REFERENCES.

DAVID, Sir T. W. E., 1923: "Antiquity of Man in Tasmania." *P. & P. Roy. Soc. Tas.*, 1923, p. 109.

DAVID, Sir T. W. E., 1926: "Pleistocene Glaciation Near Strahan." *Report A.A.A.S.*, Vol. 17, 1924, pp. 91-103.

JOHNSTON, R. M., 1893: "The Glacial Epoch of Australia." *P. & P. Roy. Soc. Tas.*, 1893, esp. pp. 95-102 and pp. 119-127.

LEWIS, A. N., 1923: "Notes on Mt. Anne and Weld Valley." *P. & P. Roy. Soc. Tas.*, 1923, p. 9.

LEWIS, A. N., 1926: *Report A.A.A.S.*, Vol. 17, 1924, pp. 85-90.

MOORE, T. B., 1895: "Further Discovery of Glaciation, West Coast, Tasmania." *P. & P. Roy. Soc. Tas.*, 1895, p. 56.

NYE, P. B., and LEWIS, A. N., 1928: "Handbook for Tasmania." *A.A.A.S.*, Hobart Meeting, 1926, title "Geology."

TAYLOR, Griffith, 1921: "Some Geographical Notes on Mt. Field." *P. & P. Roy. Soc. Tas.*, 1921, p. 188.

A CONTRIBUTION TO THE STUDY OF TASMANIAN COPEOGNATHA.

By

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Six Text Figures.

(Read 11th December, 1933.)

Probably few Tasmanian insects have been so generally neglected by students as those usually small but plentiful forms which comprise the order Copeognatha or Psocoptera. The Australian and New Zealand species have been studied by MacLachlan, Enderlein, and Tillyard, but the literature contains only isolated references to Tasmanian forms.

Among the species dealt with in the present paper are two archaic forms of more than ordinary interest. One of them closely resembles *Sphæropsocus künowi* Hagen, a fossil species found in Baltic amber, whilst the other is a member of the rare and primitive family, Lepidopsocidæ.

Suborder PARAPSOCIDA Tillyard, 1926.

Family LEPIDOPSOCIDÆ.

Genus *Tasmanopsocus* n.g.

Diagnosis.—Head very hairy. Thorax, abdomen, and legs clothed with both scales and hairs. Three ocelli present. Antennæ with 40 joints. Apical joint of maxillary palpi hatchet-shaped. Tibial segments of the legs armed with long powerful spines, as in the genus *Echinopsocus* Enderlein. Tarsi three-jointed. Forewings bluntly pointed and short, reaching only to the middle of the abdomen. The venation is not constant, but the arrangement of the veins as shown in Fig. 2 B holds good in most specimens of the genotype. Sc is not fused with R. The radial sector (Rs), which is unbranched, leaves R near the middle. M is fused with Cu_1 towards the base. Both M and Cu_1 are branched dichotomously. Cu_2 is absent. In the wings of some specimens 1A fades out towards the base. In other cases it is well developed and occasionally branched. As in the genus *Echmepteryx* Aaron, there is no distinct pterostigma. The

wings are clothed with hairs, coarse bristles, and striated, cultriform scales. The coarse bristles are minutely barbed. They occur along the veins and in the costal, anal, and apical regions of the wing. Each bristle rises from a cup-like socket. (Fig. 2 H).

The hindwings are minute, membranous, scale-like vestiges not extending beyond the metathorax.

Genotype.—*Tasmanopsocus litoralis* n.s.

Habitat.—Southern Tasmania.

Tasmanopsocus litoralis n.s.

Female.—Length of body, 2·9 mm.; length of forewings, 1·2 mm.; length of antennæ, 2·4 mm.

Colour.—Body light-brown, with a silky sheen, due to the presence of scales. Epicranium and frons marked with a dark-brown pattern, as shown in Fig. 2 A. Clypeus, clypeolus, labrum, and genæ dark-brown, almost black. Distal joint of maxillary palpi dark-brown, other joints light-brown. Antennæ light-brown. Femora dark-brown. Tibiæ light-brown, encircled with two broad dark-brown rings (Fig. 1 A). Tarsi light-brown, becoming darker towards the base. Abdomen light-brown, with a darker median longitudinal band on the dorsal side.

Head large and triangular. Surface very hairy. Paired eyes, finely pubescent, 0·34 mm. in diameter, composed of numerous ommatidia, and occupying the posterior angles of the head. Epicranial and frontal sutures well marked. Three small ocelli present and somewhat widely spaced. Antennæ long and slender, consisting of 40 segments, which are subequal in length. From the third outwards the segments possess minute hairs, arranged in a series of rings, and a whorl of four long slender spines. (Fig. 1 E). Maxillary palpi, four-jointed. The apical joint is hatchet-shaped, slightly longer than the second joint, and provided with a number of sensory pits. The second joint has a small dentiform spine on the inner side near the base (Fig. 2 A). All the joints are clothed with fine hair. Styliform appendages tridentate (Fig. 1 B). Mandibles as shown in Fig. 1 D.

Thorax.—Prothorax moderately large and visible from above. Protergum with a transverse fringe of coarse erect hairs, which form tufts at the sides. Mesothorax separated from metathorax, and much larger than either pro-

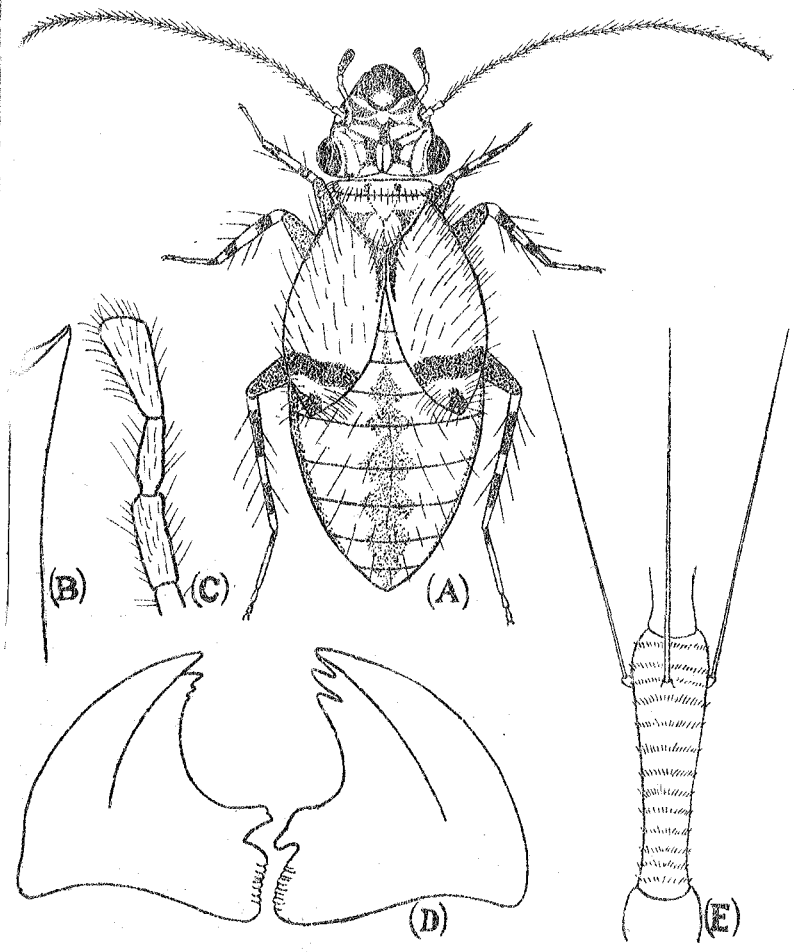

Fig. 1. ***Tasmanopsocus litoralis*** **n.s.—(A) Dorsal view of insect without the scales. (B) Styliform appendage. (C) Maxillary palpus. (D) Mandibles. (E) Joint from antennæ.**

thorax or metathorax. It is covered with scales between the forewings. Legs clothed with long hairs and elongate, leaf-like, striated scales (Fig. 2 D). Tibiæ armed with long powerful spines, as in *Echinopsocus erinaceus* Enderlein (p. 331, 1903). Tarsi three-jointed, the basal joint being longer than the other two joints combined. The apical joint is slightly curved dorso-ventrally. The apical and middle joints finely pubescent; the basal joint with a row of six short spines on the outer side (Fig. 2 G). The tarsal claws are long and almost straight, with a single small tooth before the apex (Fig. 2 G). At the base of the claws is a serrated structure resembling that which Enderlein calls a "Gleitsole" in the case of *Copostigma indicum* Enderlein (p. 232, 1903). The leg segments have the following measurements in millimetres:—

	Femur.	Tibia.	Tarsal Joints.		
			Basal.	Middle.	Apical.
Leg I.	0·61	0·56	0·23	0·05	0·08
Leg II.	0·61	0·64	0·27	0·07	0·08
Leg III.	0·75	1·00	0·41	0·08	0·08

Wings.—Forewings bluntly pointed and reaching to the fifth abdominal segment. Dorsal surface of the wing is covered with cultriform striated scales measuring 0·087 mm. long (Fig. 2 E). Each scale has about 19 striæ. Coarse bristles, which are finely barbed, occur along the veins and on the costal, anal, and apical regions of the wing. One bristle measured 0·18 mm. long. The anal margin and the tip of the wing are marked with black, whilst a broad black transverse bar crosses the wing in the apical third (Fig. 1 A). Venation is described in the diagnosis of the genus given above. Hindwings are minute vestiges of 0·11 mm. long.

Abdomen clothed with scales and long dark hairs. Most of the scales are tridentate and marked with 18 or 19 distinct striæ (Fig. 2 C). One of these scales measured 0·066 mm. long. The distal half of the scale is dark-brown, the base light-brown. Some of the abdominal scales are leaf-like, resembling those on the legs.

Habitat.—Opossum Bay, near South Arm, 22nd August, 1933. The Domain, Hobart, 23rd September, 1933.

The specimens found at Opossum Bay were taken on the underside of stones, among the dry rubbish which collects above high-tide mark. This rubbish seemed to consist chiefly of the dead branchlets of sheoaks (*Casuarina quadrivalvis*, Lab.) growing near the shore. Specimens collected on the Domain, Hobart, were also found under stones in the vicinity of sheoaks.

When disturbed *Tasmanopsocus litoralis* runs with surprising speed. It does not live in colonies, nor does it spin a web. Specimens collected on 22nd August were placed in tubes with some of the dry debris amongst which the insects were found. On the 24th August three eggs were laid in one of the tubes. The eggs were not deposited in a mass, but laid singly, and attached to dry grass-stalks, pebbles, &c. One of the eggs measured 0·66 x 0·30 mm., and had the form shown in Fig. 2 F. The chorion is ornamented with longitudinal ridges and a hexagonal pattern. On the dorsal surface is a sagittal flange, which opens longitudinally when the egg hatches. Covering the outer surface of the chorion is a delicate semi-transparent white membrane, which is perhaps merely the solidified secretion used for attaching the egg at the time of laying. However, it is easily separated from the chorion. When laid the egg is white, and remains white for seven days. The chorion then becomes brownish-purple. This colour-change shows faintly through the outer membrane, giving the egg a purple tint.

On the 19th September two eggs were found to have hatched. The first larval instar measures 0·64 mm. long, and already shows the head markings of the adult. It possesses no wings. The body is devoid of scales, but is lightly clothed with long brown bristles. The antennæ are nine-jointed, and the joints are furnished with a whorl of long bristles, as in the imago.

Type.—Holotype in Australian Museum, Sydney.

Family ATROPIDÆ.

Genus *Atropos* Leach.

Atropos pulsatoria (Linn.).

This introduced species is common in houses in Tasmania and in many other parts of the world.

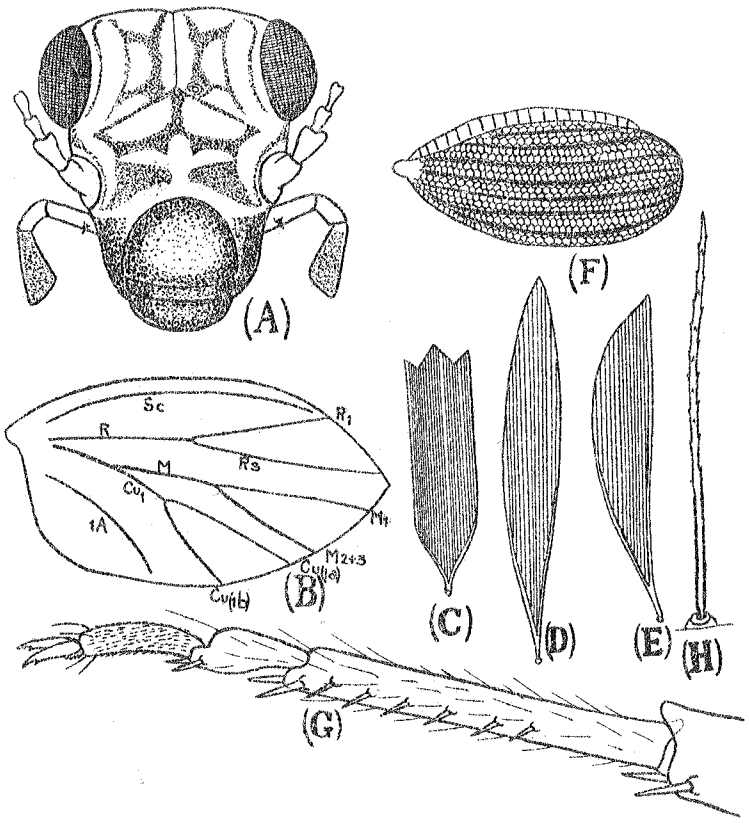

Fig. 2. *Tasmanopsocus litoralis* n.s.—(A) Front view of head. (B) Forewing descaled. (C) Abdominal scale. (D) Leg scale. (E) Wing scale. (F) Egg. (G) Tarsus of hind leg. (H) Barbed bristle from forewing.

Genus *Lepinotus* Heyden.

Lepinotus inquilinus Heyden.

This species is also widely distributed, and often occurs among old books and papers which have not been disturbed for some time. It is sometimes found in dry grass tussocks in the Tasmanian bush. Tillyard (1923, p. 176) states that specimens found in New Zealand have 15 to 17 joints in the antennæ and are usually without forewings. Tasmanian specimens usually possess the forewings and have 26 joints in the antennæ, thus agreeing more closely with the type specimen, in reference to the antennæ of which Hagen (1883, p. 311) states: "ich zähle bei *L. inquilinus* (Heyden's Type) bestimmt 25 Glieder, doch kann noch eines mehr sein."

Lepinotus tasmaniensis n.s.

(Text Fig. 3.)

Female.—Length of body, 1·50 mm.; length of forewings, 0·34 mm.; length of antennæ, 1·23 mm.

Colour.—Body and appendages have a uniform colour, which varies from light-brown to dark-brown in different specimens.

Head.—Large and triangular. Width, including eyes, 0·48 mm.; length, 0·46 mm. Hind margin slightly curved. Surface smooth and clothed with a few hairs. Eyes large and placed at the posterior angles of the head. They measure 0·15 mm. in diameter, and consist of numerous ommatidia. Epicranial suture distinct. Frontal sutures faintly marked. Ocelli absent. Antennæ long, thin, and consisting of 26 joints. The first two basal joints are longer and stouter than the rest, which are short and subequal in length. Each has a whorl of stiff hairs round its distal third. These hairs are slightly longer than the segment. There are no secondary rings. Maxillary palpi four-jointed. The apical joint club-shaped and about equal in length to the second joint. First and third joints very short. The whole appendage is clothed with a fine pubescence and a few long hairs. The styliform appendages are bidentate, the two teeth being almost equal in length (Fig. 3 C).

Thorax.—Prothorax large and visible from above. Clothed with a few hairs. Meso and metathorax separate. Legs pubescent. Tarsi three-jointed. A row of five or six

short spines on the basal tarsal joint. Tarsal claws devoid of teeth, but furnished with a long bristle, which is inserted in the base of the claw. Empodium well developed. The measurements of the leg segments are given in millimetres in the following table:—

	Femur.	Tibia.	Tarsal Joints.		
			Basal.	Middle.	Apical.
Leg I.	0·22	0·26	0·087	0·045	0·042
Leg II.	0·23	0·26	0·100	0·045	0·042
Leg III.	0·27	0·34	0·123	0·045	0·042

Wings.—Forewings without veins, and reduced to rounded, tegminised, brown flaps measuring 0·34 x 0·31 mm. On the dorsal surface of the wing are about 50 coarse erect bristles, each of which rises from a rounded socket. Radiating from each socket are seven or eight lines, which meet with similar lines from neighbouring sockets and form a reticulate pattern over the wing (Fig. 3 B). The pattern is seen best in wings treated with 5 per cent. caustic potash solution. One of the bristles measured 0·09 mm. long. Hindwings are completely absent.

Abdomen.—Brown, oval, 0·56 mm. wide, and clothed with short hairs. Long bristles project at the sides of each segment (Fig. 3 A). Supra-anal plate and paraprocts not fused with the last tergite. In specimens treated with caustic potash solution and mounted in balsam, two star-like bodes of a chitinous nature may be seen inside the abdomen (Fig. 3 D). If the internal reproductive organs are dissected out and carefully examined, it will be found that the star-like bodies are attached to the walls of the spermatheca. Hagen (1883, p. 304) has described a similar structure in *Atropos (Clothilla) pulsatoria* (Linn.), and suggests that it is used for liberating the spermatozoa in the spermatophore received from the male.

Habitat.—Trevallyn, Launceston, 11th July, 1933. Not uncommon in dry grass tussocks.

Type.—Holotype in Australian Museum, Sydney.

Lepinotus tasmaniensis resembles *Lepinotus inquilinus* in many respects, but differs from it in the wing-pattern and in possessing chitinous star-like bodies on the wall of the spermatheca.

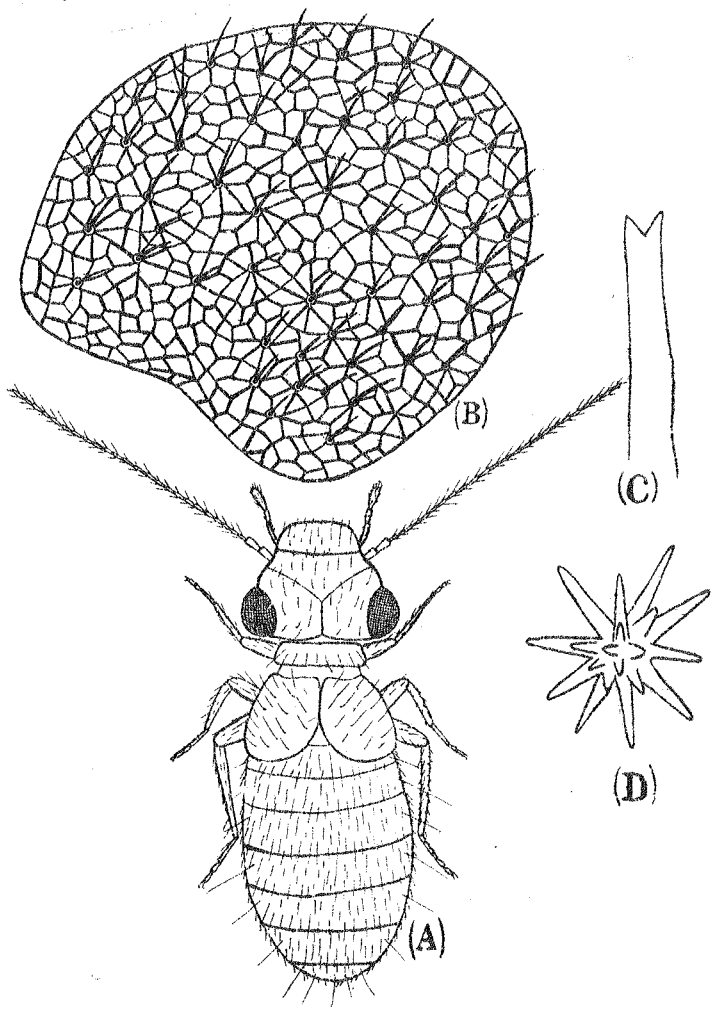

Fig. 3. ***Lepinotus tasmaniensis*** **n.s.—(A) Dorsal view of insect. (B) Forewing, showing reticulate pattern. (C) Styliform appendage. (D) Star-like body on wall of spermatheca.**

Family TROCTIDÆ.

Genus *Troctes* Burm.

Troctes divinatorius (Müller).

This small species is plentiful throughout Tasmania, both in houses and in the bush.

Genus *Sphæropsocus* Hagen.

This genus was established in 1882 for the reception of a remarkable Psocopteron found in Baltic amber. It contains only the genotype, *Sphæropsocus künowi* Hagen. This little insect has had a varied taxonomic history. Hagen (1882, p. 230) placed it "zu Atropina." Kolbe (1883, p. 190) placed it in a separate group, Sphæropsocini. Enderlein (1903, p. 208) stated that it belonged to the Psoquillidæ, but later (1911, p. 350) he transferred it to the family Liposcelidæ (= Troctidæ).

Sphæropsocus recens n.s.

(Text Fig. 4.)

Female.—Length of body, 0·94 mm.; length of forewings, 0·63 mm.; length of antennæ, 0·66 mm.

Colour.—Wings, thorax, head, legs, and antennæ very dark brown, almost black. Dorsal and ventral surface of abdomen cream-coloured in the anterior two-thirds. The posterior third is brown.

Head.—Nearly as long as broad. Surface coarsely granular, being covered with small tubercles and a few minute hairs. Eyes small, 0·06 mm. in diameter, consisting of ten ommatidia, and placed a short distance in front of the posterior angles of the head. The interspaces between the ommatidia are covered with small granulations, resembling those on the surface of the head. Frontal sutures indistinct. Epicranial suture well marked. Ocelli absent. Antennæ thin and slightly longer than the forewings. They consist of 15 joints, of which the first two are stouter than the rest. The fourth and fifth joints are much longer than any of the others. Each joint from the third outwards is marked with a series of secondary rings and furnished with a few short stiff hairs. Maxillary palpi four-jointed. The apical joint is elongated and oval in shape, the third joint short, the second joint almost equal in length to the apical joint, and the basal joint very short. The whole appendage is clothed

with fine hairs. The styliform appendages tridentate (Fig. 4 F). The shape of the mandibles is shown in Fig. 4 B.

Thorax.—Prothorax large and visible from above. Tergum and pleura of mesothorax fused to those of metathorax. Legs finely granular and lightly clothed with short hairs. The segments of the legs have the following measurements in millimetres:—

	Femur.	Tibia.	Tarsal Joints.		
			Basal.	Middle.	Apical.
Leg I.	0·15	0·18	0·06	0·03	0·04
Leg II.	0·15	0·17	0·06	0·03	0·04
Leg III.	0·16	0·24	0·08	0·04	0·04

The tarsal claws have an internal tooth before the apex (Fig. 4 E).

Wings.—The forewings (Fig. 4 A) are oval and hard, resembling the elytra of a beetle. They extend laterally beyond the sides of the abdomen and reach to the end of the body, so that the abdomen is completely hidden from above. The venation is considerably reduced. Sc, R, M, and Cu_1 run almost parallel from the base to the apex of the wing. Sc, however, fuses with R near the base. M fuses with Cu_1 at the base and again at the apex. The radial sector is given off from R near the apex, and runs round the margin of the wing to joint the distally fused portion of M and Cu_1. The veins Cu_2 and 1 A appear to be absent. Between the veins the dorsal surface of the wings is ornamented with a reticulate pattern of bordered pits and granulations. There are a few minute hairs along the veins and round the margin of the wings. Hindwings are absent.

Abdomen.—On removing the wings the first two abdominal tergites are seen to be brown and strongly chitinised. Segments 3 to 7 are cream-coloured and soft. In the pleural membrane on each side is a longitudinal fold, in which lie the abdominal spiracles. Only six pairs of spiracles are present. They are situated in segments 2 to 7 respectively. Each spiracle opens on a small brown chitinous tubercle. The tergites of the last three abdominal segments are fused together into a brown, strongly chitinised plate, the posterior margin of which gives rise to a small triangular telson and a pair of latero-ventral paraprocts. On the ventral surface the first five abdominal segments are soft and membranous, but the sternites of segments 6 to 8 are fused into a hard brown oval plate. This plate conceals the genital aperture and a minute T-shaped subgenital plate.

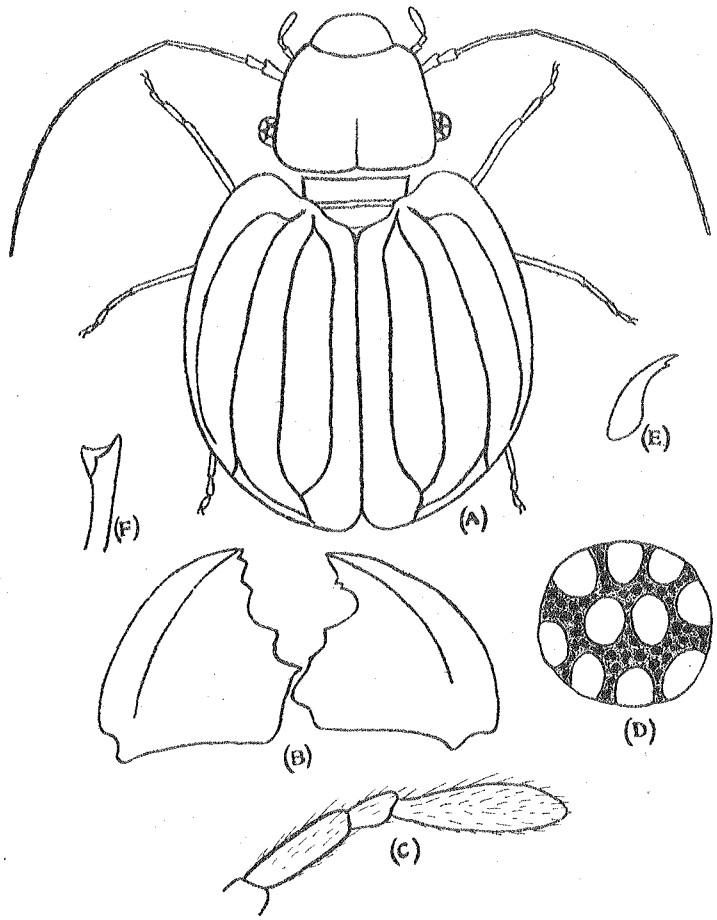

Fig. 4. *Sphæropsocus recens* n.s.—(A) Dorsal view of insect. (B) Mandibles. (C) Maxillary palpus. (D) Eye showing the ten ommatidia. (E) Tarsal claw. (F) Styliform appendage.

Habitat.—Trevallyn, Launceston, 11th July, 1933. A number of specimens were collected from dry grass tussocks on the hills near the Gorge. I have also collected it at Bellerive and on the Domain, near Hobart.

Type.—Holotype in Australian Museum, Sydney.

This interesting little insect resembles the fossil form, *Sphæropsocus künowi* Hagen so closely that it appears to belong to the same genus. The fossil species is stated to have the meso- and metathorax separated. In the Tasmanian species they are fused, the line of union being marked by a deep groove. Apart from this and a difference in the wing venation, there is a striking similarity between the fossil insect found in the Baltic amber of the Lower Oligocene period and the species living in Tasmania at the present day.

Suborder EUPSOCIDA Tillyard, 1926.

Family MYOPSOCIDÆ.

Genus *Myopsocus* Hagen.

Myopsocus australis Brauer.

This species has already been recorded from Tasmania by Tillyard (1923, p. 187). It is plentiful under stones among she-oaks on the Domain, Hobart. Large numbers of larvæ, together with adults, may be found during the early part of October. The eggs are laid in masses. They are cream-coloured, and each egg measures about 0·50 x 0·31 mm. The surface of the egg is quite smooth and without pattern. The shape is long oval. Eggs laid on 27th September hatched early in the following December.

Myopsocus nitens n.s.

(Text Fig. 5.)

Female.—Length of body, 2·6 mm.; length of forewings, 2·3 mm.; length of antennæ, 2·3 mm.

Colour.—Head, antennæ, mesothorax, and gonapophyses dark-brown and shining, as if polished. Legs lighter brown. Abdomen light-brown, marked with dark-brown at the sides.

Head triangular, smooth, and clothed with a few short hairs. Width of epicranium between the eyes, 0·46 mm. Epicranial suture distinct; frontal sutures faintly marked.

Three ocelli close together, the median ocellus smaller than the others. Clypeus large and strongly convex. Clypeolus and labrum well developed. Antennæ filiform, consisting of 13 joints. The third and fourth joints are equal in length and much longer than the other joints. Maxillary palpi small and four-jointed, the apical joint club-shaped.

Thorax.—Prothorax small, 0·35 mm. wide, and almost hidden between head and mesothorax. The scutum of the mesothorax is 0·52 mm. wide, and divided into the usual anterior and lateral portions by grooves. Legs with stiff bristles on the tibiæ and on the basal joint of each tarsus. The ventral side of the basal joint of the tarsi of the third pair of legs has a comb consisting of seventeen ctenidia. There are no ctenidia elsewhere. Tarsal claws with a small tooth near the apex and a long bristle at the base. Empodium well developed, enabling the insect to run with ease on the smooth side of a glass tube. The measurements of the leg-joints in millimetres are as follows:—

	Femur.	Tibia.	Tarsal Joints.		
			Basal.	Middle.	Apical.
Leg I.	0·52	0·66	0·20	0·05	0·09
Leg II.	0·55	0·73	0·23	0·05	0·09
Leg III.	0·66	1·07	0·37	0·07	0·11

Wings hyaline, and held at a broad angle over the back. The forewings reach just beyond the end of the abdomen. The wing-membrane punctate. The veins very coarse and dark-brown. The distal third of the pterostigma marked with very dark brown and clothed with a few short hairs. There are also a few hairs along the veins and round the wing just inside the margin. The forewings are blotched with brown, as shown in Fig. 5 A. The hindwings are almost without pigment, except for the basal half of the anterior margin, which is brown. Length of hindwings, 1·8 mm.

The venation has the form shown in Fig. 5 A and Fig. 5 B. It is typical of the genus *Myopsocus*.

Abdomen oval, with its posterior end somewhat pointed. It is clothed with a few short hairs.

Type.—Holotype in Australian Museum, Sydney.

Habitat.—New Town, Tasmania. One adult specimen and several immature forms collected under boards and stones during spring and summer, 1933.

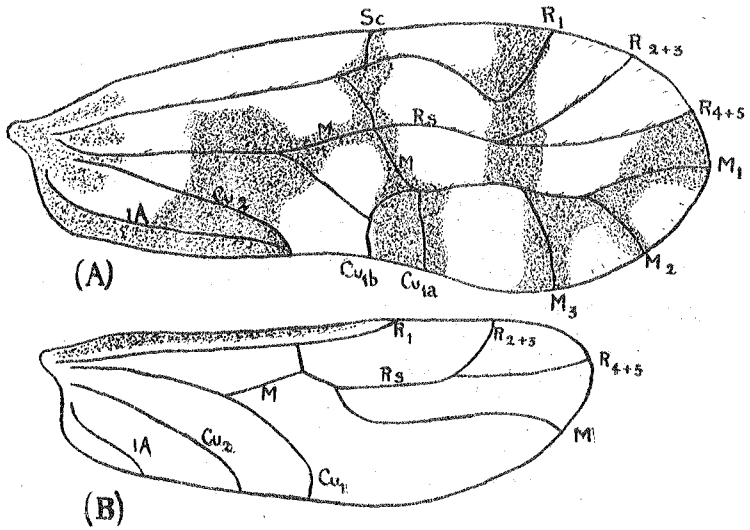

Fig. 5. *Myopsocus nitens* n.s.—(A) Forewing. (B) Hindwing.

Myopsocus nitens differs from other members of the genus in its size, shiny appearance, relatively short wings, and in having the ctenidia confined to the basal segment of the third tarsi. Moreover, it does not congregate in numbers, but is found singly, running about under stones. Its eggs are also laid singly, and not in masses.

Family CÆCILIIDÆ.

Genus *Cæcilius* Curtis.

Cæcilius brunellus Tillyard.

Several mature and immature specimens of this Psocopteron were obtained while beating mimosa shrubs *(Acacia riceana)* along the banks of the New Town Rivulet. It was taken during the month of January.

Habitat.—Lenah Valley, Tasmania.

This species has been previously recorded from New Zealand (Tillyard, 1923, p. 190).

Genus *Ectopsocus* MacLachlan.

Ectopsocus congener Tillyard.

This interesting little species occurs in large numbers under the dry bark of gum-trees. The Tasmanian form agrees very closely with the holotype, both in its wing-venation and in possessing a few small hairs on the veins. Like the preceding species it has been previously recorded from New Zealand (Tillyard, 1923, p. 192).

Habitat.—The Domain, Hobart. Immature specimens collected on 10th June, 1933, were kept on pieces of bark in glass tubes. They spun a fine web over the surface of the bark. Most of them had reached maturity before the end of July.

Genus *Peripsocopsis* Tillyard.

Peripsocopsis milleri Tillyard.

This species was taken among the dry debris and stones at the foot of she-oak trees. It has been previously recorded from New Zealand (Tillyard, 1923, p. 195).

Habitat.—The Domain, Hobart, 17th August, 1933.

Genus *Micropsocus* Enderlein.

Micropsocus nerens n.s.

(Text Fig. 6.)

Female.—Length, including wings, 1·62 mm.; length of forewing, 1·16 mm.; length of antennæ, 1·16 mm.

Colour.—Light-brown. Abdomen with transverse lines of darker brown. Ocelli reddish, surrounded with black rings.

Head triangular, broad, and clothed with short hairs. Sutures well marked. The three ocelli close together, the median ocellus being much smaller than the others. Antennæ 13-jointed, the third joint being much longer than the others. Joints from the third outwards provided with long bristles (Fig. 6 C). Palpi small and normal.

Thorax.—Prothorax hidden; mesothorax with the normal divisions of the scutum. Legs yellowish-brown, clothed with hairs and short bristles on the tibiæ. The bristles each rise from a black socket. Tarsi two-jointed; the basal joint of the hind tarsi with a row of seven ctenidia on its ventral side. Claws small and well curved. The leg-joints have the following measurements in millimetres:—

	Femur.	Tibia.	Tarsal Joints.	
			Basal.	Apical.
Leg I.	0·27	0·32	0·08	0·07
Leg II.	0·31	0·35	0·09	0·08
Leg III.	0·34	0·50	0·15	0·08

Wings.—Forewings extending beyond the end of the abdomen and held in a flat arch over the back. Hyaline punctate and colourless, except at the distal ends of the veins, where there are small cloudy patches. Distal and basal ends of the pterostigma brownish. Veins and wing margin clothed with a few hairs. Venation as shown in Fig. 6 A. Hindwings 0·92 mm. long, hyaline, colourless, and devoid of hairs, except for a fringe of five hairs between the distal ends of R_{2+3} and R_{4+5} (Fig. 6 B.)

Abdomen.—Oval, pointed behind.

Habitat.—The Domain, Hobart, 30th September, 1933. One specimen, collected from a dry grass tussock. When placed in a glass tube it immediately spun a web.

Type.—Holotype in Australian Museum, Sydney.

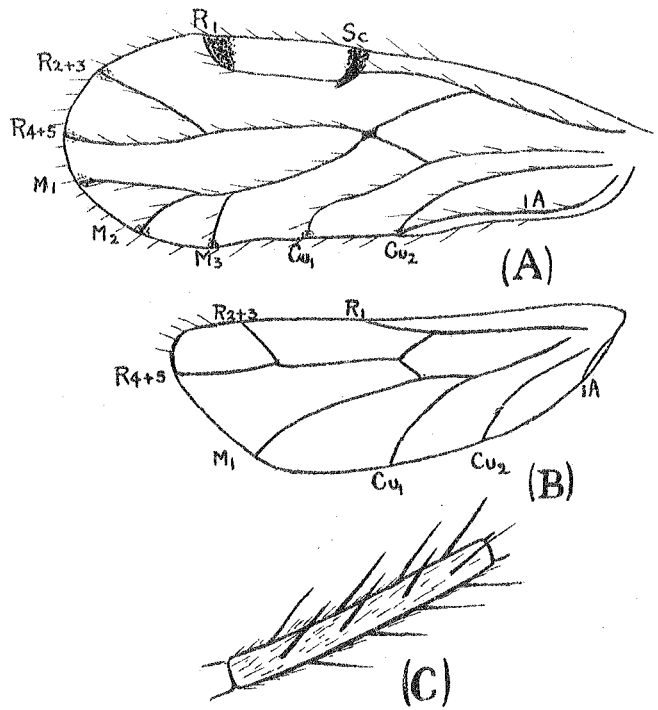

Fig. 6. *Micropsocus nerens* n.s.—(A) Forewing. (B) Hindwing. (C) Joint from antennæ.

This species resembles *M. myrmecophilus* Enderlein, but differs from it in colour, in the number of ctenidia on the hind tarsi, and in the relative lengths of the two joints of the hind tarsi.

REFERENCES.

ENDERLEIN, G., 1903: "Die Copeognathen des Indo-Australischen Faunengebietes." *Annales historico-naturales Musei Nationalis Hungarici.* Band I.

ENDERLEIN, G., 1911: "Die fossilen Copeognathen und ihre Phylogenie." *Palaeontographica,* Bd. LVIII.

HAGEN, H., 1882: "Beiträge zur Monographie der Psociden." *Stettiner Entom. Zeitung,* pp. 217-237 and 265-300.

HAGEN, H., 1883: "Beiträge zur Monographie der Psociden. Familie Atropina." *Stettiner Entom. Zeitung,* pp. 283-332.

KOLBE, H., 1883: "Neue Beiträge zur Kenntniss der Psociden der Bernstein-Fauna." *Stettiner Entom. Zeitung,* pp. 186-191.

TILLYARD, R. J., 1923: "Monograph of the Psocoptera or Copeognatha of New Zealand." *Trans. N.Z. Inst.,* Vol. 54, pp. 170-196.

TILLYARD, R. J., 1926: "Insects of Australia and New Zealand." (Angus & Robertson Ltd., Sydney.)