in height to one half of the diameter of a PME, with a faint ridge along the anterior margin.

*Chelicerae:* Vertical, with two strong teeth on both pro- and retromargins. Prolateral scopula of two rows of strong hairs, one row smooth, other serrate.

*Maxillae:* Almost parallel, converging slightly over the labium. Little more than twice as long as wide at base. The palp originates from the outer surface at about 1/3, where the maxilla is constricted but it widens distally so that the distal width approximates the basal width. There is a scopula of white hairs and a distinct serrula.

*Labium:* As wide at base as it is long. Outer margins sloping inwards slightly. Anterior margin with shallow median notch.

*Sternum:* Finely granular, strongly convex, truncated behind, longer than wide in the ratio of 5:4. The lateral surfaces are slightly grooved between the coxae, leaving low lobes at the base of each coxa. The lateral margins are drawn out into a number of sharp projections which approach similar projections from the carapace but do not fuse with them. There is a definite ridge extending along the lateral and posterior margins which encloses an elongate pit at level of coxa. The posterior margin is obtuse, separating coxae 4 by a



FIGS. 9-15. *Subantarctia fiordensis* n.sp. Fig. 9; Prolateral view of male palp. Fig. 10; Retrolateral view of male palp. Fig. 11; Prolateral view of bulb of male showing receptaculum seminis. Fig. 12; Disto-dorsal surface of tarsus, leg 1 of female, showing tarsal tubercle and 'thorns'. Fig. 13; Female chelicera. Fig. 14; Distal portion tarsus female palp. Fig. 15; Onychium and one claw, leg 1 female (only two hairs of ventral scopula shown).

distance equal to  $1\frac{1}{2}$  times their width. The posterior portion of the sternum is fused with the carapace by a sclerotic plate which encircles the petiolus.

*Legs:* 2.1.4.3 clothed with fine ciliate hairs, lacking spines. Tarsal organ and distal thorns present. Tarsal tubercle in the form of a low mound with a minute median bristle, but without accessory bristles. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 at  $\frac{1}{3}$ , metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (1:2) at  $\frac{1}{3}$ , metatarsus 1 subdistal. Prominent onychium

with ventral scopula composed of flattened and distally expanded hairs which are clothed with fine cilia. Two claws, homogeneous, flattened dorso-ventrally, with the outer margin greatly expanded on the proximal half and provided with about 20-26 teeth of which the distal 5 are strong. The inner margin is normal with 16-20 small uniform teeth.

*Palp*: Stout, clothed with ciliate hairs. Tibia with 3 (1.2) trichobothria at 1/3 of its length.

Bulb large,  $1\frac{1}{2}$  times as long as it is wide near the base, twice as long as tarsus. There is a strong lobe at midway and two tubular processes distally, one of which is denticulate. The receptaculum seminis is relatively stout and convoluted, with a well developed sieve plate. The distal tube is slender and equal in length to  $\frac{2}{3}$  of the receptaculum seminis.

*Abdomen*: Ovoid, longer than wide in ratio of 3:2, clothed with numerous small pale hairs, which are inconspicuous against the pale abdomen. The spiracles are closely spaced on each side of the epigastric furrow. Six spinnerets, relatively long and cylindrical, small colulus present.

FEMALE (immature):

*Measurements* (in millimetres)

Carapace: Length 0.988, Width 0.780

Abdomen: Length 1.404, Width 0.884.

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.632	0.210	0.364	0.364	0.359	1.929
Leg 2	0.646	0.215	0.420	0.420	0.378	2.079
Leg 3	0.504	0.196	0.294	0.364	0.280	1.638
Leg 4	0.588	0.238	0.364	0.434	0.294	1.918
Palp	0.224	0.130	0.132		0.280	0.766
Chelicera	0.322					

Similar in colour and general structure to male. Slight differences are shown in the relative sizes and disposition of the eyes. All eyes are equal in width. The ALE are separated from each other by  $\frac{9}{6}$  and from the PME by  $\frac{1}{6}$  of the diameter of a PME. The PLE are separated from each other by  $\frac{13}{6}$  and from the PME by  $\frac{3}{6}$  of the diameter of a PME. The palp is clothed with fine hairs, strongly ciliate on the tarsus but less so elsewhere. There are three trichobothria on the mid-dorsal surface of the tibia, placed in a transverse row. Tarsus with small, curved, smooth claw.

*Types*: Holotype male, Caswell Sound, Fiordland, ex leaf-mould, 19 April 1949, R. R. Forster (C.M.A. 1183, S1.2297). Allotype female, Upper Stillwater River, Caswell Sound, ex leaf-mould, 12 April 1949, R. R. Forster (C.M.A. 1184). Paratype male, Homer Tunnel, Fiordland, ex leaf-mould under *Dracophyllum*, 27 January, 1946, R. R. Forster (D.M. 2/1057).

*Remarks*: This species is close to *S. florae* from which it may be separated by its smaller size and the structure of the genital bulb and receptaculum seminis.

**Subantarctia florae** n.sp.

FIGS. 16-18

MALE:

*Measurements* (in millimetres)

Carapace: Length 1.445, Width 1.081

Abdomen: Length 1.710, Width 1.163

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.434	0.504	0.979	0.914	0.518	4.349
Leg 2	1.489	0.546	1.154	1.099	0.560	4.848
Leg 3	0.979	0.392	0.700	0.770	0.378	3.219
Leg 4	1.284	0.448	0.964	1.039	0.434	4.169
Palp	0.336	0.196	0.336		0.266	1.134

*Colour:* Carapace, sternum and appendages reddish-brown. Abdomen creamy-white.

*Carapace:* Similar in form to *fiordensis*.

*Eyes:* The eye group occupies  $\frac{3}{4}$  of the width of the head. Posterior row strongly curved. Six eyes, oval, equal in width. The PME are contiguous as are the lateral eyes. The ALE are separated by  $\frac{5}{15}$  and the PLE by  $\frac{9}{15}$  of the width of a PME from the PME. The ALE are separated by  $\frac{30}{15}$  and the PLE by  $\frac{50}{15}$  of the diameter of a PME from each other. Clypeus narrow, equal to  $\frac{1}{2}$  of width of a PME.

*Chelicerae:* As in *fiordensis*.

*Maxillae:* Three times as long as wide at the base. Palp inserted at  $\frac{1}{3}$  where width is equal to  $\frac{2}{3}$  of width at base. Both inner and outer margins expand distally beyond the constrict. There is a thick scopula of pale hairs and a distinct serrula present.

*Labium:* As long as wide at base. Lateral margins curved slightly, convergent. Anterior margin indented.

*Sternum:* As described for *fiordensis*.

*Legs:* 2.1.4.3. Closely clothed with short ciliate hairs. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2, tibia, 2 at  $\frac{1}{2}$ , metatarsus 1 subdistal. Legs 3 and 4, tibia, 1 at  $\frac{1}{3}$ , 2 at  $\frac{1}{2}$ , metatarsus, 1 subdistal. Two tarsal claws on prominent onychium. Similar to *fiordensis* in structure. Tarsal tubercle with short median bristle, not quite as high as mound. Distal pair of 'thorns' present.

*Palp:* (FIGS. 16-18): Clothed with short ciliate hairs, more numerous on tarsus. Tibia with a single trichobothrium at  $\frac{1}{3}$  of its length. Bulb as in Fig. 18, widest at base, curved slightly forward, narrowing distally with a prominent digitate lobe on the anterior surface at  $\frac{2}{3}$  of its length. The embolus is short and tubular and apparently without denticulations. Receptaculum seminis convoluted as in Fig. 18, with a well developed sieve plate which extends along its entire length. Distal tube narrow and straight.

*Abdomen:* Ovoid, closely clothed with short pale hairs. Openings of book

lungs and tracheal spiracles clearly visible, separated by a distance equal to  $1/20$  of length of abdomen. Six spinnerets, conical, in compact group. Colulus present.

FEMALE:

*Measurements* (in millimetres)

Carapace: Length 2.040, Width 1.076

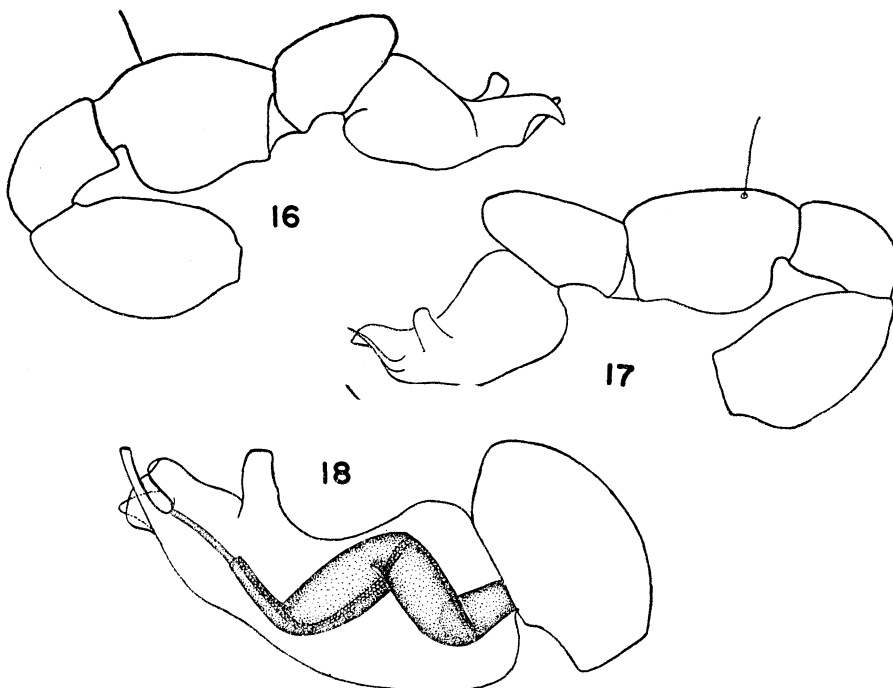
Abdomen: Length 3.403, Width 1.869

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.192	0.832	1.674	1.830	0.832	7.360
Leg 2	2.350	0.884	1.882	1.986	0.830	7.932
Leg 3	1.726	0.728	1.248	1.352	0.572	5.626
Leg 4	2.142	0.780	1.560	1.830	0.824	7.136
Palp	0.624	0.312	0.468	0.728	1.732	3.864

Similar in structure to male. Only the following characters need description.

The six eyes are equal in width. ALE separated by  $10/24$  and PLE by  $15/24$  of width of a PME from the PME. ALE separated from each other by  $41/24$  of the width of a PME from each other. PLE separated by  $60/24$  of the width of a PLE.

Pedipalp with a strong, smooth tarsal claw.



FIGS. 16-18. *Subantarctia floriae* n.sp. Fig. 16; Retrolateral view of male palp. Fig. 17; Prolateral view of male palp. Fig. 18; Prolateral view of bulb of male showing receptaculum seminis.

*Types:* Holotype male. Flora Saddle, Mt. Arthur Tableland, Nelson, ex leaf-mould, 7 April 1946, R. R. Forster (D.M. 2/1051); Allotype female, same data (D.M. 2/1052). Paratypes: same data as holotype, 1 ♂ (C.M.A. 1194), Flora Valley, near Gridiron Creek, 1,500ft, ex leaf-mould, 7 April 1946, R. R. Forster, 1 ♀ (D.M. 2/1044); Flora Hut, under log, 27 January 1948, R. R. Forster, 1 ♀ (C.M.A. 1195); Mt. Arthur Track, Nelson, 4,000ft, 22 January 1948, R. R. Forster, 1 ♂ (D.M. 2/1053); Mount Peel, Nelson, 4,400ft, under stones, 25 January 1948, 1 ♀ (D.M. 2/1054); Mount Balloon, Nelson, under log, 26 January, 1948, R. R. Forster, 1 ♀ (D.M. 2/1058).

**Subantarctia stewartensis** n.sp.

FIGS. 19-20

MALE:

*Measurements* (in millimetres)

Carapace: Length 2.216, Width 1.488

Abdomen: Length 2.380, Width 1.614

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.632	0.618	1.244	1.229	0.560	5.283
Leg 2	1.968	0.688	1.434	1.419	0.632	6.141
Leg 3	1.199	0.434	0.854	0.919	0.434	3.840
Leg 4	1.598	0.560	1.169	1.324	0.448	5.099
Palp	0.434	0.210	0.238		0.280	1.162

*Colour:* Carapace, sternum and appendages deep reddish brown. Abdomen creamy white.

*Carapace:* Relatively low, smooth and shiny. Width in front slightly more than half of greatest width which is in the vicinity of the second pair of coxae, where ratio of length:width=3:2.

*Eyes:* The eye group occupies 8/9 of the width of the head. Posterior row of eyes strongly recurved. All eyes are equal in width. The PME are contiguous as are the lateral eyes. The PLE are separated by 11/19 and the ALE by 6/19 of the width of a PME from the PME. The ALE are separated by 31/19 and the PLE by 53/19 of the diameter of a PME from each other. Clypeus narrow, less than 1/3 of the diameter of a PME.

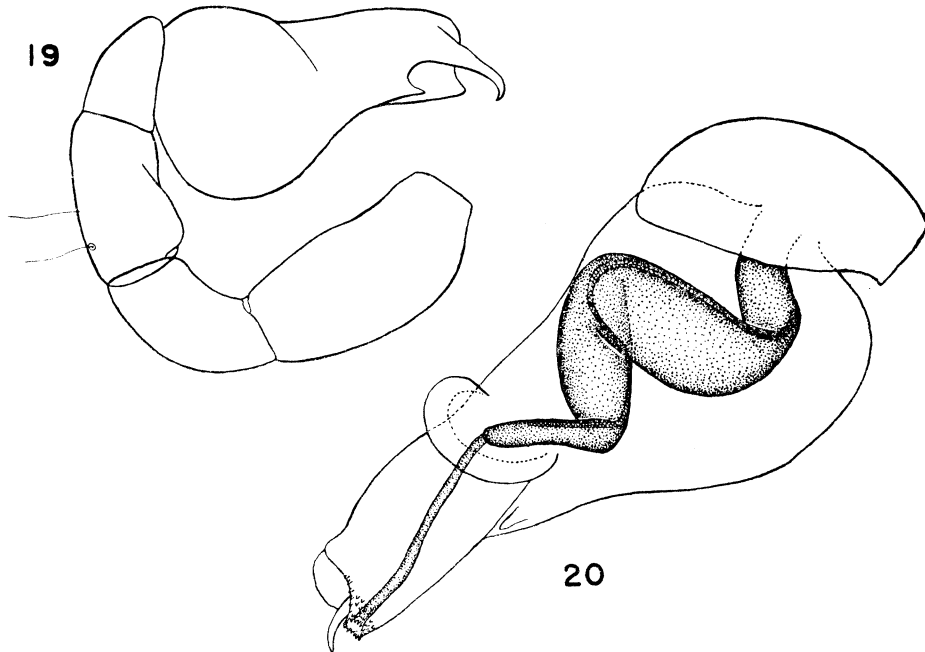
*Chelicerae:* Normal, with usual double row of hairs on prolateral surface and two teeth on both pro- and retro-margins.

*Maxillae:* Converging slightly beyond the labium. Almost three times as long as wide at base. Palp inserted at 2/7 of length where maxilla is constricted to 1/2 width at the base. Both inner and outer margins expand slightly beyond the palp. There is a thick white scopula and a well developed serrula present.

*Labium:* As long as wide at the base. Lateral margins sub-parallel, with a slight inward curve. Anterior margin with a shallow depression.

*Sternum:* As long as wide, similar to *fiordensis* in form. Coxae 4 separated by slightly more than their diameter.

*Legs:* 2.1.4.3. Closely clothed with short ciliate hairs. Trichobothria present



FIGS. 19-20. *Subantarctia stewartensis* n.sp. Fig. 19; Retrolateral view of male palp. Fig. 20; Prolateral view bulb of male showing receptaculum seminis.

on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 1 at  $1/3$ , metatarsus 1 subdistal. Legs 3 and 4, tibia 1 at  $1/3$ , 2 at  $1/2$ , metatarsus 1 subdistal. Tarsal tubercle with small median bristle. Distal thorns present. Onychium with thick ventral scopula of flattened ciliate hairs. Two claws, homogeneous, similar to *fiordensis*.

*Palp*: (FIGS. 19-21): Stout, clothed with ciliate hairs, which are more numerous and longer on the tarsus. Tibia with 2 trichobothria, 1 at  $1/3$ , 1 at  $1/2$ . Bulb almost twice as long as wide at the base, narrowing distally, with a broad, semi-circular external lobe at  $2/3$ , and terminated by a short denticulate embolus and a short spinous conductor. The receptaculum seminis is convoluted with a definite sieve plate. The distal tube is long and straight.

*Abdomen*: Ovoid, clothed with short hairs. Openings from lung books and tracheal spiracles closely spaced, separated from each other by a distance equal to  $1/18$  of the length of the abdomen. Six spinnerets, conical in a compact group, with small colulus.

FEMALE (immature):

*Measurements* (in millimetres)

Carapace: Length 1.054, Width 0.840

Abdomen: Length 1.694, Width 0.964



	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.742	0.308	0.618	0.574	0.280	2.522
Leg 2	0.700	0.294	0.560	0.504	0.280	2.338
Leg 3	0.588	0.280	0.364	0.448	0.252	1.932
Leg 4	0.840	0.350	0.646	0.900	0.283	3.019
Palp	0.252	0.144	0.158		0.252	0.806

Similar in colour and structure to male. Palp with three trichobothria grouped together at approximately 1/3 of the length of the tibia. Strong, smooth tarsal claw.

*Types*: Holotype male, Stewart Is. 20 November 1947, O. Allan (C.M.A. 1181, Sl. 295); Allotype female (immature) same data (C.M.A. 1182, Sl. 296).

*Remarks*: The large size of this species, the broad external lobe on the bulb of the male and the relatively long duct leading from the receptaculum seminis clearly separates *stewartensis* from both *fiordensis* and *florae*.

#### Genus *ASCUTA* n.gen.

Six eyes, homogeneous, equal in size or nearly so, occupying over half of the width of the head. Posterior row of eyes strongly recurved. Carapace and sternum smooth. Abdomen soft, without scutes, usually with brown pigment forming chevrons on the dorsal surface. Genital bulb of male simple. Female palp with well developed smooth, tarsal claw. Chelicerae with four prominent teeth. Legs 4, 1, 2, 3, without spines; with prominent onychium with ventral scopula of spatulate hairs. Two claws, homogeneous, flattened dorso-ventrally strongly pectenate on both margins. Tarsal organ and 'thorns' present on all pedal tarsi. Six spinnerets, tubular. A minute colulus may be present (not seen in many species). Openings from lung books and tracheal spiracles clearly visible, closely spaced.

Type species *Ascuta media* n.sp.

#### *Ascuta media* n.sp.

Figs. 21-26

MALE:

*Measurements* (in millimetres)

Carapace: Length 1.224, Width 0.840

Abdomen: Length 1.309, Width 0.812

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.949	0.434	0.784	0.700	0.406	3.273
Leg 2	0.914	0.420	0.756	0.698	0.406	3.194
Leg 3	0.826	0.308	0.574	0.588	0.392	2.688
Leg 4	1.104	0.434	0.868	0.854	0.420	3.680
Palp	0.364	0.224	0.280		0.238	1.126

*Colour*: Carapace, sternum and chelicerae uniform dark brown, without markings. Legs and palps paler uniform yellowish-brown. Eyes ringed with

black pigment. Ground colour of abdomen creamy white. Dorsal surface with a broad patch of purplish pigment on the anterior surface followed by 6 chevrons which become progressively smaller posteriorly. There are irregular markings on the lateral surfaces and four small patches on the ventral surface, two at the base of the spinnerets and two behind the epigastric groove.

*Carapace*: Smooth, without fovea, low and gently rounded, highest at  $1/3$  of its length. Width in front equal to  $1/2$  of greatest width between coxae 2 and 3 where ratio of length:width=3:2. There are a few inconspicuous hairs on the median surface.

*Eyes*: Six eyes, oval. The eye group occupies  $7/12$  of the width of the head in that region. The lateral eyes are contiguous, as are the PME. From above the posterior row is strongly recurved while a line taken with the ALE and PME is more gently procurved. Ratio ALE:PME:PLE=12:12:13. The ALE are separated from the PME by  $5/12$  and from each other by  $20/12$  of the diameter of a PME. The PLE are separated from the PME by  $7/12$  and from each other by  $34/12$  of the diameter of a PME. The height of clypeus is slightly less than the diameter of a PME.

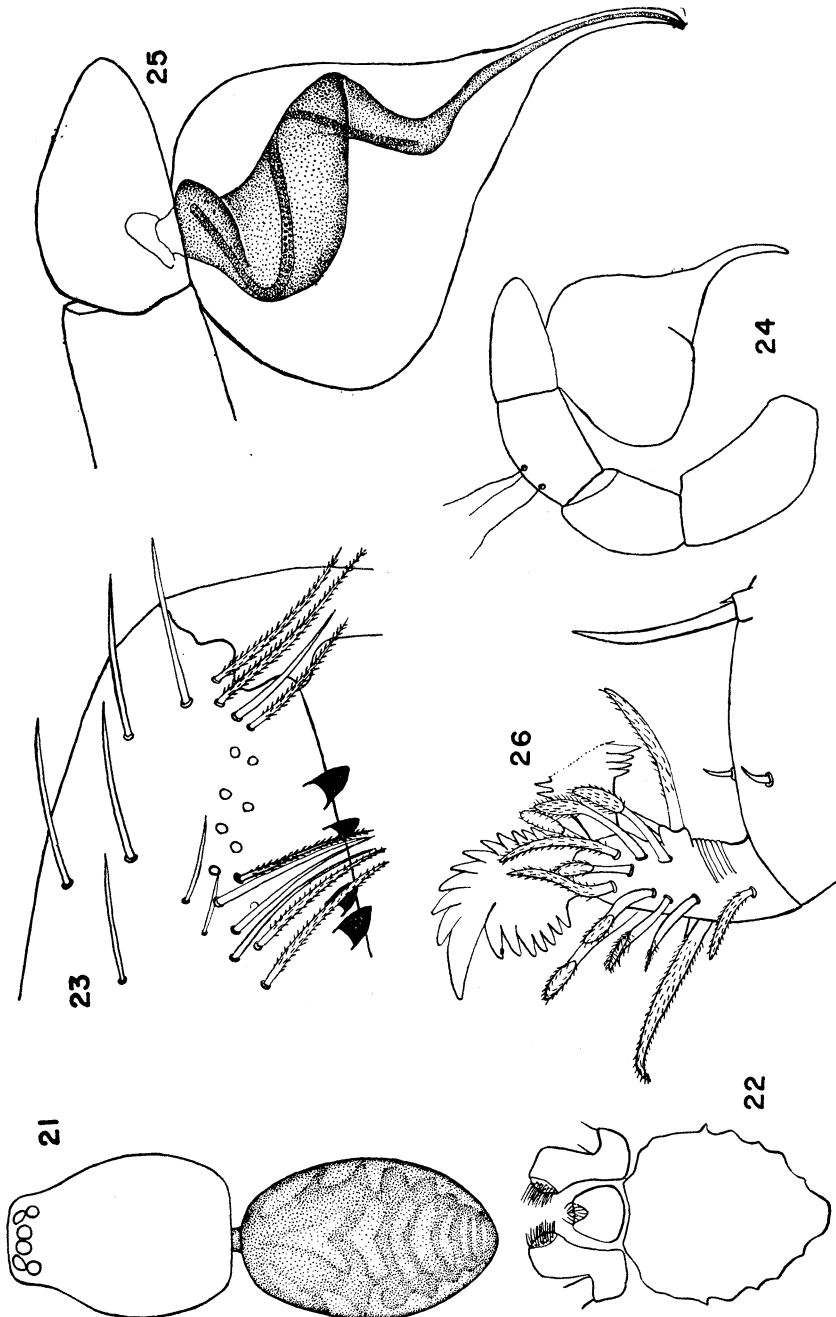
*Chelicerae*: Vertical. Two closely spaced teeth on both pro- and retro-margins, of which the pair on the promargin are medially situated. Two rows of strong hairs on prolateral surface, more ventral row ciliate, other row smooth. In addition to this scopula there are a number of irregularly placed smooth hairs.

*Maxillae*: Directly slightly inwards beyond the labium more than twice as long as wide at the base. Palp inserted at  $1/3$  of the length of the maxilla where it is constricted to  $1/2$  of width at base. There is a thick scopula and well defined serrula present.

*Labium*: Free, wider at base than long, lateral margins slightly convergent, anterior margin indented.

*Sternum*: Shape as in Fig. 22, convex, smooth, with small sharp lateral extensions at the level of the coxae. The surface of the sternum near the lateral margins at the level of coxae 1-3 are swollen. The posterior margin is obtuse, terminating between coxae 4, which are separated by a distance equal to  $1 \frac{3}{5}$  of their diameter.

*Legs*: 4.1.2.3. Closely clothed with short serrate hairs. Trichobothria are present on the tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 in transverse rows at midway, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (1:2) at  $1/3$ , metatarsus 1 subdistal. Tarsal tubercle with a stout median bristle which is equal in length to slightly more than  $1/2$  of the length of adjacent hairs. The median bristle on tarsi 3 and 4 is somewhat reduced in length. There are a pair of 'thorns' on the disto-dorsal surface of all tarsi. The onychium is well developed, provided with three pairs of strong sharp ciliate hairs, and a relatively thick ventral scopula which consists mainly of spatulate hairs which are round in cross-section for most of their length and smooth, but are flattened and expanded, distally where both surfaces are finely ciliate. The bases of the disto-dorsal pair of ciliate hairs above the claws are each provided with a strong anteriorly directed spine. Two claws, homogeneous, flattened dorso-



FIGS. 21-26. *Ascuta media* n. gen., n.sp. Fig. 21; Dorsal view of male showing abdominal pattern. Fig. 22; Sternum, maxillae, and labium of male. Fig. 23; Male chelicera (prolateral view). Fig. 24; Retrolateral view of male palp. Fig. 25; Retro-lateral view of bulb of male showing receptaculum seminis. Fig. 26; Tarsal tubercle, 'thorns', onychium and claws, leg 4 of male (the onychium is twisted so that the ventral scopula is uppermost).

ventrally and relatively broad with strong teeth on both margins, outer margin with 6-7 teeth, inner margin with from 10-11. Coxae 1.2.4.3.

*Palp* (FIGS. 24-25): Clothed with ciliate hairs which are much more closely spaced on the tibia and tarsus. Tibia with three trichobothria, 1 at 1/4, 2 in a transverse row at 1/3. Genital bulb large, pyriform, width equal to twice the length of tarsus. The embolus is simple, strong, narrowing gradually from the bulb, gently curved. The receptaculum seminis is stout, slightly convoluted, with a well defined sieve plate along its entire length. The distal dust is straight and opens distally.

*Abdomen*: Ovoid, without scutes or epigynum, closely clothed with fine, short setose hairs. There are six spinnerets, relatively long and tubular, in a compact group. There appears to be a minute cololus present.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 1.474, Width 0.979

Abdomen: Length 2.143, Width 1.394

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.964	0.378	0.840	0.742	0.392	3.316
Leg 2	0.914	0.364	0.728	0.714	0.364	3.084
Leg 3	0.798	0.308	0.518	0.646	0.322	2.592
Leg 4	1.054	0.448	0.840	0.934	0.420	3.692
Palp	0.378	0.158	0.252		0.336	1.124
Chelicera	0.604					

Similar in appearance to male. Only the following characters need mention. All eyes are equal in width. The ALE are separated from the PME by 4/12 and from each other by 24/12 of the width of a PME, while the PLE are separated from the PME by 8/12 and from each other by 36/12 of the diameter of a PME. The eye group occupies 3/4 of the width of the head in the region of the eyes. Tibia of palp with 3 (1.2) trichobothria. Tarsal claw strong and smooth.

*Types*: Holotype male, Lake Te Au, near south arm of Lake Te Anau, Fiordland, ex. moss, 12-24 January 1953, R. R. Forster (C.M.A. 1232); Allotype female, same data (C.M.A. 1233); Paratypes, same data as holotype, 3 ♂, 1 ♀ (C.M.A. 1234), 1 ♂ (D.M. 2/1079).

*Records*: Cascade Creek, Eglinton Valley, 25 January 1951, R. R. Forster, 1 ♀ (C.M.A. 1231); Martins Bay, ex. leaf-mould, 28 January 1955, R. R. Forster, 1 ♂ (C.M.A. 1226, S1.315); Same locality, under logs, 1 February 1955, R. R. Forster and J. S. Dugdale, 1 ♀ (C.M.A. 1229).

#### *Ascuta magna* n.sp.

FIGS. 27-34

#### MALE:

##### *Measurements* (in millimetres)

Carapace: Length 2.030, Width 1.542

Abdomen: Length 2.175, Width 1.244

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	2.175	0.742	1.598	1.610	0.646	6.771
Leg 2	1.885	0.700	1.586	1.604	0.632	6.407
Leg 3	1.624	0.688	1.229	1.434	0.588	5.563
Leg 4	2.134	0.770	1.601	2.030	0.634	7.169
Palp	0.490	0.280	0.364		0.350	1.484
Chelicera	1.024					

*Colour:* Carapace, sternum, chelicera and palps dark yellowish-brown, without markings, legs paler brown. Ground colour of abdomen creamy white with seven black chevrons along the dorsal surface, of which the first two are somewhat broken (FIG. 27). There are a number of irregular patches on the lateral surfaces and down the mid-ventral surface between the epigastric groove and the spinnerets.

*Carapace:* Smooth and shiny. Cephalic region rather narrow, equal to 1/3 of greatest width between coxae 2 and 3 where ratio of length:width=4:3. Posterior margin slightly incurved.

*Eyes:* Six eyes, oval in outline. Eye group occupies 7/9 of width of head in that region. The lateral eyes and the PME are each almost contiguous. When viewed from above the posterior row is strongly recurved, while a line drawn through the ALE and PME is more gently procurved. Ratio of ALE:PME:PLE=11:11:11. The ALE are separated from the PME by 4/11 and from each other by 16/11 of the diameter of a PME, while the PLE are separated from the PME by 7/11 and from each other by 28/11 of the diameter of a PME. Height of clypeus equal to 5/11 of the diameter of a PME.

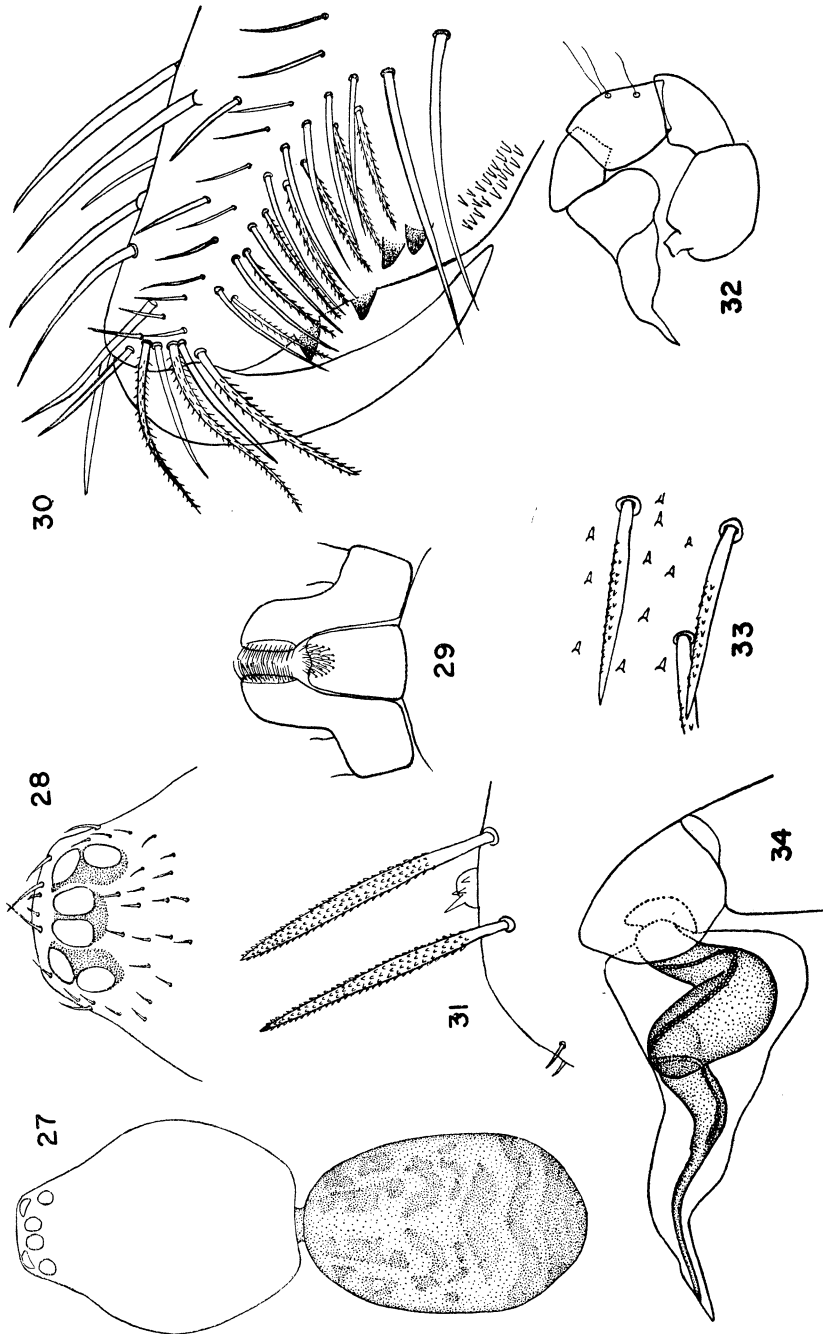
*Chelicerae:* Vertical, with two strong teeth on both pro- and retromargins and a number of denticulations beyond the furrow. The retromarginal teeth are more widely separated and are situated approximately midway down the cheliceral furrow while the promarginal teeth are placed on the proximal extremity. There are two rows of strong hairs forming a scopula on the pro-lateral surface of which the more ventral row is ciliate, while the other hairs are smooth. There is a row of smaller smooth hairs along the mid prolateral surface and a number of irregularly placed smooth hairs on both pro- and retrolateral surfaces.

*Maxillae:* More than twice as long as wide at the base. Directed inwards beyond the labium. Palp inserted at 1/3 of length where the maxilla is constricted to 1/2 of width at base. Thick scopula of pale hairs and well defined serrula present.

*Labium:* Longer than it is wide at the base in the ratio of 4:3. Lateral margins almost parallel, anterior margin with shallow notch.

*Sternum:* Scutiform, convex, with raised areas opposite coxae 1-3. Posterior portion narrowed and terminated obtusely between coxae 4 which are separated by a distance equal to their width. Intercoxal sclerotic strips lacking.

*Legs:* 4.1.2.3. Closely clothed with fine ciliate hairs. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 in transverse row at 1/2, metatarsus 1 sub-distal. Legs 3 and 4, tibia with 3 (1.2) at 1/3, metatarsus 1



FIGS. 27-34. *Ascuta magna* n.sp. Fig. 27; Dorsal view of male showing abdominal pattern. Fig. 28; Eyes of male. Fig. 29; Maxillae and labium of male. Fig. 30; Prolateral view of male chelicera. Fig. 31; Tarsal tubercle and 'thorns', leg 1 of male. Fig. 32; Prolateral view of male palp. Fig. 33; Surface of pedipalp tibia showing denticulations. Fig. 34; Prolateral view of bulb of male showing receptaculum seminis.

subdistal. Tarsal tubercle with a small median bristle which is barely as high as the tubercle itself and three smaller accessory bristles. Distal pair of 'thorns' present. Claws flattened dorso-ventrally, homogeneous, with 14 teeth on outer margin and 12 on the inner. The outer margin is expanded. Onychium distinct with thick ventral scopula of distally flattened hairs. There appears to be a small black vestigial third claw on the distal tip of the onychium among the scopula hairs, very much as recorded by Hickman (1929) for *Tasmanoops alipes*.

*Palps*: Stout, tarsus short, obtusely terminated. Tibia with 3 trichobothria, 1 at 1/3, 2 at 1/2. Bulb as shown in FIG. 34, elongate, twice as long as wide at the base, narrowing gradually. Receptaculum seminis stout, convoluted, with a thin sieve plate along its entire length. The distal duct opens subdistally from the embolus.

*Abdomen*: Ovoid, longer than wide in ratio of 5:3. Closely clothed with short hairs. Openings from lung books and tracheal spiracles clearly visible, separated from each other by a distance equal to 1/19 of length of abdomen. Six spinnerets, relatively short, in compact group. I have not been able to see any colulus.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 2.030, Width 1.624

Abdomen: Length 2.320, Width 1.598

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.596	0.632	1.434	1.598	0.532	5.792
Leg 2	1.592	0.688	1.428	1.542	0.518	5.768
Leg 3	1.562	0.490	1.244	1.504	0.420	5.220
Leg 4	1.936	0.560	1.598	1.740	0.646	6.480
Palp	0.490	0.392	0.420		0.784	2.086
Chelicera	0.700					

Similar in appearance and structure to male. Palp with a prominent smooth claw.

*Types*: Holotype male, Lake Te Au, near south arm of Lake Te Anau, ex moss, 12-24 January 1953, R. R. Forster (C.M.A. 1235, S1.320); Allotype female, Stillwater Base Camp, Caswell Sound, Fiordland, ex moss, 11 April 1949, R. R. Forster (C.M.A. 1240). Paratypes: same data as Allotype, 1 ♂ (C.M.A. 1241); same data as holotype 1 ♂ (C.M.A. 1236); Homer Saddle, Fiordland, ex leafmould under *Dracophyllum*, 26 December 1944, J. T. Salmon, 1 ♂ (D.M. 2/1081).

*Remarks*: The large size of this species, the stout male pedipalp and the form of the genital bulb clearly separates it from all other species.

#### *Ascuta ornata* n.sp.

FIGS. 35-37

## MALE:

*Measurements* (in millimetres)

Carapace: Length 1.039, Width 0.798

Abdomen: Length 1.169, Width 0.700

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.039	0.350	0.854	0.770	0.420	3.433
Leg 2	0.994	0.336	0.840	0.764	0.416	3.350
Leg 3	0.854	0.308	0.700	0.700	0.404	2.966
Leg 4	1.104	0.322	0.964	1.054	0.378	3.822
Palp	0.280	0.172	0.210		0.238	0.900
Chelicera	0.420					

*Colour:* Carapace pale yellowish brown with a median U-shaped mark, from the outer surfaces of which thin lines lead to the lateral eyes. The eyes are surrounded by black pigment with two further shorter lines inside the outer lines. The margins of the carapace are also shaded with dark pigment. Appendages pale uniform yellowish-brown. Ground colour of abdomen creamy white with seven narrow chevrons along the dorsal surface which do not extend to the lateral margins. The first two are broken mesially. Lateral surfaces with irregular markings. Ventral surface with median patch in region of epigastric groove and the base of the spinnerets. There is a transverse patch on the median surface. Sternum with 7 black patches, 3 on each side opposite coxae 1-3 and one posteriorly.

*Carapace:* Smooth and shiny, relatively low. Width in front somewhat less than 1/2 greatest width between coxae 2 where ratio of length:width=4:3.

*Eyes:* The eye group occupies 4/5 of the width of the head. When viewed from above the posterior row is strongly recurved while the row formed by the ALE and PME is more gently pro-curved. The lateral eyes are contiguous as are the PME. (Ratio of ALE:PME:PLE=6:7:6). ALE separated from PME by 1/7 and from other by 10/7 of the diameter of a PME. PLE separated from PME by 4/7 and from each other by 18/7 of the diameter of a PME. Clypeus narrow, height equal to 2/7 of the diameter of a PME.

*Chelicerae:* Normal, with a pair of strong teeth on each margin and a double row of smooth and serrate hairs on the pro-lateral surface.

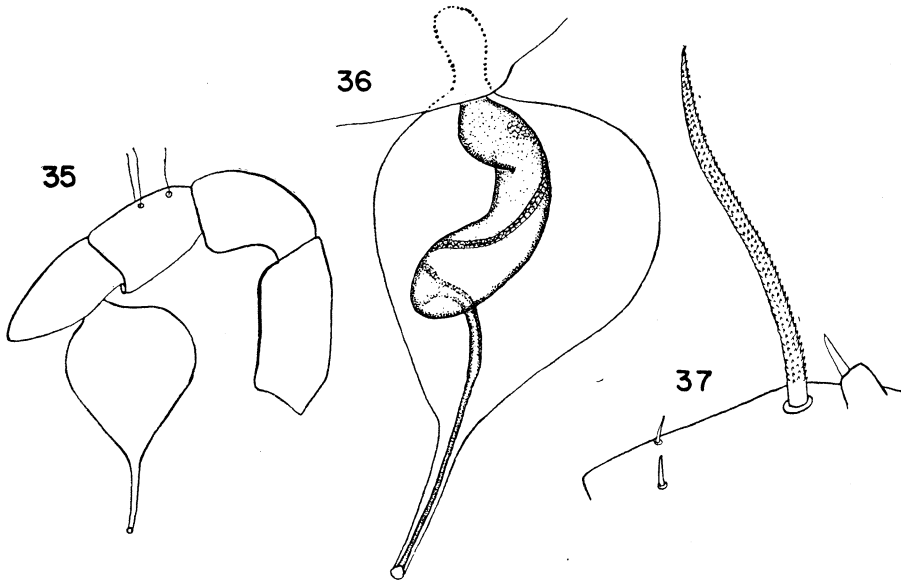
*Maxillae:* Parallel. More than twice as long as wide at the base. Palp inserted at 1/4 of length, where maxilla is constricted to 4/5 of width at base. Scopula of pale hairs and serrula present.

*Labium:* Wider at base than long in the ratio of 13:9. Outer margins slightly convergent. Anterior margin indented.

*Sternum:* Smooth, convex. Scutiform longer than wide in ratio of 5:4, outer margins curved, entire. Posterior margin obtuse, separating coxae 4 by distance equal to 4/5 of their diameter.

*Legs:* 4.1.2.3. Clothed with fine serrate and ciliate hairs. The distal extremities of the tibiae and metatarsi of legs 3 and 4 are ringed with strong serrate hairs. Trichobothria are present on the tibiae and metatarsi of all legs.





FIGS. 35-37. *Ascuta ornata* n.sp. Fig. 35; Prolateral view of male palp. Fig. 36; Prolateral view of bulb of male showing receptaculum seminis. Fig. 37; Disto-dorsal surface tarsus, leg 1 of male showing typical hair, tarsal tubercle and 'thorns'.

Legs 1 and 2, tibia 2 at 1/2, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (1:2) at 1/2, metatarsus 1 subdistal. The tarsal tubercle appears as a strong tubercle with single stout median bristle equal in length to 1/10 of the adjacent hairs. A distal pair of thorns are present. Onychium prominent with thick ventral scopula of ciliate hairs which appear flattened along their entire length in contrast to the spatulate hairs of other species of this genus which are only flattened distally. Two claws, homogeneous, flattened dorso-ventrally, with 12-14 teeth on the outer and 10 on the inner margins on legs 1 and 2. The teeth are fewer in number on legs 3 and 4. The median outer tooth appears to be elongate on all legs.

*Palp*: Relatively stout, clothed with fine serrate and ciliate hairs. Tibia with three trichobothria, 1 at 1/3 and 2 at 1/2. Bulb pyriform, embolus slender, straight, simple, terminating abruptly. Receptaculum seminis stout, sausage shaped, with a well defined sieve plate extending the entire length. Distal tube slender, straight opening distally.

*Abdomen*: Ovoid, longer than wide in ratio of 17:10, clothed with fine ciliate hairs. Openings from lung books and tracheal spiracles clearly visible separated by a distance equal to 1/14 of length of abdomen. Spinnerets tubular, in compact group. Colulus not observed.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.868, Width 0.770

Abdomen: Length 1.548, Width 0.979

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.840	0.322	0.646	0.632	0.342	2.832
Leg 2	0.770	0.294	0.641	0.560	0.420	2.685
Leg 3	0.742	0.280	0.532	0.532	0.350	2.436
Leg 4	0.914	0.266	0.700	0.754	0.364	2.998
Palp	0.252	0.130	0.158		0.322	0.862
Chelicera	0.378					

Similar in structure and appearance to male. Palp provided with a short, straight, smooth tarsal claw.

*Types*: Holotype male, Lake Te Au, near south arm Lake Te Anau, ex moss, 12-24 January 1953, R. R. Forster (C.M.A. 1237); Allotype female, same data as holotype (C.M.A. 1238, S1.321); Paratypes; same data as holotype, 1 ♂, 1 ♀ (C.M.A. 1239, S1.322), 1 ♂ (D.M. 2/1080).

*Remarks*: This species is closest to *A. algida*, from which it may be separated by its larger size, the absence of accessory bristles on the tarsal tubercle and the shape of the genital bulb of the male.

#### *Ascuta salmoni* n.sp.

FIGS. 38-40

MALE:

*Measurements* (in millimetres)

Carapace: Length 0.832, Width 0.667

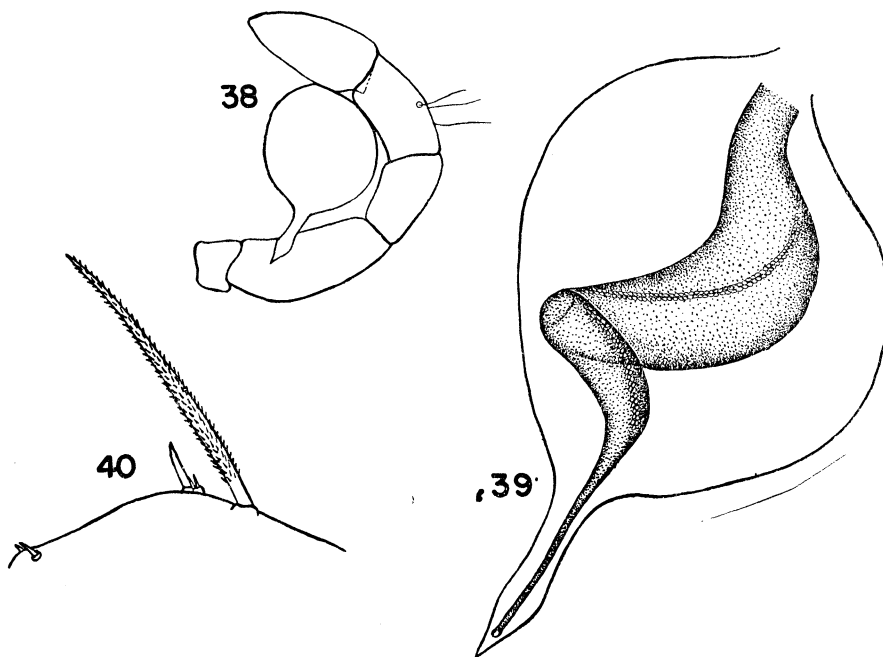
Abdomen: Length 1.216, Width 0.662

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	1.084	0.364	0.868	0.826	0.378	3.520
Leg 2	0.979	0.392	0.770	0.728	0.364	3.233
Leg 3	0.882	0.350	0.574	0.618	0.322	2.746
Leg 4	1.104	0.434	0.868	0.900	0.350	3.656
Palp	0.294	0.158	0.158		0.252	0.862

*Colour*: Carapace, sternum and appendages dark reddish-brown without markings. Abdomen creamy white with seven chevrons along the dorsal surface, which do not extend to the lateral margins. There are irregular markings on the lateral surfaces and a broken line down the median ventral surface.

*Carapace*: Smooth and shiny. Relatively low, highest at 5/7 of its length. Width in front equal to 1/2 greatest width at level of coxae 2 where ratio of length:width=17:12.

*Eyes*: The eye group occupies 3/4 of the width of the head. The lateral eyes are contiguous as are the PME. Ratio of ALE:PME:PLE=7:8:7. The ALE are separated from the PME by 3/8 and from each other by 10/8 of the width of a PME. The PLE are separated from the PME by 4/8 and from each other by 18/8 of the width of a PME. Clypeus equal in height to 1/4 of the width of a PME.



FIGS. 38-40. *Ascuta salmoni*. n.sp. Fig. 38; Prolateral view of male pedipalp. Fig. 39; Prolateral view of male bulb showing receptaculum seminis. Fig. 40; Disto-dorsal surface tarsus, leg 1 of male showing typical hair, tarsal tubercle and 'thorns'.

**Chelicerae:** Normal, with two strong teeth on each margin and a double row of smooth and serrate hairs on the prolateral surface.

**Maxillae:** Parallel. As wide at base as long. Palp inserted at  $1/3$  where width is only  $1/2$  width at base. Scopula and serrula present.

**Labium:** As wide at base as long. Lateral margins slightly convergent. Anterior margin notched.

**Sternum:** Scutiform, slightly convex, lateral margins evenly rounded, entire. Posterior margin obtuse separating coxae 4 by a distance equal to their width.

**Legs:** 4.1.2.3. Clothed with serrate and ciliate hairs. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 at  $2/3$ , metatarsus 1 subdistal. Legs 3 and 4, tibia 3 at  $1/3$ , metatarsus 1 subdistal. Tarsal tubercle with a short but strong median bristle, equal in length to  $1/6$  of adjacent hairs on legs 1 and 2 but relatively smaller on legs 3 and 4. Two claws, flattened dorso-ventrally, homogeneous with from 6-8 teeth on each margin. Onychium with thick ventral scopula of spatulate hairs.

**Palps:** Clothed with fine ciliate and serrate hairs. Tibia with three trichobothria, 1 at  $1/4$  and 2 in transverse rows at  $1/3$ . Bulb spherical, embolus straight, slender expanded distally but terminated by a sharp point. The receptaculum seminis is stout narrowing evenly to the distal tube which is straight and opens subdistally. There is a distinct sieve plate.

**Abdomen:** Clothed with fine ciliate hairs. Ovoid, longer than wide in ratio

of 8:5. Openings from lung books and tracheal spiracles clearly visible separated by a distance equal to 1/10 of the length of the abdomen. Six spinnerets tubular, in compact group, colulus not observed.

FEMALE:

*Measurements* (in millimetres)

Carapace: Length 0.840, Width 0.674

Abdomen: Length 1.598, Width 0.770

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.742	0.280	0.560	0.490	0.380	2.052
Leg 2	0.632	0.210	0.548	0.420	0.392	2.002
Leg 3	0.490	0.210	0.392	0.406	0.384	1.682
Leg 4	0.770	0.280	0.588	0.574	0.322	2.434
Palp	0.144	0.098	0.126		0.158	0.526
Chelicera	0.266					

Similar in general appearance and structure to male. Palp with definite smooth claw.

*Types*: Holotype male, Inner Chetwode Is., Queen Charlotte Sounds, ex leaf-mould, 14 September 1948, J. T. Salmon (D.M. 2/1077, S1.4/220); Allotype female, same data (D.M. 2/1078, S1.4/221); Paratype male (C.M.A. 1244).

*Remarks*: The shape of the embolus is characteristic for this species.

***Ascuta algida* n.sp.**

FIGS. 41-43

MALE:

*Measurements* (in millimetres)

Carapace: Length 0.840, Width 0.674

Abdomen: Length 1.054, Width 0.646

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.632	0.252	0.504	0.434	0.294	2.116
Leg 2	0.560	0.250	0.420	0.378	0.252	1.860
Leg 3	0.546	0.224	0.350	0.364	0.238	1.722
Leg 4	0.728	0.294	0.574	0.572	0.280	2.448
Palp	0.238	0.144	0.144		0.172	0.698
Chelicera	0.434					

*Colour*: Carapace orange-brown with median U-shaped patch from which four lines extend forward to the eyes. Lateral margins shaded. Sternum orange brown with a median longitudinal band to which three further bands extend from each side at the level of coxae 1-3. Appendages pale yellow-brown. Abdomen creamy white with seven chevrons down the dorsal surface.

*Carapace*: Low: width in front equal to 1/2 of greatest width at level of coxa 2 where ratio of length:width=13:10.

*Eyes*: The eye group occupies 5/7 of the width of the head in that region.

When viewed from above the posterior row is strongly recurved. Ratio of ALE:PME:PLE=10:10:11. The lateral eyes are contiguous as are the PME. ALE separated from PME by  $3/10$  and from each other by  $14/10$  of the diameter of a PME. PLE separated from PME by  $6/10$  and from each other by  $24/10$  of diameter of a PME. Height of clypeus equal to  $2/10$  of the diameter of a PME.

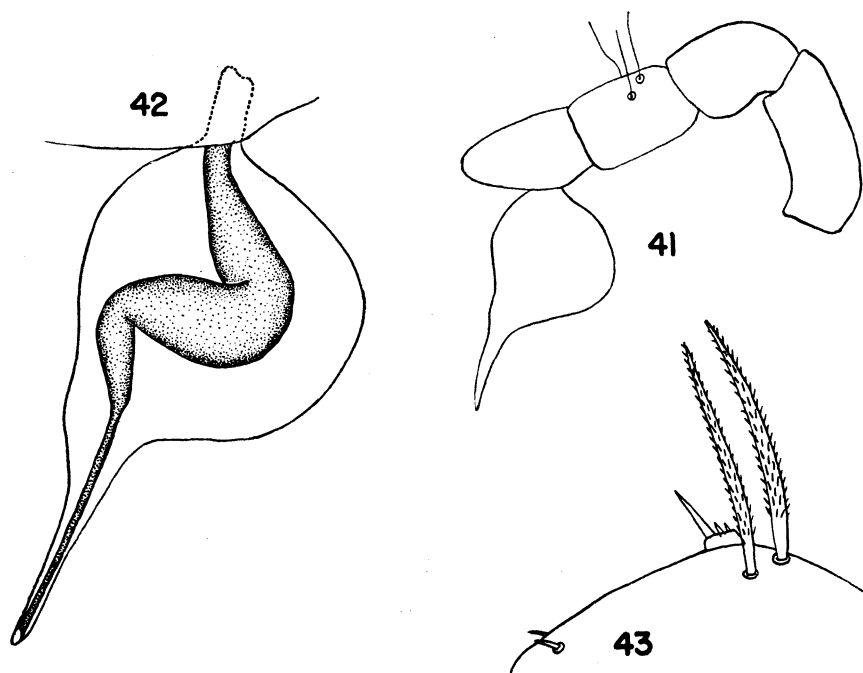
*Chelicerae*: Typical, with four teeth and a double row of prolateral hairs.

*Maxillae*: Directed slightly towards each other beyond the labium. Twice as long as wide at the base. Palp inserted at  $7/20$  of the length of the labium where the maxilla is constricted to  $1/2$  of width at base. Scopula and serrula present.

*Labium*: Wider at base than it is long in ratio of 10:7. Lateral margins almost parallel. Anterior margin notched.

*Sternum*: Scutiform, longer than wide in ratio of 21:16, convex, lateral margins evenly curved, entire, with low swellings opposite coxae 1-3. Posterior margin truncate separating coxae 4 by distance equal to  $1\frac{1}{2}$  times their diameter.

*Legs*: 4.1.2.3. Clothed with short ciliate hairs. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 in transverse row at midway, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 in close group at  $9/3$ , metatarsus 1 subdistal. Tarsal tubercle with short median bristle, equal in length to  $1/4$  of



FIGS. 41-43. *Ascuta algida* n.sp. Fig. 41; Prolateral view of male palp. Fig. 42; Prolateral view of male bulb showing receptaculum seminis. Fig. 43; Disto-dorsal surface of tarsus, leg 1 of male showing typical hairs, tarsal tubercle and 'thorns'.

adjacent hairs on legs 1 and 2 but smaller on legs 3 and 4. There are from 2-3 accessory bristles. Distal pair of 'thorns' present. Onychium with ventral scopula composed mainly of distally spatulate hairs. Two claws, homogeneous, flattened dorso ventrally with from 7-8 teeth on each margin. The teeth on the outer margin of leg 4 appear to be reduced to three.

*Palp* (FIGS. 41-42): Tibia with 3 (1.2) trichobothria at 1/3. The bulb is almost round, embolus straight, simple, terminating bluntly. The receptaculum seminis is convoluted relatively slender and appears to lack a sieve plate. The tube is narrow and straight and opens distally.

*Abdomen*: Ovoid, longer than wide in ratio of 5:3, clothed with small hairs. The openings from the lung books and tracheal spiracles are separated from each other by a distance equal to 1/10 of the length of the abdomen. Six spinnerets, relatively long and tubular, in compact group. Small colulus present.

#### FEMALE:

*Measurements* (in millimetres)

Carapace: Length 0.900, Width 0.728

Abdomen: Length 1.598, Width 0.934

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.646	0.252	0.420	0.364	0.252	1.934
Leg 2	0.546	0.172	0.378	0.336	0.252	1.684
Leg 3	0.490	0.158	0.336	0.322	0.238	1.544
Leg 4	0.770	0.280	0.434	0.560	0.280	2.324
Palp	0.266	0.098	0.144		0.210	0.718

Similar in general appearance and structure to male. Palp with a short smooth tarsal claw.

*Types*: Holotype male, Mount Algidus, Canterbury, ex leaf-mould, 10 February 1949, R. R. Forster (C.M.A. 1201); Allotype female, same data (C.M.A. 1202); Paratype male, same data as holotype (C.M.A. 1203).

*Records*: Creek, east of Doghill, tributary of Hurunui River, ex moss in beech forest, 12 May 1952, J. S. Dugdale, 1 ♂, 1 ♀ (C.M.A. 1204, S1.308).

*Remarks*: *A. algida* shows affinity to both *A. modica* n.sp. and *A. mensa* n.sp. It may be separated from both of these species by the slightly smaller size and the more slender and straight form of the embolus.

#### *Ascuta modica* n.sp.

FIGS. 44-46

#### MALE:

*Measurements* (in millimetres)

Carapace: Length 0.964, Width 0.742

Abdomen: Length 1.169, Width 0.674

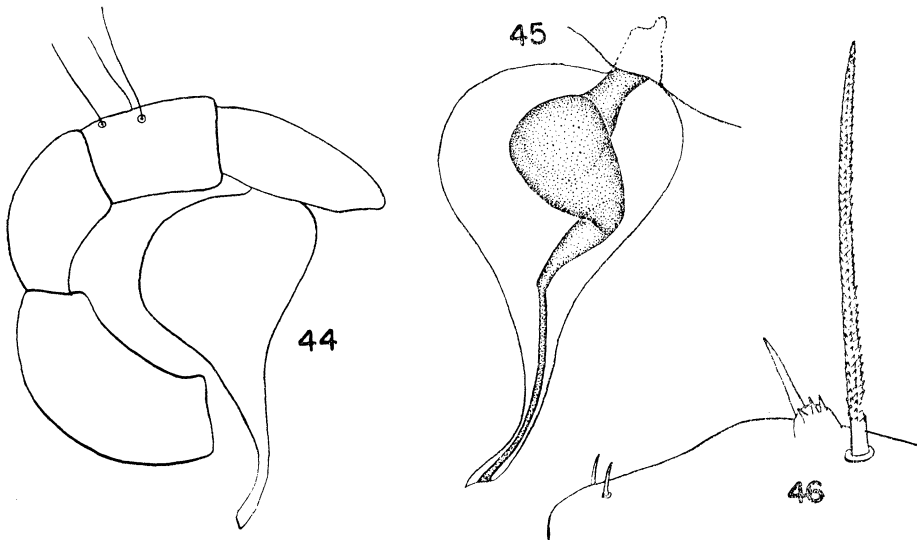
	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.770	0.280	0.646	0.560	0.336	2.592
Leg 2	0.700	0.278	0.560	0.504	0.294	2.336
Leg 3	0.574	0.238	0.420	0.434	0.252	1.918
Leg 4	0.840	0.294	0.632	0.660	0.280	2.706
Palp	0.238	0.130	0.144		0.196	0.708

*Colour:* Carapace dark orange-brown with a prominent median U-shaped mark from which two lines extend forward to the lateral eyes. Margins of carapace shaded. Sternum dark brown with a prominent black patch on the posterior surface which narrows anteriorly. Appendages uniform dark-brown. Abdomen creamy white with seven chevron markings down the dorsal surface, anterior two indistinct. There are irregular markings on the lateral surfaces, two patches on the ventral surface behind the epigastric groove and shading around the base of the spinnerets.

*Carapace:* Low and smooth. Width in front slightly more than twice greatest width between coxae 2 where ratio of length:width=6:5. Viewed from the side the carapace is gently rounded, rising from the eye region to the highest point at 5/7.

*Chelicerae:* Typical, with two teeth on each margin and a double row of smooth and serrate hairs on the prolateral surface.

*Maxillae:* Directed slightly towards each other beyond the labium. Little more than twice as long as wide at the base. Palp inserted at 1/3 where maxilla is constricted to 1/2 of width at base. Scopula and serrula present.



FIGS. 44-46. *Ascuta modica* n.sp. Fig. 44; Retrolateral view of male palp. Fig. 45; Retrolateral view male bulb showing receptaculum seminis. Fig. 46; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

*Labium*: As wide at base as long, outer margins straight, directed slightly inwards, with shallow antero-median notch.

*Sternum*: Smooth and shiny, convex. Scutiform, longer than wide in ratio of 22:19. There are low swellings opposite coxae 1-3. Posterior margin obtuse separating coxae 4 by a distance equal to  $1\frac{1}{2}$  their diameter. There are no sclerotic strips between the coxae.

*Legs*: 4.1.2.3. Clothed with numerous short hairs which appear to be smooth on femur, patella and tibia but are serrate on the metatarsus and tarsus. Legs 3 and 4 with very strong serrate hairs surrounding the distal extremities of the tibiae and metatarsi. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 in transverse row at midway, metatarsus 1 subdistal. Legs 3 and 4, tibia 1 at  $\frac{1}{3}$ , 2 in transverse row at midway, metatarsus 1 subdistal. Tarsal tubercle with short median bristle and 4-5 small accessory bristles. Median bristle on legs 1 and 2 equal to  $\frac{1}{5}$  of the length of adjacent hairs, but only slightly longer than the accessory bristles on legs 3 and 4. Onychium with thick ventral scopula of spatulate hairs. Two claws, flattened dorso-ventrally with 8 teeth on the outer margin of which the anterior is the longest and 6 even teeth on the inner margin.

*Palp*: Clothed with fine serrate hairs. Three (1:2) trichobothria on tibia at  $\frac{1}{3}$  of its length. Bulb large, pyriform, embolus relatively stout, simple, gently curved, terminated obliquely. Receptaculum seminis short, stout, distal duct long and slender, opening sub-distally. Sieve plate not observed.

*Abdomen*: Ovoid, longer than wide in ratio of 21:12. Closely clothed with short hairs. Openings of lung books and tracheal spiracles clearly visible separated by a distance equal to  $\frac{1}{8}$  of length of abdomen. Six spinnerets in compact group, with minute colulus.

*Type*: Holotype male, Kennedy's Bush, Christchurch, Canterbury, 29 November 1949, R. R. Forster (C.M.A. 1200, S1.306).

*Remarks*: Most closely related to *A. mensa* from which it is separated by the relatively greater length of the tarsus of the pedipalp of the male and the longer embolus.

### *Ascuta mensa* n.sp.

FIGS. 47-49

#### MALE:

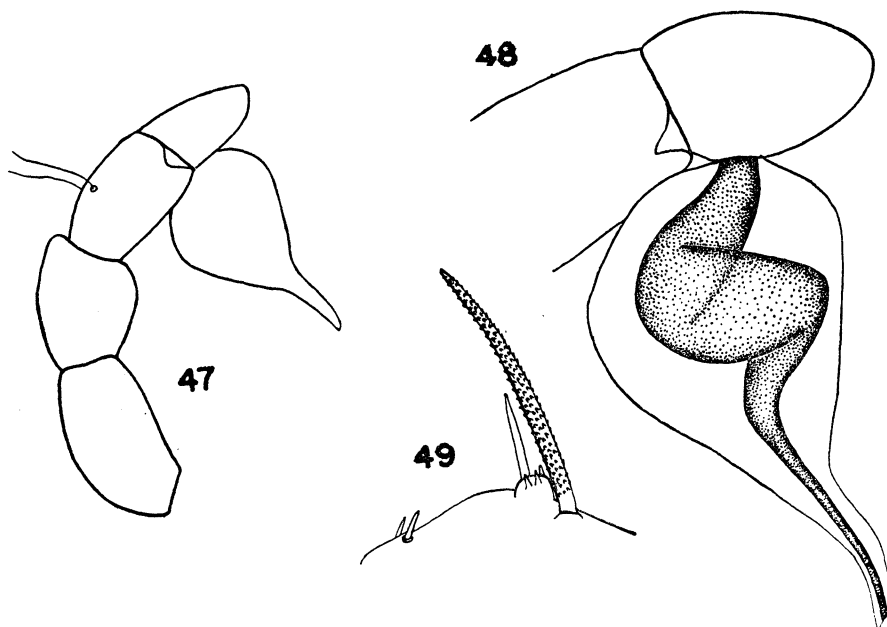
#### *Measurements* (in millimetres)

Carapace: Length 0.964, Width 0.840

Abdomen: Length 1.244, Width 0.700

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.798	0.364	0.660	0.574	0.350	2.746
Leg 2	0.646	0.280	0.574	0.532	0.308	2.340
Leg 3	0.642	0.276	0.434	0.490	0.266	2.108
Leg 4	0.882	0.350	0.632	0.700	0.336	2.900
Palp	0.280	0.172	0.106		0.210	0.858
Chelicera	0.490					





FIGS. 47-49. *Ascuta mensa* n.sp. Fig. 47; Retrolateral view of male palp. Fig. 48; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 49; Distodorsal surface of tarsus, leg 1 of male, showing a typical hair, tarsal tubercle and 'thorns'.

**Colour:** Carapace dark reddish-brown with a dark U-shaped mark on the median surface and black shading on the lateral margins. Sternum dark reddish brown with a thin uniform black shading which forms a black band along the median line, broad posteriorly but narrowing anteriorly. Appendages uniform pale brown. Abdomen heavily shaded with black on the antero-dorsal and lateral margins, with a row of six chevrons down the dorsal surface. On the ventral surface there is a median patch immediately behind the epigastric groove and two patches behind the tracheal spiracles and at the base of the spinnerets.

**Carapace:** Smooth. Width in front equal to half greatest width between coxae 2 where ratio of length:width=7:6.

**Eyes:** The eye group occupies  $\frac{7}{8}$  of the width of the head. When viewed from above, the posterior row of eyes are strongly recurved while the row formed by the ALE and PME is more gently procurved. Ratio of ALE:PME:PLE=5:6:5. The ALE are separated from the PME by  $\frac{2}{6}$  and from each other by  $\frac{10}{6}$  of the diameter of a PME, while the PLE are separated from the PME by  $\frac{4}{6}$  and from each other by  $\frac{18}{6}$  of the diameter of a PME. Clypeus narrow equal in height to  $\frac{1}{3}$  of the width of a PME.

**Chelicerae:** Typical, with two teeth on each margin and a double row of serrate and smooth hairs on the pro-lateral surface.

**Maxillae:** Converging, slightly beyond the labium. Less than twice as long as wide at the base. Palp inserted at  $\frac{1}{3}$  where maxilla is constricted to  $\frac{1}{2}$  width at base. Scopula of pale hairs and serrula present.

*Labium*: As long as it is wide at the base. Lateral margins sub-parallel, anterior margin notched.

*Sternum*: Scutiform, convex, smooth, without sclerotic strips between the coxae. There are low mounds near the lateral margins opposite coxae 1-3. Broadly obtuse posteriorly, separating coxae 4 by a distance equal to  $1\frac{1}{4}$  times their width.

*Legs*: 4.1.2.3. Clothed with fine serrate and ciliate hairs. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 midway, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (1.2) at  $\frac{1}{3}$ , metatarsus 1 subdistal. Tarsal tubercle with short median bristle, equal to  $\frac{1}{4}$  of length of adjacent hairs on legs 1 and 2, and  $\frac{1}{6}$  on legs 3 and 4. There are 3 accessory bristles and the distal pair of 'thorns'. Onychium with thick ventral scopula of spatulate hairs. Two claws, flattened dorso-ventrally provided with from 7-8 teeth along each margin.

*Palp*: Clothed with ciliate and serrate hairs. Tibia with 2 trichobothria in a transverse row at  $\frac{1}{3}$ . Genital bulb pyriform, embolus relatively stout, tubular, terminated obliquely. Receptaculum seminis stout, apparently without sieve plate, distal tube straight opening distally.

*Abdomen*: Ovoid, longer than wide in ratio of 9:5, clothed with inconspicuous ciliate hairs. Openings from lung books and tracheal spiracles clearly visible, separated by a distance equal to  $\frac{1}{9}$  of the length of the abdomen. Six spinnerets in compact group, tubular, no colulus observed.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 1.039, Width 0.784

Abdomen: Length 1.229, Width 0.700

	Femur	Petalla	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.660	0.294	0.448	0.574	0.210	2.186
Leg 2	0.646	0.266	0.420	0.420	0.224	1.976
Leg 3	0.574	0.196	0.364	0.416	0.210	1.760
Leg 4	0.798	0.352	0.560	0.560	0.280	2.550
Palp	0.252	0.196	0.144		0.214	0.806
Chelicera	0.308					

Similar in form to male. Palp with stout, smooth tarsal claw.

*Types*: Holotype male. Flora Track, Nelson, 3000ft, ex leaf-mould, 29 January, 1948, R. R. Forster (D.M. 2/1068); Allotype female, Flora Saddle, Nelson, 3200ft, ex leaf-mould, 20 January, 1948, R. R. Forster (D.M. 2/1067). Paratypes: Flora Camp, Nelson, 3000ft, ex leaf-mould, 21 January, 1948, R. R. Forster, 1 ♂ (D.M. 2/1075); Flora Camp, Nelson, 3000ft, ex leaf-mould, 23 February, 1946, J. T. Salmon, 1 ♂, 1 ♀, (C.M.A. 1243, Sl.342), 1 ♂, 1 ♀ (D.M. 2/1076); Balloon Hut, Mt. Arthur Tableland, Nelson, ex leaf-mould, 26 January, 1948, R. R. Forster, 1 ♂ (C.M.A. 1242), 1 ♂ (D.M. 2/1070); Mount Arthur, 4200ft, ex leaf-mould under *Hebe*, 22 January, 1948, R. R. Forster, 1 ♂ (D.M. 2/1069); Mount Arthur Track, 3600ft, ex leaf-mould

under *Dracophyllum traversi*, 22 January, 1948, R. R. Forster, 1 ♂, (D.M. 2/1071); same locality, 3800ft, under *Olearia lacunosa*, 22 February, 1946, J. T. Salmon, 1 ♀ (D.M. 2/1074); Salisbury Hut, Mt. Arthur Tableland, Nelson, ex moss and bog plants, 22 January, 1946, J. T. Salmon, 2 ♂, 1 ♀ (D.M. 2/1072, 2/1073).

*Record*: South Terrace, Karamea, 20 January, 1950, R. R. Forster, 1 ♂, (C.M.A. 1230).

***Ascuta stewartensis* n.sp.**

FIGS. 50-54

**MALE:**

*Measurements* (in millimetres)

Carapace: Length 1.024, Width 0.826

Abdomen: Length 1.009, Width 0.714

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.964	0.364	0.914	0.770	0.448	3.460
Leg 2	0.868	0.361	0.688	0.756	0.378	3.051
Leg 3	—	—	—	—	—	—
Leg 4	1.104	0.350	0.949	1.039	0.392	3.834
Palp	0.336	0.238	0.224		0.252	1.050
Chelicera	0.488					

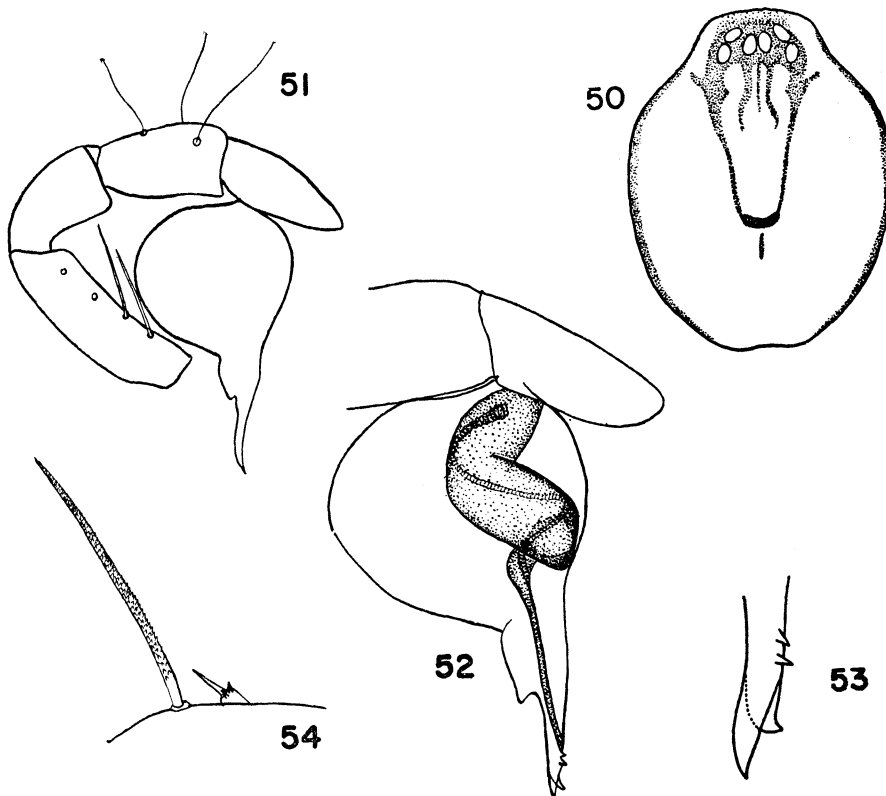
*Colour*: Carapace dark, orange brown, with black shading around the eyes, from which four lines extend back down the median line. The two outer lines fuse with a black U-shaped mark on the median surface. Lateral and posterior margins with faint black shading. Sternum and appendages uniform orange-brown, without markings. Abdomen with 7 chevrons along the dorsal surface, irregular markings along the lateral margins and two parallel marks down the ventral surface.

*Carapace*: Width in front slightly less than half of greatest width between coxae 1 and 2 where ratio of length:width=5:4. Low, highest portion at 2/3 of its length.

*Eyes*: The eye group occupies 4/5 of the width of the head. The lateral eyes are contiguous as are the PME. Ratio of ALE:PME:PLE=6:7:7. From above the posterior row of eyes are strongly recurved, while the row formed by the ALE and PME is more gently procurved. The ALE are separated from the PME by 2/7 and from each other by 11/7 of the diameter of a PME. The PLE is separated from the PME by 4/7 and from each other by 16/7 of the diameter of a PME. Clypeus narrow, equal in height to 2/7 of the diameter of a PME.

*Chelicerae*: Typical, with two strong teeth on both pro- and retromargins on double row of smooth and serrate hairs on the prolateral surface.

*Maxillae*: Distal portion directed slightly inwards beyond the labium. More than twice as long as wide at the base. Palp inserted at 1/5 where maxilla is constricted to 1/2 width at base. Serrula and thick scopula of pale hairs present.



FIGS. 50-54. *Ascuta stewartensis* n.sp. Fig. 50; Carapace of male. Fig. 51; Retro-lateral view of male palp. Fig. 52; Retrolateral view of bulb of male showing receptaculum seminis.

*Labium*: As wide at base as long. Lateral margins sub-parallel. Anterior margin notched.

*Sternum*: Convex, smooth and shiny. Scutiform longer than wide in ratio of 6:5, lateral margins entire without extensions. Posterior margin broadly obtuse between coxae 4, which are separated by a distance equal to slightly more than their width apart.

*Legs*: 4.1.2.3.? Clothed with fine ciliate and serrate hairs. Trichobothria on tibiae and metatarsi of all legs. Leg 1, tibia 2 at 1/3. Metatarsus 1 subdistal. Leg 4, tibia 3 at 1/3, metatarsus 1 subdistal. (Leg 3 is missing from the single specimen examined.) Tarsal tubercle with a minute median bristle and 2 small accessory bristles. A distal pair of 'thorns' are present. Well developed onychium with strong ventral scopula composed of spatulate hairs. Two claws, flattened dorso-ventrally with 9 outer and 12-13 inner teeth.

*Palps*: Clothed with serrate hairs. Tibia with three trichobothria 1 at 1/3, 2 in transverse row at 2/3. Bulb sub-spherical, embolus stout from the base

to approximately half of its length where it is constricted, forming a stout spine. The distal portion is slender, and appears to be composed of two portions at the extremity. The receptaculum seminis is stout and convoluted, with a distinct sieve plate. The distal duct is slender and straight, opening subdistally in the vicinity of two minute teeth.

*Abdomen:* Ovoid, longer than wide in ratio of 4:3. Clothed with short, fine serrate hairs. Opening from lung books and tracheal spiracles clearly visible separated by a distance equal to 1/12 of the length of the abdomen. Six spinnerets, tubular, in compact group. No colulus observed.

## FEMALE:

*Measurements* (in millimetres)

Carapace: Length 1.054, Width 0.840

Abdomen: Length 1.694, Width 0.964

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.742	0.308	0.618	0.574	0.280	2.522
Leg 2	0.700	0.294	0.560	0.504	0.280	2.338
Leg 3	0.588	0.280	0.364	0.448	0.252	1.932
Leg 4	0.840	0.350	0.646	0.900	0.283	3.019
Palp	0.252	0.144	0.158		0.252	0.806

Similar in appearance and structure to male. Palp with short, smooth claw.

*Types:* Holotype male. Halfmoon Bay, Stewart Is., June, 1950, O. Allan (C.M.A. 1198, S1.305); Allotype female, same locality, January, 1952, O. Allan (C.M.A. 1199, S1.323); Paratype male, same data as holotype (C.M.A. 1227).

*Ascuta alpina* n.sp.

FIGS. 55-59

## MALE:

*Measurements* (in millimetres)

Carapace: Length 0.994, Width 0.742

Abdomen: Length 1.099, Width 0.742

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.714	0.280	0.560	0.490	0.322	2.366
Leg 2	0.660	0.252	0.563	0.490	0.324	2.289
Leg 3	0.574	0.224	0.420	0.420	0.266	1.904
Leg 4	0.728	0.266	0.574	0.560	0.280	2.402
Palp	0.224	0.130	0.144		0.224	0.722
Chelicera	0.448					

*Colour:* Carapace, sternum and chelicerae dark reddish-brown, without markings. Legs and palps paler brown. Ground colour of abdomen creamy white with seven purplish-brown chevrons down the dorsal surface merging with broad irregular bands along the lateral surfaces. There are two pigmented patches behind the epigrastric scute and two near the spinnerets.

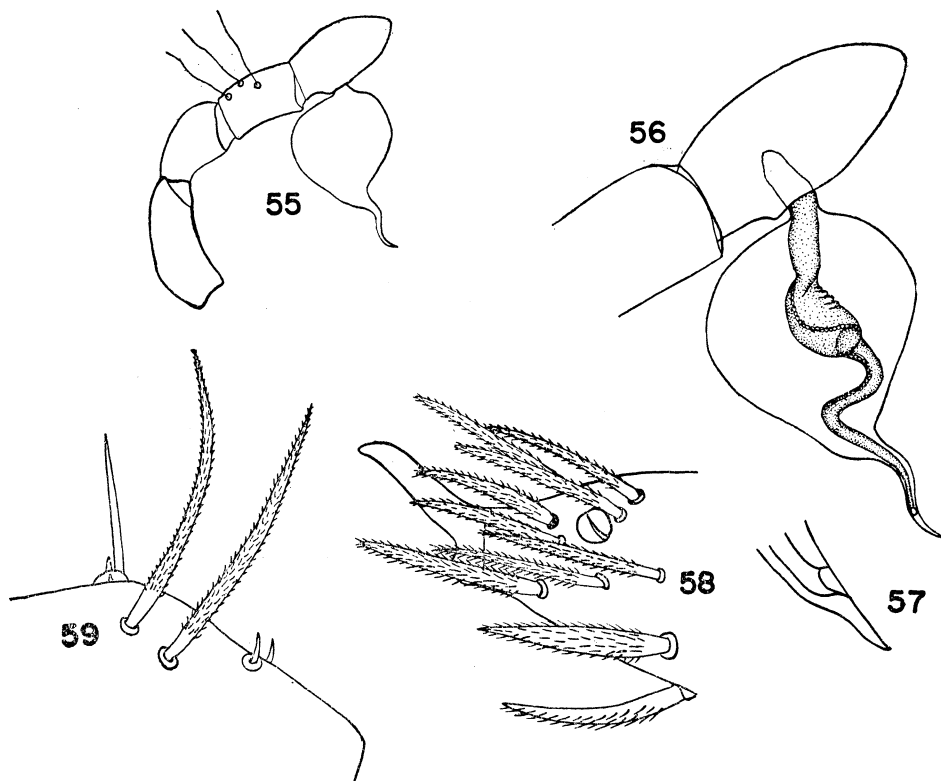
*Carapace*: Shiny but finely coriaceous. Width in front little more than half of the greatest width of the carapace between coxae 2 where ratio of length: width = 23:17.

*Chelicerae*: Typical, with two teeth on each margin and a double row of hairs on the prolateral surface.

*Maxillae*: Directed slightly inwards beyond the labium. Twice as long as wide at base. Palp inserted at 2/5 where maxilla is constricted to 1/2 width at base. Thick scopula of pale hairs and serrula present.

*Labium*: As long as wide at the base. Lateral margins convergent, rounded anteriorly.

*Sternum*: Finely coriaceous. Scutiform, longer than wide in ratio of 10:9. There are low mounds near the lateral margins opposite coxae 1-3. Posterior margin broadly truncate separating coxae 4 by a distance equal to 1 1/3 times their width. There are sclerotic strips between the coxae and posteriorly extending from the carapace to the sternum but not fusing with either. The posterior strip encircles the base of the petiolus.



FIGS. 55-59. *Ascuta alpina* n.sp. Fig. 55; Retrolateral view of male palp. Fig. 56; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 57; Distal portion of embolus. Fig. 58; Distal portion of tarsus of female pedipalp. Fig. 59; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hairs, tarsal tubercle and 'thorns'.

*Legs:* 4.1.2.3. Clothed with fine ciliate hairs. Tibiae and metatarsi of all legs with trichobothria. Legs 1 and 2, tibia, 2 in transverse row midway, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (1.2) at 1/3, metatarsus 1 subdistal. Tarsal tubercle with relatively strong median bristle which is equal in length to 1/2 of adjacent hairs on legs 1 and 2 but reduced to approximately 1/3 length of adjacent hairs on legs 3 and 4. There are two small accessory bristles. Distal pair of 'thorns' present.

*Palp* (FIGS. 55-56): Tibia with three trichobothria on the dorsal surface, 1 at 1/4 and 2 in a transverse row at 1/3 of the length of the segment. Bulb round, embolus slender, curved, terminating sharply. Receptaculum seminis relatively straight, median portion saccular with narrow sieve plate. Distal duct opening subdistally.

*Abdomen:* Ovoid, lower than wide in ratio of 7:5. Closely clothed with short ciliate hairs. Openings of lung books and tracheal spiracles separated by a distance equal to 1/8 of the length of abdomen. Six spinnerets relatively long and tubular, in compact group, with minute colulus.

FEMALE:

*Measurements* (in millimetres)

Carapace: Length 1.024, Width 0.784

Abdomen: Length 1.598, Width 1.039

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.712	0.252	0.560	0.490	0.308	2.322
Leg 2	0.688	0.238	0.518	0.462	0.322	2.228
Leg 3	0.560	0.234	0.392	0.420	0.238	1.844
Leg 4	0.770	0.280	0.549	0.560	0.280	2.439
Palp	0.280	0.130	0.130		0.294	0.834
Chelicera	0.476					

Similar in appearance and structure to male, only the following characters need mention.

The eyes are all equal in width. The ALE are separated from the PME by 5/10 and from each other by 24/10 of the diameter of a PME while the PLE are separated from the PME by 8/10 and from each other by 28/10 of the diameter of a PME. The tibia of palp is provided with three trichobothria, 1 at 1/4 and 2 in transverse row at 1/3 of the length of the segment. There is a strong tarsal claw which is smooth and almost straight.

*Types:* Holotype male, Arthur Pass, Canterbury, ex moss, 9 December 1949, R. R. Forster (C.M.A. 1205); Allotype female, same data (C.M.A. 1206); Paratypes: same data as holotype, 1 ♂, 1 ♀ (C.M.A. 1207); Arthur Pass, 6 April, 1954, R. Griffiths, 1 ♀ (C.M.A. 1208); Reservoir Bush, Cass, Canterbury, ex leaf-mould, 4 January, 1954, J. S. Dugdale, 1 ♀ (C.M.A. 1225).

*Remarks:* This species is related to *A. extensa* but may be distinguished from it by the shape of the receptaculum seminis and the sinuous form of the embolus.

*Ascuta extensa* n.sp.

FIGS. 63-65

MALE:

*Measurements* (in millimetres)

Carapace: Length 0.868, Width 0.688

Abdomen: Length 1.244, Width 0.742

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.674	0.294	0.546	0.434	0.294	2.242
Leg 2	0.588	0.280	0.462	0.406	0.280	2.016
Leg 3	0.546	0.238	0.364	0.350	0.238	1.732
Leg 4	0.714	0.255	0.560	0.546	0.280	2.355
Palp	0.238	0.130	0.130		0.172	0.670
Chelicera	0.490					

*Colour:* Carapace orange brown, with a prominent U-shaped mark on the median surface which is joined by two irregular lines to the lateral eyes. Margins shaded. Sternum orange-brown with a dark streak on the postero-median surface which extends to half the length, narrowing anteriorly. Appendages yellow brown. Ground colour of abdomen creamy white. Dorsal surface heavily shaded anteriorly followed by seven chevrons. There are a few irregular markings on the ventral surface.

*Carapace:* Smooth and shiny with a few small pale hairs along the median surface. Relatively low, evenly and very gently rounded, highest at 2/3 of its length. Width of anterior margin approximately equal to 1/2 of greatest width between coxae 2 where ratio of length:width=9:7.

*Eyes:* The eye group occupies 2/3 of the width of the head, in that region. (The ratio of ALE:PME:PLE=4:4:5). The lateral eyes are contiguous as are the PME. The ALE are separated from the PME by 2/4 and from each other by 6/4 of the diameter of a PME, while the PLE are separated from the PME by 3/4 and from each other by 12/4 of the diameter of a PME. From above the posterior row of eyes are strongly recurved.

*Chelicerae:* Normal, with two teeth on both margins and double row of smooth and serrate hairs on the prolateral surface.

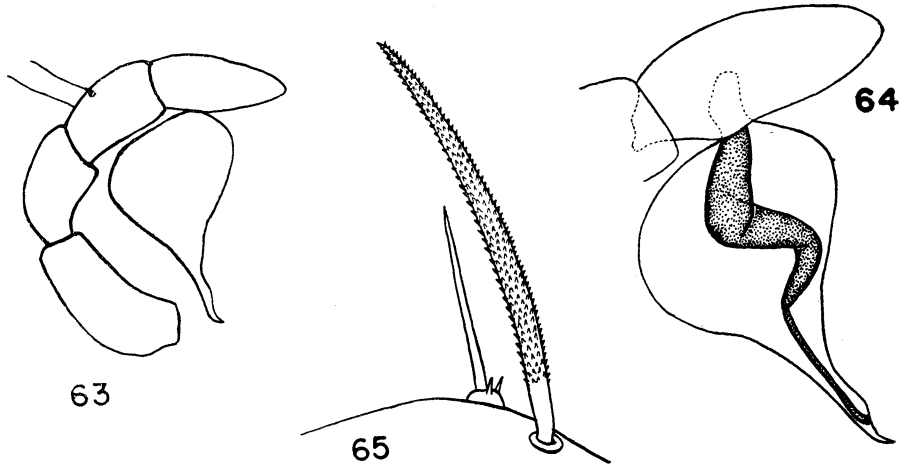
*Maxillae:* Directed slightly inwards beyond the labium. Longer than wide at the base in ratio of 17:10. Palp inserted at 2/5 where width is equal to 1/2 of width at base. Scopula of pale hairs and serrula present.

*Labium:* Wider at base than long in the ratio of 6:5, lateral margins subparallel, anterior margin slightly indented.

*Sternum:* Scutiform, convex, smooth, longer than wide in ratio of 7:6. Lateral margins entire, evenly curved. There are low mounds near the lateral margins opposite coxae 1-3. The posterior margin is broadly obtuse, separating coxae 4 by a distance equal to 1 1/2 times their diameter.

*Legs:* 4.1.2.3. Clothed with fine, serrate and ciliate hairs. Trichobothria on tibiae and metatarsi of all legs. Leg 1, tibia 3 (2.1) near midpoint, metatarsus 1 subdistal. Leg 2, tibia 2 near midpoint, metatarsus 1 subdistal. Legs 3 and





FIGS. 63-65. *Ascuta extensa* n.sp. Fig. 63; Retrolateral view of male palp. Fig. 64; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 65; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair and tarsal tubercle.

4, tibia 3 (1.2) at 1/3, metatarsus 1 subdistal. Tarsal tubercle with relatively strong median bristle, equal to 1/2 length of adjacent hairs on tarsi 1 and 2 and 1/6 on tarsi 3 and 4. There are from 2-3 accessory bristles and a distal pair of 'thorns'. Onychium with thick ventral scopula of spatulate hairs, two claws, flattened dorso-ventrally with from 7-8 teeth along each margin.

*Palp:* Tibia with 3 trichobothria, 1 at 1/4 and 2 in transverse row at 1/3. Bulb as in FIG. 64, embolus only slightly curved, narrowing to a sharp distal point. Receptaculum seminis relatively slender, apparently without sieve plate, distal duct opening subdistally.

*Abdomen:* Ovoid, longer than wide in the ratio of 9:7, clothed with short, inconspicuous ciliate hairs. Openings from lung books and tracheal spiracles clearly visible, separated by a distance equal to 1/18 of length of abdomen. Six spinnerets, relatively long and tubular, in compact group with minute colulus.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.900, Width 0.700

Abdomen: Length 1.339, Width 0.700

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.700	0.280	0.546	0.462	0.294	2.282
Leg 2	0.646	0.280	0.462	0.420	0.280	2.088
Leg 3	0.560	0.224	0.378	0.406	0.224	1.792
Leg 4	0.710	0.308	0.532	0.560	0.280	2.390
Palp	0.266	0.130	0.126		0.238	0.760
Chelicera	0.490					

The general structure including the relative size and disposition of the eyes

is as described for the male. Palp with 3 trichobothria (1 at 1/3, 2 transveers at 1/2) on tibia and a well developed, smooth, slightly curved tarsal claw.

*Types:* Holotype male, Kakahu, South Canterbury, ex leaf-mould, 30 April, 1950, R. R. Forster (C.M.A. 1211); Allotype female, same data (C.M.A. 1212); Paratypes: same data as holotype, 1 ♂, 2 ♀ (C.M.A. 1213, S1.312, 313), 1 ♀ (D.M. 2/1060); Peel Forest, South Canterbury, 19 January 1951, R. R. Forster, 1 ♂ (C.M.A. 1214, S1.314); same locality, 20 January, 1951, R. R. Forster, 1 ♀ (C.M.A. 1215).

*Records:* Lake Rubicon, Canterbury, ex moss, 19 November, 1950, R. R. Forster, 4 ♂, 3 ♀ (C.M.A. 1216, S1.333); Coopers Creek, Oxford, Canterbury, ex moss, 8 October, 1953, R. R. Forster, 2 ♂ (C.M.A. 1217, S1.315); Same locality, 3 December, 1948, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1220); Junction of Harper and Avoca Rivers, Canterbury, 8 April, 1954, J. S. Dugdale, 1 ♀ (C.M.A. 1218); Lake Janet, Mount Grey, Canterbury, ex leaf-mould, 28 August, 1951, J. S. Dugdale, 1 ♀ (C.M.A. 1219); Okuku Pass, Canterbury, ex moss, 6 April, 1952, J. S. Dugdale, 2 ♂, 1 ♀ (C.M.A. 1221, S1.316); same locality, ex leaf-mould, 25 April, 1950, R. R. Forster, 2 ♂, 1 ♀ (C.M.A. 1224); Hoods Bush, Malvern Hills, Canterbury, ex moss, 3 May, 1953, R. R. Forster, 2 ♀ (C.M.A. 1222); Glentui Gorge, Canterbury, ex moss, 14 March, 1954, R. R. Forster, 1 ♀ (C.M.A. 1223).

### *Ascuta orepukiensis* n.sp.

FIGS. 60-62

MALE:

*Measurements* (in millimetres)

Carapace: Length 0.964, Width 0.700

Abdomen: Length 1.039, Width 0.700

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.770	0.294	0.588	0.504	0.294	2.450
Leg 2	0.756	0.294	0.532	0.532	0.292	2.406
Leg 3	0.660	0.252	0.420	0.490	0.238	2.260
Leg 4	0.812	0.336	0.632	0.660	0.308	2.748
Palp	0.238	0.130	0.130		0.172	0.670
Chelicera	0.476					

*Colour:* Carapace, sternum and appendages uniform dark reddish-brown without markings. Antero-dorsal third of abdomen heavily shaded followed by six chevrons which extend down the entire dorsal surface and merge laterally with an irregular shaded band. The ventral surface of the abdomen is without markings.

*Carapace:* Low, shiny, Width in front equal to 1/2 of greatest width between coxae 2 where ratio of length:width=7:5.

*Eyes:* The eye group occupies 2/3 of the width of the head. The lateral eyes are contiguous as are the PME. Ratio of ALE:PME:PLE=5:6:5. The ALE are separated from the PME by 2/6 and from each other by 8/6 of the diameter of a PME. The PLE are separated from the PME by 3/6 and from

each other by  $12/6$  of the diameter of a PME. The clypeus is low, equal to  $2/6$  of the diameter of a PME. When viewed from above the posterior row is strongly recurved while the anterior row if the PME is included is more gently procurved.

*Chelicerae*: Typical, with two strong teeth on both margins and a double row of serrate and smooth hairs on pro-lateral surface.

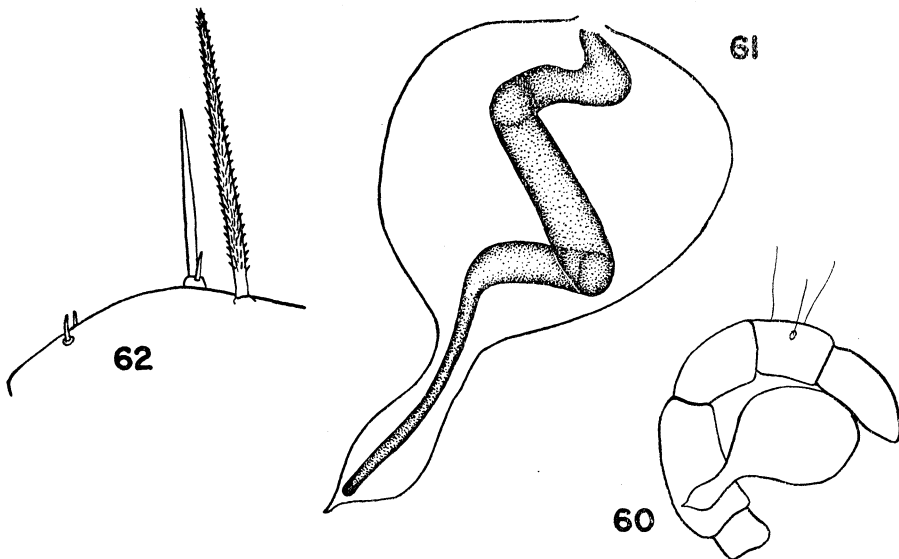
*Maxillae*: Directed slightly inwards beyond the labium. Little more than twice as long as wide at the base. Palp inserted at  $1/3$  where width is only  $1/2$  of width at the base. Scopula and serrula present.

*Labium*: As wide at base as long. Lateral margins parallel. Anterior margin notched.

*Sternum*: Finely coriaceous, shiny, convex. Scutiform, margin entire, evenly curved, longer than wide in ratio of 4:3. Posterior margin obtuse, separating coxae 4 by a distance equal to twice their diameter.

*Legs*: 4.1.2.3. Clothed with fine serrate and ciliate hairs. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2 tibia 2 at  $2/3$ , metatarsus 1 subdistal. Legs 3 and 4, tibia 3 in row at  $1/2$ , metatarsus 1 subdistal. Tarsal tubercle with strong median bristle equal to  $2/3$  of length of adjacent hairs and a small accessory bristle. Onychium of all legs with a strong ventral scopula of spatulate hairs. Two claws, homogeneous, flattened dorso-ventrally, claws of legs 1 and 2 with 8 teeth on each margin, legs 3 and 4 with only five.

*Palp*: Clothed with fine serrate and ciliate hairs. Tibia with three trichobothria, 1 at  $1/4$ , 2 in transverse row at  $1/3$ , bulb round, embolus stout, expanded and flattened distally but terminated with a sharp point. Receptaculum seminis



FIGS. 60-62. *Ascuta orepukiensis* n.sp. Fig. 60; Retrolateral view of male palp. Fig. 61; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 62; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

slender, without sieve plate. Distal tube slender, straight, opening subdistally.

*Abdomen*: Clothed with fine ciliate hairs. Ovoid, longer than wide in ratio of 7:5. Openings from lung books and tracheal spiracles clearly visible, separated by a distance equal to 1/10 of length of abdomen. Six spinnerets, tubular, in compact group with minute colulus.

FEMALE:

*Measurements* (in millimetres)

Carapace: Length 1.134, Width 0.868

Abdomen: Length 1.619, Width 1.009

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.964	0.308	0.688	0.504	0.308	2.772
Leg 2	0.742	0.350	0.504	0.448	0.308	2.352
Leg 3	0.700	0.280	0.434	0.490	0.224	2.128
Leg 4	0.840	0.280	0.646	0.728	0.280	2.774
Palp	0.252	0.130	0.144		0.238	0.764

Similar in structure to male. Palp with relatively strong smooth tarsal claw.

*Types*: Holotype male, Orepuki, Southland, ex leaf-mould, 17 May, 1948, J. H. Sorensen (C.M.A. 1210, Sl.311); Allotype female, same locality, 9 May, 1949, R. R. Forster (C.M.A. 1209); Paratype male, Longwood Range, Southland, 1 September, 1948, J. H. Sorensen (C.M.A. 1245, Sl.325).

*Remarks*: *A. orepukiensis* and the following two species *A. rakiura* and *A. australis* seem to form a natural group characterised by the extremely slender receptaculum seminis. The distal expansion of the embolus enables this species to be readily recognised.

***Ascuta rakiura* n.sp.**

FIGS. 66-68

MALE:

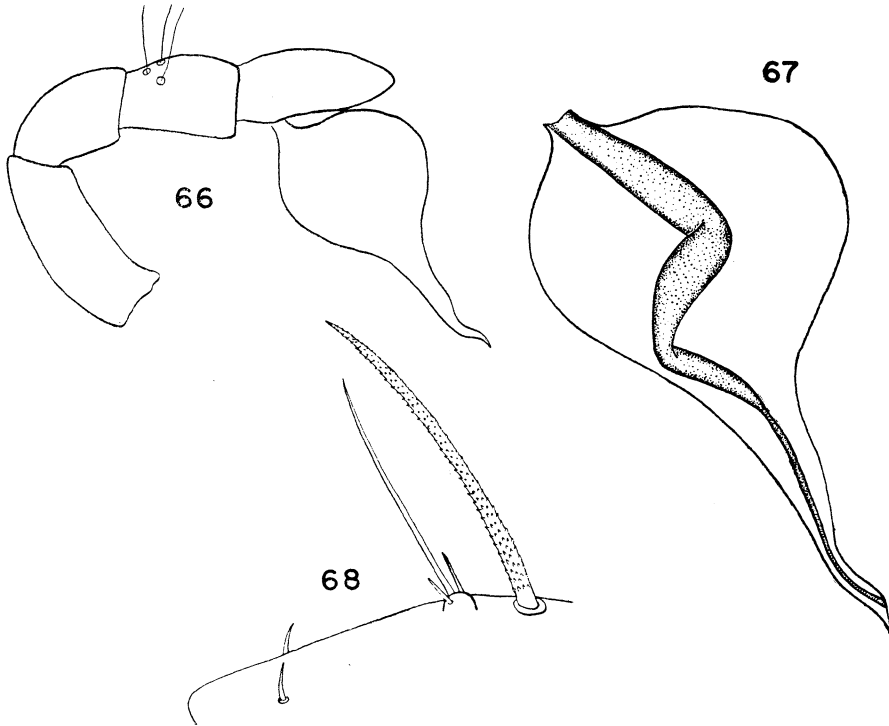
*Measurements* (in millimetres)

Carapace: Length: 0.700, Width 0.688

Abdomen: Length 0.964, Width 0.604

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.700	0.210	0.504	0.448	0.322	2.184
Leg 2	0.694	0.206	0.490	0.448	0.308	2.146
Leg 3	0.560	0.204	0.350	0.392	0.224	1.730
Leg 4	0.728	0.224	0.546	0.574	0.294	2.366
Palp	0.266	0.112	0.126		0.172	0.676
Chelicera	0.364					

*Colour*: Carapace, sternum and appendage uniform orange brown, without markings. Ground colour of abdomen white, with a heavy purplish shading on the antero-dorsal surface followed by six chevrons which merge with longitudinal bands along the lateral margins. Ventral surface with a patch



Figs. 66-68. *Ascuta rakiura* n.sp. Fig. 66; Retrolateral view of male palp. Fig. 67; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 68; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

immediately behind the epigastric groove and a further shaded area around the base of the spinnerets.

*Carapace*: Smooth and low. Width in front equal to  $1/2$  of greatest width between coxae 2 where ratio of length:width=10:9.

*Eyes*: The eye group occupies  $2/3$  of the width of the head. When viewed from above the posterior row is strongly recurved and a line taken from the ALE and PME is more gently procurved. Ratio of ALE:PME=5:6:5. The lateral eyes are contiguous as are the PME. ALE separated from PME by  $1/5$  and from each other by  $8/5$  of the diameter of a PME. PLE separated from PME by  $2/5$  and from each other by  $12/5$  of the diameter of a PME. The clypeus is narrow being equal to  $1/5$  of diameter of a PME.

*Chelicerae*: Normal, with two strong teeth on each margin and a double row of smooth and serrate hairs on the prolateral surface.

*Maxillae*: Directed inwards beyond the labium. Slightly more than twice as long as wide at the base. Palp inserted at  $1/3$  where the maxilla is constricted to  $2/3$  of the basal width. Scopula of pale hairs and serrula present.

*Labium*: As wide at the base as long. Lateral margins sub-parallel. Anterior margin indented.

*Sternum*: Scutiform, smooth, convex, longer than wide in the ratio of

14:11. Low mounds on lateral surfaces opposite coxae 1-3. Posterior margin obtuse separating coxae 4 by distance equal to  $1 \frac{1}{6}$  of their width.

*Legs:* 4.1.2.3. Clothed with short ciliate and serrate hairs, which are stronger around the distal ends of the tibiae and metatarsi of legs 3 and 4. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 transverse at midway, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 in the transverse row at  $\frac{1}{3}$ , metatarsus 1 subdistal. Tarsal tubercle with long slender median bristle which is equal to  $\frac{3}{4}$  of the length of the adjacent bristles on legs 1 and 2 and  $\frac{2}{3}$  on legs 3 and 4. There are two relatively long and slender accessory bristles. Distal thorns present. Onychium with ventral scopula consisting mainly of normal ciliate hairs, although some of the more distal hairs appear to be spatulate. Two claws, homogeneous, flattened dorso-ventrally, with 6-8 teeth along the outer margin of which the distal are longest and 6 even sized teeth along the inner margin.

*Palp:* Clothed with fine serrate and ciliate hair. Tibia with three trichobothria: 1 at  $\frac{1}{3}$ , 2 in transverse row at  $\frac{1}{2}$ . Bulb simple, pyriform, embolus broad at base, narrowing gradually, curved distally, terminated obliquely. The receptaculum seminis is very slender, twisted, with a long slender distal tube which opens from the distal oblique face of the embolus. No sieve plate has been observed.

*Abdomen:* Ovoid, longer than wide in ratio of 14:9, clothed with short ciliate hairs. Openings of lung books and tracheal spiracles clearly visible, separated by a distance equal to  $\frac{1}{7}$  of the length of the abdomen. Six spinnerets, tubular, in compact group. No colulus observed.

*Type:* Holotype male, Easy Cove, S.W. Stewart Island, ex leaf-mould, 26 January, 1955, R. K. Dell and B. A. Holloway (D.M. 2/1059, 4/235).

*Remarks:* The genital bulbs of this species and *A. australis* are very similar, although sufficiently distinct to separate the two forms. The most obvious character which separates them is the median bristle of the tarsal tubercle which is long and slender in *rakiura* but short and stout in *australis*.

***Ascuta australis* n.sp.**

FIGS. 69-71

**MALE:**

*Measurements* (in millimetres)

Carapace: Length 0.900, Width 0.688

Abdomen: Length 0.949, Width 0.560

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.632	0.266	0.560	0.434	0.280	2.172
Leg 2	0.574	0.252	0.420	0.378	0.294	1.918
Leg 3	0.504	0.210	0.378	0.322	0.238	1.652
Leg 4	0.700	0.336	0.532	0.546	0.252	2.366
Palp	0.210	0.130	0.130		0.172	0.642
Chelicera	0.420					

*Colour:* Carapace yellow-brown with dark U-shaped patch on the median surface joined by thin black lines to the lateral eyes. Margins shaded with black.

Sternum, evenly shaded with black pigment with a dark median longitudinal band. Appendages uniform pale yellowish brown. Ground colour of abdomen pale creamy white, heavily shaded on the antero-dorsal and lateral margin with purplish-brown pigment. There are six prominent chevrons along the dorsal surface and a pair of patches on the ventral surface behind the epigastric groove and at the base of the spinnerets.

*Carapace*: Smooth and low. Width of anterior margin slightly more than  $1/2$  greatest width between coxae 2 where the ratio of length:width=6:5.

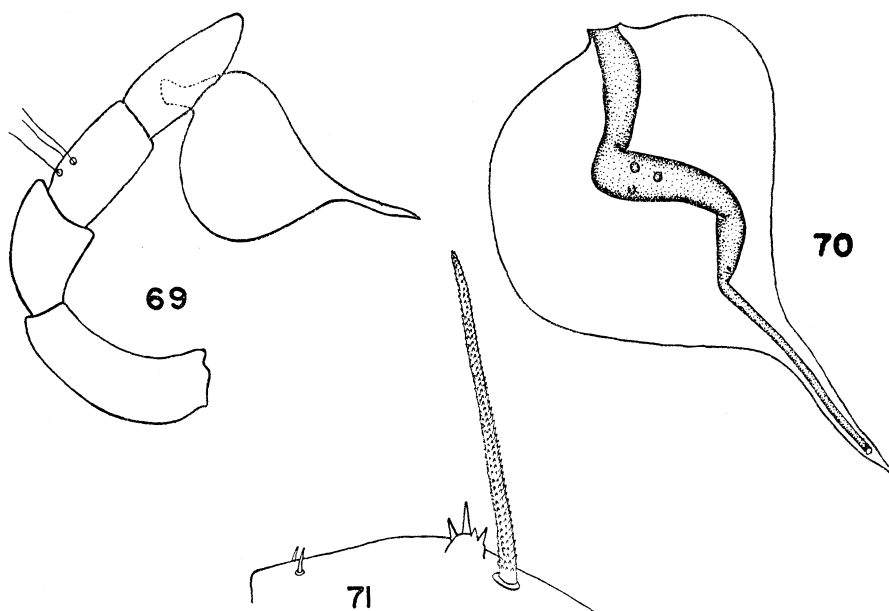
*Eyes*: The eye group occupies  $2/3$  of the width of the head. The lateral eyes are contiguous as are the PME. From above the posterior row is strongly recurved while the row formed by the ALE and PME is more gently procurved. All eyes are oval and equal in width. The ALE are separated from the PME by  $1/5$  and from each other by  $1\ 3/5$  of a PME. The PLE are separated from the PME by  $3/5$  and from each other by  $14/15$  of the diameter of a PME. Clypeus equal in height to  $2/5$  of the diameter of a PME.

*Chelicerae*: Normal, with a pair of strong teeth on each margin and a double row of serrate and smooth hairs on the prolateral surface.

*Maxillae*: Directed slightly inwards beyond the labium. Twice as long as wide at the base. Palp inserted at  $1/3$  where maxilla is constricted to  $1/2$  width at base. Scopula of pale hairs and serrula present.

*Labium*: As wide at base as it is long. Lateral margins parallel, anterior margin notched.

*Sternum*: Scutiform, longer than wide in ratio of 7:6. There are small



FIGS. 69-71. *Ascuta australis* n.sp. Fig. 69; Retrolateral view of male palp. Fig. 70; Retrolateral view showing receptaculum seminis. Fig. 71; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

sharp projections at the level of the coxae and low mounds near the lateral margins. The posterior portion is obtuse, separating coxae 4 by a distance equal to  $1 \frac{1}{5}$  of their width.

*Legs:* 4.1.2.3. Clothed with fine serrate and ciliate hairs. The hairs encircling the distal extremities of the tibia and metatarsus of legs 3 and 4 are much stronger than the remaining hairs. Tibiae and metatarsi of all legs with trichobothria. Legs 1 and 2, tibia, 2 in transverse row immediately beyond mid-point, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 in transverse row near mid-point, metatarsus 1 subdistal. Tarsal tubercle with a small median bristle and three accessory bristles. The median bristle on tarsi 1 and 2 is only slightly longer than the height of the tubercle, while on tarsi 3 and 4 it is reduced further so that it is no larger than the accessory bristles. The distal pair of 'thorns' are present on all tarsi. Scopula of spatulate hairs on ventral surface of onychium, two claws, flattened dorso-ventrally with 8 teeth along the outer margin and 6 along the inner, of which the more distal are the longest.

*Palp:* Clothed with fine serrate and ciliate hairs. Tibia with 3 trichobothria 1 at  $1/4$ , 2 transverse at  $1/3$ . Genital bulb pyriform, embolus narrow, even straight, terminated by a narrow sharp point. The receptaculum seminis is slender and only slightly twisted, opening sub-distally. There is no sieve plate present but there are three small tubercles on the median surface of the receptaculum seminis.

*Abdomen:* Ovoid, longer than wide in ratio of 7:4, clothed with small ciliate hairs. The openings from the lung books and the tracheal spiracles are clearly visible and are separated by a distance equal to  $1/14$  of the length of the abdomen. Six spinnerets, tubular, in compact group. Colulus not observed.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.714, Width 0.518

Abdomen: Length 0.979, Width 0.646

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.546	0.210	0.350	0.266	0.224	1.596
Leg 2	0.504	0.158	0.294	0.172	0.224	1.352
Leg 3	0.420	0.156	0.224	0.210	0.172	1.132
Leg 4	0.560	0.172	0.378	0.308	0.230	1.648
Palp	0.224	0.056	0.084		0.144	0.508
Chelicera	0.210					

Similar in structure and appearance to male. Palp with smooth tarsal claw.

*Types:* Holotype male, Murderer's Cove, Big South Cape Island, ex leaf-mould, 24 January, 1955, R. K. Dell and B. A. Holloway, (D.M. 2/1062, 4/234); Allotype female, same data (D.M. 2/1063).

#### ***Ascuta pallida* n.sp.**

FIGS. 72-75



## MALE:

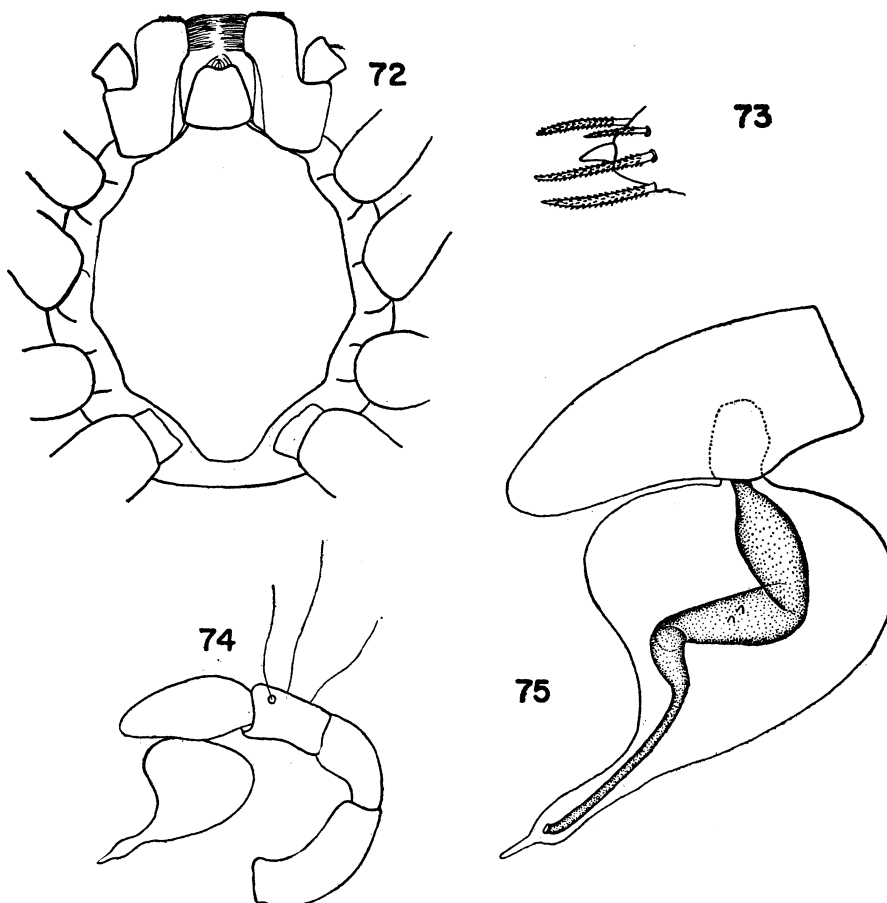
*Measurements (in millimetres)*

Carapace: Length 0.595, Width 0.459

Abdomen: Length 0.722, Width 0.476

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.364	0.130	0.280	0.172	0.163	1.109
Leg 2	0.336	0.130	0.266	0.172	0.172	1.076
Leg 3	0.266	0.130	0.172	0.158	0.130	0.856
Leg 4	0.350	0.126	0.280	0.238	0.158	1.152
Palp	0.144	0.070	0.070		0.126	0.410
Chelicera	0.238					

*Colour:* Carapace and sternum uniform reddish-brown. Appendages pale yellow-brown. Abdomen uniform silvery white.



FIGS. 72-75. *Ascuta pallida* n.sp. Fig. 72; Ventral surface of cephalothorax of female. Fig. 73; Distal portion of tarsus of female palp. Fig. 74; Retrolateral view of male palp. Fig. 75; Retrolateral view of bulb of male showing receptaculum seminis.

*Carapace*: Smooth and shiny. Relatively flat, width in front slightly less than  $1/2$  greatest width at level of coxae 2 where ratio of length:width = 15:11.

*Eyes*: The eye group occupies only  $1/2$  width of the head. All eyes are equal in width. The lateral eyes are contiguous as are the PME. The ALE are separated from the PME by  $2/3$  and from each other by three times the diameter of a PME. The PLE are separated from the PME by  $4/3$  and from each other by four times a PME. The height of the clypeus is equal to the width of a PME.

*Chelicerae*: Vertical. Fang strong, evenly curved, both margins with two strong teeth. Double row of smooth and serrate hairs on proteral surface.

*Maxillae*: Curved inwards beyond the labium. Twice as long as it is wide at the base. Palp inserted at almost  $1/2$  where the maxilla is constricted to  $1/2$  width at base. There is a scopula of pale hairs and a serrula present.

*Labium*: Slightly wider at base than it is long. Lateral margins converging. Anterior margin notched.

*Sternum*: Finely coriaceous but shiny. Slightly convex longer than wide in ratio of 5:4. Posterior margin obtuse, separating coxae 4 by distance equal to twice their width.

*Legs*: 4.1.2.3. Clothed with fine serrate and ciliate hairs. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 at  $2/3$ , metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (2.1) at  $1/3$ , metatarsus 1 subdistal. Tarsal tubercle small with a strong median bristle which is about  $2/3$  of the length of adjacent hairs, on legs 1 and 2, and relatively shorter on legs 3 and 4. There is a small accessory bristle and a distal pair of 'thorns'. Onychium with thin ventral scopula of serrate hairs, none of which appear spatulate. Two claws, homogeneous, flattened dorso-ventrally, claws of legs 1 and 2 with 8 outer and 12 inner teeth, legs 3 and 4 with 3 outer and 6 inner.

*Palps*: Sparsely clothed with slender ciliate hairs, most numerous on tarsi. Tibia with 3 trichobothria, 1 at  $1/3$ , 2 at  $2/3$ . Bulb simple, embolus distended subdistally but terminated with a slender rod. The receptaculum seminis is slender without a sieve plate but with two small tubercles on the mid surface. The opening of the tube is subdistal.

*Abdomen*: Clothed with numerous short pale brown hairs. Ovoid, longer than wide in ratio of 3:2. Openings of lung books and tracheal spiracles clearly visible separated by a distance equal to  $1/12$  of the length of the abdomen. Six spinnerets, tubular, posterior pair longest, without colulus.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.595, Width 0.467

Abdomen: Length 0.850, Width 0.552

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.434	0.144	0.308	0.280	0.144	1.310
Leg 2	0.420	0.144	0.280	0.266	0.158	1.268
Leg 3	0.336	0.130	0.158	0.210	0.130	0.964
Leg 4	0.406	0.144	0.294	0.308	0.196	1.348
Palp	0.158	0.070	0.084		0.144	0.456
Chelicera	0.266					

Similar in appearance and structure to male. Pedipalp with three trichobothria on the tibia distributed as in male and a small smooth tarsal claw.

*Types*: Holotype male (C.M.A. 1189, S1.300); Allotype female (C.M.A. 1190), Lake Te Au, near south arm of Lake Te Anau, ex moss, 12-24 January, 1953, R. R. Forster. Paratypes: Same data as holotype, 3 ♀ (C.M.A. 1191, S 301), 1 X (D.M. 2/1050); Takahē Valley, Fiordland, ex leaf-mould, 18 January, 1951, R. S. Duff, 1 ♂ (C.M.A. 1168).

*Remarks*: The relatively small size and the lack of pigment on the abdomen set this species apart from all other species of *Ascuta* known at present. Apart from these two characters, *pallida* seems to fall naturally into this genus.

***Ascuta plena* n.sp.**

FIGS. 76-79

MALE:

*Measurements* (in millimetres)

Carapace: Length 1.810, Width 1.229

Abdomen: Length 2.245, Width 1.434

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.700	0.266	0.560	0.490	0.294	2.340
Leg 2	0.688	0.252	0.490	0.448	0.292	2.270
Leg 3	0.574	0.224	0.364	0.406	0.224	1.792
Leg 4	0.728	0.280	0.560	0.574	0.252	2.394
Palp	0.280	0.130	0.130		0.224	0.764
Chelicera: Length	0.486					

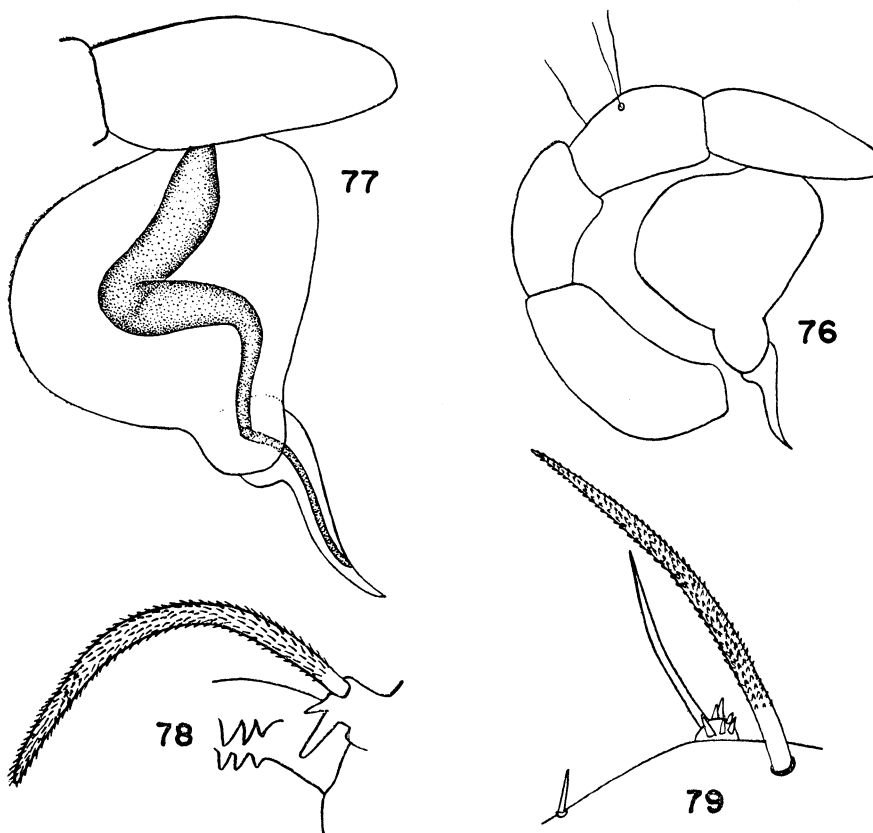
*Colour*: Carapace and sternum reddish-brown, without shading. Appendages paler. Ground colour of abdomen creamy-white, heavily shaded on the antero-dorsal surface. There are seven chevrons down the dorsal surface and two pairs of patches on the ventral surface, one pair behind the epigastric groove and the other pair at the base of the spinnerets.

*Carapace*: Finely granulate but shiny. Width in front slightly more than 1/2 of greatest width between coxae 2 and 3 where ratio of length:width=4:3. Low, highest point at 2/3 of the length of the carapace. Few inconspicuous hairs present on the median surface.

*Eyes*: The eye group occupies 2/3 of the width of the head. Ratio of ALE:PME:PLE=13:14:13. The lateral eyes are contiguous as are the PME. The ALE are separated from the PME by 6/14 and from each other by 30/14 of the width of a PME. The PLE is separated from the PME by 16/14 and from each other by 42/14 of the diameter of a PME. Clypeus equal in height to 8/14 of the width of a PME.

*Chelicerae*: Typical, with two strong teeth on each margin and a double row of smooth and serrate hairs on the prolateral surface.

*Maxillae*: Parallel. Ratio of length:width at base=7:3. Palp inserted at 1/3 where width is equal to 2/3 of width at base. Scopula of pale hairs and serrula present.



Figs. 76-79. *Ascuta plena* n.sp. Fig. 76; Retrolateral view of male palp. Fig. 77; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 78; Distal portion of onychium, leg 1 of male, showing basal spines of antero-dorsal hairs. Fig. 79; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

**Labium:** Slightly longer than wide at base. Lateral margins slightly convergent. Anterior margin notched.

**Sternum:** Scutiform, convex, longer than wide in ratio 5:4. There are small sharp extensions at level of each coxa and thin sclerotic strips passing between the coxae. There are low swellings near the lateral margins opposite coxae 1-3. Posterior margin obtuse, separating coxae 4 by distance equal to 13/11 of their width.

**Legs:** 4.1.2.3. Closely clothed with ciliate and serrate hairs. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 at 1/2, metatarsus 1 subdistal, Legs 3 and 4, tibia 3 (1.2) at 1/3, metatarsus 1 subdistal. Tarsal tubercle with long median bristle equal to 1/2 length of adjacent hairs on legs 1 and 2, and 1/3 on legs 3 and 4, and with from 5-6 short accessory bristles. Distal 'thorns' present. Onychium well developed with normal strong ciliate hairs and thick ventral scopula of spatulate hairs. The base of the disto-

lateral setose hairs can be seen in the preparation of leg 1 to be provided with two strong spinous projections as shown in FIG. 78. These projections are probably present in all species but are very difficult to observe in untreated microscopic preparation. Two claws, homogeneous, flattened dorso-ventrally, claws of legs 1 and 2 with 9 teeth along each margin, legs 3 and 4 with 5 outer teeth and 7 inner.

*Palp*: Clothed with serrate hairs, more numerous and longer on tarsi. Tibia with 3 trichobothria, 1 at 1/4, 2 in transverse row at 1/2. Bulb simple with small distal swelling from the outer margin of which the embolus originates. The embolus is relatively short and stout, slightly curved and is terminated sharply. The receptaculum seminis is slender and does not appear to possess a sieve plate.

*Abdomen*: Ovoid, longer than wide in ratio of 3:2. I have been unable to see the tracheal spiracles. The spinnerets are tubular and in a compact group. A colulus has not been observed.

*Types*: Holotype male, Track above Flora Hut, Mount Arthur Tableland, Nelson, ex leaf-mould, 7 April, 1946, J. T. Salmon (D.M. 2/1065, 4/217); Paratype male, Leslie Valley Track, near Mount Arthur Tableland, Nelson, ex leaf-mould, 23 January, 1948, R. R. Forster (C.M.A. 1228).

*Remarks*: The unusual form of the male genital bulb readily characterises this species.

***Ascuta inopinata* n.sp.**

FIGS. 80-82

MALE:

*Measurements* (in millimetres)

Carapace: Length 1.190, Width 0.765

Abdomen: Length 1.105, Width 0.762

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.722	0.281	0.578	0.504	0.392	2.477
Leg 2	0.688	0.298	0.467	0.479	0.281	2.213
Leg 3	0.638	0.170	0.561	0.425	0.298	2.090
Leg 4	0.892	0.298	0.595	0.595	0.316	2.496
Palp	0.255	0.126	0.127		0.221	0.719

*Colour*: Carapace and sternum uniform reddish-brown, without markings. Appendages pale yellow-brown. Ground colour of abdomen creamy-white with seven well defined chevrons along the dorsal surface which extend laterally to merge with lateral longitudinal bands. Ventral surface with a pair of patches behind the epigastric groove and in front of the spinnerets.

*Carapace*: Smooth, relatively low, highest at 7/10 of its length. Width in front equal to 9/14 of the greatest width between coxae 2 and 3 where ratio of length:width=10:7.

*Eyes*: The eye group occupies 9/11 of the width of the head. Ratio of ALE:PME:PLE=9:10:9. The lateral eyes are contiguous as are the PME.

The ALE are separated from the PME by a distance equal to  $2/10$  and from each other by  $15/10$  of the width of a PME. The PLE are separated from the SME by  $8/10$  and from each other by  $27/10$  of the width of a PME. The height of the clypeus is equal to  $3/10$  of the diameter of a PME.

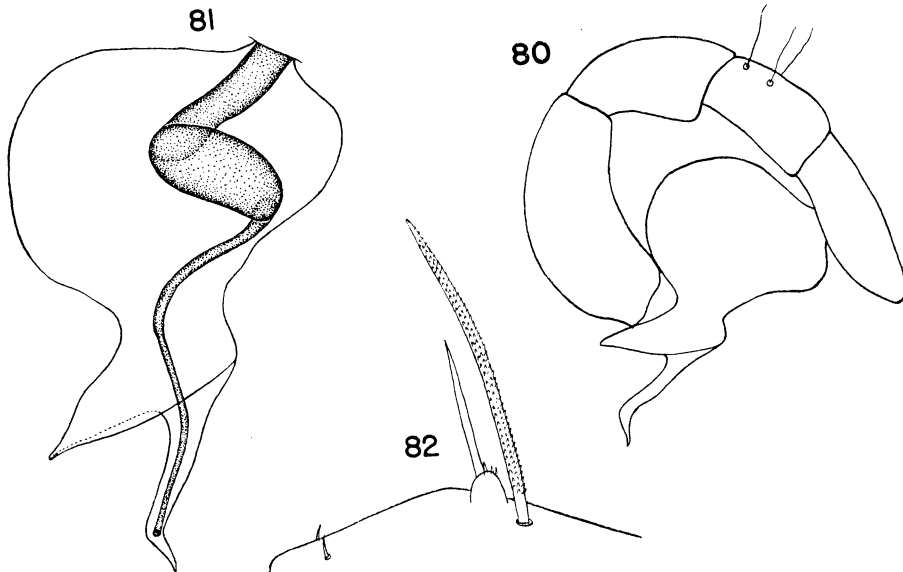
*Chelicerae*: Typical, with two strong teeth on each margin and a double row of smooth and serrate hairs on the prolateral surface.

*Maxillae*: Converging slightly beyond the labium. Longer than wide at base in ratio of 12:7. Palp inserted at  $1/3$  where the maxilla is constricted to  $1/2$  of width at base. Inner margin straight, outer margin somewhat swollen distally. Scopula of pale hairs and serrula present.

*Labium*: Slightly wider at base than long. Lateral margins slightly convergent. Anterior margin notched.

*Sternum*: Finely granulate, but shiny, convex, scutiform longer than wide in ratio of 7:6, with small lateral extension at the level of, and between the coxae. There are low swellings near the lateral margins opposite coxae 1-3. Posterior margin obtuse, separating coxae 4 by a distance equal to  $29/11$  of their width.

*Legs*: 4.1.2.3. Clothed with fine ciliate and serrate hairs. Strong serrate hairs encircle the distal extremities of the tibiae and metatarsi of legs 3 and 4. Trichobothria are present on the tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2 at  $1/3$ , metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (1.2) at  $1/2$ , metatarsus 1 subdistal. Tarsal tubercle with long median bristle, almost half as long as the adjacent hairs and three small accessory bristles. Distal thorns present. Onychium with ventral scopula of spatulate hairs. Two claws flattened dorso-ventrally, with strong teeth on both margins, homogeneous.



FIGS. 80-82. *Ascuta inopinata* n.sp. Fig. 80; Retrolateral view of male palp. Fig. 81; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 82; Distodorsal surface tarsus, leg 1 of male, showing typical hairs, tarsal tubercle and 'thorns'.

*Palp*: Clothed with fine ciliate and serrate hairs. Tibia with three trichobothria, 1 at 1/3, 2 in transverse row at 1/2. Bulb with broad expansion at the base of the embolus. The embolus is slender, bent distally where it is terminated sharply. The receptaculum seminis is stout for half of its length. The distal portion is slender, only slightly stouter than the distal tube. The opening is subdistal. No sieve plate has been observed.

*Abdomen*: Clothed with fine ciliate hairs. Ovoid, longer than wide in ratio of 13:9. Openings from lung books and tracheal spiracles clearly visible, separated by a distance equal to 1/10 of the length of the abdomen. Six spinnerets, tubular, in compact group, no colulus observed.

*Types*: Holotype male, Flora Track, Mount Arthur Tableland, 3000ft, ex leaf-mould, 29 January, 1948, R. R. Forster (D.M. 2/1064, 4/216).

Genus *DURIPELTA* n.gen.

Six eyes, homogeneous, occupying most of head region. Carapace and sternum granulate. Abdomen of male with one or two well developed scutes, female with epigastric scute. Carapace and sternum joined by sclerotic strips between and behind legs. Genital bulb of male simple. Female pedipalp with well developed but smooth claw. Legs 1-4.2.3 without spines, prominent onychium with weakly developed ventral scopula. Legs with two claws, homogeneous, flattened dorso-ventrally, strongly bipectenate. Tarsal tubercle and 'thorns' present. Six tubular spinnerets. No colulus, and openings from lung books, spiracles usually clearly visible, closely spaced.

Type species *Duripelta borealis* n.sp.

This genus is closely related to *Ascuta* n.gen. from which it is sharply separated by the presence of abdominal scutes, sclerotic strips joining the carapace and sternum and granulate carapace.

*Duripelta borealis* n.sp.

FIGS. 83-91

MALE:

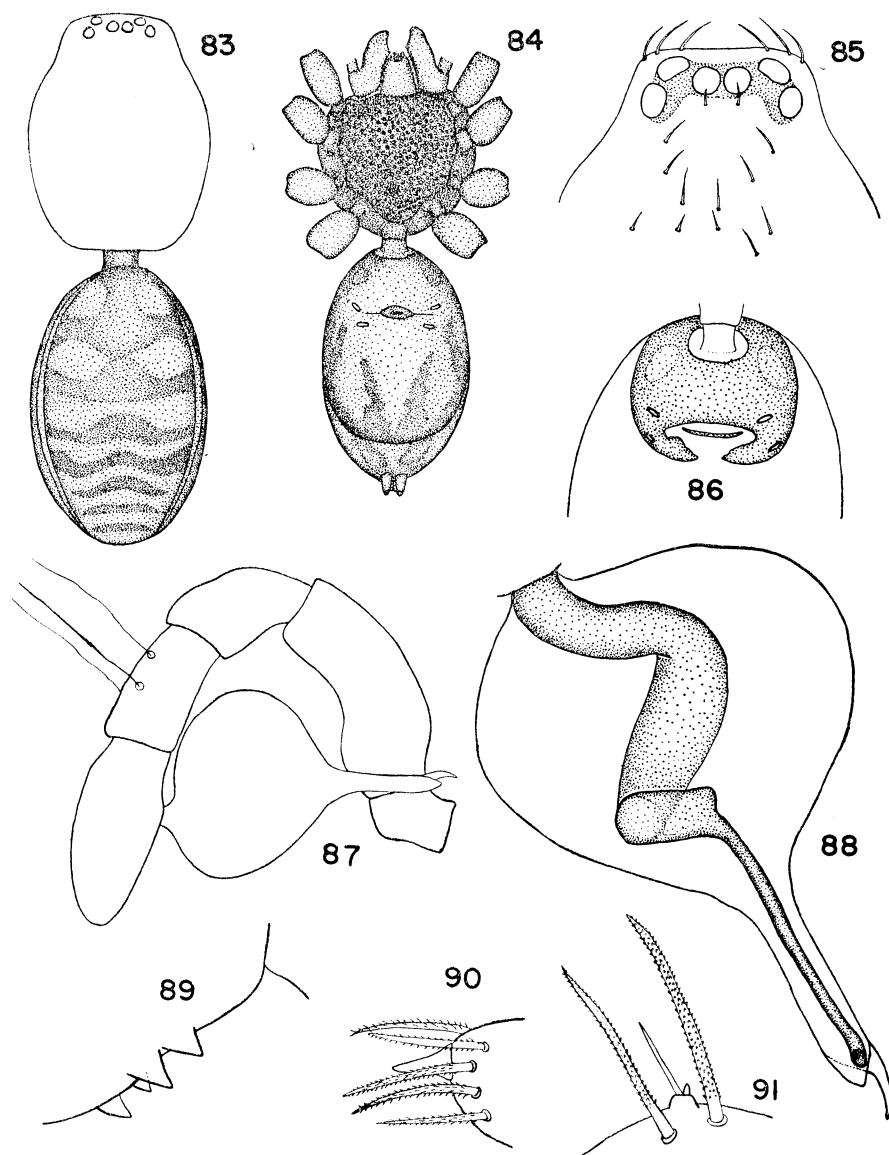
*Measurements* (in millimetres)

Carapace: Length 0.660, Width 0.618

Abdomen: Length 0.840, Width 0.632

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.560	0.224	0.434	0.364	0.266	1.848
Leg 2	0.532	0.196	0.420	0.350	0.238	1.736
Leg 3	0.434	0.196	0.266	0.308	0.204	1.408
Leg 4	0.504	0.224	0.420	0.420	0.210	1.778
Palp	0.196	0.112	0.105		0.144	
Chelicera	0.353					

*Colour*: Carapace, sternum and chelicerae deep reddish-brown, legs and palps paler. The ground colour of the abdomen is creamy-white with five black chevrons on the dorsal surface and black longitudinal markings on the



FIGS. 83-91. *Duripelta borealis* n.sp. Fig. 83; Dorsal surface of male. Fig. 84; Ventral surface of male. Fig. 85; Eyes of male. Fig. 86; Antero-ventral surface of abdomen of female. Fig. 87; Retrolateral surface of male palp. Fig. 88; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 89; Cheliceral teeth of female. Fig. 90; Distal portion of tarsus of female palp. Fig. 91; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hairs and tarsal tubercle.



ventral surface. The scutes on both dorsal and ventral surfaces are deep reddish-brown but are translucent so that the abdominal markings show clearly through them.

*Carapace*: Closely covered with fine granules. Fovea absent. Longer than wide in the ratio 5:4. When seen from the side the carapace is relatively low and gently rounded, highest at a point about one third of the length from the anterior margin. The carapace appears to be joined to the sternum by thickened strips extending down between the legs and posteriorly. There are a few small inconspicuous hairs on the median surface.

*Eyes* (FIG. 85): The eye group occupies  $\frac{3}{5}$  of the width of the head. The posterior row when seen from above is strongly procurved but the anterior margins of the PME are behind the anterior margins of the ALE. Ratio of eyes ALE:PME:PLE=8:9:8. The lateral eyes and the PME are subcontiguous. The ALE are separated from the PME by a distance equal to  $\frac{4}{9}$  of the diameter of the PME while the PLE are separated from the PME by  $\frac{8}{9}$ . Clypeus narrow, not quite as wide as the diameter of the PME.

*Chelicerae* (FIG. 89): Vertical, relatively stout, lacking boss. Fang strong, evenly curved, groove with four strong teeth, two on each margin. Scopula of serrate and smooth setose on prolateral surface.

*Maxillae*: In many specimens the maxillae are parallel but in some are inclined slightly over the labium. Lateral margins almost straight, sub-parallel, width at base almost equal to one half times the length, palp inserted laterally at one third. There is a pale but relatively thick scopula on the inner distal surface and a well developed serrula is present.

*Labium*: Free, as wide at base as it is long, lateral margins slightly convergent, with a shallow antero-median notch.

*Sternum*: Scutiform, somewhat convex and strongly granulate almost as wide as it is long. Joined to carapace by sclerotic lateral thickenings when enclose the bases of the legs. Posterior margin broadly rounded, extending behind coxae 4 which are separated by a distance equal to  $\frac{5}{3}$  of their diameter.

*Legs*: 1.4.2.3. Without spines, uniformly clothed with serrate hairs, of which those encircling the distal extremity of metatarsi of legs 3 and 4 are markedly stronger. Trichobothria are present on the tibia and metatarsus of all legs. Legs 1 and 2 with transverse pair at about the mid-point, metatarsus with one on subdistal surface. Legs 3 and 4 with three on the tibia arranged 2:1 and one on the subdistal surface of metatarsus. Tarsal tubercle in the form of a small mound with a strong median spine which is slightly longer than half of adjacent hairs. There is a small accessory bristle immediately behind the median bristle. The distal pair of thorns are present. The two claws are homogeneous with six outer teeth of which the distal is the longest and seven on the inner margin. There is a prominent onychium with a thin scopula of serrate setae on the ventral surface.

*Palps*: Clothed with serrate hairs. Two trichobothria on dorsal surface of tibia, one at  $\frac{1}{3}$  and the other at  $\frac{2}{3}$  of the length of the segment. Genital bulb simple, as wide as the tarsus is long, with a straight narrow distal tube terminated by a sharp, curved point. The receptaculum seminis opens at the

base of this distal spine where it is covered by a flattened extension which is itself pointed distally. The receptaculum seminis is slender and only slightly convoluted. A sieve plate has not been observed.

*Abdomen:* Ovoid, longer than wide in ratio of 19:13, sparsely clothed with small inconspicuous serrate hairs. Well developed scutes are present on both dorsal and ventral surfaces. The ventral scute covers 3/4 of the ventral surface and extends anteriorly to enclose the petiolus and in many specimens is actually fused to the dorsal scute along its anterior margin. The genital opening is oval, and the openings of the two pairs of spiracles can be clearly seen, the opening to the lung books anterior to, and those of the trachea posterior to the genital opening. The dorsal scute is oval in shape and extends back down approximately 17/20 of the length of the abdomen. Six squat spinnerets are present in a compact group.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.728, Width 0.618

Abdomen: Length 1.084, Width 0.882

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.632	0.252	0.490	0.406	0.266	2.046
Leg 2	0.560	0.224	0.434	0.404	0.252	1.874
Leg 3	0.504	0.210	0.336	0.364	0.158	1.572
Leg 4	0.604	0.224	0.490	0.490	0.238	2.046
Palp	0.204	0.126	0.112		0.210	0.652

*Colour:* Carapace, sternum and appendages as in male. Abdomen creamy-white with reddish-brown chevrons on the dorsal surface and variable markings on the ventral surface.

*Carapace:* As in male.

*Eyes:* Ratio of ALE:PME:PLE=3:4:3. The median eyes and the lateral eyes are sub-contiguous. ALE separated from the PME by a distance equal to 1/2 of the diameter of a PME. PLE separated from PME by a distance almost equal to the diameter of a PME. Height of clypeus equal to 3/4 of the diameter of a PME.

Chelicerae, maxillae, labium and sternum as in male.

*Legs:* 1.4.2.3. Measurement of a series of specimens of both sexes shows that legs 1 and 4 are usually about equal in length. In some specimens the first legs are the longest and others the fourth, but the difference is always insignificant. The legs of the females show the same structure as the males, including the form of the tarsal tubercle.

*Palps:* Clothed with serrate hairs without spines. Trichobothria on tibia, one at 1/3 and one at 2/3 of the length of the segment. Tarsal claw small but distinct, almost straight and smooth. No tarsal tubercle present.

*Abdomen:* With a small ventral scute which encloses the petiolus anteriorly but does not extend back farther than the second pair of spiracles which open from it.

*Types:* Holotype male (D.M. 2/1038), Allotype female (D.M. 2/1039) and paratypes (D.M. 2/1040), (C.M.A. 1248). Days Bay, Wellington, ex leaf-mould, 30 November, 1947, R. R. Forster.

*Records:*

*South Island.* Stephen Is., Cook Strait, ex leaf-mould, 19 May, 1950, R. R. Forster, 2 ♂ (C.M.A. 1137, S1.283); Pelorus Bridge, Marlborough, c.900ft, ex leaf-mould, 17 December, 1951, R. Pilgrim, 1 ♂ (C.M.A. 1143, S1.286); Cawthron Park, Nelson, ex leaf-mould, 17 October, 1946, E. S. Gourlay, 1 ♂, 1 ♀ (D.M. 2/1035).

*North Island.* Stokes Valley, Wellington, 3 April, 1948, R. R. Forster, 2 ♀ (C.M.A. 1145); same locality, 10 August, 1948, R. R. Forster, 3 ♀ (C.M.A. 1134); same locality, 10 January, 1948, R. R. Forster, 2 ♂, 6 ♀ (C.M.A. 1138); Top of Jacobs Ladder, Orongoronga, Wellington, 25 October, 1954; V. J. Wilson, 1 ♂ (D.M. 2/1020); Rimutaka Range, Wellington, ex leaf-mould, 10 August, 1946, A. J. Healy, 1 ♀ (D.M. 2/1021); Pinehaven, Wellington, ex leaf-mould, 22 February, 1953, R. K. Dell, 1 ♀ (D.M. 2/1022); Hutt Forks, Wellington, 24 May, 1948, J. Rudge, 1 ♀ (D.M. 2/1025); Blue Mountains, Silverstream, 18 April, 1948, J. T. Salmon, 1 ♀ (D.M. 2/1026); Karori, Wellington, 24 March, 1946, R. R. Forster, 1 ♀ (D.M. 2/1027); Tararua Range, below Field Hut, ex moss, 1 February, 1952, B. A. Holloway, 1 ♂ (D.M. 2/1028); Wainui-o-mata Waterworks, Skull Gully, ex leaf-mould, 20 March, 1954, B. A. Holloway, 3 ♂, 4 ♀ (D.M. 2/1036, 4/223); Silverstream, Wellington, ex leaf-mould, 20 May, 1950, R. K. Dell, 1 ♂, 1 ♀ (D.M. 2/1041); Waikanae, Wellington, ex leaf-mould, 3 January, 1948, R. R. Forster, 4 ♂ (D.M. 2/1082); Kapiti Island, ex leaf-mould, May, 1948, R. R. Forster, 2 ♂, 7 ♀ (C.M.A. 1139, S1.284); Mt. Egmont, Taranaki, ex leaf-mould, 4 November, 1951, T. E. Woodward, 1 ♀ (C.M.A. 1141); Dawson Falls, Mt. Egmont, 2000ft, ex leaf-mould, 21 January, 1955, J. T. Salmon, 1 ♂, 2 ♀ (C.M.A. 1135, S1.282); Desert Road, Waiouru, ex leaf-mould, 24 March, 1948, J. T. Salmon, 3 ♂ (D.M. 2/1030); Ruapuka, Taihape, 1400ft, 8 October, 1946, K. Ross, 2 ♂, 1 ♀ (D.M. 2/1031); Totara Reserve, Manawatu, ex leaf-mould, 21 August, 1948, R. R. Forster, 1 ♂ (C.M.A. 1136); Upper Rangitikei River, Vinegar Hill, ex leaf-mould, 17 December, 1948, R. R. Forster, 1 ♀, 1 imm. (C.M.A. 1142); Manawatu Gorge, ex leaf-mould, 15 December, 1946, R. R. Forster, 1 ♂, 1 ♀ (D.M. 2/1033); Opouawa Gully, West Wairarapa, ex leaf-mould, 5 April, 1947, R. R. Forster, 3 ♂, 8 ♀ (D.M. 2/1032); Wallingford, Hawkes Bay, ex leaf-mould, 12 February, 1948, G. Ramsay, 2 ♂, 6 ♀ (D.M. 2/1029, 4/222); Panikiri Bluff, Waikaremoana, 3600ft, ex leaf-mould, 12 December, 1946, R. R. Forster, 2 ♂, 1 ♀ (D.M. 2/1017, 2/1023, 2/1043); Waikaremoana, ex leaf-mould, 28 December, 1945, P. N. Wilton, 2 ♂, 1 ♀ (D.M. 2/1037); Lake Waikare-iti, ex leaf-mould, 10 December, 1946, R. R. Forster, 6 ♂, 1 ♀ (D.M. 2/1034); Maruiana Arm, Waikaremoana, ex leaf-mould, 11 December, 1946, R. R. Forster, 1 ♂, 2 ♀ (D.M. 2/1024); Valley behind Te Hope, Coromandel Peninsula, ex leaf-mould, 3 January, 1952, T. E. Woodward, 1 ♂, 1 ♀ (C.M.A. 1140, S1.285); Te Aroho Mountain, 3000ft, ex leaf-mould, 5 March, 1946, J. T. Salmon, 2 ♂ (D.M. 2/1016, 4/214); Waitakere Range, Auckland, ex leaf-mould, 6 February, 1949, R. R. Forster, 2 ♀ (C.M.A. 1146).

*Remarks:* This species is closely related to *D. australis* from which it may be separated by the presence of a dorsal abdominal scute in the male and the form of the male genital bulb. This distribution of species is predominantly North Island, but the presence of a number of populations in the north-west corner of the South Island ties up very well with similar distribution patterns previously recorded for other groups of animals and indicates a relatively recent bridging of the present-day Cook Strait.

***Duripelta australis* n.sp.**

FIGS. 92-101

MALE:

*Measurements* (in millimetres)

Carapace: Length 0.840, Width 0.660

Abdomen: Length 0.964, Width 0.618

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.618	0.280	0.490	0.378	0.238	2.004
Leg 2	0.618	0.266	0.434	0.406	0.238	1.962
Leg 3	0.490	0.210	0.322	0.336	0.210	1.568
Leg 4	0.621	0.266	0.420	0.490	0.214	2.011
Palp	0.238	0.144	0.130		0.210	0.722
Chelicera	0.406					

*Colour:* Carapace and sternum deep reddish-brown, appendages slightly paler. Dorsal surface of abdomen deeply shaded with blackish brown, leaving cream coloured areas, two irregular patches anteriorly, of which the more posterior is the larger, followed by five chevrons which become smaller posteriorly.

*Carapace:* Granulate, relatively low and evenly rounded. Longer than wide in the ratio of 6:5.

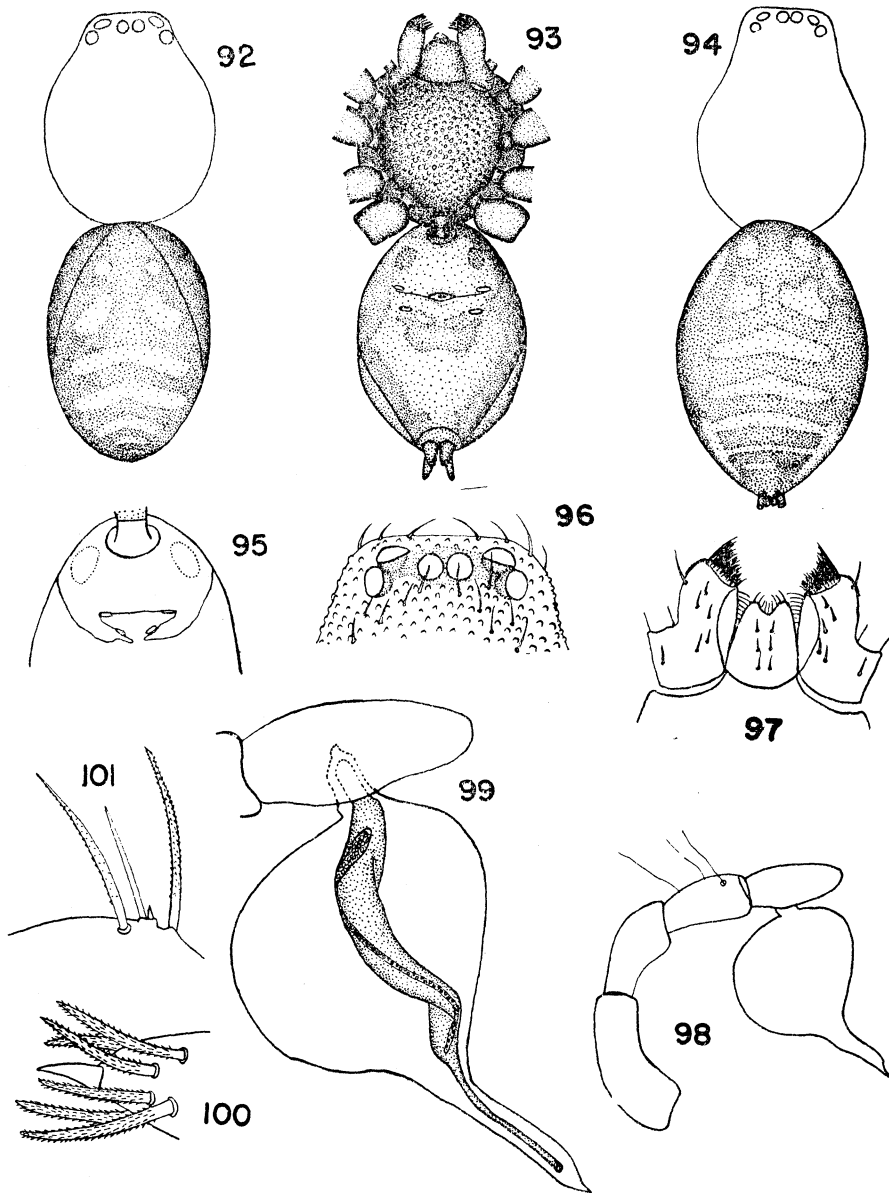
*Eyes:* The eye group occupies 9/14 of the width of the head region. Ratio of ALE:PME:PLE=8:9:8. The PME and the lateral eyes are sub-contiguous. The ALE is separated from the PME by 1/2 and the PLE is separated from the PME by a distance equal to the diameter of a PME. Viewed from above the posterior row of eyes is strongly recurved whereas if the anterior margins of the ALE and PME are used the anterior line is slightly procurved. The height of the clypeus is slightly less than the width of a PME.

*Chelicerae:* Vertical, without boss. With four strong teeth, two on each margin. Fang strong, evenly curved. Normal scopula of smooth and serrate hairs on the prolateral surface.

*Maxillae* (FIG. 97): Longer than wide at base in ratio of 7:5. Parallel, outer margin indented strongly where the palp is inserted, somewhat curved beyond the palp. Well defined serrula and scopula present.

*Labium:* As long as wide at the base. Lateral margins slightly convergent, anterior margin recurved.

*Sternum:* Scutiform, granulate, convex, longer than wide in the ratio of



FIGS. 92-101. *Duripelta australis* n.sp. Fig. 92; Dorsal surface of male. Fig. 93; Ventral surface of male. Fig. 94; Dorsal surface of female. Fig. 95; Antero-ventral surface of abdomen of female. Fig. 96; Anterior portion of carapace showing eyes. Fig. 97; Maxillae and labium of female. Fig. 98; Retrolateral surface of male palp. Fig. 99; Retrolateral view of bulb of male showing receptaculum seminale. Fig. 100; Distal portion of tarsus of female palp. Fig. 101; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hairs and tarsal tubercle.

13:11. Fused laterally with scute. The posterior margin of the scute is obtuse, extending between coxae 4 which are separated by a distance equal to  $8/5$  of their diameter.

*Legs:* 4.1.2.3. Clothed with serrate hairs but lacking spines. Tarsal tubercle with prominent median bristle equal to  $2/3$  of the length of adjacent hairs and with a small accessory bristle behind the main bristle. Distal pair of tarsal thorns present. Trichobothria on tibia and metatarsi of all legs arranged as follows: Legs 1 and 2, tibia transverse pair near midpoint, metatarsus 1 subdistal. Legs 3 and 4, tibia, 3 (2:1) near midpoint, metatarsus 1 subdistal. Two claws, homogeneous, bipectenate. 6 outer teeth, 7 inner, situated on a well developed onychium which is provided with a thin ventral scopula of sharply tipped serrate hairs.

*Palp:* Clothed with serrate hairs. Three trichobothria on tibia, 1 at  $1/3$ , 1 at  $2/3$  of the length of the segment and 1 subdistal. The bulb is wider than the tarsus, embolus equal in length to half of the width of the bulb and terminating sharply. The distal portion beyond the opening of the receptaculum seminis appears to be flattened. The receptaculum seminis is slender, slightly twisted with a definite sieve plate.

*Abdomen:* Only a ventral scute is present. It extends from near the spinnerets, widening anteriorly to cover the lateral margins of the anterior half of the abdomen and enclosing the petiolus. The genital opening is oval and the two pairs of spiracles are clearly visible, one pair anterior to and the other posterior to, the genital opening. Six spinnerets, anterior pair conical, posterior pair elongate, colulus absent.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.868, Width 0.688

Abdomen: Length 1.039, Width 0.770

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.574	0.266	0.476	0.406	0.238	1.960
Leg 2	0.574	0.265	0.434	0.406	0.224	1.903
Leg 3	0.462	0.210	0.336	0.322	0.220	1.550
Leg 4	0.588	0.252	0.436	0.476	0.238	1.990
Palp	0.224	0.144	0.144		0.236	0.748
Chelicera	0.423					

Characters as for male except as follows:

*Eyes:* Ratio ALE:PME:PLE=4:5:4. Median eyes and lateral eyes subcontiguous. The ALE and PLE are separated from the PME by  $8/5$  and  $6/5$  respectively of the width of a PME. Width of clypeus equal to  $3/5$  of diameter of a PME.

*Palps:* Tibia with three trichobothria, 1 at  $1/3$ , 1 at  $2/3$  and 1 subdistal. Tarsus with a short, sharp, straight claw.

*Abdomen:* With a short antero-ventral scute which encloses the petiolus and has the form shown in FIG. 95. Spinnerets as in male.

*Types*: Holotype male (C.M.A. 1096), Allotype female (C.M.A. 1097), paratypes, 22 ♂, 10 ♀ (C.M.A. 1098, D.M. 2/1082), Lewis Pass, 2200ft, ex leaf-mould, 29 January, 1956, R. R. Forster.

*Records*: Martins Bay, South Westland, ex leaf-mould, 20 January, 1955, R. R. Forster, 2 ♂, 2 ♀ (C.M.A. 1117, S1.278); south bank of Haast River, ex leaf-mould, 31 December, 1951, G. Wheeler, 1 ♂ (C.M.A. 1118); Anita Bay, Milford Sound, ex leaf-mould, 18 December, 1944, J. T. Salmon, 1 ♂ (C.M.A. 1128); Lake Paringa, Westland, ex leaf-mould, 23 October, 1954, L. P. Hughson, 5 ♂, 3 ♀ (C.M.A. 1131); south bank of Paringa River, Westland, ex leaf-mould, 3 June, 1954, J. M. Moreland, 4 ♂, 1 ♀ (C.M.A. 1130); Franz Josef, Westland, ex leaf-mould, 26 April, 1951, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1110); Waitangi-tuna River, Westland, ex leaf-mould, 5 December, 1949, R. R. Forster, 1 ♂ (C.M.A. 1112); Okarito, Westland, ex moss, 7 December, 1949, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1119); Lake Kanieri, Westland, 28 January, 1954, J. T. Salmon, 2 ♂, 1 ♀ (C.M.A. 1125, S1.280); Camerons, Westland, 5 September, 1950, R. A. Chapman, 2 ♂ (C.M.A. 1102); Moana, Westland, 3 September, 1951, B. Wisely, 1 ♀ (C.M.A. 1108); Moana, Westland, ex leaf-mould, 10 March, 1950, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1124); Taremakau, Westland, ex leaf-mould, 29 May, 1949, G. Southgate, 1 ♀ (C.M.A. 1120); Mount Davie, near Greymouth, Westland, 18 January, 1950, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1103); Blackball, West Coast, 6 March, 1950, L. P. Hughson, 1 ♂ (C.M.A. 1104); 12-mile, Greymouth, Westland, 18 January, 1950, R. R. Forster, 1 ♀ (C.M.A. 1126); Punakaiki, Westland, ex leaf-mould, 1 July, 1949, R. R. Forster, 1 ♂ (C.M.A. 1099); Woodpecker Bay, West Coast, ex leaf-mould, January, 1950, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1101); Taipo River, Westland, ex leaf-mould, 3 January, 1951, R. Jacobs, 1 ♂ (C.M.A. 1114); Woodpecker Bay, West Coast, ex leaf-mould, 19 January, 1950, R. R. Forster, 1 ♀ (C.M.A. 1133); Kiwi Valley, Lewis Pass, ex leaf-mould, 14 November, 1949, R. R. Forster, 7 ♀ (C.M.A. 1106); Lake Sumner, Canterbury, ex moss, 13 April, 1952, J. S. Dugdale, 2 ♀ (C.M.A. 1127); Waiho Gorge, ex leaf-mould, 26-27 January, 1954, J. T. Salmon, 1 ♀ (C.M.A. 1118); Upper Doubtful River, Canterbury, 6 April, 1953, F. W. Dukes, 1 ♂, 1 ♀ (C.M.A. 1116); Clear Grey River, 16 April, 1948, F. W. Dukes, 1 ♂, 1 ♀ (C.M.A. 1113); Oparara, Karamea, ex leaf-mould, 20 January, 1950, R. R. Forster, 1 ♂, 2 ♀ (C.M.A. 1100); South Terrace, Karamea, ex leaf-mould, 20 January, 1950, R. R. Forster, 2 ♂, 1 ♀ (C.M.A. 1107); Flora Valley, Nelson, near Gridiron Creek, ex leaf-mould, 7 April, 1946, R. R. Forster, 3 ♀ (C.M.A. 1115); Flora Saddle, Nelson, 2000ft, ex leaf-mould, 20 January, 1948, R. R. Forster, 2 ♂ (D.M. 2/1061); Flora Camp, Nelson, 3200ft, ex leaf-mould, 21 January, 1948, R. R. Forster, 8 ♂ (D.M. 2/1018); Balloon Creek, Mount Arthur Tableland, Nelson, 2500ft, ex leafmould, 21 February, 1946, J. T. Salmon, 1 ♂ (D.M. 2/1019); Leslie Valley Track, Mount Arthur District, Nelson, 2000ft, ex leaf-mould, 20 January, 1948, R. R. Forster, 3 ♂, 1 ♀ (D.M. 2/1044); Upper Takaka, Nelson, ex leaf-mould, 17 May, 1953, C. Holmes, 1 ♂, 1 ♀ (C.M.A. 1109, S1.276, 277).

***Duripelta minuta* n.sp.**

FIGS. 102-109

## MALE:

*Measurements* (in millimetres)

Carapace: Length 0.632, Width 0.490

Abdomen: Length 0.770, Width 0.448

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.420	0.158	0.364	0.252	0.210	1.404
Leg 2	0.434	0.158	0.308	0.252	0.172	1.324
Leg 3	0.378	0.144	0.266	0.224	0.144	1.156
Leg 4	0.462	0.159	0.350	0.336	0.210	1.517
Palp	0.158	0.126	0.098		0.158	0.540

*Colour:* Carapace, sternum, appendages and abdominal scutes golden-brown. The soft portions of the abdomen are creamy-white.

*Carapace:* Smooth, with few pale, inconspicuous hairs on the median surface. Longer than wide in ratio of 9:7, low, evenly rounded when viewed from the side.

*Eyes:* Relatively small, occupying 5/9 of the width of the head region. When viewed from above the posterior row of eyes are strongly procurved but the row formed by the ALE and PME is almost straight. Ratio of ALE:PME:PLE=9:12:11. The PME are contiguous. Lateral eyes sub-contiguous. ALE separated from PME by distance equal to 6/12 diameter of a PME. PLE are separated from each other by distance equal to 33/12 of the diameter of a PME. The clypeus narrow, equal in width to 10/12 of the diameter of a PLE.

*Chelicerae:* Typical, vertical, armed with two pairs of strong teeth, one pair on each margin, and a thin scopula of smooth and serrate hairs on pro-lateral surface.

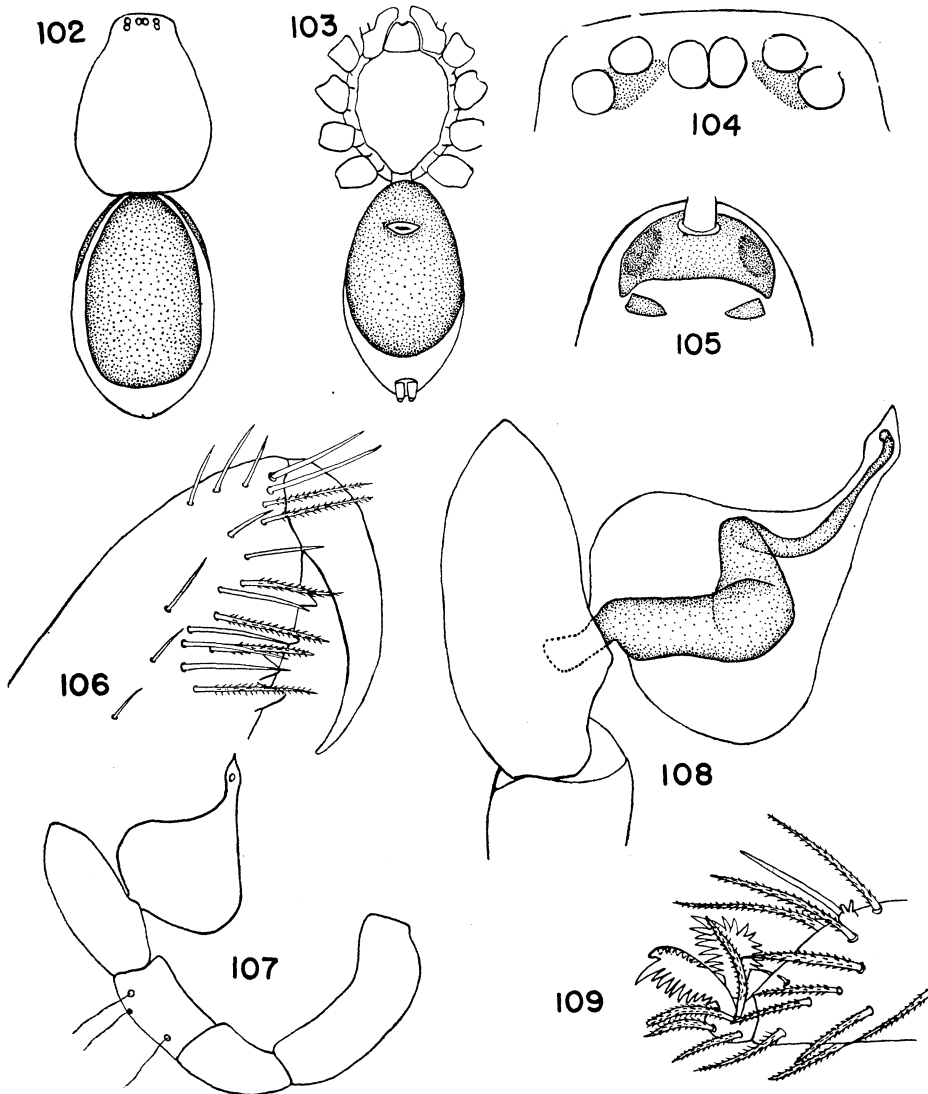
*Maxillae:* Converging slightly over the labium. Twice as long as wide at the base, narrowing to one half of the basal width at about one-third of its length, where the palp is inserted. The outer margin of the distal two-thirds is gently rounded, while the inner margin is straight. Serrula and distal scopula present.

*Labium:* As long as it is wide at the base, lateral margins slightly convergent, with a shallow anterior notch on the anterior surface.

*Sternum:* Almost oval in outline, broader anteriorly, slightly convex and finely granulate. Terminated by a broadly rounded point posteriorly, between coxae 4 which are separated by a distance equal to slightly less than twice their width.

*Legs:* Lacking spines but clothed with fine ciliate hairs. Tarsal tubercle on legs 1 and 2, with a well developed median bristle which is almost as long as the adjacent hairs, and with two small basal bristles. Median bristle smaller on legs 3 and 4. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2, tibia with two in a transverse row at 2/3, metatarsus 1 subdistal. Legs 3 and 4, tibia 3 (2:1) near mid-point, metatarsus 1 subdistal. Coxae 1 and 2 largest, almost twice as long as wide, coxa 3 smallest, rounded, as wide as long. Two claws, homogeneous, with double row of pectenations 9-10





Figs. 102-109. *Duripelta minuta* n.sp. Fig. 102; Dorsal surface of male. Fig. 103; Ventral surface of male. Fig. 104; Eyes of male. Fig. 105; Antero-ventral portion of abdomen of female. Fig. 106; Prolateral surface of female chelicera. Fig. 107; Retro-lateral view of male palp. Fig. 108; Retrolateral view bulb of male showing receptaculum seminis. Fig. 109; Distal portion of tarsus, leg 1 of male.

outer, 7 inner. Well developed onychium with few ciliate hairs which do not form a definite ventral scopula.

*Palp*: Clothed with fine ciliate hairs. Three trichobothria (1:2) on tibia at 1/3. Bulb relatively small. Width less than the length of the tarsus, narrowing evenly to the apical process which widens distally before it terminates sharply.

The receptaculum seminis is somewhat convoluted and opens from the expanded portion of the distal process.

*Abdomen:* Both dorsal and ventral scutes are present. The ventral scute covers most of the ventral surface and extends to the dorsal surface anteriorly where it encircles the petiolus. The genital opening is similar in shape and position to *borealis* and *australis*, but the openings of the spiracles are difficult to see. The dorsal scute extends over 4/5 of the dorsal surface. It is rounded in front where in some specimens it fuses with the ventral scute. Lateral margins are straight and parallel, posterior margin broadly obtuse, slightly curved. Six spinnerets, colulus absent.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.688, Width 0.504

Abdomen: Length 0.914, Width 0.560

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.434	0.130	0.364	0.266	0.196	1.390
Leg 2	0.420	0.144	0.308	0.280	0.196	1.348
Leg 3	0.364	0.144	0.224	0.224	0.196	1.152
Leg 4	0.434	0.146	0.350	0.308	0.224	1.462
Palp	0.158	0.098	0.070		0.144	0.470

*Colour:* Carapace and appendages pale orange-brown. Abdomen uniform creamy white with a pale brown ventral scute.

*Carapace:* As in male.

*Eyes:* The eye group occupies 7/11 of the width of the head. Ratio of ALE:PME:PLE=5:6:6. Both the AME and the lateral eyes are contiguous. ALE separated from PME by 4/6 and PLE separated from PME by 8/6 of the diameter of a PME.

*Palp:* Clothed with fine ciliate hairs. Tibia with 3 (2:1) trichobothria at about mid-length. Tarsal claw smooth.

*Abdomen:* Longer than wide in ratio of 15:9, closely clothed with fine ciliate hairs. Without dorsal scute, but with ventral scute as shown in FIG. 105. Spinnerets as in male.

*Types:* Holotype male (C.M.A. 1147); Allotype female (C.M.A. 1148); Paratypes (C.M.A. 1149, D.M. 2/1045), Ashley Gorge, Canterbury, ex leaf-mould, 16 October, 1949, R. R. Forster.

*Records:* Arthur Pass, Canterbury, 2500ft, ex leaf-mould, 14 January, 1951, E. W. Dawson, 1 ♂ (C.M.A. 1153); Same locality, ex leaf-mould, 10 January, 1949, E. W. Dawson, 2 ♂ (C.M.A. 1154); same locality, ex leaf-mould, 21 December, 1952, F. Corey, 1 ♂ (C.M.A. 1158); same locality, ex moss, 4 December, 1949, R. R. Forster, 1 ♂ (C.M.A. 1155); McGrath's Creek, Arthur Pass, Canterbury, ex leaf-mould, 3 January, 1950, E. W. Dawson, 1 ♀ (C.M.A. 1157); Cooper's Creek, Oxford, Canterbury, ex moss, 8 October, 1953, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1150, S1.328); Chalk Hill, Canterbury, ex leaf-mould, 4 November, 1951, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1151);

Lake Rubicon, Canterbury, ex leaf-mould, 19 November, 1950, R. R. Forster, 1 ♂, 1 ♀ (C.M.A. 1152); Glentui Gorge, Canterbury, ex moss, 20 July, 1952, I.W.T. Munro, 1 ♀ (C.M.A. 1156).

*Remarks:* The distribution of this species is somewhat restricted when compared with that of the remaining two species of this genus. It appears to be only found in a small area of mid-Canterbury and extending west to Arthur Pass. The small size of this species and the different form of the abdominal scutes and palp of the male makes it easily separated from both *borealis* and *australis*.

#### Genus *POUNAMUA* n.gen.

Six eyes, all oval, homogeneous, occupying well over half of width of head. Posterior row strongly recurved. Carapace and sternum smooth, not joined by lateral strips. Abdomen soft, without scutes, with purplish pigment. Genital bulb of male palp usually simple (relatively complex in *complexa*). Female palp with well developed tarsal claw. Legs 4.1.2.3, without spines, prominent onychium with ventral scopula. Two claws, homogeneous, flattened dorso-ventrally, strongly pectinate on both margins. Median teeth of outer margin on claws of legs 3 and 4 greatly enlarged. Tarsal tubercle and 'thorns' present on all pedal tarsi. Six spinnerets, small colulus. Spiracles and opening from lung books difficult to see but apparently closed space.

#### *Type species Pounamua vulgaris* n.sp.

*Pounamua* n.gen. shares with *Ascuta* and *Duripelta* the prominent cheliceral teeth and tarsal claw on the pedipalp of the female which separates it from all overseas genera. It may be separated from both of the New Zealand genera by the elongate median claw on the outer margins of the claws of legs 3 and 4 and by the usually uniform purplish pigmentation of the abdomen.

#### *Pounamua vulgaris* n.sp.

FIGS. 110-119

MALE:

#### *Measurements* (in millimetres)

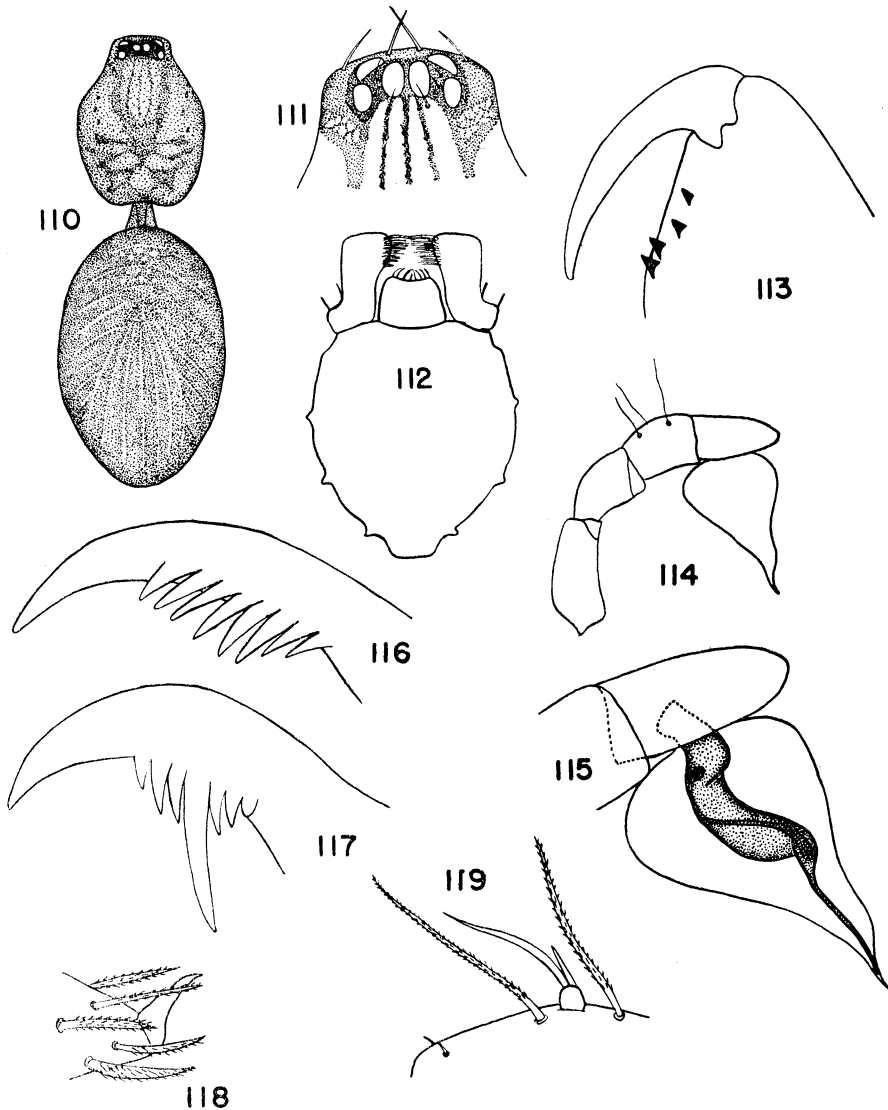
Carapace: Length: 0.714, Width 0.574

Abdomen: Length 0.919, Width 0.574

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.674	0.294	0.532	0.490	0.294	2.284
Leg 2	0.588	0.252	0.490	0.448	0.294	2.072
Leg 3	0.504	0.196	0.350	0.392	0.266	1.708
Leg 4	0.714	0.280	0.504	0.574	0.294	2.366
Palp	0.172	0.098	0.130		0.144	0.544
Chelicera	0.378					

*Colour:* Legs and chelicerae pale brown. Carapace pale brown with black pigment enclosing the eyes and an irregular shading of purplish pigment over the remainder of the carapace. Sternum pale brown with a median longitudinal dark line from which similar lines branch out laterally to the intercoxal areas.

The posterior portion of the median line is forked, each branch leading to the posterior surface of coxae 4. The abdomen is suffused with purple pigment, leaving numerous thin pale lines as shown in Fig. 110. Spinnerets and surrounding area white. Epigastric region pale.



FIGS. 110-119. *Pounamua vulgaris* n. gen. n.sp. Fig. 110; Dorsal surface of female. Fig. 111; Anterior surface of carapace showing eyes. Fig. 112; Sternum, maxillae and labium of female. Fig. 113; Male chelicera showing teeth. Fig. 114; Prolateral view of male palp. Fig. 115; Prolateral view of bulb of male showing receptaculum seminis. Fig. 116; Claw leg 1 of female. Fig. 117; Claw leg 4 of female. Fig. 118; Distal portion of female palp. Fig. 119; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hairs, tarsal tubercle and 'thorns'.

*Carapace:* Without granules, low, evenly rounded when viewed from the side, highest at  $2/3$  of its length. Head region about half as wide as region at level between coxae 2 and 3 where width is equal to  $4/5$  of the length of the carapace. Anterior margin slightly procurved, posterior margin indented.

*Eyes:* All eyes oval in outline, occupying  $3/4$  of the width of the head region. From above the posterior row of eyes appears recurved, while the anterior row, if the PME are included, is less strongly procurved. Ratio of ALE:PME:PLE=9:10:8. The lateral eyes are sub-contiguous. Median eyes separated from each other and from the ALE by a distance equal to  $2/10$  of their diameter. ALE separated from the PME by  $4/10$  and from each other by  $20/10$  of the diameter of a PME. Clypeus short, equal to  $4/10$  of the diameter of a PME.

*Chelicerae:* Vertical. Four well developed teeth, two on promargin, two on retromargin with a scopula of smooth and serrate hairs on pro-lateral surface.

*Maxillae:* Converging slightly beyond the labium. Twice as long as wide at base. Palps inserted at about  $1/4$  of length. Outer margins straight, inner margins incurved distally where there is a scopula of pale hairs.

*Labium:* Free, wider at the base than long in ratio of 9:7, lateral margins sub-parallel, converging slightly distally. Interior margin gently recurved.

*Sternum:* Smooth and shiny, strongly convex, broadly scutiform with small lateral extensions at each coxa. The posterior surface extends back beyond coxae 4, terminating obtusely, separating coxae 4 by a distance equal to  $1\ 1/5$  of their width.

*Legs:* Clothed with fine setose hairs, which are stronger around the distal extremities of the tibiae and metatarsi, where the hair could be termed serrate. Spines absent. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2 with 2 in a transverse row on mid-surface of tibia and 1 on sub-distal surface of metatarsus. Legs 3 and 4 with 3 at  $1/3$  of length of tibia and 1 on subdistal surface of metatarsus. Tarsal tubercle with strong median bristle equal to  $2/3$  of the length of adjacent hairs and a well developed accessory bristle which is approximately  $1/4$  of length of the hairs. Distal pair of thorns present. Two claws, homogeneous, flattened dorso-ventrally, with 7-8 teeth on both margins. The pectenations of the claws of legs 1 and 2 are fairly even but the median tooth of the outer row of pectenations of the claws of legs 3 and 4 is greatly developed, equal to 2 or 3 times the length of the adjacent teeth. Onychium provided with a thin ventral scopula of sharp serrate hair in addition to the usual stout serrate dorsal and lateral hairs. Coxae 1 and 2 equal in length and longer than 3 and 4. Coxa 3 smallest, equal to  $2/3$  of length of coxa 1.

*Palp* (Figs. 114-115): Three trichobothria on tibia, closely spaced just short of the mid-point. Genital bulb pyriform, receptaculum seminis only slightly convoluted, sieve plate well developed.

*Abdomen:* Longer than wide in ratio 11:7, clothed with small ciliate hairs. Scutes lacking, four spiracles near epigastric groove, difficult to see. Six spinnerets in compact group, small colulus present.

## FEMALE:

*Measurements* (in millimetres)

Carapace: Length 0.854, Width 0.674

Abdomen: Length 1.069, Width 0.812

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.632	0.238	0.490	0.420	0.280	2.060
Leg 2	0.618	0.224	0.434	0.420	0.278	1.974
Leg 3	0.504	0.190	0.322	0.364	0.210	1.590
Leg 4	0.660	0.280	0.490	0.546	0.266	2.242
Palp	0.266	0.130	0.130		0.224	0.750
Chelicera						

Similar in structure to male. Palp with three trichobothria on tibia, 1 at 1/3 and 2 in transverse row at 1/2 of the length of the segment; strong, smooth tarsal claw present.

*Types*: Holotype male (C.M.A. 1159); Allotype female (C.M.A. 1160); Paratypes, many ♂ and ♀ (C.M.A. 116, S1.331, 332, D.M. 2/1046), Lake Te Au, near south arm of Lake Te Anau, Fiordland, ex moss, 12-24 January, 1953, R. R. Forster.

*Records*: Stillwater Base Camp, Caswell Sound, ex moss, 12 April, 1949, R. R. Forster, 2 ♂, 1 ♀ (C.M.A. 1169); Caswell Sound, Fiordland, ex moss 2 April, 1949, R. R. Forster, 1 ♂ (C.M.A. 1173); Detention Cove, Dusky Sound, Fiordland, March, 1949, P. C. Bull, 1 ♂ (C.M.A. 1174); Wairaurahiri River area, West Southland, ex moss, 28 May, 1948, G. Weston, 1 ♂, 1 ♀ (C.M.A. 1175, S1.292, 327); Beehive, north side of Lake Manapouri, Fiordland, ex lichens, 6 February, 1946, J. T. Salmon, 1 ♂, 1 ♀ (D.M. 2/1083); Lake Gunn, Eglinton Valley, Fiordland, ex leaf-mould, 29 December, 1943, J. T. Salmon, 1 ♂ (D.M. 2/1084).

***Pounamua vulgaris ramsayi* n.sub.sp.**

Figs. 120-123

## MALE:

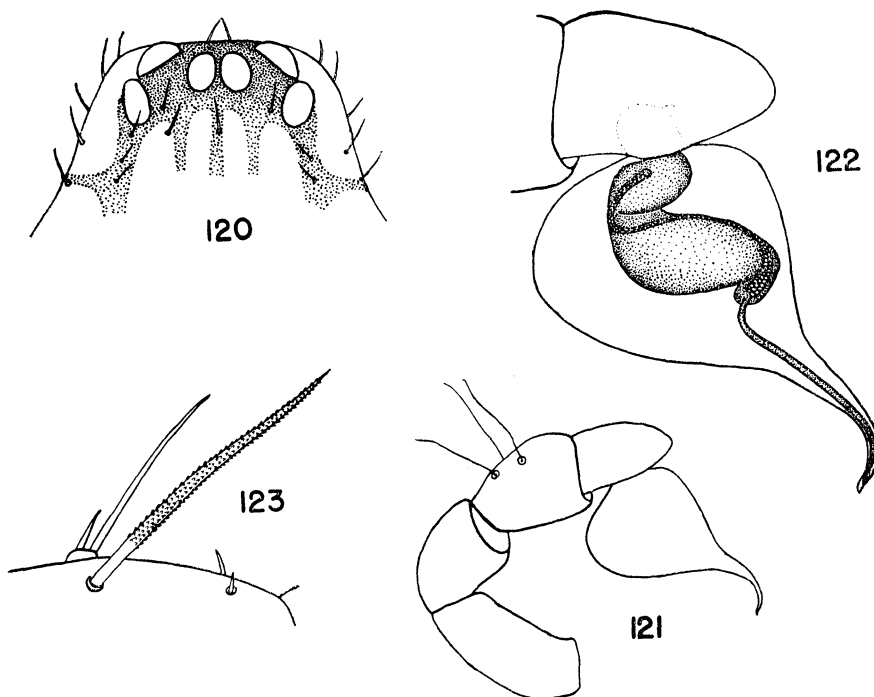
*Measurements* (in millimetres)

Carapace: Length 0.770, Width 0.604

Abdomen: Length 0.840, Width 0.574

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.604	0.224	0.504	0.434	0.280	2.046
Leg 2	0.604	0.222	0.434	0.434	0.280	1.974
Leg 3	0.490	0.172	0.336	0.392	0.238	1.628
Leg 4	0.610	0.210	0.490	0.504	0.281	2.095
Palp	0.224	0.130	0.130		0.144	0.628
Chelicera	0.364					

*Colour*: Appendages pale yellow-brown. Carapace and sternum darker



FIGS. 120-123. *Pounamua vulgaris ramsayi* n.sub.sp. Fig. 120; Anterior portion of carapace showing eyes. Fig. 121; Retrolateral view of male palp. Fig. 122; Retro-lateral view of bulb of male showing receptaculum seminis. Fig. 123; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

brown with black-brown shading. Abdomen uniformly shaded with purple pigment except epigastric region and spinnerets which are white.

*Carapace:* As in *vulgaris*.

*Eyes:* Six eyes, oval. From above the posterior row is strongly recurved, anterior row, when PME are included, more gently procurved. Ratio of ALE:PME:PLE=5:7:6. PME sub-contiguous. Lateral eyes contiguous. The ALE are separated from the PME by a distance equal to  $4/7$  of the diameter of a PME. PLE separated from each other by  $15/7$  and from the PME by  $8/7$  of the diameter of a PME. Clypeus narrow, width equal to  $3/7$  of the diameter of a PME.

Chelicerae, maxillae, labium and sternum as in *vulgaris*.

*Legs:* 4.1.2.3. Clothed with ciliate hairs, no spines. Tarsal tubercle on all tarsi. Median bristle equal to  $2/3$  length of adjacent hairs on legs 1 and 2, but relatively smaller on tarsi 3 and 4 where the median bristle is equal to half of the length of the adjacent hairs. The number and disposition of trichobothria is as for *vulgaris*. The onychium and claws are also similar.

*Palp* (FIGS. 121-122): Tibia with three trichobothria, 1 at  $1/3$ , 2 in transverse row at mid-length. Genital bulb pyriform but distal process more slender and

longer than in *vulgaris*. The receptaculum seminis is stouter and the sieve plate is well developed.

*Abdomen*: As in *vulgaris*.

FEMALE: Unknown.

*Type*: Holotype male, Lake Hankerson, Fiordland, ex leaf-mould, 23 February, 1953, G. Ramsay (C.M.A. 1162, Sl.287).

*Remarks*: This form is readily separated from the nominate form by the stouter palp and the shape of the genital bulb.

***Pounamua hornabrooki* n.sp.**

FIGS. 124-129

MALE:

*Measurements* (in millimetres)

Carapace: Length 0.900, Width 0.660

Abdomen: Length 1.039, Width 0.646

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.660	0.266	0.532	0.434	0.294	2.186
Leg 2	0.574	0.266	0.448	0.420	0.280	1.988
Leg 3	0.532	0.210	0.350	0.364	0.238	1.694
Leg 4	0.660	0.280	0.560	0.518	0.266	2.284
Palp	0.210	0.130	0.130		0.196	0.666
Chelicera	0.322					

*Colour*: Legs and palp light brown, chelicerae dark brown. Carapace darker than legs, with a median horseshoe shaped patch and indistinct radiating lines. Eyes surrounded with black pigment. Dorsal surface of abdomen heavily shaded with purplish pigment which forms a series of seven chevrons (FIG. 124). The ventral surface of the abdomen is pale cream with a few patches of dark pigment behind the epigastric groove and around the spinnerets.

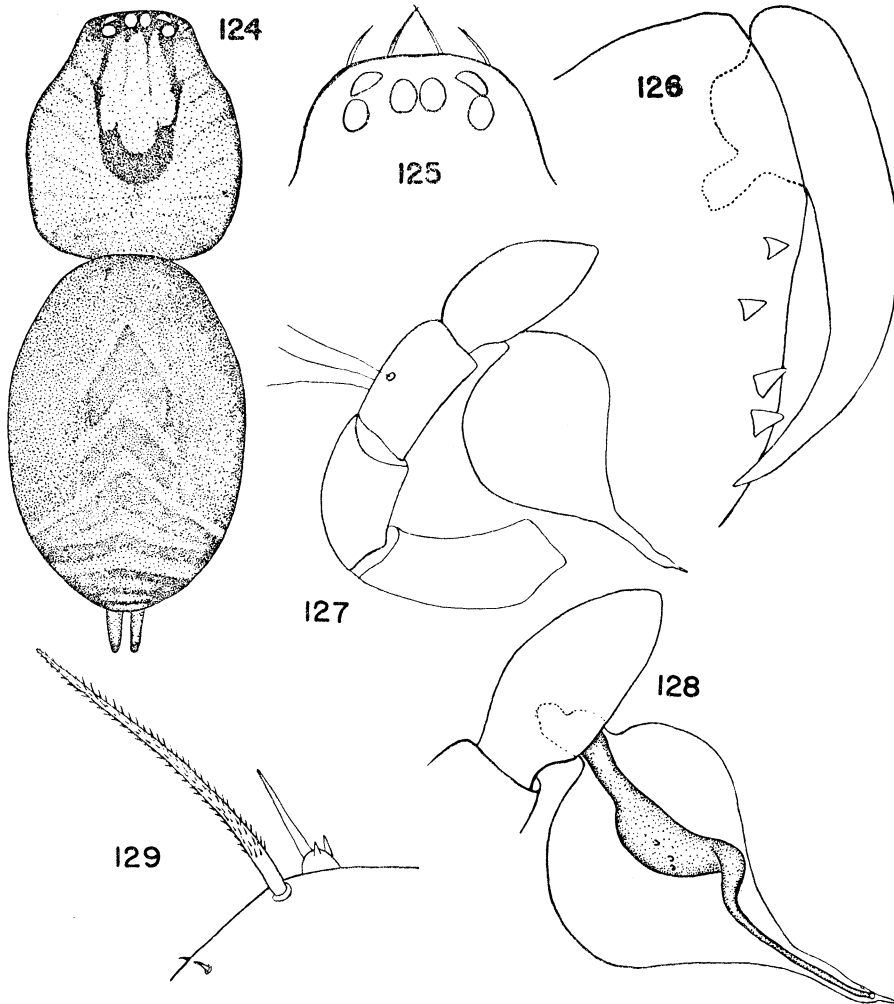
*Carapace*: Low, longer than wide in ratio of 3:2; smooth with a few inconspicuous hairs on the median surface and about the eyes.

*Eyes*: The eye group occupies 4/5 of the width of the head. Ratio of ALE:PME:PLE=9:10:10. PME and the lateral eyes sub-contiguous. ALE separated from the PME by 4/10, and the PLE are separated from the PME by 6/10 of the diameter of a PME. Using the PME as a unit for both anterior and posterior rows, the posterior row is strongly recurved while the anterior row is more gently procurved.

*Chelicerae* (FIG. 126): Vertical, four teeth, in two pairs, larger pair on proximal retro-margin of cheliceral furrow and smaller pair more distally situated on the pro-margin. Usual scopula of smooth and serrate hairs on the pro-lateral surface.

*Maxillae*: Little more than twice as long as wide at base, parallel, not converging over labium. Inner and outer margins beyond the insertion of the palp straight, sub-parallel. Serrula and white scopula present.





FIGS. 124-129. *Pounamua hornabrooki* n.sp. Fig. 124; Body of male from above. Fig. 125; Eyes of male. Fig. 126; Chelicera of male. Fig. 127; Retrolateral view of male palp. Fig. 128; Retrolateral view of bulb of male showing receptaculum seminis. Fig. 129; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

**Labium:** Wider at base than long in ratio of 10:7. Outer margins curved, anterior margin slightly indented.

**Sternum:** Smooth and shiny. Broadly scutiform, slightly convex, longer than wide in the ratio of 5:4. Coxae 4 separated by a distance equal to slightly more than their width.

**Legs:** 4.1.2.3. Clothed with ciliate hairs, which are stouter around the distal extremities of tibia and metatarsus of legs 3 and 4. Tarsal tubercle on all tarsi. On tarsi 1 and 2 the median bristle is less than 1/3 of length adjacent

hairs and there are two short accessory bristles. The median bristle on tarsi 3 and 4 is greatly reduced, being equal in length to the height of the basal tubercle and there appears to be no accessory bristles present. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia, 2 in a transverse row at mid-length. Metatarsus with 1 subdistal. Legs 3 and 4, tibia with 3 (1:2) near mid-length, metatarsus 1 subdistal. Two claws, flattened dorso-ventrally, bipectenate, with six to seven teeth on each margin. The median tooth of outer rows of pectenations on legs 3 and 4 is elongate. Onychium prominent, with ventral scopula of spatulate hairs.

*Palp*: Tibia with three trichobothria, 1 at 1/3, 2 in transverse line at 1/2. Bulb of form shown in FIG. 128, pyriform, embolus slender, constricted beyond opening of receptaculum seminis to terminate sharply. Receptaculum seminis slender, almost straight, seemingly without sieve plate but with 2-3 small tubercles on the median surface.

*Abdomen*: Oval, longer than wide in ratio of 5:3. Clothed with small inconspicuous ciliate hair. Openings from lung books and tracheal spiracles difficult to see, but apparently closely spaced. Six spinnerets, posterior pair longest, anterior pair more conical, median pair small. No colulus observed.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.979, Width 0.742

Abdomen: Length 1.642, Width 1.009

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.700	0.280	0.518	0.476	0.280	2.254
Leg 2	0.574	0.238	0.476	0.434	0.266	1.988
Leg 3	0.560	0.210	0.350	0.406	0.210	1.736
Leg 4	0.714	0.294	0.574	0.588	0.280	2.450
Palp	0.224	0.130	0.130		0.252	0.736
Chelicera	0.406					

Structure similar to male. Tibia of palp with three trichobothria on the dorsal surface, 1 at 1/3 and 2 at 1/2. Tarsal claw small, smooth, almost straight.

*Types*: Holotype male (C.M.A. 1164, S1.291); Allotype female (C.M.A. 1165); Paratypes (C.M.A. 1166, D.M. 2/1047). Manapouri-Doubtful Sound, Fiordland, ex leaf-mould, February, 1953, R. W. Hornabrook.

*Record*: Lake Manapouri, Fiordland, ex leaf-mould, August, 1955, L. O. Simpson, 1 ♂, 1 ♀ (C.M.A. 1167).

*Remarks*: This species appears to be close to *P. vulgaris* n.sp. but is easily separated from it by the chevron markings of the abdomen and the form of the genital bulb of the male.

#### **Pounamua totara** n.sp.

Figs. 130-132

## MALE:

*Measurements* (in millimetres)

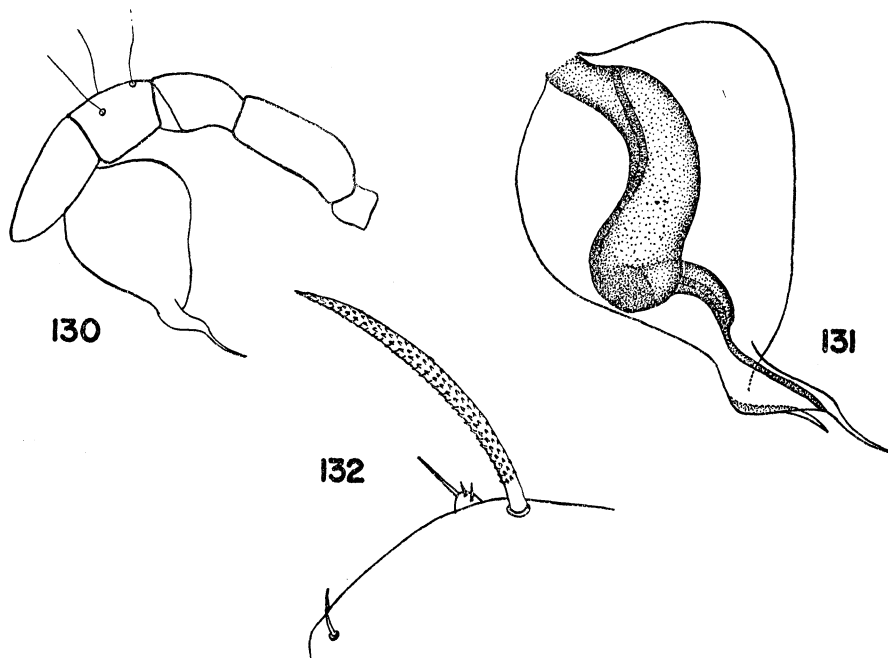
Carapace: Length 0.728, Width 0.632

Abdomen: Length 1.024, Width 0.618

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.728	0.238	0.604	0.490	0.322	2.382
Leg 2	0.646	0.266	0.560	0.504	0.308	2.284
Leg 3	0.588	0.210	0.490	0.504	0.280	2.072
Leg 4	0.742	0.280	0.700	0.742	0.350	2.814
Palp	0.224	0.130	0.130		0.196	0.680

*Colour*: Carapace with blackish brown shading and a dark median U-shaped mark. Sternum, maxillae, labium and appendages uniform pale creamy yellow. Abdomen heavily shaded with purplish-black pigment which is broken by a number of faint pale transverse lines on the dorsal surface and two longitudinal lines on the ventral surface. Spinnerets white.

*Carapace*: Smooth and shiny, with few inconspicuous hairs on the median surface. Low, evenly rounded, longer than wide in ratio of 10:9.



FIGS. 130-132. *Pounamua totara* n.sp. Fig. 130; Retrolateral view of male palp. Fig. 131; Retrolateral view bulb of male showing receptaculum seminis. Fig. 132; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

*Eyes:* The eye group occupies 10/11 of the width of the head. The ratio of ALE:PME:PLE=6:7:6. The PME are contiguous as are the lateral eyes.

The ALE are contiguous with the PME and are separated from each other by a distance equal to 8/7 of the diameter of a PME. The PLE are separated from the PME by a distance equal to 3/7 and from each other by 13/7 of the diameter of a PME. When viewed from above the posterior row is strongly recurved while the anterior margins of the PME are almost level with the anterior margins of the ALE. Clypeus low, only equal to 3/7 of the width of a PME.

*Chelicerae:* Typical, with four teeth and a double row of smooth and ciliate hairs on the prolateral surface.

*Maxillae:* More than twice as long as wide at base, parallel, outer margin curved, inner margin straight. Serrula and scopula present.

*Labium:* As long as wide at the base. Anterior margin slightly notched.

*Sternum:* Scutiform longer than wide in ratio of 17:16. Convex, smooth, with low mounds near the lateral margins opposite coxae 1-3. Posterior margin obtuse, separating coxae 4 by a distance equal to 1 1/2 times their width.

*Legs:* 4.1.2.3. Clothed with fine ciliated hairs, with a ring of stout serrate hairs around the distal extremities of the metatarsi of legs 3 and 4. Trichobothria are present on the tibiae and metatarsi of all legs. Legs 1 and 2, tibia 2: 1 at 1/2, metatarsus, 1 subdistal. Legs 3 and 4, tibia, 1 at 1/4, 2 at 1/2; metatarsus 1 subdistal. Tarsal tubercle with slender median bristle, equal in length to 1/4 of the adjacent hairs on legs 1 and 2 and shorter on legs 3 and 4. There are two small accessory bristles. Distal 'thorns' present. Onychium with ventral scopula of slightly flattened ciliate hairs. Two claws, homogeneous, with 9 teeth on both inner and outer margins. The outer margin appears to be somewhat expanded and the median outer tooth on legs 3 and 4 is elongated.

*Palp* (Figs. 130-131): Clothed with fine ciliate hairs. Tibia with three trichobothria, 1 at 1/3, 2 at 1/2. Genital bulb pyriform, embolus flattened, broad at the base but narrowing to form a sharp slender distal process. Receptaculum seminis rather slender, with a distinct sieve plate, opening at the base of the slender distal process where there appears to be a short spine.

*Abdomen:* Closely clothed with fine, inconspicuous hairs. Longer than wide in ratio of 18:11. Openings from lung books and tracheal spiracles clearly visible separated by a distance equal to 1/14 of the length of the abdomen. Six spinnerets, tubular, in compact group. Colulus not seen.

*Type:* Holotype male. Totara Reserve, Manawatu, ex leaf-mould, 12 May, 1949, R. R. Forster (C.M.A. 1163, S1.290).

*Remarks:* The form of the genital bulb clearly distinguishes this species from all other known species of this genus.

**Pounamua hollowayi** n.sp.

FIGS. 145-145

## MALE:

*Measurements* (in millimetres)

Carapace: Length 0.756, Width 0.574

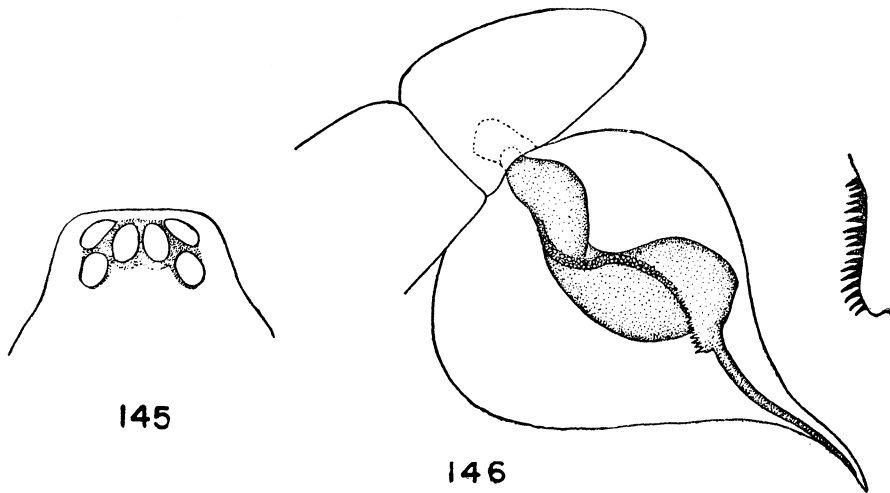
Abdomen: Length 0.660, Width 0.434

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.532	0.210	0.420	0.350	0.266	1.778
Leg 2	0.504	0.224	0.406	0.350	0.252	1.736
Leg 3	0.462	0.196	0.280	0.308	0.210	1.456
Leg 4	0.588	0.238	0.476	0.448	0.268	2.020
Palp	0.210	0.130	0.130		0.130	0.600
Chelicera	0.364					

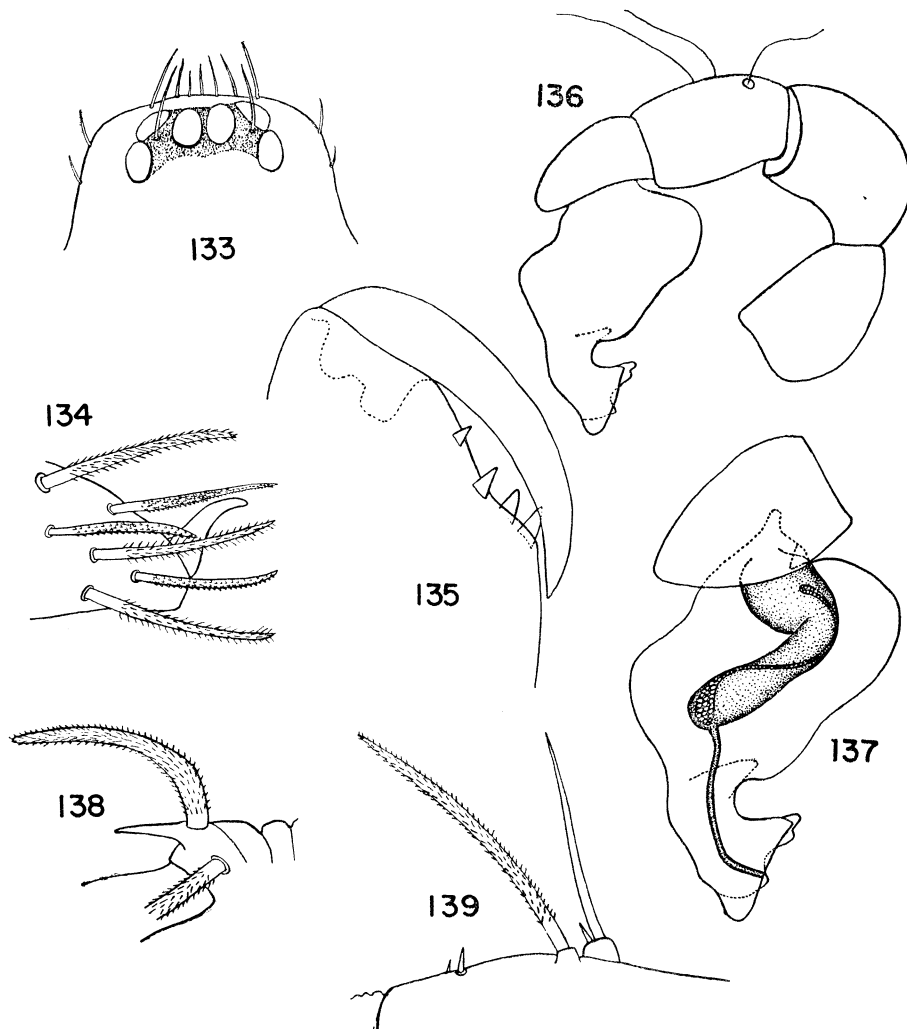
*Colour:* Appendages pale yellow-brown. Carapace and sternum dark brown with black shading. Abdomen uniformly shaded with dark purple pigment, except for the spinnerets and the epigastric region which are creamy white.

*Carapace:* Smooth, relatively low, widest between coxae 2 and 3 where width is equal to 4/5 of length of the carapace. Few small hairs present on the median and anterior surfaces.

*Eyes:* Six eyes, homogeneous, in compact group, taking up 7/10 of the width of the head region. When viewed from above the posterior row is strongly recurved, while a line taken from the anterior margins of the PME and ALE is only slightly procurved. Ratio of ALE:PME:PLE=9:10:9. The lateral eyes and the PME are both contiguous or nearly so. The ALE are separated from the PME by 2/10 and from each other by 10/10 of the diameter of a PME.



FIGS. 145-146. *Pounamua hollowayi* n.sp. Fig. 145; Eyes of male. Fig. 146; Retro-lateral view of male bulb showing receptaculum seminis (distal portion of sieve plate enlarged).



FIGS. 133-139. *Pounamua complexa* n.sp. Fig. 133; Eyes of male. Fig. 134; Distal portion tarsus, female palp. Fig. 135; Chelicera of male. Fig. 136; Retrolateral view of male palp. Fig. 137; Retrolateral view of bulb showing receptaculum seminis. Fig. 138; Disto-dorsal surface of onychium of leg 1 of male, showing spinous projection at base of disto-dorsal hairs. Fig. 139; Disto-dorsal surface of tarsus, leg 1 of male, showing typical hair, tarsal tubercle and 'thorns'.

shiny, strongly convex, with shallow grooves near the lateral margins between coxae 1 and 2, 2 and 3.

*Legs:* 4.1.2.3. Clothed with fine setose hairs, which are stronger and serrate around the distal extremities of the tibiae and metatarsi of legs 3 and 4. Tarsal tubercle on all tarsi, median bristle long, equal to  $\frac{2}{3}$  of length of adjacent hairs. Single small accessory bristle present. Trichobothria on tibiae and metatarsi of all legs. Legs 1 and 2, tibia with 2 in transverse line at midway, meta-

tarsus 1 subdistal. Legs 3 and 4, tibia, 3 (1:2) at 1/3, metatarsus 1 subdistal. Two claws on prominent onychium which is provided with a ventral scopula. Claws flattened dorso-ventrally, homogeneous with 6-8 teeth on each margin. Median outer tooth on claws of legs 3 and 4 relatively long. Coxa 4 longest, coxa 3 shortest, coxae 1 and 2 equal in length.

*Palp*: Short and stout. Patella, tibia and tarsus thickly clothed with serrate hairs. Three trichobothria on dorsal surface of tibia, 1 at 1/3, 2 in a transverse row about halfway. Genital bulb as in FIG. 137, distal portion is expanded and consists of two plates. Receptaculum seminis short, a distal tube almost as long as receptaculum seminis. Sieve plate well developed.

*Abdomen*: Ovoid, slightly more than twice as long as wide, clothed with fine ciliate hairs. Six spinnerets, relatively long, anterior pair closely spaced at base, small colulus present. Openings from lung books and tracheal spiracles difficult to see, but apparently closely spaced on each side of epigastric groove.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.770, Width 0.574

Abdomen: Length 1.244, Width 0.826

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.518	0.196	0.420	0.350	0.238	1.722
Leg 2	0.490	0.158	0.364	0.348	0.238	1.598
Leg 3	0.448	0.172	0.280	0.336	0.158	1.392
Leg 4	0.618	0.210	0.434	0.476	0.224	1.962
Palp	0.224	0.130	0.128		0.222	0.704
Chelicera	0.350					

Similar to male in colour and general structure. Only the following characters need mention.

*Eyes*: Occupying 3/5 of head region. Ratio ALE:PME:PLE=8:11:9. Lateral eyes contiguous, PME contiguous. ALE separated from the PME by 2/11 and the PLE separated from the PME by 3/11 of the diameter of a PME. The ALE are separated from each other by 2/11 of the diameter of a PME.

*Palp*: Tibia with three trichobothria, 1 at 1/3, 2 in a transverse row at half way. Strong tarsal claw, slightly curved, smooth.

*Types*: Holotype male (C.M.A. 1176, S1.293); Allotype female (C.M.A. 1177, S1.294), Cascade Creek, Eglinton Valley, Fiordland, ex moss, 10 February, 1955, R. R. Forster.

*Records*: Key Summit, Eglinton Valley, ex leaf-mould, 26 January, 1946, R. R. Forster, 1 ♂ (D.M. 2/1085); Sinbad Gully, Milford Sound, 24 January, 1946, R. R. Forster, 1 ♂ (C.M.A. 1179).

*Remarks*: The relatively complex structure of the distal portion of the genital bulb and embolus of the male separates this species sharply from all other known forms within this genus. Apart from the structure of the bulb of the male, it conforms closely with the remaining species and does not seem to warrant the establishment of a separate genus.

Genus *KAPITIA* n.gen.

Six eyes, oval, homogeneous, in compact group; posterior row strongly recurved. Carapace smooth, low. Lateral strips absent. Abdomen without scutes or pigment. Genital bulb of male with complex embolus. Female palp without claw. Cheliceral furrow without teeth. Legs 4.1.2.3, without spines, onychium without definite ventral scopula but with a row of flattened, distally clavate hairs. Two claws with single row of pectenations. Tarsal tubercle and 'thorns' absent. Six conical spinnerets, colulus absent. Openings from lung books and tracheal spiracles closely spaced.

Type species *Kapitia obscura* n.sp.

*Kapitia* n.gen. is sharply separated from the remaining four genera recorded from New Zealand by the absence of a pedipalp tarsal claw and of teeth along the margins of the cheliceral furrow. In these respects it agrees with most of the genera recorded from overseas, but in the absence of adequate comparative material and a lack of comprehensive descriptions it is difficult to decide just where its affinities lie, and so I have established this genus for the sole New Zealand species and a further species from Australia which will be described in a subsequent paper.

***Kapitia obscura* n.sp.**

FIGS. 140-144

MALE:

*Measurements* (in millimetres)

Carapace: Length 0.520, Width 0.364

Abdomen: Length 0.780, Width 0.518

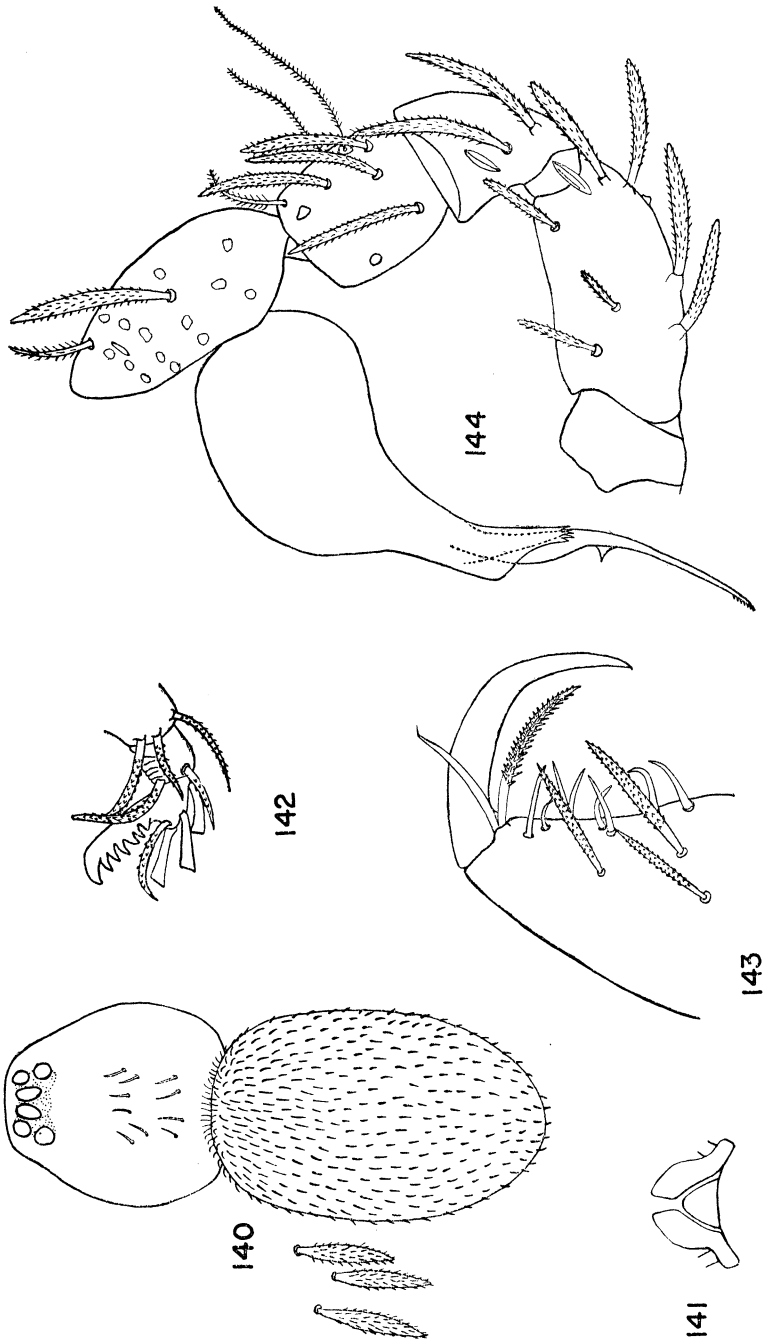
	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.336	0.130	0.266	0.196	0.158	1.086
Leg 2	0.294	0.112	0.224	0.172	0.158	0.960
Leg 3	0.252	0.110	0.172	0.144	0.144	0.822
Leg 4	0.364	0.131	0.322	0.252	0.160	1.239
Palp	0.094	0.042	0.056		0.130	0.326
Chelicera	0.172					

*Colour:* Carapace and sternum reddish-brown. Appendages yellow brown. Abdomen white.

*Carapace:* Smooth and shiny. Low, highest at 2/3 of its length. Width in front slightly less than 1/2 greatest width between coxae 2 where the ratio of length:width=6:5.

*Eyes:* The eye group occupies 2/3 of the width of the head. The lateral eyes and the PME are sub-contiguous. Ratio of ALE:PME:PLE=6:7:6. The ALE are separated from the PME by 2/7 and from each other by 6/7 of the diameter of a PME. The PLE are separated from the PME by 1/7 and from each other by 10/7 of the diameter of a PME. When viewed from above the posterior row is strongly recurved, while the row formed by the ALE and PME is more gently procurved. The clypeus is equal in height to 1/7 of the width of a PME.





FIGS. 140-144. *Kapitia obscura* n. gen. n.sp. Fig. 140; Dorsal surface of male. Fig. 141; Labium and maxilla of male. Fig. 142; Onychium and one claw, leg 1 of female. Fig. 143; Female chelicera. Fig. 144; Prolateral view of male palp.

*Chelicerae*: Vertical, without boss. There are a number of smooth hairs along the furrow but teeth are absent. Few scattered hairs on both pro-lateral and retrolateral surfaces and a pair of strong pro-distal hairs. one smooth, the other serrate.

*Maxillae* (FIG. 141): Directed across the labium, more than twice as long as wide at base. Palp inserted at 1/4 where width is equal to 1/2 width at base. Scopula and serrula present.

*Labium*: Sub-triangular in outline, almost twice as wide at base as long.

*Sternum*: Smooth and shiny. Scutiform, longer than wide in ratio of 5:4. Lateral margins entire without lateral extensions. Posterior margin obtuse, separating coxae 4 by a distance equal to 1 1/2 times their diameter.

*Legs*: 4.1.2.3. Clothed with small but stout ciliate hairs. Trichobothria present on tibiae and metatarsi of all legs. Legs 1 and 2, tibia 1 at 1/3, 1 at 2/3, metatarsus 1 subdistal. Leg 3, tibiae, 1 at 1/3, 2 in transverse row at 1/2, metatarsus 1 subdistal. Leg 4, tibia, 1 at 1/4, 1 at 2/3, 1 subdistal, metatarsus 1 subdistal. There appears to be no tarsal tubercle present, although there is a small club-shaped hair on the disto-dorsal slope. Onychium well developed with three pairs of strong serrate hairs and several flattened, distally clavate setae along the ventral surface which are not numerous enough to be termed a scopula. Two claws, homogeneous, each with a single row of six teeth.

*Palp* (FIG. 144): Clothed with stout ciliate hairs. Tibia with 2 trichobothria at approximately 1/3 of the length of the segment. The bulb is sub-pyriform, somewhat longer than wide, with a long slender embolus which is provided with a strong tooth at midway and a distal row of small denticulations. The base of the embolus is partially enclosed by a prominent flattened process of which the apical margin is serrate. The receptaculum seminis is difficult to distinguish but it appears to be a simple sac filling the bulb and opening subdistally.

*Abdomen*: Clothed with short, stout ciliated hairs. Ovoid, longer than wide in ratio of 3:2. Openings from lung books and tracheal spiracles separated by a distance equal to 1/16 of the length of the abdomen. Six spinnerets conical, placed in a compact group. No colulus present.

#### FEMALE:

##### *Measurements* (in millimetres)

Carapace: Length 0.520, Width 0.364

Abdomen: Length 1.092, Width 0.676

	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
Leg 1	0.350	0.130	0.252	0.196	0.172	1.100
Leg 2	0.294	0.128	0.238	0.194	0.144	0.998
Leg 3	0.224	0.098	0.158	0.144	0.142	0.766
Leg 4	0.378	0.132	0.308	0.224	0.158	1.200
Palp	0.102	0.070	0.070		0.126	0.368
Chelicera	0.172					

The female is similar in appearance and structure to the male. There

appears to be only a single trichobothrium on the tibia of the pedipalp situated at 1/3 of the length of the segment. There is no tarsal claw present.

*Types:* Holotype male (C.M.A. 1192, S1.301); Allotype female (C.M.A. 1193, S1.302); Kapiti Island, ex leaf-mould, May, 1947, R. R. Forster.

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A NEW SPECIES OF *PYCNOGONUM*  
FROM BANKS PENINSULA  
NEW ZEALAND

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ABSTRACT

A NEW species of *Pycnogonum* is described from the littoral zone of Banks Peninsula. *Pycnogonum amovigerum* n.sp. is remarkable for the absence of ovigers in both sexes, the eggs being carried as a single flattened mass cemented to the ventral surface of the males.

The Pycnogonidae of New Zealand are not well known. Stock, 1954, described the first species of the family to be recorded from this country, *Pycnogonum planum*, from material collected by Th. Mortensen at Kaipara Harbour in 1915.

Family PYCNOGONIDAE Wilson, 1878

Genus *PYCNOGONUM* Brünnich, 1764

*Pycnogonum anovigerum* n.sp.

FIGS. 1-5

*Trunk*: Elongated oval in outline, integument finely mammilated, first trunk segment somewhat rhombic, half as long as wide. Eye tubercle near anterior margin of first trunk segment, low, rounded, eyes well pigmented. Dorsal posterior margin of segments 1-3 raised into a low ridge with a distinct median tubercle. There is also a distinct ridge on the dorso-distal portion of the lateral processes of segments 1-3. (FIGS. 1, 3.)

*Proboscis*: Large, 1/3rd as long as trunk, basal half cylindrical, distal half bluntly conical.

*Abdomen*: Clavate, conical at tip in holotype (female), rounded in paratypes (males), reaching beyond the posterior margins of the second coxae of the fourth legs. The greatest width of the abdomen is at a point level with the inner postero-lateral extremities of the first coxae of the fourth legs.

*Third Leg*: Short, first coxa slightly wider than lateral process; femur with two dorsal swellings, and a single marked ventral one; femur longer than