

THREE NEW SPECIES OF THE HYMENOPTEROUS FAMILY ENCYRTIDAE FROM NEW SOUTH WALES*

BY

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The three species here considered were discovered by Mr. Harold Compere at Sydney, New South Wales, during his search for parasites of the citrophilus mealybug, *Pseudococcus gahani* Green. *Tetracnemus pretiosus* and *Anusoidea comperei* were definitely reared from this mealybug, and the former species is now being propagated and colonized in large numbers in California. The third species, *Anarhopus sydneyensis*, was not reared from a definite host, but a captured specimen oviposited freely in both *Pseudococcus gahani* Green and *Pseudococcus longispinus* (Targ.) without progeny resulting. Its exact host relationship therefore remains uncertain.

The types of the species herewith described are deposited in the United States National Museum, and the paratypes, except as otherwise noted, are in the collection of the Citrus Experiment Station.

***Tetracnemus pretiosus* n. sp.**

Figures 1 and 2

The insect here recognized as belonging to Westwood's genus agrees closely with original description and figure. The most important discrepancy is that the axillae are only slightly separated. The original description does not consider this structure, but the figure shows the axillae widely separated. There is a possibility, therefore, that the figure overstates this condition. Until it can be shown that Westwood's insect has the axillae widely separated, it would be better to place the species here described in the same genus; there is even considerable doubt whether the difference in the degree of separation of the axillae should be considered a good generic distinction without other supporting characters.

* Paper No. 202, University of California, Graduate School of Tropical Agriculture and Citrus Experiment Station, Riverside, California.

The male of *T. pretiosus* has the antennal funicle five-jointed, with a long branch on each of the first four joints. The first branch, however, has the appearance of being articulated to the outer apex of the base of the joint. If this is actually the case, it indicates that the first branch is actually the remnant of the second joint of the originally six-jointed funicle, and that the branch, being relatively important, has been preserved, while the basal part of the joint has been practically eliminated by reduction or fusion with the first joint. In the female there are definitely only five funicle joints.

The female of *T. pretiosus* agrees generically in many ways with Girault's genus *Arhopoideus* (Memoirs Queensland Museum, vol. 4, p. 174, 1915), but the head is not longer than wide, the cheeks and scrobes are not especially long, the club is much shorter and only a little wider than the funicle, and the abdomen, at least in contracted condition, is shorter than the rest of the body. Inasmuch as the male of *Arhopoideus* is unknown, it is inadvisable to go farther than to point out the similarity of the genus to *Tetracnemus*.

T. pretiosus is very close to a species of *Tetracnemus* from New Zealand, that was named in manuscript by Dr. L. O. Howard years ago. The male of the New Zealand insect differs from *T. pretiosus* apparently only in having the reticulations of the scutellum a little coarser, or about the size of those of the mesoscutum. The female, however, differs from the same sex of *T. pretiosus*, not only in the same way, but also in having the scutellum brassy green and the mesopleura brown or yellowish brown instead of purple, the scape nearly all yellow, the wings uniformly clear, etc. Adopting Howard's manuscript name for the New Zealand insect, it may be called *Tetracnemus brounii* n. sp.¹

FEMALE—

Head submenisciform, barely wider than long as seen from in front, widest at lower third of eyes, above that point being broadly rounded and below converging to the rather broad oral margin; as seen from side appearing moderately thick fronto-occipitally, thickest through the middle and with the curvature of anterior surface nearly uniform or only slightly less on lower half. Occiput moderately concave, with the neck inserted near the center. Eyes very slightly longer than wide, nearly circular, touching the occipital margin posteriorly and slightly protuberant at lower end in frontal view of head.

¹ The types of *Tetracnemus brounii* are 5 females and 2 males (holotype ♀, allotype and paratypes) reared from an undetermined species of *Pseudococcus*, at Nelson, New Zealand, by Mr. E. S. Gourlay. The holotype and allotype will be deposited in the U. S. National Museum, and the paratypes returned to Mr. Gourlay.

Frontovertex a little wider than long, almost one-half as wide as head, with the inner orbits of eyes strongly diverging posteriorly and the occipital margin acute. Ocelli large, arranged in an obtuse angle, and with the posterior pair about their own diameter from the eye margins and less than half their own diameter from the occipital margin. Cheeks rather broad and almost as long as one-half the length of head, or almost equaling the diameter of eyes; genal suture absent. Face slightly inflexed and with a rather deep common scrobal cavity, which is slightly narrowed above, reaches a little above the middle of head and lower third of eyes, and is divided in the lower half by a low triangular convex area, with a groove on each side leading to the antennal socket. Antennae inserted moderately close together and very near the oral margin, with the sockets oval and distinctly less than their own length apart. Antennae ten-jointed, with a five-jointed funicle and with the flagellum somewhat clavate-cylindrical.

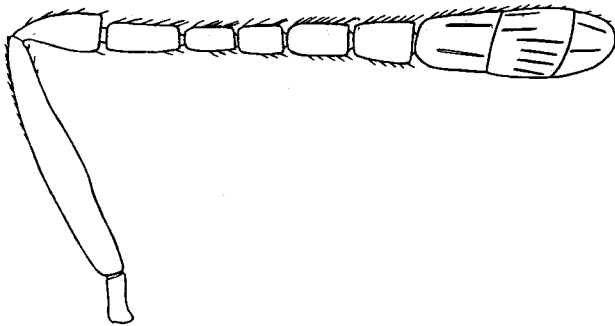


Fig. 1. *Tetracnemus pretiosus* n. sp. Antenna of female.

Scape very slender, moderately long, and surpassing the scrobal cavity by about one-fifth of its own length. Pedicel about thrice as long as thick, distinctly stouter and slightly longer than the following joint. Funicle joints increasing slightly in thickness distad; first joint about thrice as long as thick, the second and fourth about twice as long as thick, the fifth slightly less than twice as long as thick, and the third distinctly the smallest joint and about one-half longer than thick. Club elongate-oval, evenly rounded at apex, distinctly but not greatly wider than funicle and about equaling the combined length of the three preceding joints; its first joint longer than wide and longer than the preceding joint, the second as long as wide, and the third still shorter. Flagellum with fine short antrorse setae, mostly confined to the dorsal and outer surfaces and becoming much finer on the club. Mandibles small, bidentate at apex, with the teeth small, short, and blunt, and the inner one somewhat the longer. Maxillary palpi two-jointed, the first joint as long as thick and the second tapering and about twice as long as the first. Labial palpi about one-half as long as maxillary palpus and composed of one joint.

Thorax about one-third longer than wide, very convex above, and the depth dorsoventrally about two-thirds the width. Pronotum very strongly arcuate and hardly visible in dorsal view. Mesoscutum about

one-half broader across the base than the median length, its basal margin very slightly bisinuate. Axillae rather more than twice as broad as their exterior length, very acute, and nearly meeting medially and their surface plane with scutellum. Scutellum moderately convex, nearly as long as mesoscutum but hardly longer than wide at base, moderately broadly rounded at apex and with the lateral margins abruptly declivous and moderately well elevated but becoming less elevated at apex. Propodeum very short medially, much longer at the sides, convex from side to side, and declivous posteriorly. Spiracles very minute, circular, and placed close to lateral margins of propodeum at the middle and just outside two very fine, parallel longitudinal carinae (the outer carina bisecting the spiracle). Abdomen very strongly compressed, its length to apex of last tergite much less than that of thorax, but length to apex of hypopygium, when abdomen is expanded with ovipositor exerted, more or less equaling or even somewhat exceeding that of head and thorax combined. Hypopygium in expanded condition laminately compressed, with the ovipositor protruded nakedly. Ovipositor sheaths not observable in dry material, but in dissected mounts appear as oval plates, about twice as long as wide, lying just beneath apex of last tergite. Cerebral plates placed on each side at base of apical tergite.

Legs of ordinary length and structure, the middle tarsi a little shorter and stouter than hind tarsi, and spur of middle tibiae not quite so long as the first tarsal joint. Wings fully developed and rather narrow in proportion to the length. Submarginal vein not thickened subapically but rather strongly curved; marginal vein between two and three times as long as wide; postmarginal vein practically absent; stigmal vein scarcely longer than marginal and somewhat expanded at apex. Marginal fringe very short and dense. Discal setae beyond speculum short, fine, and rather dense. Speculum in breadth equaling the length of stigmal vein, not reaching to posterior margin, bounded on its proximal margin above by the venation, and after passing beyond bend in submarginal separated from basal area by only two or three rows of very fine weak pale-colored setae. Basal area bare except a row of fine setae close to submarginal vein. Costal cell with rather dense fine setae, which become weaker and sparser along the vein and toward the base of cell. Hind wings with a longer marginal fringe than fore wings and with the costal cell extremely narrow.

Head and mesoscutum shining and finely scaly-reticulate, with the areoles becoming longitudinal on sides of face. Scrobal impression polished. On the cheeks the reticulations become faint, and toward the occiput and on the postocular region they are replaced with fine lineolations. Frontovertex with a few scattered fine punctures. Axillae and scutellum finely and delicately tessellate. Propodeum polished. Mesopleura finely lineolate-tessellate. Abdomen finely tessellate, but first tergite toward base and the hypopygium polished. Cheeks, frontovertex, mesoscutum, and scutellum with fine, short, moderately numerous, dark-colored and inconspicuous hairs, the scutellum without enlarged hairs at apex. Eyes with very short, fine, erect hairs.

Head and thorax rather dark brassy green, with the scrobal impression blue and the axillae and scutellum dark purple blue. Cheeks posteriorly and the postocular region bluish. Pleura of thorax and the abdomen blue, the mesopleura and venter with a purple luster, the first tergite, however, brassy green. Antennae piceous, but basal half of scape, excluding radicle joint, dull yellow. Legs yellow; the coxae, trochanters, and femora pale lemon yellow, the tibiae and tarsi more brownish yellow, and last joint of tarsi fuscous. Wings slightly dusky hyaline, with the speculum clearer than other parts. Basal half of submarginal vein yellowish, the remainder of venation fuscous.

Measurements in millimeters as follows: length of body, (0.917 to) 1.48; length of head, 0.406; width of head, 0.475; width of vertex at anterior ocellus, 0.212; thickness of head fronto-occipitally, 0.371; length of antenna, 0.956; width of mesoscutum, 0.476; length of fore wing, 1.084; width of fore wing, 0.515.

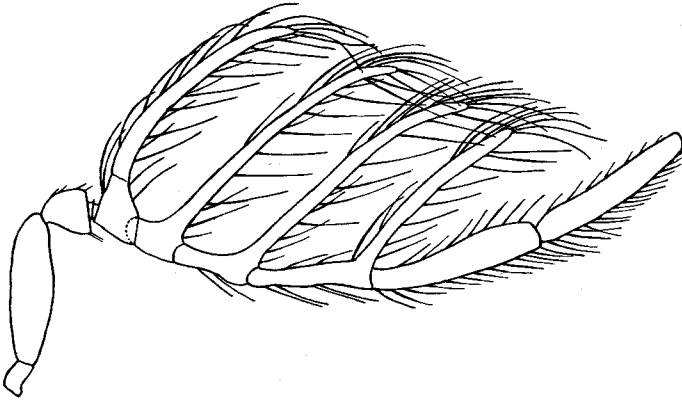


Fig. 2. *Tetracnemus pretiosus* n. sp. Antenna of male.

MALE—

Head irregularly submenisciform, rather thin fronto-occipitally and thickest through the middle of eyes; as seen from in front somewhat broader than long, broadest through the eyes, and with the cheeks strongly and somewhat arcuately converging below. Eyes rather small, very slightly longer than wide, convex, and rather strongly protuberant. Frontovortex about twice as broad as long, more than one-half as broad as whole head, moderately convex from side to side and with the occipital margin acute. Ocelli in a very obtuse angle, the anterior one placed at the center of frontovortex, and the posterior pair almost touching the occipital margin and placed rather more than one-half their own diameter from the eye margins. Cheeks as long as the lesser diameter of eyes, rather convex, with a slight indication of a longitudinal ridge subposteriorly, and without a genal suture. Face with a large, moderately deep, common scrobal cavity, reaching above to anterior margin of frons, and divided lengthwise for almost its entire length by a low rounded ridge which broadens toward the antennal sockets. Antennae inserted about half-way between ocular line and oral margin, with the sockets placed about their own width apart and at practically the same distance from oral margin. Antennae

eight-jointed. Scape slender, subfusiformly compressed, and surpassing the scrobal cavity. Pedicel small, or scarcely longer than thick. Funicle five-jointed; joints 1 to 4 each with a long slender ramus inserted above at apex, the rami all about equal in length; the joints, excluding rami, increasing greatly in length distad, the first broader than long, the second slightly longer than wide, the third about twice as long as the second, the fourth about three times as long as the second, and the fifth slender, terete, and a little longer than the fourth. Club entire, very elongate-oval, considerably thicker than the preceding joint and about as long. Rami with numerous long spreading hairs, the funicle joints otherwise and the club with similar but shorter hairs.

Thorax similar to that of female, but much less convex longitudinally, and with the axillae indistinct. Abdomen about two-thirds as long as thorax and strongly compressed. Cercal plates and vibrissae inserted at the middle on each side. Aedeagus in dry specimens usually protruded and strongly curved downward. Legs practically as in female. Wings similar but the fore pair considerably broader in proportion to length.

Frontovortex and mesonotum rather dull, somewhat roughly and very finely scaly-reticulate, and with the scutellum somewhat more finely sculptured and rather more shining than the mesoscutum. Face and cheeks shining, the scrobal cavity and clypeal margin below antennae polished, the face otherwise finely reticulate with the areoles for the most part somewhat longitudinally lengthened. Cheeks posteriorly and the postorbital region very delicately lineolate or almost polished. Pleura shining and finely reticulate, the propleura and prepectus distinctly sculptured, and the mesopleura more delicately reticulate, with areoles longitudinally lengthened. Propodeum polished. Abdomen very finely tessellate and rather dull. Pubescence as in the female.

Head and thorax very dark green, the mesoscutum appearing almost piceous in some aspects. Face and cheeks brilliant brassy green. Scutellum nearly as dark as mesoscutum but with a dark reddish and purple instead of a dull green luster. Propodeum somewhat bluish green with a brassy luster. Mesopleura mostly dark blue or purple blue. Abdomen piceous, mostly without a metallic luster, but sometimes purplish on the sides especially at base. Antennae piceous, but the scape yellow except its apical fourth and the radicle joint. Front and middle legs dull yellow with the front tarsi more or less infuscated. Hind coxae bluish, the femora, except base and sometimes beneath, tibiae, except sometimes beneath, and hind tarsi fuscous, the hind legs otherwise yellow. Wings clear hyaline, the veins fuscous.

Measurements in millimeters as follows: length of body, (0.796 to) 1.25; length of head, 0.408; width of head, 0.490; width of vertex at anterior ocellus, 0.290; thickness of head fronto-occipitally, 0.238; length of antenna, 0.966; width of mesoscutum, 0.479; length of fore wing, 1.172; width of fore wing, 0.573.

Described from 2 females, 7 males (holotype ♀, allotype, and paratypes) reared in January, February, and March, 1928, from *Pseudo-*

coccus gahani Green, collected at Sydney, New South Wales (H. Compere); and 15 females, 27 males (paratypes) reared from the same host in the propagating cages at Riverside, California, in April and May, 1928.

***Anusoidea comperei* n. sp.**

Figures 3 and 4

This species differs from *Anusoidea aureiscutellum* Girault in having the thorax mainly piceous without a purple luster, the mesopleura entirely dark, and only the apex of front and middle tibiae, with their tarsi, yellowish. The color of the scutellum is also apparently redder. The general form and habitus of this genus in the female sex is superficially like *Homalotylus* Mayr but it differs greatly in the venation, the very large Cerapterocerus-like antennae, and in many other details, so that the resemblance to *Homalotylus* is merely an example of homoplasmy.

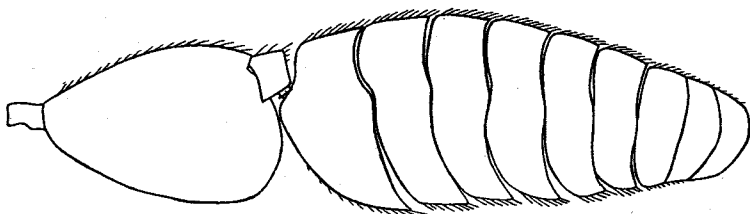


Fig. 3. *Anusoidea comperei* n. sp. Antenna of female.

FEMALE—

Head menisciform, slightly longer than wide, moderately thick fronto-occipitally, thickest approximately at middle, strongly rounded on the sides and gently rounded on the dorsal margin. Occiput only slightly and uniformly concave, with the neck inserted at the center. Eyes large, distinctly less than twice as long as broad, and oval, except that the posterior orbits are practically straight. Inner orbits only slightly diverging anteriorly as seen in dorsal view of head, yet strongly diverging at extreme lower ends. Frontovortex much longer than wide, in ocellar region about one-half as wide as either eye, continuous below with face, and with the occipital margin rather sharp. Ocelli in an acute angle, the posterior pair placed about one-half their own diameter from the eye margins and remote from occipital margin. Cheeks moderate in length, rather less than one-third as long as eyes, and with the genal suture very fine but distinct. Postocular space rather narrow and more narrowed above, the summit of eyes touching occipital margin. Face rather depressed and with distinctly separated scrobes. Antennal sockets placed rather close together, almost at the oral margin, and separated by a well elevated, convex, longitudinal ridge, which is not at all narrowed above. Antennae very large, foliately expanded and nearly as long as entire body. Scape large, very broadly and laminately expanded, pyriform in outline, nearly as

thin on dorsal as on ventral margin, with the apex broadly and truncately rounded and the ventral margin only slightly convex. Pedicel very small but laminate, and having the dorsal margin abruptly bent downward in a right angle at the middle, so that the apex appears to be on the ventral margin. Flagellum very broad and laminate, broadest a little before the middle, then tapering to the broadly rounded apex. First funicle joint largest and longest, yet the third slightly the broadest of all, the third to sixth about equal in length but successively narrowing distad. Club about as long as wide at base, somewhat narrowing to the broadly rounded apex, and with the three rather obscure joints becoming successively shorter distad. Mandibles small, bidentate, the teeth acute and slightly unequal. Maxillary palpi two-jointed, slender, the apical joint somewhat more than twice as long as thick and about one-half as long as the basal joint. Labial palpi similar to the maxillary pair but much shorter, the apical joint not much longer than thick.

Thorax about one-half longer than wide, considerably wider than deep dorsoventrally and gently convex above. Pronotum short and arcuate. Mesoscutum about twice as broad as long, and having the posterior margin between tegulae practically straight. Axillae rather large, each nearly twice as broad as long on outer edge, the inner ends very acute and contiguous, and the surface plane with scutellum. Scutellum large, depressed, about as long as wide, moderately acute at apex, and having the sides convexly arcuate to a slight degree, abruptly declivous and moderately well elevated. Propodeum very short medially but having the usual length at sides, its surface moderately declivous medially, and subdepressed at the sides, except on posterior margin which is narrowly declivous. Propodeal spiracles small, circular, and about equally distant from anterior and lateral margin of the segment. Metapleura very narrow. Abdomen about two-thirds as long and not quite so wide as thorax, triangular as seen from above, and about one-third longer than wide at base. Tergum deeply concave and the venter rather strongly compressed. Cercal plates retracted within the concavity of tergum close to the base of abdomen and mainly concealed. Ovipositor entirely enclosed by vomeriform apical ventrites.

Legs slender and about as long as in *Homalotylus*; hind tibiae and tarsi very slender; middle tibiae and tarsi stouter, the tarsi slightly tapering toward apex and the tibial spur almost as long as the basitarsus. Wings more than twice as long as wide and reaching well beyond apex of abdomen. Marginal fringe short and rather dense. Discal setae fine and dense in area below that portion of venation from proximal end of thickened part of submarginal vein to apex of stigmal vein. This densely pubescent area followed by a narrow, strongly arcuate band, where the setae are colorless. Apex of wing beyond arcuate band moderately setose. Basal area almost entirely bare except one row of rather coarse setae beneath submarginal vein. Speculum very narrow and very oblique, not quite reaching to base of stigmal vein and barely reaching beyond the middle of disk, where it is well separated from the basal area. Area between speculum and venation with rather coarse setae. Costal cell rather narrow and with

only one row of fine setae, except toward the apex where there are two rows. Submarginal vein slightly sinuate and thickened in its apical fifth. Marginal vein elongate or about six or seven times as long as thick. Postmarginal vein subobsolete. Stigmal vein about equal to marginal, almost straight, slender, hardly appreciably enlarged at apex, and forming an angle of about 40° with costal margin. Submarginal vein with about fourteen enlarged setae, the longest of which only slightly exceed the width of the costal cell. Setae on marginal vein numerous and similar to those between speculum and venation. Hind wings with the costal cell extremely narrow and not reaching to the hooklets, the marginal fringe of the posterior margin about twice as long as fringe of fore wings, and the disk bare at base almost as far distad as the bend in the vein. Remainder of disk with moderately dense setae which become subobsolete at the extreme apex.

Face and frontovertex moderately dull and with fine, dense, shallow, malleate punctures. Occiput with transverse lineate reticulations. Mesoscutum shining, metallic, very minutely and delicately reticulate. Axillae and scutellum opaque from an extremely fine dense shagreening. Pleura and abdomen finely reticulate and shining. Head almost bare, except a few extremely short fine setae on the post-ocular region and a row of equally minute, glistening white setae on face close to margin of eyes. Mesoscutum with fine, appressed, white setae, moderately close and becoming obsolete on posterior border. Scutellum with rather sparse, short, black setae, a pair of long black setae at apex and two pairs of subapical setae, which are about one-half as long as the apical pair.

Head dark orange brown, becoming more or less piceous on face, and orange ferruginous on the upper half of occiput. Thorax and abdomen piceous, the pronotum somewhat brownish, the mesoscutum shining with a slight plumbeous luster, the axillae very dark reddish brown, and the scutellum orange red. Antennae entirely piceous and shining. Legs piceous, the coxae, trochanters, and base of femora of front and middle legs and apex of middle femora creamy white, the apex of front and middle tibiae, with their tarsi, yellowish, and the apex of hind tibiae and hind tarsi brownish. Wings hyaline, the fore wings each with a broad fuscous band across the middle, exactly covering the more densely setose area of disk, the distal margin of band strongly convex and the proximal margin somewhat obliquely transverse. Venation piceous, but the submarginal vein, except the thickened apical part, brown.

Measurements in millimeters as follows: length of body, (1.70 to) 1.85; length of head, 0.649; width of head, 0.594; width of vertex at posterior ocelli, 0.149; thickness of head fronto-occipitally, 0.323; length of antennae, 1.61; greatest width of antenna, 0.418; width of mesoscutum, 0.568; length of fore wing, 1.61; width of fore wing, 0.608.

MALE—

Head submenisciform, about as broad as long, well rounded on the sides and above, and moderately thick fronto-occipitally. Face somewhat reflexed, the frons not prominent. Occiput moderately concave, with the neck inserted near the center. Eyes rather small, only a little

longer than broad, and somewhat protuberant. Cheeks about three-fourths as long as eyes, convergent in frontal view toward the rather narrow mouth, and with the outer margin slightly discontinuous with eyes. Frontovortex a little broader than long, slightly widening anteriorly, the posterior part nearly twice as wide as the eye. Ocelli large, approximately in a right angle, the posterior pair a little more than their own diameter from the eye margin and slightly closer to the acute occipital margin. Face with a large shallow common scrobal cavity, descending considerably below the antennal sockets and divided by a very low longitudinal ridge, which extends upward hardly above the sockets. Antennal sockets situated close together on the ocular line and remote from oral margin. Antennae filiform and almost as long as body. Scape compressed, but not expanded, the ventral edge thin, with radicle excluded about four times as long as wide, and including radicle about as long as pedicel and first funicle joint combined. Pedicel slightly longer than thick. Flagellum slender and filiform. Funicle joints all much longer than thick, the distal joints slightly shortening, with the sixth about two and one-half times longer than thick. Club entire, long, tapering, acute at apex, and almost as long as the last two funicle joints combined. Flagellum provided with numerous, uniformly distributed, short, antrorse setae.

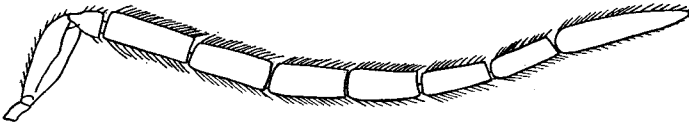


Fig. 4. *Anusoidea comperei* n. sp. Antenna of male.

Thorax much as in the female, but mesoscutum more convex, with its posterior margin slightly angulate medially, and the axillae slightly separated. Abdomen depressed, about as wide as thorax and three-fourths as long, or in dry specimens much shorter than thorax, triangular in form, and acute at apex. Cercal plates retracted to about the basal fourth in dry specimens, or in less contracted specimens to about the middle. Legs practically as in female. Wings shorter and broader than in female, the disk beyond speculum with uniform moderately dense setae. Speculum moderately wide, not quite reaching to stigmal vein and interrupted below, the setae on its proximal margin a little coarser than elsewhere. Base of disk more sparsely setose than the middle with a hairless band on posterior margin of wing and an enclosed triangular hairless area. Costal cell with three complete rows and an incomplete row of setae. Submarginal vein very slightly thickened in the apical fourth; marginal vein about three times as long as wide; postmarginal vein indistinct and spur-like; stigmal vein about one-fourth longer than the marginal and scarcely thickened at apex. Hind wings with the discal setae moderately dense and uniformly distributed, except in a small bare area at base.

Frontovortex, mesoscutum, axillae, and scutellum with a very minute, opaque or subopaque shagreening, which is duller on the scutellum. Under low magnification this sculpture appears granular

tessellate, but when highly magnified it appears puncto-tessellate, with the tessellations irregular in shape, usually more or less longitudinally lengthened, and becoming a little coarser on scutellum. Lower part of face, cheeks, and pleura much more shining than the dorsum, and finely reticulate. Abdomen shining. Face with rather sparse, fine, appressed, glistening white setae. Frontovortex with short erect black setae. Eyes with a fine, very short, rather dense pile. Pubescence of thorax about as in female, except that the setae of mesoscutum are whitish only at the sides, and, therefore, much less conspicuous.

Body piceous or black, non-metallic, the face sometimes somewhat brownish, the prepectal plates pale brown. Antennae black with black setae, but the scape yellowish beneath toward base. Front and middle legs very pale brownish yellow, the coxae brown or piceous and middle tibiae on basal half more or less dusky. Hind legs entirely brownish piceous, sometimes a little paler on femora. Wings entirely clear hyaline, the venation piceous.

Measurements in millimeters as follows: length of body, (1.23 to) 1.59; length of head, 0.447, width of head, 0.505; thickness of head fronto-occipitally, 0.254; width of vertex at anterior ocellus, 0.247; width of mesoscutum, 0.540; length of antenna, 1.52; length of forewing, 1.41; width of fore wing, 0.649.

Described from 3 females, 7 males (holotype ♀, allotype, and paratypes) from Sydney, New South Wales (Compere). The holotype was reared December 4, 1927, from an undetermined mealybug. The remaining specimens are the offspring of this female, propagated on *Pseudococcus gahani* Green. The males were reared January 2-7, 1928, and the female paratypes were obtained February 10, 1928, after the parent had been mated with her own male offspring.

Anarhopus n. gen.

Figure 5

In Girault's table (Mem. Queensland Mus., vol. 4, p. 179) *Anarhopus* runs to *Arhopoideus* Girault, from which it differs in having the antennae large, with the flagellum compresso-clavate, the funicle joints increasing in width distad, the fifth joint distinctly wider than long, the club broadly rounded at apex, concave on inner surface, and about one-half as long as funicle, the fore wing with a broad cross-band, the abdomen strongly compressed throughout, considerably shorter than thorax and with the ovipositor enclosed by the ventrites, etc. In Mercet's table it runs out at couplet 21, as the marginal vein is distinctly longer than wide and the ovipositor is concealed.

Genotype:

Anarhopus sydneyensis n. sp.

FEMALE—

Head as long as wide, submenisciform, in frontal view well rounded above and on sides, but with the cheeks converging somewhat to the

rather broad oral margin and discontinuous with outline of eyes. Occiput deeply concave longitudinally so that the eyes in dorsal view extend much farther back on each side of head than does the very acute occipital margin of vertex. Neck inserted near center of occiput. Eyes moderate in size, nearly circular, or only a little longer than wide, and with the inner orbits appearing almost parallel in dorsal view of head, although appearing to diverge slightly at anterior ends in frontal view. Postorbital region moderately wide below and becoming extremely narrow above posteriorly where the eyes do not quite touch the occipital margin. Cheeks very large and broad, not quite so long as diameter of eyes and with the genal suture obsolete. Frontovortex broad and covering much more than one-third but not quite one-half the width of head. Ocelli in a somewhat obtuse angle, the lateral pair about their own diameter from the eye margins and about equally distant from occipital margin. Face joining with frons in a broad curve and with a large common scrobal cavity. The latter rather deep, with long sloping margins on sides and above, and reaching dorsally above lower ends of eyes by approximately one-fourth their length. Antennal sockets placed close together, or not quite their own length apart, almost on the clypeal margin, and separated by a short low longitudinal ridge, which does not extend above the sockets. Antennae ten-jointed, the flagellum compresso-clavate with a five-jointed funicle. Scape rather slender, compressed, fusiform, and excluding the radicle about as long as the next three joints combined. Pedicel twice as long as thick and about as long as the following joint. First three funicle joints subequal in length, the next two becoming successively shorter, all increasing gradually in width distad, the first about one-half longer than wide, the third about as long as wide, and the fifth about one-third wider than long. Club about three times as long as wide, about one-half as long as the funicle, and as wide as the preceding joint. Its apex broadly and nearly evenly rounded, and its inner surface deeply concave. The sutures between the three joints much more distinct on the convex outer surface of the club. First suture strongly arcuate, the second very strongly oblique. Greatest length of first joint about two-fifths that of entire club. Second joint about four to five times longer across superior margin than below. Third joint comparatively small and oblique. Pedicel and funicle joints densely covered with short, erect, spiny setae, the club on convex outer surface with similar smaller setae, which become evanescent toward apex. Each joint of the club with about six fine, linear sensoria.

Thorax convex, robust, about two-thirds longer than wide, and but slightly less deep dorsoventrally than wide. Collar of pronotum very narrow and arcuate. Mesoscutum large, convex, about one-third wider than long, and with the hind margin nearly straight. Axillae a little more than twice as wide as long exteriorly, very acute and practically meeting medially, their disks plane with scutellum. Scutellum about two-thirds as long as mesoscutum, the sides slightly arcuately convergent to the bluntly rounded apex, the disk depressed, and the margins rather well elevated and very abruptly declivous. Propodeum long at the sides, but at the middle shortened about one-half, rather

strongly convex from side to side and obliquely declivous toward the rear. Propodeal spiracles very minute, circular and placed on the lateral margin remote from anterior margin. Abdomen strongly compressed throughout, about three-fourths as long as thorax, its apex laminately compressed with the last ventrite surpassing apex of tergum. Ovipositor entirely enclosed by ventrites. Cercal plates and vibrissae not visible in dry specimens. Legs ordinary and moderately long; middle tarsi stouter than hind pair and slightly tapering; spur of middle tibiae almost as long as the basitarsus. Wings fully developed, infuscated from marginal vein distad, but becoming paler at apex. Marginal fringe rather dense and short. Discal setae dense in infuscated area and becoming a little weaker and sparser toward apex. Clear basal area of disk almost free from setae except in the space beyond speculum on posterior margin, there being one row of about 7 to 9 setae below submarginal vein and one oblique row of about 4 or 5 smaller setae across disk from middle of submarginal vein.

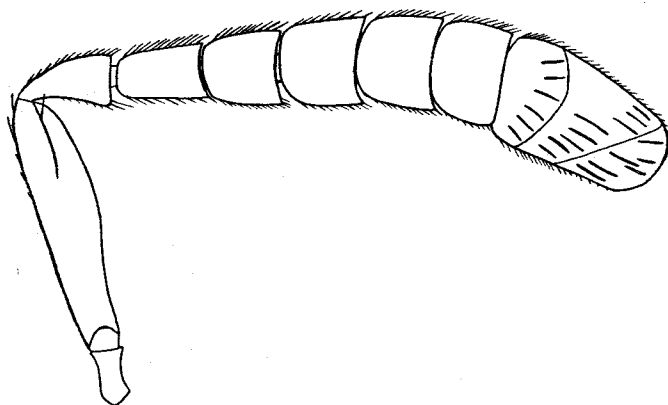


Fig. 5. *Anarhopus sydneyensis* n. sp. Antenna of female.

Speculum, therefore, weakly differentiated, reaching to stigmal vein and becoming very broad and open below. Costal cell rather wide and with two incomplete and irregular rows of setae. Submarginal vein not thickened distad and armed with about 15 bristle-like setae which are almost as long as width of costal cell. Marginal vein about twice as long as wide and armed with numerous fine setae. Postmarginal vein very short. Stigmal vein about as long as marginal and postmarginal veins combined, a little curved and slightly widened at apex. Hind wings with the vein rather strongly arcuate in the basal half, the costal cell extremely narrow, the discal setae moderately dense on apical half of disk, and with the marginal fringe nearly twice as long as that of fore wings.

Head finely puncto-reticulate with the cheeks and scrobal cavity much smoother. Frontovortex with sparse, fine, shallow pin punctures. Mesoscutum very finely scaly-reticulate and with sparse shallow pin punctures. Axillae minutely tessellate. Scutellum with very fine and dense, thimble-like punctures. Propodeum and metapleura polished,

the former with two fine parallel longitudinal carinae at middle, placed about their own length apart, and with two fine parallel carinae running close together on each side from spiracle to hind margin. Mesopleura finely reticulato-lineolate. Abdomen smooth and shining. Eyes and frontovertex with about equally fine, very short, erect and rather sparse setae. Clypeal margin and prominence between antennae with somewhat longer setae. Mesoscutum with sparse, short retrorse setae, which are pale but not conspicuously whitened. Scutellum with sparse inconspicuous setae, the two pairs at apex erect but only slightly enlarged.

Coloration strongly metallic but with the luster not brilliant except on the smoother parts.

MALE—

Not known.

Anarhopus sydneyensis n. sp.

FEMALE—

Head and thorax metallic green with a brassy luster, the scutellum dark green. Propodeum with a brilliant brassy and reddish luster. Cheeks strongly brassy. Mesopleura bluish at posterior end. Abdomen rather brilliantly metallic and mainly steel blue and purple. Eyes very dark chestnut red. Antennae black, the scape with a greenish luster on the outer surface and with a longitudinal white streak on inner dorsal margin, not quite attaining the apex. Coxae, front femora except apex, and hind femora metallic greenish. Apex of front femora and tibiae, and the front tarsi brown, the tibiae otherwise piceous. Middle femora piceous but becoming more or less pale brown at apex and on anterior margin of apical half. Middle tibiae, spurs, and basal third of hind tibiae white, but the middle tibiae sometimes more or less ferruginous brown especially toward apex. Hind tibiae otherwise piceous. Middle and hind tarsi ferruginous brown, with the apical joint piceous. Fore wings clear hyaline at base but with a well infuscated cloud distad from level of marginal vein. Basal margin of cloud very convex. Apex of wing becoming broadly much paler but not entirely clear. Hind wings clear at base and becoming abruptly somewhat dusky on apical half. Submarginal vein dusky testaceous, the marginal and stigmal veins piceous.

Measurements in millimeters as follows: length of body, (1.61 to) 1.69; length of head, 0.577; width of head, 0.564; width of vertex at anterior ocelli, 0.247; thickness of head fronto-occipitally, 0.304; length of antenna, 1.403; greatest width of antenna, 0.158; width of mesoscutum, 0.568; length of fore wing, 1.395; width of fore wing, 0.592.

Described from 4 females (holotype and paratypes), collected near Sydney, New South Wales (H. Compere). Holotype captured on orange tree at Wahroonga, December 8, 1927, and the paratypes reared December 1-10, 1927, from mealybug material collected in citrus orchard at Warrawee.