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The Aradidae of New Zealand (Hemiptera, Heteroptera)

1. Introduction; the Aneurinae

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Abstract

THE Aneurinae of New Zealand are revised and keys are given for the separation of the species.

INTRODUCTION

THE Aradidae or flat bugs and bark bugs are mycetophagous insects commonly found under bark, usually of dead trees, in leaf litter, or sometimes on exposed fungi. In their natural habitat nearly all Aradidae are inconspicuous, being exceedingly flattened, mostly brownish in colour and often mottled. Some are covered with secretions which obscure the cuticle, while others have the integument covered with particles from their surroundings.

The classification followed here is that used by Usinger and Matsuda (1959), who recognized eight major groups within the family Aradidae. They regarded these as sub-families for, as they pointed out, although these are not exactly equivalent in degree of distinctness, they are as nearly so as most higher categories of a given level. Therefore, they considered that the elevation of one or several, but not all of these to family rank would distort the actual relationships. No advantage would appear to be gained by elevation of them all to family rank, and the biological and structural unity of the group known for so long as Aradidae would be lost.

The eight sub-families are the Aneurinae, Mezirinae, Carventinae, Isoderminae, Calisiinae, Aradinae, Chinamyersiinae and Prosympiestinae. Of these, five are widely distributed but three have an interesting restricted distribution. The Isoderminae have an Antarctic distribution, being confined to southern South America, New Zealand and Australia. The Prosympiestinae are found in New Zealand and Australia and the Chinamyersiinae are confined to New Zealand. New Zealand is the only region of the world with representatives of each of the sub-families of Aradidae. Usinger and Matsuda (1959) have said that this country stands as a natural storehouse of Aradid types unequalled by any other island or continent.

Much of this work was carried out at the British Museum (Natural History) during a period of leave granted by the University of Auckland. I am indebted to the Trustees of the British Museum and the Keeper of Entomology, Mr J. P. Doncaster, for permission to study in the Museum. I am especially grateful to Dr W. E. China for generous help and hospitality and to Professor R. L. Usinger, of the University of California, who sent me all the New Zealand specimens in his care. The following institutions have lent material: Auckland War Memorial Museum; Plant Diseases Division, D.S.I.R., Mt Albert; Dominion Museum, Wellington; Entomology Division, D.S.I.R., Nelson, and the Canterbury Museum, Christchurch. To these and to the individual collectors who have given or lent me specimens I wish to express my gratitude.

Acknowledgment is made of a grant from the University Grants Committee for entomological studies in the Tongariro National Park. Aradidae collected during this investigation will be dealt with in these papers.

Usinger and Matsuda (1959) give full descriptions and keys to the sub-families and genera of the Aradidae of the world. For the sake of completeness and the convenience of readers I have thought it advisable to include shortened sub-family descriptions and generic keys and I should like to acknowledge that these are based largely on those in Usinger and Matsuda.

THE ANEURINAE

Usinger and Matsuda recognize only two genera in this sub-family: *Aneurus* Curtis and *Aneuraptera* Usinger and Matsuda. *Aneurus* has a world-wide distribution while the monotypic genus *Aneuraptera* is confined to New Zealand. *Aneurus* is macropterous and has a well developed scutellum, while the strikingly distinct *Aneuraptera* is micropterous and lacks a scutellum.

To date only one species of *Aneurus* has been recorded from New Zealand. This paper describes two more species, *Aneurus brouni* Buchanan White is re-described and additional information on *Aneuraptera cimiciformis* Usinger and Matsuda is presented.

In the lists of specimens examined the following abbreviations are used for the names of institutions housing the collections: A.U., University of Auckland; B.M., British Museum (Nat. Hist.); C.M., Canterbury Museum, Christchurch; D.M., Dominion Museum, Wellington; E.D., Entomology Division, D.S.I.R., Nelson; H.M., Helsinki Museum, Finland.

Subfamily ANEURINAE Douglas and Scott, 1865, *British Hemiptera*,
pp. 26, 267.

The Aneurinae have well developed genae extending nearly or quite to the apex of the clypeus. The rostrum arises well behind the apex of the head in an open excavation or atrium. The anterior dorsal scent gland opening is conspicuous even in adults and is not, or only slightly displaced backwards; the other openings are reduced. The dorsal surface of the abdomen has glabrous areas distributed as follows: two in the connexival area of each of segments 3 to 7, two adjacent to these on the abdominal terga and one on either side of the middle. Hemelytra, when present, consist almost entirely of membrane, being sclerotized only at the extreme base. When a scutellum is present it is almost always broad and rounded behind.

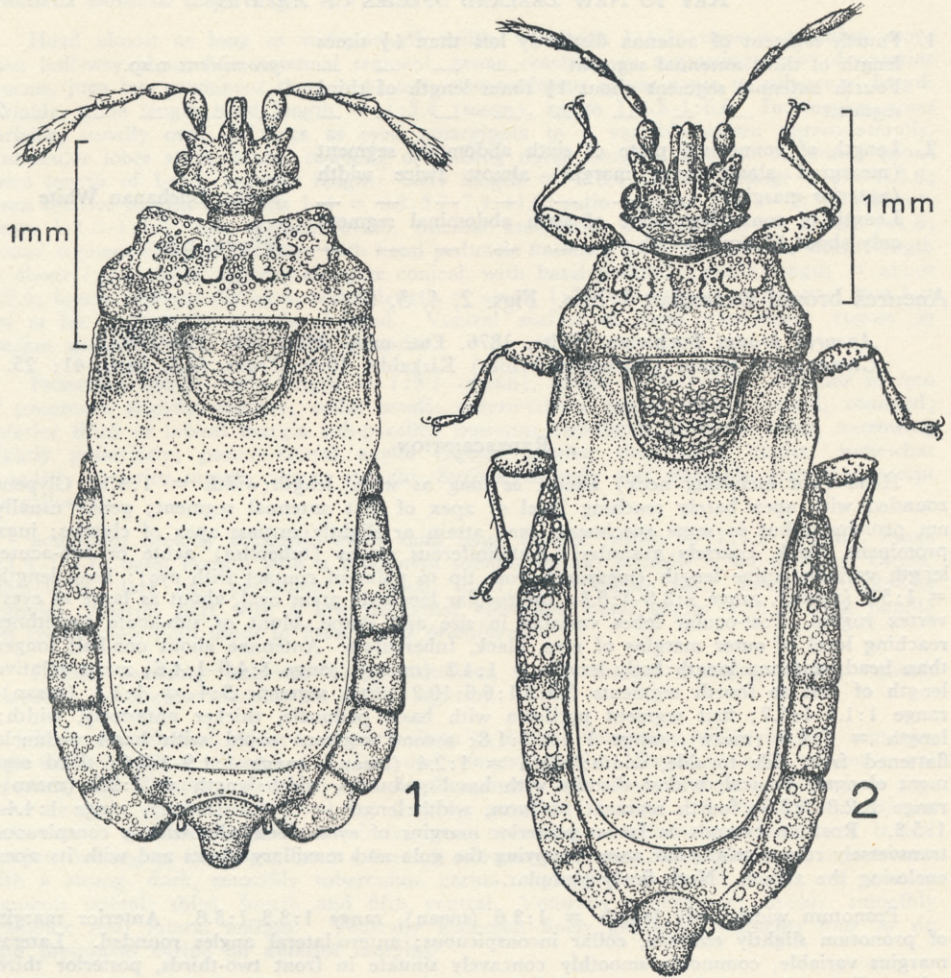


FIG. 1.—*Aneurus salmoni* n.sp. Holotype, male (legs omitted).

FIG. 2.—*A. brouni* Buchanan White, Male.

KEY TO GENERA OF ANEURINAE

- Scutellum well developed; macropterous *Aneurus* Curtis (1825).
- Scutellum absent; micropterous *Aneuraptera* Usinger and Matsuda (1959).

Genus ANEURUS Curtis

Aneurus Curtis, 1825, *British Entomology* 2, p. 86. (For Synonymy see Usinger and Matsuda, 1959)

KEY TO NEW ZEALAND SPECIES OF *Aneurus*

- | | | | | | |
|---|-------|-------|-------|-------|------------------------------|
| 1. Fourth segment of antenna distinctly less than $1\frac{1}{2}$ times length of third antennal segment | ..... | ..... | ..... | ..... | <i>prominens</i> n.sp. |
| Fourth antennal segment about $1\frac{1}{2}$ times length of third segment | ..... | ..... | ..... | ..... | ..... 2 |
| 2. Length of connexival plate of sixth abdominal segment (measured along inner margin) almost twice width (anterior margin) | ..... | ..... | ..... | ..... | <i>brouni</i> Buchanan White |
| Length of connexival plate of sixth abdominal segment only about $1\frac{1}{2}$ times width | ..... | ..... | ..... | ..... | <i>salmoni</i> n.sp. |

Aneurus brouni Buchanan White. Figs. 2, 4, 5, 6

Aneurus brouni Buchanan White, 1876, Ent. mon. Mag., 13: 105-106.

Ctenoneurus brouni (Buchanan White) Kirkaldy, 1909, Trans. N.Z. Inst., 41: 25.

REDESCRIPTION

Head (not including neck) almost as long as wide, length:width = 1:1.1. Clypeus rounded with apex barely reaching level of apex of first antennal segment; genae usually not prominent but in some specimens may attain or slightly surpass apex of clypeus; juga prominent, black, coarsely granular. Antenniferous spines (tubercles) acute or sub-acute, length variable, spine length (measured from tip to point of contact with eye): head length = 1:5.0 (mean), range 1:3.8-1:5.8. Interocular laevigate areas oval, about as large as eyes; vertex rugose. Post-ocular lobes variable in size and shape, blunt or sub-acute sometimes reaching level of outer margins of eyes, black, tuberculate. Antennae about one-half longer than head; antenna length:body length = 1:4.2 (mean), range 1:4.0-1:4.6; mean relative length of first to fourth segments 5.5:5.1:6.6:10.2; ratio segment 3:4 = 1:1.5 (mean), range 1:1.5-1:1.7; first segment pyriform with basal peduncle, thicker anteriorly, width:length = 1:1.6 (mean), range 1:1.5-1:1.8; second segment ovoid with basal peduncle flattened from side to side, width:length = 1:2.4 (mean), range 1:1.9-1:2.7; third segment elongate conical, widest distally with basal peduncle, width:length = 1:3.2 (mean), range 1:2.8-1:3.6; fourth segment fusiform, width:length = 1:4.7 (mean), range 1:4.4-1:5.3. Rostrum extends as far as posterior margins of eyes. Ventrally with a conspicuous transversely rugose triangular area occupying the gula and maxillary plates and with its apex enclosing the atrium. Neck finely granular.

Pronotum width:body length = 1:3.6 (mean), range 1:3.3-1:3.8. Anterior margin of pronotum slightly concave, collar inconspicuous; antero-lateral angles rounded. Lateral margins variable, commonly smoothly concavely sinuate in front two-thirds, posterior third sub-parallel with posterior angle rounded; sometimes anterior third sub-parallel, posterior two-thirds abruptly wider, sub-parallel or convex. Posterior margin widely and shallowly cut into. Pronotum generally coarsely granulate except on callosities.

Scutellum broadly rounded, wider than long, length:width = 1:1.4 (mean); lateral margins subparallel in basal third, remainder broadly rounded, almost semicircular, surface smoothly granulate rugose; basal margin with prominent carina; laterally a submarginal carina, prominent basally, breaking up into granules in apical half; basal angles with a conspicuous black tooth.

Hemelytra with corium reaching at least half-way along scutellum; membrane reaching on to 7th tergum, sometimes almost to posterior border; basally costal margin almost straight with low carina.

Abdomen elongate oval; maximum width:length (measured in mid-line from apex of scutellum to level with posterior extremities of seventh abdominal segment) = about 1:1.4.

First connexival segment short, triangular, remainder elongate, approximately rectangular; in sixth segment ratio of width (anterior margin): length (inner margin) = 1:1.8 (mean), range 1:1.5-1:2.0. Posterior angles of connexival plates scarcely or not at all projecting, posterior borders elevated. Upper surface of connexivum with smooth usually broad granules, commonly arranged in elevated rows near lateral border on third segment and sometimes fourth and fifth; segments 3-7 with a pair of glabrous areas in inner half of

each, comprising a circular anterior area located near the anterior margin and a larger oval posterior area located about three-fifths of the way along the segment; in seventh segment the posterior area may approach a circular shape. Spiracles on third, fourth and fifth segments ventral, on second and seventh segments lateral, on sixth segment lateral but not always visible from above.

Ventrally abdomen finely granular with scattered large flat smooth granules; segments four to six with prominent carina on anterior margins. Connexiva with broad smooth granules closely arranged and scale-like; some specimens with a sub-marginal fold in one or more of segments three to five.

Male. Connexival plate of seventh segment with inner margin straight or feebly concave for greater part, posterior extremity curved inwards; outer margin almost parallel with inner margin, slight concavity at spiracle, postero-lateral angle broadly rounded; ratio of width (anterior margin) to length (from inner anterior angle to most posterior part of plate) = 1:1.9 (mean), range 1:1.7–1:2.1. Lobes (processes of segment eight) short, cylindrical, spiracles terminal. Pygophor about as broad as long, base evenly rounded, sides sinuate, apex rounded, surface with large smooth granules, closely arranged; pygophor length about equal to or slightly greater than length of seventh connexival plate (measured from inner anterior angle to most posterior part of plate).

Female. Connexival plate of seventh segment with basal three-quarters of inner margin straight, apical quarter at an angle of 45° to basal part; outer margin with basal three-quarters sub-parallel to inner margin, feebly concave at spiracle; apical quarter curved inwards to meet apex of inner margin; ratio of width (anterior margin) to length (from inner anterior angle to most posterior part of segment) = 1:1.9, range 1:1.8–1:2.2. Genital segment with basal margin almost straight mesially, rounding laterally to widely diverging feebly sinuate lateral margins; apical angles acute; posterior margin feebly concave; basal and lateral margins with a strong dark carina; segment surface with coarse smooth granules; spiracles on short broad papillae.

General Colour. Usually dark reddish brown; some specimens yellow brown.

Length of Body. Males, 3.7–4.7mm Females, 4.0–5.2mm.

Specimens Examined. Type, male, New Zealand (B.M.); 2 Cotypes, female, New Zealand (B.M.); 1 ♀ Otago (Lewis), Sharp Coll. (B.M.); 1 ♂ 1 ♀ Picton, J. J. Walker (B.M.); 3 ♀ ♀ Port Chalmers, J. J. Walker (B.M.); 1 ♀ Mt Arthur 2.1.21, T.C., J. G. Myers Coll. (B.M.); 1 ♂, Silverstream, Wellington, 18.7.20 J. G. Myers (B.M.); 2 ♀ ♀ 1 ♂ Port Chalmers, Oct. 1901–Nov. 1902, J. J. Walker (B.M.); 3 ♂ ♂ 1 ♀ Picton, Oct. 1901–Nov. 1902, J. J. Walker (B.M.); 1 ♀ Makara 29.1.22, T. Cockroft (B.M.); 5 ♀ ♀ 4 ♂ ♂ Orepuki, 10.12.10, G. Howes (B.M.); 1 ♀ New Zealand, Sharp Coll. (B.M.); 2 ♂ ♂ Dun Mt 2,000ft, 27.11.27 E. S. Gourlay (E.D.); 2 ♂ ♂ 1 ♀ Mt Algidus 4,500ft, 6 and 12.12.59, J. I. Townsend (E.D.); 2 ♂ ♂ 96a (no other details) (E.D.); 4 ♀ ♀ Dun Mt 2,000ft, 31.8.20, A. Philpott (E.D.); 2 ♂ ♂ Titirangi, Auckland, 2.12.50, T. E. Woodward; 4 ♀ ♀ 8 ♂ ♂ Canaan Track, Nelson, 25.10.48, T. E. Woodward; 1 ♂ Jcn. Casey Ck. and Poulter R., 4.4.53, J. Dugdale (C.M.); 1 ♀ 2 ♂ ♂ Kowhai Bush 18.5.52, J. Dugdale (C.M.); 1 ♂ Okuku Pass 23.4.50, R. Forster (C.M.); 3 ♀ ♀ 2 ♂ ♂ Canterbury, Hood's Bush, Malvern Hills, 5.3.53, R. R. Forster (C.M.); 1 ♂, no details, Bergroth Coll. (H.M.); 9 ♀ ♀ 8 ♂ ♂ Ohakune Mountain Rd., Mt Ruapehu, 21.2.63, J. G. Pendergrast (A.U.).

A. brouni has a wide distribution through New Zealand.

Aneurus prominens n.sp. Figs. 3, 9, 10, 11

Larger than *brouni*.

Head almost as long as wide, length:width = about 1:1.1. Clypeus reaching little more than half-way along first antennal segment, genae almost reaching apex of clypeus, juga less prominent than in *brouni*. Antenniferous spines stout, acute, longer than in *brouni*, spine length:head length = 1:3.75 (mean), range 1:3.5–1:4.0. Interocular laevigate areas

circular, slightly larger than eyes. Postocular lobes sub-acute, not surpassing outer margin of eyes. Antenna twice length of head; antenna length:body length = 1:3.5 (mean, 2 specimens); relative lengths segments 1-4 = 7.0:5.0:8.5:10.0; ratio segments 3:4 = 1:1.2 (mean, 4 specimens); first segment pyriform, thicker anteriorly, width:length = about 1:1.8; second segment pyriform with short peduncle somewhat flattened from side to side, width:length = about 1:2.0; third segment elongate conical, widest apically and with a basal peduncle, width:length = about 1:3.2; fourth segment fusiform, width:length = about 1:3.4. Rostrum reaches posterior margin of head. Ventral surface of head with a transversely rugose triangular area occupying the gula and maxillary plates and with its apex enclosing the atrium, less conspicuous than in *brouni* and with a longitudinal ridge on each side of a rostral groove. Neck finely granular.

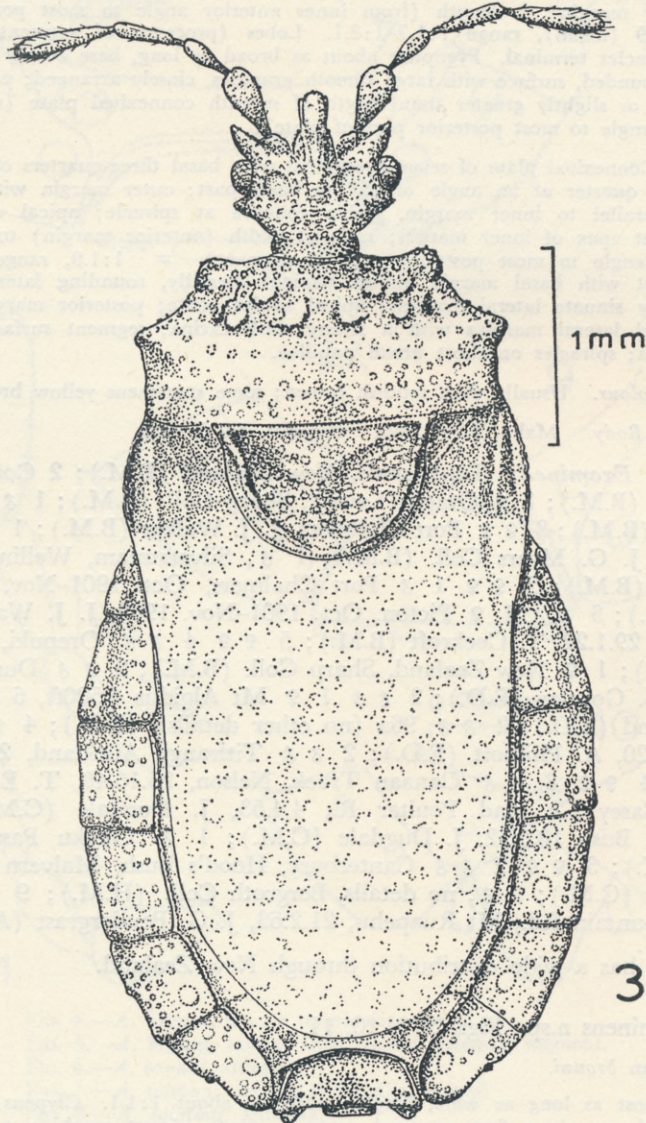


FIG. 3.—*A. prominens* n.sp. Holotype, female (legs omitted).

Pronotum width: body length = 1.2.9 (mean 4 specimens). Anterior margin of pronotum slightly concave, collar small; antero-lateral angles raised, feebly produced forwards, rounded but more prominent than in *brouni*. Lateral margins strongly sub-acutely produced laterally a little in front of middle, sinuate in front of projection, sub-parallel behind. Posterior margin almost straight. Surface coarsely and smoothly granulate, sparse in middle third of disc, callosities prominent.

Scutellum broadly rounded, almost semicircular, wider than long, length:width = 1:1.6 (4 specimens); surface rugose; anterior part of disc with a low triangular elevation; basal margin with a carina; laterally a sub-marginal carina, prominent, tuberculate, absent at apex; basal angles with a dark tooth, less conspicuous than in *brouni*.

Corium reaching half-way along scutellum, basally coastal margin rounded and held at about 90° to surface; membrane reaching more than half-way along 7th segment.

Abdomen oval, maximum width:length = about 1:1.1; disc flat. Connexivum slightly reflexed, posterior angles of connexival segments slightly projecting; connexival segments relatively wider than in *brouni*, in segment 6 ratio of width (anterior margin): length (inner margin) = 1:1.2 (5 specimens). Surface of connexivum with widely spaced low smooth granules, more numerous anteriorly where they may be arranged in two rows, one marginal, one submarginal. Spiracles of segments 2, 6, 7 lateral, visible from above; 3, 4, 5 ventral, conspicuous; 8 terminal.

Male. Connexival plate of 7th segment with inner margin concave; outer margin almost straight; posterior lateral angle broadly rounded; ratio of width (anterior margin) to length (from inner anterior angle to most posterior part of segment) = 1:1.5 (1 specimen). Processes of 8th segment prominent, spiracle terminal near outer side. Pygophore as long as broad, shorter than length of connexivum of 7th segment; base evenly rounded, sides sinuate, apex rounded, surface with large smooth granules closely arranged.

Female. Connexival plate of 7th segment with inner margin straight anteriorly, curved to meet outer margin posteriorly; outer margin rounded posteriorly, spiracle prominent; ratio of width to maximum length = 1:1.6 (mean 4 specimens). Basal margin of genital segment rounding laterally to straight diverging lateral margins, apical angles less acute than in *brouni*, posterior margin feebly concave; basal and lateral margins with a strong smooth carina; spiracles on truncated cones, prominent, visible from above. Surface of segment almost smooth with inconspicuous granules near apical angles; near hind margin disc shallowly depressed in middle, with fine transverse striae.

Ventrally, connexival segments 2, 3, 4, 5 with laterally a sub-marginal papillate carina; connexival lateral margins thickly smoothly granulate, remainder of connexivum smooth in anterior segments, connexival segments 6 and 7 with inconspicuous sparsely arranged granules. Abdomen finely granular; segments 4, 5 and 6 with an inconspicuous carina along anterior margins, often partially hidden under posterior margins of segment in front.

General Colour. Holotype light reddish brown, darker on hemelytra, connexivum pale. Paratype ochreous.

Length of Body. Male, 4.9mm. Female, 5.3–5.7mm.

Holotype: Female, Titirangi, 1 June 1942, M. W. Carter. Paratype: Female, same data as holotype. Holotype and paratype deposited in the collection at the Entomology Division, D.S.I.R., Mt Albert, Auckland.

Additional specimens: 1 ♂, 1 ♀, no data, from the Bergroth Collection (H.M.); 1 ♀, Ohakune, 1923, T. R. Harris (B.M.).

This new species is separated from *A. brouni* and *A. salmoni* by its slightly larger size, the form of the pronotal margins, the proportions of the antennal segments and the proportions of the connexival plate of the sixth segment.

So few specimens have been collected that no conclusions can be drawn on the distribution of this species.

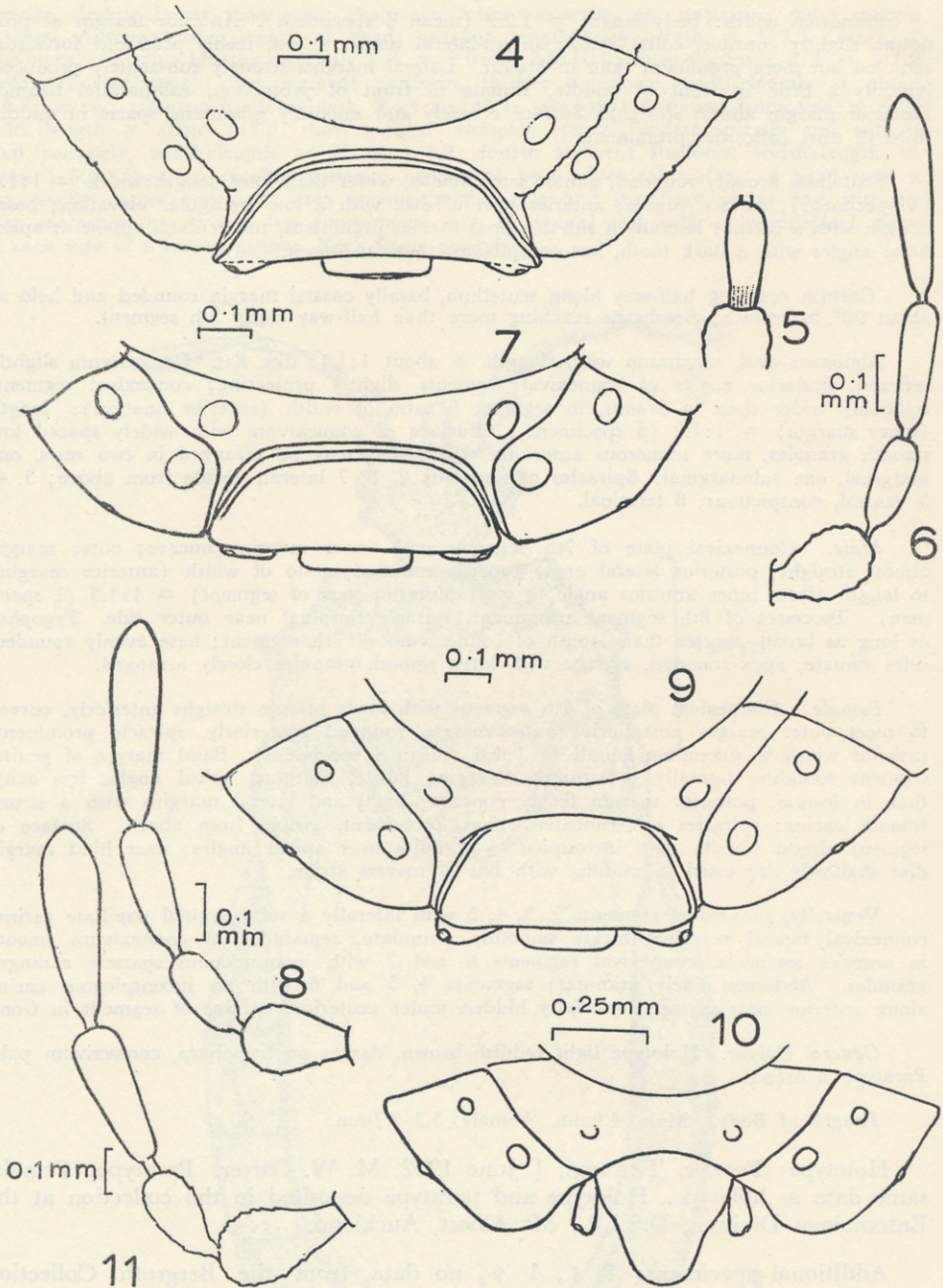


FIG. 4.—*A. brouni*, female terminalia, dorsal.
 FIG. 5.—*A. brouni*, lateral view second antennal segment.
 FIG. 6.—*A. brouni*, antenna.
 FIG. 7.—*A. salmoni*, female terminalia, dorsal.
 FIG. 8.—*A. salmoni*, antenna.
 FIG. 9.—*A. prominens*, female terminalia, dorsal.
 FIG. 10.—*A. prominens*, male terminalia, dorsal.
 FIG. 11.—*A. prominens*, antenna.

Aneuris salmoni n.sp. Figs. 1, 7, 8

Head almost as long as wide, length:width = about 1:1.2; clypeus reaching more than half-way along first antennal segment, genae reaching or surpassing apex of anterior process, juga less prominent than in *brouni*. Antenniferous spines acute or sub-acute, length variable, spine length:head length = 1:5.4 (mean), range 1:4.5–1:6.6. Interocular areas variable, usually oval, as large as eyes, emarginate to a variable extent antero-laterally. Post-ocular lobes stout, acute, reaching or passing outer margins of eyes. Antennae about twice length of head, antenna length: body length = 1:3.4 (mean), range 1:3.0–1:3.8; mean relative lengths segments 1–4 = 6.3:5.7:7.4:11.0; ratio segment 3:4 = 1:1.5 (mean), range 1:1.5–1:1.6; first segment ovoid, thickest anteriorly, width:length = about 1:1.6; second segment elongate pyriform with basal peduncle flattened from side to side, width:length = about 1:2.1; third segment elongate conical, with basal peduncle, width:length = about 1:2.8; fourth segment fusiform, width:length = about 1:3.7. Rostrum reaches past eyes but not as far as posterior margin of head. Ventral surface of head transversely rugose in median groove. Neck very finely granular.

Pronotum width: body length = 1:3.1 (mean), range 1:2.9–1:3.2. Anterior margin of pronotum slightly concave, collar small; antero-lateral angles slightly raised, rounded; anterior third of lateral margin sub-parallel, posterior two-thirds abruptly wider, narrowing slightly posteriorly; postero-lateral angles slightly greater than right angles, somewhat rounded; posterior margin almost straight. Surface coarsely and smoothly granulate except on callosities.

Scutellum broadly rounded, wider than long, length: width = 1:1.5 (mean), range 1:1.4–1:1.6; basal margin with a prominent smooth carina; laterally a sub-marginal carina, tuberculate, dark and prominent in basal third; disc rugose with smooth cobble-like granules, anterior part with a low triangular elevation; basal angles with a dark papilla less conspicuous than tooth in *brouni* and *prominens*.

Corium reaching half-way along scutellum, costal margin straight, slightly raised, granulate; membrane reaching on to 7th segment.

Abdomen sub-oval, wider posteriorly than in *brouni*, maximum width in fifth segment, ratio width:length = about 1:1.2. Disc and connexivum flat. Posterior angles of connexival segments very slightly projecting; connexival segments less elongate than in *brouni*, in segment six ratio width: length = 1:1.4 (mean), range 1:1.3–1:1.7. Surface of connexivum with smooth granules, sparse posteriorly, more numerous anteriorly especially near lateral margin, forming in some specimens a tenuous sub-marginal row; inner margin of connexivum with a strong, dark, smoothly tuberculate carina. Spiracles of second, sixth and seventh segments lateral; third, fourth and fifth ventral. Ventrally connexivum thickly, smoothly granulate near lateral margin. Ventrally abdomen finely granular; segments four to six with prominent carina on anterior margins.

Male. Connexival plate of seventh segment with inner margin abruptly bent inwards almost half-way along, anterior part straight, posterior part concave; lateral margin with anterior part (in front of spiracle) parallel to corresponding part of inner margin, posterior part subparallel with that of inner margin, angle between parts rounded; posterior margin parallel with anterior margin, postero-lateral angle rounded; ratio width (anterior margin): length (from inner anterior angle to most posterior part of plate) = 1:1.6 (mean), range 1:1.5–1:1.7. Seventh tergal plate with concave posterior margin, a tubercle or mass of tubercles at the junction with posterior margin of connexivum. Lobes of eighth segment short, parallel sided, rounded terminally, spiracles terminal. Pygophor as wide as long, base evenly broadly rounded, sides sinuate; surface with large smooth granules closely arranged; pygophor shorter than connexival plate of segment seven.

Female. Connexival plate of seventh segment with inner margin sinuate, concave in basal two-thirds, apical third almost straight, passing back to meet outer margin; outer margin convex, sub-parallel with basal part of inner margin; ratio of width of plate (anterior margin): length (from inner anterior angle to most posterior part of plate) = 1:1.7 (mean, 2 specimens), range 1:1.6–1:1.8. Posterior margin seventh tergum raised mesially. Genital segment with basal margin straight; basal angles rounded; lateral margins straight, diverging; posterior angles less acute than in *brouni*; posterior margin straight, parallel to anterior margin; basal and lateral margins with a dark carina; disc with low smooth granules near apical angles; near hind margin disc shallowly depressed in middle. Spiracles on broad short papillae.

General Colour. Light reddish brown.

Length of Body. Males, 3.9–4.5mm. Females, 4.4–4.7mm.

NOTE: The single female from the same series as the male holotype has not been designated the allotype because it is atypical. It appears to have been a general specimen killed before hardening and tanning of the cuticle. The colour is light ochreous, the membrane almost white, and there is some distortion of the scutellum and surface of the pronotum.

The labels on the holotype and four other male specimens collected by Professor J. T. Salmon contain the information "under leaf". These labels are obviously not in the collector's handwriting, but the single female specimen from the same series has her own label and here the words are "under logs".

Holotype: Male, Mt Arthur Track; 3,600ft, under leaf, 22.1.48, J. T. Salmon; deposited in the collection of the Dominion Museum, Wellington.

Allotype: Female, Craigieburn Stream, 5.2.50, McFarlane; deposited in the collection of the Canterbury Museum, Christchurch.

Four male paratypes and 2 nymphs, same date as holotype (D.M., E.D., A.U., B.M.); 1 ♀, Mt Arthur Track, 3,600ft, under logs, 22.1.48, J. T. Salmon; 1 ♂ leaf mould, Upper Hurunui above L. Sumner, 25.3.51, W. Dukes (C.M.); 1 ♂ Avalanche Peak, Arthur's Pass, 3.1.50, E. Dawson (C.M.); 1 ♂ leaf mould, Arthur's Pass, 10.1.48, E. Dawson (C.M.); 1 ♂ leaf mould, Okuku Pass (N. Cant.), 25.4.50, R. R. Forster (C.M.); 1 ♂ Arthur's Pass, 3,000ft, under damp *Nothofagus cliffortioides* bark, 3.1.23, Myers (B.M.).

This new species is most easily distinguished from *A. brouni* and *A. prominens* by the shape of the connexival plate of the seventh segment and by the proportions of the connexival plate of the sixth segment. It is also separated from *prominens* by the proportions of the third and fourth antennal segments.

The localities of the few specimens collected would seem to indicate an interesting distribution in high country in the northern half of the South Island.

It is a pleasure to dedicate this new species to Professor J. T. Salmon, of Wellington.

GENUS ANEURAPTERA Usinger and Matsuda

Aneuraptera Usinger and Matsuda, 1959, Classification of the Aradidae, Brit. Mus. (Nat. Hist.) London, 96.

Type Species: *Aneuraptera cimiciformis* Usinger and Matsuda.

Aneuraptera cimiciformis Usinger and Matsuda.

Aneuraptera cimiciformis Usinger and Matsuda, 1959, Classification of the Aradidae, Brit. Mus. (Nat. Hist.) London, 96–99. Fig. 30.

The holotype and three other specimens in the British Museum (Nat. Hist.) and a further three specimens from other collections have been examined.

Usinger and Matsuda (loc. cit.) state that the head is about one and three-fourths times across the eyes as long. Their measurements 12.8:7.2 give a width/length ratio of 1.8. Their figure of the holotype (Fig. 30), however, shows a ratio

of about 1.2 and measurements made by me on other specimens confirm this. It is of interest that the authors were aware of the actual proportions of the head because in their generic description of *Aneuraptera* they write "Head about as long as wide". Also, they note that the antennae of *A. cimiciformis* are about two and two-thirds as long as the head. Their measurements of 19.7:7.3 give an antenna length/head length ratio of 2.7. The antennae on the holotype have been damaged so it was impossible to check this ratio from the type, but their Fig. 30 shows a ratio of about 2.0 and measurements made on two other specimens give ratios of 1.6 and 1.8. It would seem then, that Usinger and Matsuda's measurement for the length of the head is too small.

Specimens Examined. Holotype, male, New Zealand (B.M.); 1 ♂, 2 ♀♀, Thomas Broun (1838–1919) collection (B.M.); 1 ♀ 1 ♂ Whangarei, 18–20.3.31, E. S. Gourlay (E.D.); 1 ♀, no details, Bergroth Collection (H.M.).

REFERENCE

USINGER, R. L., and MATSUDA, R., 1959. Classification of the Aradidae. British Museum (Natural History), London, 410 pp.

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University of Auckland.