

AUSTRALIAN PSYLLIDÆ.

PART II.

BY WALTER W. FROGGATT, F.L.S.

(Plates xiv.-xvi.)

iii. Subfamily PSYLLINÆ.

Front of head either swollen or produced into two conical processes; eyes prominent. Stalk of cubitus shorter than stalk of subcosta.

Genus i.—CALOPHYA, F. Löw, Verh. Zool.-Bot. Gesell. Wien, xxviii., 1879.

ii.—DIAPHORINA, F. Löw, *loc. cit.*

iii.—PSYLLA, Geoffroy, Hist. Ins. 1762.

iv.—AMBLYRRHINA, F. Löw, *loc. cit.*

v.—SPANIONEURA, Först, Rheinl. w. Westphal. Verh. 1848.

vi.—ARYTAINA, Först, *loc. cit.*

vii.—LIVILLA, Curtis, Brit. Ent. Vol. xiii., 1.

viii.—FLORIA, F. Löw, *loc. cit.*

ix.—ALLOEONEURA, F. Löw, *loc. cit.*

x.—HOMOTOMA, Guérin.

xi.—ANOMONEURA, Schwarz.

xii.—FREY-SUILA, Aleman, La Naturaleza (2), i. 1887.

This group contains a number of small species which lead a free life in the larval and pupal states, neither constructing lerp-scales nor producing galls upon their food plants. Some of them are perfectly naked, but others are enveloped or sheltered under a flocculent or woolly exudation, or surrounded with filaments of a woolly or waxy nature produced from glands along the outer

margin of the body. The wattles (Acacias) are very rich in these insects, several of them having two or more peculiar species; so that the range of many is probably as wide as the distribution of the host plants. The eggs are generally laid all over the tips of the young foliage, or if on the branchlets thickly encrusting them, with the larvæ, pupæ, and perfect insects all crawling about on the same branch. In some cases these are so numerous that at first sight they look like aphides.

Judging from the numbers obtained in New South Wales where these insects have received most attention in this country, Australia will be found to be the richest region in this group of the Homoptera.

E. H. Rübsaman has described a new species (*Pauropsylla udei*) from Sumatra* the larva of which produces a gall, and is exactly like the typical *Trioza* larva from his drawings, but the perfect insect, also figured, belongs to the *Psyllinæ*. He also figures several other *Trioza* larvæ from Africa, and another from South America, but does not name them.

Genus PSYLLA, Geoffroy.

Head triangular, transverse; face lobes convex, conical; eyes semiglobose, prominent; antennæ slender, first two joints thickest. Thorax with front margins acute. Legs stout. Wings broad, rounded at apex, stigma distinct; stalk of subcosta longer than stalk of cubitus; radius stout, seldom curving downward to any distance; wings frequently semiopaque and sometimes spotted; nervures stout.

PSYLLA ACACIÆ-PYCNANTHÆ, n.sp.

(Plate xiv., fig. 5.)

Larva reddish-yellow, thickly mottled with black; antennæ, legs and wing-covers slightly mottled with fuscous; centre of abdomen tinged with red, outer margins fringed with long hairs.

Pupa similar in colour, but with the markings more defined; antennæ yellow, with apex of 3rd, 5th and whole of apical joints

* Mitteilungen über neue und bekannte Gallen, 1899.

fuscous. Head very large, broad, rounded in front, sloping on sides; rounded behind, showing distinct median suture through centre; antennæ standing out straight in front, moderately long, slender. Thorax short, almost square, showing median suture with four spots on either side. Wing-covers large, swelling out, rounded on sides. Legs short, stout. Abdomen short, broad, rounded to apex, basal segments banded with, and the whole of apical segments fuscous.

Imago.—Length 0·0625, antennæ 0·03 inch. General colour dull brick red to reddish-brown, mottled with black; antennæ fuscous; face-lobes black at base, tips white, beneath all white; front of head and segmental divisions of thorax black, with a slight pubescence over antennæ, head and prothorax; legs fuscous, with tibiæ and tarsi pale ochreous; mesonotum marked with four parallel dark brown bars; scutellum pale yellow; abdomen mottled with black at base, bearing five broad black bands; wings semi-transparent, slightly clouded; nervures light brown: ventral surface black, with abdominal bars white. Head with eyes as broad as thorax, narrow, deeply cleft and lobed in front, with the sides sloping down to front of eyes, slightly rounded on the sides, deeply arcuate behind; a distinct median suture, and fovea on either side. Face lobes short, broad at base, deeply cleft, and conical at tips; clothed with grey hairs. Antennæ very long and slender, tapering to the tips; 1st joint short, broad; 2nd very short; 3rd very long; 4th and 5th shorter; 6th-9th tapering, shorter; 10th short, truncate at apex. Eyes very large, prominent, as broad as the head, subglobular, compressed on the sides: central ocellus small, indistinct; lateral ocelli small, enclosed in a bright reddish patch close to hind margin of eyes. Thorax: prothorax angular in front, truncate at extremities, marked with two impressed spots; arcuate behind; dorsulum rounded on both sides, elongated at extremities; mesonotum large, convex, slightly arcuate in front, rounded on sides to apex; scutellum small. Legs long, thighs thickened; tibiæ slender, hind legs stouter than preceding ones, tarsal joints large. Wings thrice as long as broad, rounded at tips; primary stalk long; stalk of subcosta long, costal

cell elongate; stigma long and slender; radius short, straight, running out above tip of wing; stalk of cubitus very short, upper branch of cubitus long, upper and lower forks nearly of equal length; lower branch of cubitus rather long, upper fork curving round; lower branch very short, curving inwards; clavus short. Abdomen large, narrow at base, swelling out and tapering to tip. Genitalia: (♂) lower genital plate elongate, rounded at tip; forceps broad at base, pointed at apex; upper valve slender at tips, curving over towards forceps: (♀) very short, broad, rounded at apex.

Hab.—Cheltenham, Victoria (on *Acacia pycnantha*; C. French, Junr.).

The only specimens of this species that I have seen were upon the large stout leaves of this *Acacia*. The eggs were scattered about singly, and there did not appear to be many specimens upon each leaf.

PSYLLA LIDGETTI, Maskell.

Trans. R. Soc. S. Aust. 1898, p. 5, pl. i., figs. 1-4.

This species was named from specimens sent to Mr. Maskell by Mr. Lydgett who found them on *Acacia implexa* at Myrniong, Victoria, a wattle which does not grow about Sydney.

This is a brown-coloured psylla with irregular patches of reddish-yellow, the antennæ and feet yellow; eyes red. The wings are clouded in a different manner from any of the species of this genus that I have examined, and it is probably a local species like many of the others.

Mr. Lydgett has promised to send me some specimens of this *Psylla*, but up to date I have not received them.

PSYLLA FRENCHI, n.sp.

(Plates xiv., fig. 4; xvi., fig. 2.)

Pupa.—General colour pale yellow, tinted with green; antennæ, legs, blotches on head, wings and wing-covers light brown; eyes reddish-yellow; thorax with eight black spots forming a circle on

the back; abdomen green, upper segments marked with interrupted black bands, apical segments black. Head broad, slightly rounded in front, sloping to eyes, narrow behind them, arcuate behind. Antennæ long, slender, coming to a point at tip. Thorax broad, sloping back to abdomen. Wing-covers large, swelling out on side, pointed at apex. Abdomen constricted at base, swelling out, rounded to tip, bearing a patch of white wax-like secretion on anal segment.

Imago.—Length 0·01, antennæ 0·0225 inch.

General colour dull yellow, marked with light brown; terminal joint of antennæ, tarsi, and abdominal segments barred with black; eyes red. Wings semiopaque mottled with light brown; nervures light reddish-brown. Head very short, as broad as thorax, rounded in front, cleft in centre, with median suture, and dark fovea on either side, hind margin arcuate. Face lobes large, rounded at tip. Antennæ long, slender, 1st joint very broad, short; 2nd longer; 3rd very long; 4th-9th filiform; 10th slightly clubbed, truncate at apex. Eyes very large, projecting, semi-globular: central ocellus large, at apex of median suture; lateral ocelli large, close to hind margin of eye. Thorax: pronotum narrow, deeply wrinkled, with fovea in centre and on either side, convex in front; dorsulum large, arcuate in front, pointed at sides, arcuate behind; mesonotum large, convex, arcuate in front, broadly rounded on sides to hind margin; scutellum large. Legs stout, long; tibial spines large; tarsi long. Wings nearly thrice as long as broad, rounded at apex; primary stalk long; stalk of subcosta long, straight, forming a stout stigma joined to costal nervure; radius running close to subcostal, turning downward at extremity: stalk of cubitus short, curving downward; upper branch turning upward, upper fork turning downward; lower branch of cubitus curving downward to middle of wing, upper fork long, curving upward in a line with upper branch; lower fork short; clavus broad, stout. Abdomen stout. Genitalia (♂) short, broad; lower genital plate short, broad; forceps long, broader at base, slender, produced into finger-like processes, pointed at tips, fringed with fine hairs; penis long, slender; upper

genital plate short, broad, truncate at apex, narrow at base, slightly rounded on the sides, and fringed with fine hairs.

Hab.—Colo Vale, N.S.W. (on *Acacia* sp.; W. W. Froggatt).

Dedicated to Mr. C. French, Junr., to whom I am indebted for several fine species. The larvæ form no lerp, but crawl about freely among the tips of the foliage, and do not even seem to form any secretion like others of the free-living species. They are never very numerous, but scattered all over the foliage.

PSYLLA ACACIÆ-PENDULÆ, n.sp.

(Plates xiv., fig. 1; xvi., fig. 13.)

Larva pale ochreous, eyes and centre of abdomen bright red. General form oval, thoracic segments cylindrical, flattened on dorsal surface. Head large, with fovea on either side; antennæ short, stout, eyes far back, above base of fore-legs. Abdomen broad, rounded, fringed with short spiny tubercles.

Pupa.—General colour light brown to pale yellow, sometimes tinted with red or green; apex of 3rd and the rest of the joints of antennæ and tibiæ black; sides of head, spots behind, a double row on thorax, wing-covers, and bands on abdominal segments brown. Head very large, rounded in front; antennæ seven-jointed, pointed at tips; eyes very large, projecting. Thorax very broad across, arcuate in front; wing-covers standing out on either side, short, and sharply rounded at apex; tarsi covered with fine hairs. Abdomen flattened, truncate at base, rounded on sides, segments deeply divided, wrinkled.

Imago.—Length 0·05, antennæ 0·02 inch.

General colour light brown, covered with a grey pubescence, apical joints of antennæ black; wings hyaline, nervures brown. Head long, deeply arcuate in front, with a deep median suture, and fovea on either side, sloping down to eyes, arcuate behind. Face lobes broad at base, rounded, short. Antennæ long, slender; 1st joint short, slightly curved; 2nd short; 3rd very long; 4th-9th uniform, slender; 10th short, tapering to tip. Eyes large, flattened on inner margin: central ocellus very small, at apex of

median suture; lateral ocelli large, bright red, close to hind margin of eyes. Thorax: pronotum broad, convex in front, arcuate behind; dorsulum long, nearly truncate in front, somewhat angular at extremities; mesonotum large, convex, deeply arcuate in front, rounded behind; scutellum resting upon hind margin of mesonotum. Legs slender, tarsi long. Wings twice as long as broad, rounded at tips, slender at base, costal nervure stout, with subcostal forming a slender stigma: primary stalk long, curving upward; stalk of subcosta long, curving upward; radius long, curving upward, and running parallel with costal; stalk of cubitus short, upper branch of cubitus curving upward, upper fork long, turning downward, a little longer than lower branch, forming a long cell; lower branch of cubitus transverse, upper fork turning upward and then down; lower fork curving round to the base; clavus stout, thickened; clavical suture long, slender. Abdomen slender, yellow, with basal half of each segment on both dorsal and ventral surfaces barred with dark brown. Genitalia (♂) large, lower genital plate broad, rounded; forceps broad at base, bending over like two bent fingers; penis hidden; upper genital plate broad at base, rounded at apex.

Hab.—Pera Bore, Bourke, and Condobolin, N.S.W. (in each case upon *Acacia pendula*; W. W. Froggatt).

This species appears to be peculiar to the Weeping Myall (*Acacia pendula*) and probably ranges over the western country where this tree grows. This insect can be found in all stages of growth upon the twigs in November and December.

PSYLLA ACACIÆ-DECURRENTIS, n.sp.

(Plates xiv., fig. 7; xvi., fig. 5.)

Larva.—General colour bright orange-yellow, dorsal surface mottled with fuscous; legs and antennæ fuscous. Head very large, convex in front; with a faint median cleft running down centre to base of abdomen; antennæ very long, slender; eyes large, far back on sides of head. Thorax very small, legs long. Abdomen broad, rounded to apex, lightly fringed with hairs.

Pupa.—General colour bright reddish-brown; legs, antennæ, wing-covers, blotches behind eyes, two rows of spots down sides of thorax, two elongated bars at base, and whole of apical portion of abdomen dark brown. Dorsal surface thickly clothed with short spiny hairs. Head short, broadest at base, rounded in front and on sides; antennæ stout and very long; eyes small, angular on inner margins. Thorax rounded in front, swelling out on sides to base of wing-covers; the latter small, elongate, rounded at tips; legs stout, long, tarsi large. Abdomen large, swelling out at base, almost circular, last segment curving inwards, forming a lobe on either side of anus.

Imago.—Length 0·065, antennæ 0·0275 inch.

Ochreous thickly marked with chocolate and darker brown; antennæ from second joint to tip and eyes black; abdomen banded with black and red; wings opaque, thickly mottled with brown, and marbled with white, nervures ochreous. Dorsal surface clothed with fine grey hairs. Head small, nearly truncate in front, median suture distinct, arcuate at base. Face lobes very large, broad at base, coming to a conical tip. Antennæ very long, slender; 1st joint very short, broad; 2nd short, stout; 3rd long, cylindrical; 4th-9th shorter, uniform in length; 10th shorter, pointed to apex. Eyes rather small, projecting slightly on sides, angular on inner margins: central ocellus very small, at apex of median suture; lateral ocelli elongate, situated at upper margin of eye. Thorax: pronotum narrow, of uniform width, slightly broadest at extremities; dorsolum slightly convex in front, broadest in centre, tapering to a point at extremities, rounded behind; mesonotum large, convex on summit, arcuate in front, produced into a conical point on sides, rounded behind; scutellum arcuate in front, rounded behind. Legs long, thighs thick, tibiæ slender, tarsi long. Wings twice as long as broad, swelling out in front, slightly depressed in centre, swelling out broadly and rounded at apex; nervures very thick, especially the costal; primary stalk short, straight, stalk of subcosta long; subcosta running into costa forming a slender stigma; radius short, coming out on upper edge of wing; stalk of cubitus very short; upper branch of cubitus

long, curving upward and then down, upper fork short, coming out below tip of wing; lower fork as long as upper; lower branch of cubitus transverse, upper fork curving round, long; lower fork short, curving sharply round towards base of wing; clavus stout, thickened; clavical suture very long. Abdomen broad, rounded on sides, red bands on dorsal surface, white on ventral. Genitalia : (♂) lower genital plate large, rounded; forceps slender, curved inward; penis slender, upper genital plate slender, broad at base, pointed at apex : (♀) upper and lower genital plates short and rounded.

Hab.—Richmond, Young, Wagga, N.S.W. (on *Acacia decurrens*; W. W. Froggatt).

The insects clustering all over the stems and branchlets of this wattle form no protective covering or secretion. The eggs, bright yellow and somewhat elongate in form, thickly coat the bark of the small branches; larvæ, pupæ and perfect insects crawl over the stem beneath. The very long antennæ, beautifully coloured wings and dark tints give this psyllid a striking appearance.

PSYLLA CAPPARIS, n sp.

(Plates xiv., fig. 6; xvi., fig. 14.)

Larva semitransparent to pale yellow, abdomen reddish-orange, eyes bright red; tip of antennæ black. Head very large, broad, rounded in front, lightly fringed with fine hairs; eyes far back on sides of head; a fine median suture running through head to base of thorax. Antennæ in front of head, tapering to tips. Thorax as broad as head but not more than one-half the length, forming two lobes on the sides. Legs stout, thick, and very hairy. Abdomen rounded to apex, each segment ornamented with a fine hair.

Pupa bright orange to pale yellow; apical half of antennæ, tibiæ and tarsi black; wing-covers, blotches on head, spots on thorax, interrupted bands on the base and apex of abdominal segments dark brown. Dorsal surface lightly clothed with fine scattered hairs, thickest upon legs, wing-covers, and tip of abdo-

men, the latter clothed with a mass of white filaments forming a white tufted tail. General form that of larva, with head arcuate behind; wing-covers swelling out on sides, abdomen broad and rounded to tip.

Imago.—Length 0·045, antennæ 0·025 inch.

General colour greyish-brown to light ochreous, mottled and marbled with darker brown; antennæ black from third basal segment; abdomen bright yellow, apical margin of basal and whole of apical segments black; wings opaque, clouded with a greyish tint, thickly mottled with light brown, forming an irregular pattern towards apical edge; nervures light brown. Head narrow, rounded in front, slightly cleft in centre, rounded to eyes, with a slight median suture and small rounded fovea on either side, deeply arcuate behind. Face lobes broad at base, short, coming to a point at apex. Antennæ rather short, springing out in front of eyes; 1st joint short, broad; 2nd short; 3rd longest; 4th-9th of uniform length; 10th short, slightly thickened at tip. Eyes very large, prominent, semiglobular: central ocellus small, at base of median suture; lateral ocelli large, close to hind margin of eyes. Thorax: pronotum rounded in front, arcuate behind, with extremities rounded, and marked with a dark spot; dorsulum broad, slightly depressed on either side of front margin, coming to a point at extremities, hind margin irregularly rounded; mesonotum large, deeply arcuate in front, coming to a point on extremities, rounded behind; scutellum arcuate in front, rounded behind. Legs short, femora stout and rounded; tibiæ short; tarsi small. Wings nearly twice as long as broad, narrow at base, curved on costal margin to broad rounded tip; primary stalk long, curving upward; stalk of subcosta long, subcostal nervure turning up and forming a stout opaque stigma; radius short, curving downwards, not reaching tip of wing; stalk of cubitus short, upper branch curving upward, then down; upper fork turning upward at tip, lower fork downward, each of about equal length; lower branch of cubitus short, not as long as lower fork, upper fork curving upwards, rounded to extremity; clavus short, slender; clavical suture long, slender. Abdomen short,

broad. Genitalia: (♂) large, turned over back, lower genital plate rounded, elongate; forceps broad at base, long, slender, rather straight; penis hidden; upper genital plate rounded at base, long, slender: (♀) short, broad, thickly clothed with hairs, which form quite a white tuft when viewed from above.

Hab.—Gunnedah, N.S.W. (on *Capparis Mitchellii*; W. W. Froggatt).

This species was found in all stages of development, from the bright yellow eggs to the winged psyllid, covering the underside of the leaves of this shrub, the infested foliage looking as if it had been coated with dust, from the number of larvæ and larval skins attached to the leaves. I have never seen this species except on this one occasion, but it probably has a wide range like its food plant.

PSYLLA CANDIDA, n.sp.

(Plates xiv., fig. 12; xvi., fig. 16.)

Larva dull yellow; tips of antennæ, spots on head and thorax black, eyes reddish-brown; entire dorsal surface fringed with fine hairs. Head small, rounded in front, broadest behind. Antennæ very long, eyes large. Thorax short. Abdomen long, oval to tip, marked with fine parallel striæ.

Pupa pale yellow, with last four joints of antennæ black, eyes light red; abdomen pale green, yellow at apex. Head rounded in front, arcuate behind. Antennæ long, slender, basal joints stout, apical ones tapering to tip. Eyes large, rounded, projecting. Thorax swelling out behind head. Wing-covers large, projecting beyond the base of abdomen. Legs short, thick. Abdomen oval, smooth, showing slender interrupted black bars at base of segments, fringed with very stout black hairs.

Imago.—Length 0·04, antennæ 0·01 inch.

General colour light ochreous, in some specimens head and thorax shaded with green; abdomen bright green; last two joints of antennæ black, eyes red; wings light brown, sometimes barred with darker tints, nervures dull yellow. Head narrow, rounded and slightly lobed in front, with a deep median suture, arcuate

behind. Face lobes small, not showing from above. Antennæ long, 1st joint very stout, broad; 2nd short; 3rd longest; 6th-10th slightly swollen, rounded at apex. Eyes very large, projecting: central ocellus very small; lateral ocelli small, on summit of head. Thorax: pronotum broad and deeply convex in front, broad and arcuate behind; dorsulum convex, coming to a point at extremities, swelling out behind, convex at apex; mesonotum rounded in front; scutellum broad, arcuate in front, rounded behind. Legs short, stout. Wings long, slender, thrice as long as broad, curved in at base, costa straight to rounded tip; primary stalk long, stalk of subcosta long, subcosta running parallel with costa forming a slender stigma; radius turning up at tip, not reaching apex of wing; stalk of cubitus short, upper branch of cubitus arching upward then down; upper fork curving down, emerging in centre of tip of wing, lower fork as long as upper, curving downwards; lower branch of cubitus long, upper fork curving round forming a long cell, lower fork short, turning outwards; clavus short, stout; clavical suture distinct. Abdomen short, swelling out at base, distinctly marked at segmental divisions, rounded on outer margins. Genitalia: (♂) short, broad, turned up over the back; lower genital plate long; forceps slender, forming two slender fingers; penis large; upper genital plate small, rounded to a point at apex.

Hab. —Termiel, Gosford, N.S.W. (on *Acacia decurrens*; W. W. Froggatt).

The larvæ and pupæ of this species attack the tips of the foliage of the *Acacia*, producing a quantity of white waxy filaments which mat the terminal leaves together in the same manner as do some of the mealy bugs. Under this secretion the larvæ feed and the pupæ cast their skins; the perfect insects crawl about on the foliage.

PSYLLA SCHIZONEUROIDES, n.sp.

(Plate xiv., fig. 3.)

Larva bright yellow, legs and antennæ fuscous, eyes bright red. Head rounded in front; antennæ stout, with a very long terminal

bristle. Abdomen small in proportion to head and thorax, segmental divisions very distinct, dorsal surface covered with short hairs, with a fringe of longer ones round the pointed tip of abdomen.

Pupa bright yellow, but thickly covered with fuscous on the dorsal surface. General form very short and broad.

Imago.—Length 0·045, antennæ 0·015 inch.

General colour dark brown mottled with ochreous; antennæ fuscous, except 2nd-4th joints which are yellow; legs marked with yellow, tarsi black; wings opaque, richly mottled with light brown, forming a dotted pattern in centre but more blotched at edges; segmental divisions of the abdomen white. Head as broad as thorax, almost truncate in front, with a very slight median cleft and suture, two small impressed foveæ; somewhat angulated at base of antennæ, convex on hind margin. Face lobes large, very broad at base, coming to a point at tip, covered with long hairs. Antennæ short, hairy, springing from in front of eyes, 1st joint short; 2nd short, slender; 3rd longest; 4th-8th slender, shorter towards apex; 9th-10th forming a slight club rounded at apex. Eyes very large, prominent, standing out on the sides of head, angular on the inner margins: central ocellus at apex of median suture; lateral ocelli small, close to hind margin of head. Thorax: pronotum slender, of uniform width, curving round behind eyes; dorsulum slightly convex in front, coming to a point at extremities, sloping down on hind margin to truncate base; mesonotum deeply arcuate in front, swelling out on sides to a point at extremities, broadly rounded to base. Legs short, stout. Wings little more than twice as long as broad, narrower at base, broadly rounded to apex; primary stalk moderately long, stalk of subcosta long; subcostal nervure running close to costal, forming a slender stigma; radius curved upward, then turning downward, but emerging above tip of wing; stalk of cubitus short, upper branch of cubitus long, arching upward, upper and lower fork nearly of equal length, upper slightly longer, emerging below tip of wing; lower branch of cubitus short, upper fork long, curving

upward and then down, lower fork rather long, curving inward; clavus short, clavical suture slender. Abdomen short, stout, coming to a conical point at tip. Genitalia: (♂) short, lower genital plate small, forceps short, upper genital plate small: (♀) very short, upper and lower genital plates short, pointed, covered with fine hairs.

Hab.—Condobolin, Carrathool, N.S.W. (on “Warrior Bush,” *Apophyllum anomalum*; W. W. Froggatt).

This species probably has a wide range in the western districts where the “warrior-bush” grows. The eggs are clustered close together and frequently extend over an inch down the twig; they are so numerous that they tint the smaller twigs a bright yellow. The larvæ and pupæ discharge a white sticky secretion, which envelopes them in a greyish-white mass, exactly like that of the common woolly aphis (*Schizoneura lanigera*); beneath this the insects are almost as thick as the woolly aphis under similar circumstances.

PSYLLA STERCULIÆ, n.sp.

(Plate xv., fig. 13.)

Eggs bright yellow, short and more rounded than usual, laid in great clusters on the young foliage between the forks of branchlets. The young larvæ crawl close together, seldom moving at first, and are smothered with numbers of small black ants (*Leptomyrmex gracilis*).

Larva.—Head and thorax dull yellow, barred with light brown, eyes red; antennæ and legs semitransparent, the latter tipped with fuscous; abdomen reddish-yellow; entire dorsal surface lightly clothed with long hairs. Head and thorax conjoined, very broad, rather truncate in front, rounded behind. Antennæ short, standing on either side. Legs short, thick. Abdomen small, truncate at base, rounded on sides to apex.

Pupa similar in colour, except that the brown markings are much darker. Head not as broad as thorax; wing-covers small; abdomen much broader. Entire dorsal surface covered with short hairs bearing a sugary honey-dew.

Imago.—Length 0·045, antennæ 0·001 inch.

General colour ochreous, tinged with reddish-brown; head, prothorax and outer margins of dorsulum black; tips of antennæ and tarsi fuscous; front of dorsulum, sides of metanotum, hind portion of thorax and bands on upper portion, and apex of abdomen chestnut-brown; wings light brown, semiopaque, nervures darker. Head very narrow, turned down and rounded in front, deeply arcuate behind, with a slight median suture and shallow fovea on either side. Face lobes hidden from above. Antennæ very short; 1st-2nd joints very short; 3rd cylindrical, slender, long; 4th-9th short, rounded, decreasing in length to apex, 10th rounded. Eyes large, projecting, angular on inner margin: central ocellus hidden from above; lateral ocelli very small, in line with centre of eyes. Thorax: pronotum narrow, deeply curved in front, slender towards tips, not quite reaching to outer edge of eyes; dorsulum large, rounded on either side, toothed at extremities; mesonotum large, arcuate in front, rounded on sides, arcuate at junction with scutellum. Legs long; tibiæ long, slender; tarsi and tarsal claws large. Wing thrice as long as broad, curved at base, rounded at tip; costal nervure very stout; primary stalk very long; stalk of subcosta shorter than stalk of cubitus; subcosta running into costal nervure, forming a thickened slender stigma; radius straight, running out above tip of wing; stalk of cubitus long; upper branch of cubitus very long, upper and lower forks short, forming a small angular cell, upper one emerging in centre of wing, lower branch of cubitus short, upper fork long, curving round, lower fork nearly straight; clavus short, clavical suture slender. Abdomen small. Genitalia: (♂) curved over back, very hairy; lower genital plate large, rounded; forceps slender, upper genital plate short, rounded in front: (♀) abdomen large, swollen, genital plates forming an elongated tip, very hairy.

Hab.—Wagga, N.S.W. (on Kurrajong, *Sterculia* sp.; W. W. Froggatt).

This is a rare species; I have only found it in one place, on the kurrajongs at the back of the Experiment Farm at Bomen.

PSYLLA ACACIÆ-BAILEYANÆ.

(Plates xiv., fig. 2 ; xvi., fig. 3.)

Larvæ clustering round the tips of twigs, forming no lerp. General colour bright yellow, legs and antennæ fuscous at tips; eyes red. Head broad, rounded in front, longer than thorax. Antennæ long, hairy, standing out in front. Eyes large, well back on side of head. Thorax as broad as head, lobed on sides. Legs long. Abdomen large, rounded, oval, with tip ornamented with two fine hairs.

Pupa.—Head and thorax pale yellow to ochreous; tarsi and last three joints of antennæ fuscous; abdomen light yellow, shaded with green; eyes reddish-brown; two blotches on head, markings on thorax, wing-covers, transverse lines on upper abdominal segments and the whole of lower segments fuscous. Head small, rounded in front and on sides, not as broad as thorax, arcuate behind; antennæ long, slender, pointed at apex: eyes large, rounded, projecting. Thorax swelling out at base, wing-covers broad, rounded to tips; legs stout. Abdomen broad, rounded on the sides to apex, slightly truncate.

Imago.—Length 0·03, antennæ 0·0075 inch.

General colour dull orange-yellow, legs and antennæ fuscous at tips; abdomen pale green to yellow, barred with fuscous; thorax mottled with brown; wings grey, semiopaque, thickly covered with irregular brown spots; nervures light brown. Dorsal surface covered with a grey pubescence. Head small, deeply lobed in front, arcuate behind antennæ, rounded on sides, convex behind, with a median suture, and a small dark fovea on either side. Face lobes small, rounded, slightly hairy. Antennæ slender, 1st and 2nd joints rounded at apex, 3rd longest, 4th-8th uniform, 9th-10th thickened, rounded at tip. Eyes very large, projecting, rounded on outer margin, truncate on inner edge: central ocellus very small, hidden by the floury pubescence; lateral ocelli very small, situated near centre of inner margin of eye. Thorax: pronotum narrow, convex in front, with a dark fovea on either side near extremities; dorsulum slender, rounded in front, tapering

to a rounded knob at sides, rounded behind; mesonotum large, slightly arcuate in front, swelling out, rounded on sides, slightly arcuate behind; scutellum small, broad. Legs long, slender, covered with fine hairs. Wings short, broad, not quite twice as long as broad, broadly rounded at tips; primary stalk long, turning upwards, stalk of subcosta slightly longer, subcosta running into costal nervure forming a distinct stigma; radius short, turning upward at the tip; stalk of cubitus short, upper branch of cubitus curving upward, then downwards; upper fork turning downward, longer than lower fork; lower branch of cubitus short, upper fork long, curving upward and then down, lower fork curving inwards; clavus stout, clavical nervure long, crossing the length of anal cell. Abdomen: (♂) slender, (♀) large, swollen. Genitalia: (♂) large, lower genital plate short, round at base; forceps very short, broad, blunt at tips, penis small; upper genital plate broad at apex, slender, bending over towards forceps, clothed with fine hairs; (♀) very short, broad, pointed at tips.

Hab.—Sydney, N.S.W. (on *Acacia Baileyana*, F.v.M.; W. W. Froggatt.)

The insects in all stages of growth cluster over the young branchlets of the *Acacia*, so that in the early summer the trees look as though they were infested with yellow aphides; they fly off in a cloud when disturbed. The eggs are slender, bright yellow, and scattered all over the foliage, among which the larvæ and young pupæ crawl about.

It is a curious fact that wherever this pretty, ornamental wattle is planted the psyllids appear. They swarm in my garden at Croydon, and I have seen them away out in the bush at Balmoral on the trees, and in several other localities, so that the range of the species is probably that of the food plant.

Genus MYCOPSYLLA, n.g.

Head deeply cleft in front; face lobes wanting; eyes very large, antennæ very large, slender. Thorax with pronotum not as wide as head, narrow. Legs long, slender. Wings nearly thrice as

long as broad, glassy transparent, acute at extremity; stigma distinct; radius very short, turning upward; stalk of subcosta longer than stalk of cubitus; furcations of upper arm of cubitus forming an angular cell at tip of wing. Legs long, slender. Abdomen narrow at junction with thorax, broad behind, tapering to tip.

Type *Psylla fici*, Tryon.

MYCOPSYLLA FICI, Tryon.

Psylla fici, Tryon, Trans. Nat. Hist. Soc. Queensland, Vol. i., 1892-4, p. 60.

(Plates xv., fig. 7; xvi., fig. 17.)

Eggs deposited in patches of about 50 upon the underside of leaves, close together, but not in contact; dark reddish-brown, finely granulated; oval, pointed at the extremities, showing a straight parallel ridge or keel of lighter colour along the dorsal surface.

Larva.—First stage: pale yellow, eye-spots brown; general form oval, with a flange round body; segmental divisions distinct; clothed with short hairs forming a fringe round outer margins, a pencil of white wax-like secretion cleft at tip projecting from above tip of abdomen. Second stage: dull white to pale yellow, entire upper surface of head (except median suture), four large angular blotches on thorax, wing-covers, four interrupted bands on basal and apical portion of abdominal segments black; eyes bright orange. Head broad, oval; antennæ very short forming a curved horn in front of eyes; eyes not projecting. Thorax swelling out behind eyes, rounded at base; wing-covers short, broad, standing out, rounded to tip of abdomen; lightly clothed with short hairs. Ventral surface pale yellow; basal portion of legs, tip of rostrum, four slender bars on the upper and whole of the apical segments of abdomen fuscous; tibiae and tarsi ochreous.

Pupa.—General colour as in last stage of larva, only the colouration much lighter, and tinged with yellow; abdomen pale green. Head lobed in front, swelling out behind eyes, truncate at base;

antennæ short, thick, pointed at apex, curving round sides of head. Wing-covers reaching beyond base of abdomen; the latter short, rounded, anal segment with a stout conical tubercle on either side.

Imago.—Length 0·135, antennæ 0·06 inch.

General colour ochreous-yellow; apex of basal, the whole of the apical joints of antennæ, outer margins of head, thorax, and abdominal segments clouded with fuscous, thorax also shaded with orange; eyes red; ocelli orange. Wings hyaline, nervures ochreous. Head very broad, twice as wide as long, deeply cleft and angulate between base of antennæ, rounded on sides, arcuate behind. Face lobes wanting. Antennæ springing from either angle of head, long, slender; 1st joint very stout; 2nd narrow at base; 3rd very long, cylindrical, narrow at base; 4th-7th of uniform girth, but decreasing in length to tip; 8th much shorter, swollen at tip; 9th shorter, swollen; 10th very short, swollen, truncate at tip. Eyes very large, occupying the whole side of the head, rounded on outer margin: central ocellus placed at base of median cleft; lateral ocelli close to hind margin of eye. Thorax: pronotum not as broad as head, curved, slender; dorsulum very convex, rounded in front, sloping down on sides, rugose on edges, rounded behind; mesonotum broad, arcuate on front and sides, hind margin truncate; scutellum convex, slightly arcuate in front. Legs long, stout, lightly clothed with hairs. Wings thrice as long as broad, rounded to a point at apex; primary stalk long, curved down in centre, clouded with fuscous along upper edge; stalk of subcosta long, curving inward, straight above; subcostal nervure long, close to costal, forming a distinct stigma; radius very short, turning up beyond tip of stigma; stalk of cubitus very short, upper branch of cubitus long, nearly straight, upper fork turning upward above tip of wing, lower fork turning down below tip of wing, thrice the length of upper fork; lower branch of cubitus turning downward, upper fork long, curving round; lower fork shorter, curving inwards to base of wing; clavus stout, curved; clavical suture slender, running through lower portion of cell. Abdomen long, slender, constricted at base,

round to apex. Genitalia: (♂) short, broad, lower genital plate rounded to a point; forceps short, narrow at base, swelling out and deeply arcuate at extremities, upper genital plate forming curved short fingers; (♀) short, broad, very hairy; tips of valves coming to a sharp point.

Hab.—Sydney, N.S.W (W. W. Froggatt); Brisbane, Q. (H. Tryon; in both localities on the Moreton Bay Fig, *Ficus macrophylla*.)

This psyllid seems to range wherever the Moreton Bay Fig grows. The larvæ by piercing the upper surface of the leaves, cause the sap to flow out into little buttons which coagulate into regular folds and run together into a sticky mass, sometimes covering a score or more of pupæ. These remain under the covering until fully developed, when they crawl out and emerge from the pupal skin which remains attached to the leaf, so that when this is badly infested the mass of dried coagulated sap is surrounded with cast pupa-cases.

Mr. Tryon described only the eggs and larva of this insect in his short account of "Two insect pests of the Moreton Bay Fig" under the name of *Psylla fici*.

MYCOPSYLLA PROXIMA, n.sp.

(Plate xvi., fig. 8.)

Larva bright yellow, thickly mottled with black spots like the preceding species on the head, but with the thoracic spots forming a large blotch on the wing-covers; two large elongate marks on first four abdominal segments, 5th with a band across, apical ones all black. General form irregularly rounded, obese, and nearly as broad as long; legs and antennæ not visible when viewed from above; anal segment of abdomen arcuate at tip, with a tubercle on either side.

Pupa.—General colour pale green; legs and antennæ pale ochreous, dorsal marking as on larva, but those on head and thorax reddish-brown. Short, broad in form, clothed with fine hairs, and a white secretion that rubs off easily.

Imago.—Length 0.115, antennæ 0.0475 inch.

General colour green, dorsal surface of head and centre of thorax black, 1st segment of abdomen pale yellow, the rest dark green, anal segment and genitalia yellow; wings hyaline, nervures ochreous except primary stalk and subcosta which are black. Head as in the preceding species, but 3rd joint of antennæ more spindle-shaped, fringed with fine hairs. Central ocellus very small; lateral ocelli well up on side of eyes. Thorax: pronotum and dorsulum very narrow, the former curving round the latter, widest at extremities. Wings as in the preceding species, but the stigma more slender, lower fork of upper branch of cubitus longer, and upper fork of lower branch longer and more rounded. Abdomen of same form. Genitalia (♂) of same general form, with upper genital plate much more curved and hooked.

Hab.—Sydney, N.S.W. (on *Ficus rubiginosa*; W. W. Froggatt).

This species is closely allied to the Moreton Bay Fig insect, but is quite different enough to form a new species. The larva and pupa are very different in form and colouration and in habits. The larva always forms a solitary button of sap, under which seldom more than one seeks shelter, the outer surface of the exuded sap being covered with the fine hairs on the under surface of the leaf, and never forming a large irregular mass as on the foliage of *F. macrophylla*.

Genus EUCALYPTOLYMA, n.g.

Head broad, deeply arcuate behind. Face lobes large, rounded at tips. Eyes very large, prominent. Antennæ short, apical joints slightly swollen. Thorax: pronotum variable. Wings rounded at extremities, stalk of subcosta longer than stalk of cubitus; subcosta without stigma, running parallel with costa, forming a long slender tail to marginal cell; radius long, turning down at apex.

Type *Eucalyptolyma maideni*.

EUCALYPTOLYMA MAIDENI, n.sp.

(Plates xiv., fig. 9; xvi., figs. 11, 20.)

Lerp white, opaque, granulated, 3 lines in length, $2\frac{1}{2}$ wide at base, commencing at a rounded spot with the central portion

flattened, forming an elongate horn-shaped piece of sugar with a narrow open lace-like strip running down each side; broad end of lerp open, forming a flat-roofed chamber in which the larva hides with its head at the opening. The leaves of infested trees are literally covered with these lerp-scales, which are very brittle and crack off in the sun or are washed off by rain very quickly.

Larva pale orange-yellow, legs and antennæ semitransparent, the latter tipped with black; eyes dark yellow. Front of head to tip of abdomen of uniform width; abdomen somewhat heart-shaped. Back and outer margins fringed with fine hairs, which generally carry minute globules of the white sugary secretion used in constructing the lerp-scale.

Pupa.—Head and abdomen bright green; thorax pale yellow; wing-covers, legs, antennæ, spots between eyes, thorax, and upon abdomen brown. Head large, lobed in front, constricted at base; antennæ short, stout, fringed with long hairs; eyes large, projecting. Thorax long, sloping on sides to wing-covers, the latter small; legs short, stout. Abdomen large, narrow at base, broad, oval to tip.

Imago.—Length 0.06, antennæ 0.0125 inch.

General colour bright green tinged with yellow at base of thorax, and on genitalia; antennæ, eyes, and legs light brown, tips of first joint of tarsi and centre of eyes black; wings hyaline, nervures dark brown. Head broad, arcuate in front, rounded on sides, deeply arcuate behind. Face lobes large, close together, rounded at tips, clothed with fine hairs. Antennæ short; 1st joint very thick; 2nd broad, short; 3rd long, slender; 4th-8th uniform in length; 9th-10th shorter, the latter elongated, rounded at apex. Eyes very large, hemispherical, projecting: central ocellus small, at apex of median cleft; lateral ocelli small, close to hind margin of eyes. Thorax: prothorax produced in front into a stout angular point fitting into back of head, the extremities forming a rounded lobe behind the eyes; dorsulum rounded on summit, not as wide as head, lobed on sides; mesonotum large, arcuate in front, rounded behind; scutellum small, flattened.

Legs short, stout. Wings more than twice as long as broad, broad, rounded at tips; primary stalk long; stalk of subcosta longer than that of cubitus, subcosta running parallel to costa forming a long narrow cell but no stigma; radius very long, curving round at extremity to tip of wing; stalk of cubitus short, upper branch of cubitus long, almost straight, upper fork curving sharply downwards, lower fork of about equal length; lower branch of cubitus rather long, upper fork short, rounded, lower fork very short; transverse, slightly turned in at tips; clavical suture distinct. Abdomen stout. Genitalia (♂) long, upper and lower genital plates long, slender, when closed appearing like a duck's head.

Hab.—Botanic Gardens, Sydney, N.S.W. (on *Eucalyptus* sp.; W. W. Froggatt).

I have named this after Mr. J. H. Maiden, who has helped me on many occasions since I took up the study of this family, with notes, references and specimens.

EUCALYPTOLYMA ERRATICA, n.sp.

(Plates xiv., fig. 8; xvi., fig. 21.)

Lerp white to pale yellow, formed of a brittle sugar-like secretion which cracks or washes very readily off the leaves, commencing at a point, attached along the outer edges of leaf, swelling out, and shaped like a small flattened horn; 4 lines in length, $1\frac{1}{4}$ in width at open base; scattered all over the underside of leaves.

Larva pale yellow, hiding under lerp, but coming out and running about over the foliage.

Pupa pale yellow; antennæ darkest at tips, legs brown, a dark mark on either side of thorax, wing-covers margined with brown. Head small; antennæ and legs short; wing-covers small, pointed at tips. Abdomen very large, narrow at base, swelling out to apex, elongate, oval, marked with impressed spots along the sides of dorsal surface.

Imago.—Length 0·0475, antennæ 0·0125 inch.

General colour deep yellow, eyes black, apical joints of antennæ light brown. Wings semitransparent, slightly clouded with brown, nervures light yellow. Head broad, deeply lobed, with a median suture, and a large fovea on either side; sloping down on sides to eyes, deeply arcuate behind. Face lobes very large, long, rounded at tips, turned down under head. Antennæ short; 1st joint broad, short; 2nd longer; 3rd-8th slender, of uniform length; 9th-10th forming a rounded club. Eyes very large, standing out on sides of head, somewhat reniform: central ocellus small, hidden from above; lateral ocelli small, very close to hind margin of eyes. Thorax: pronotum narrow; dorsulum slightly rounded in front, convex behind; mesonotum large, arcuate in front, rounded on sides and apex; scutellum small. Legs long, slender, tibial spines on hind legs very prominent, tarsi small. Wings more than thrice as long as broad; narrow at base, rounded in front to a broadly rounded tip; slightly arcuate on hind margin; primary stalk long, straight; stalk of subcosta long; costal nervure running close to costa, forming a slender cell but no stigma; radius long, curving downward to tip of wing; stalk of cubitus short, upper branch of cubitus curving upward then down, upper and lower forks of about same length, both turning downward; lower branch of cubitus long, upper fork curving round, lower fork very short, curving inward; clavus short. Abdomen small. Genitalia: (♂) very large; lower genital plate short, rounded; forceps very long, straight, slender, lightly fringed with hairs, and curved at tip; upper genital plate very long, thicker, and rounded at tip: (♀) short, broad, upper and lower genital plates forming a blunt point.

Hab.—Mosman Bay, and Sydney, N.S.W. (on *Eucalyptus corymbosa*; W. W. Froggatt).

This species, in the structure of the lerp chamber and habits of the larva, is closely related to *E. maideni*. The lerp scale is like the central part of the former without the scroll-like network ornamenting the sides.

Genus *ERIOPSYLLA*, n.g.

Head broad, cleft in front; face lobes short, broad, hairy; antennæ short; eyes reniform. Thorax: pronotum slender, curving round. Wings coriaceous, long, thrice as long as broad, rounded at extremities; no true stigma; subcosta running parallel to costal nervure forming a slender tail to the marginal cell; stalk of subcosta longer than stalk of cubitus; radius long; legs stout.

Type *E. viridis*.

ERIOPSYLLA VIRIDIS, n.sp.

(Plate xvi., fig. 6.)

Pupa pale green, with eyes, blotches on head, tips of antennæ, wing-covers, and apical portion of abdominal segments light brown. Head broad, somewhat rounded; eyes small; antennæ short, fringed with fine hairs, pointed at tips. Thorax fitting close on to base of head, as broad as abdomen; legs stout, with apex of tibiæ and tarsi fuscous. Abdomen oval, rounded at apex.

Imago.—Length 0·0475, antennæ 0·0125 inch.

General colour bright green, legs and antennæ pale green, eyes silvery grey; wings horn-colour, opaque, finely reticulated, nervures yellow; genitalia yellow, tipped with red. Head broad, rounded in front, slightly cleft, with a median suture, hind margin arcuate. Face lobes broad, rounded at apex, clothed with fine hairs. Antennæ very short, composed of very short joints, broadest at apex, and constricted at base; 10th joint elongate-oval. Eyes large, reniform, not projecting: central ocellus small, indistinct; lateral ocelli small. Thorax: pronotum narrow, wrinkled, and curled up on edges; dorsulum elongate, truncate in front, rounded behind; mesonotum somewhat flattened, arcuate in front, rounded on sides; scutellum narrow, truncate in front, rounded behind. Legs stout, tibiæ slender, tarsi large. Wings thrice as long as broad, narrow at base, sharply rounded to tip; primary stalk long, stalk of subcosta long; subcostal nervure long, running parallel to costal, nearly reaching tip of wing, forming no stigma; radius long, curving upward, and turn-

ing down at tip of wing; stalk of cubitus short, upper branch of cubitus long, upper and lower forks long, lower shortest, lower branch of cubitus half as long as upper; upper fork long, curving downwards, lower fork curving inward: clavus long, slender; clavical suture very slender. Abdomen broad, short, lightly barred with yellow on sides. Genitalia (♂) slender, lower genital plate elongate, forceps stout at base, curving up into finger-shaped tip; upper genital plate slender, curving over to tip of forceps.

Hab.—George's River, near Sydney, N.S.W. (on *Melaleuca linifolia*; W. W. Froggatt).

The larvæ and pupæ cluster upon the tips of the young growth of this shrub, enveloped in a slight fluffy white secretion, and are generally scattered over an infested bush in small colonies.

ERIOPSYLLA GRACILIS, n.sp.

(Plates xiv., fig. 11; xvi., fig. 9.)

Larva bright yellow, antennæ, legs, and apex of abdomen semi-transparent; tarsi and tips of antennæ fuscous, eyes bright red. Head very large, rounded, lobed, parallel on sides, truncate behind; antennæ short, thickened at base, coming to a point at tips. Thorax not as long as head, but of uniform width; lobes of wing-covers projecting slightly on sides; legs short, stout. Abdomen constricted at base, swelling out to same width as thorax, rounded to tip, fringed with fine feathery filaments, each with a globule of honey-dew at its apex.

Pupa.—General colour dull white to pale yellow; two broad blotches on head, antennæ, legs, spots on thorax, wing-covers, three interrupted bands on basal segments, and the whole of the apical portion fuscous; eyes purple. Head large, rounded in front, arcuate in front of eyes, sloping in on sides, truncate behind; antennæ short, standing out at an angle from sides of head; eyes large, projecting, rounded in front, angulated on inner margin. Thorax and abdomen of uniform width, short and broad, the latter rounded to apex; wing-covers large, broad, rounded to apex; legs short, stout. Wing-covers and apical edge of abdomen fringed with white wax-like filaments.

Imago.—Length 0·03, antennæ 0·0075 inch.

General colour deep yellow, finely barred with black on thoracic and abdominal segments; apical joints of antennæ fuscous, eyes light reddish-brown; wings semiopaque, coriaceous, slightly clouded with yellow, nervures pale brown. Head broad, with a frontal cleft, median suture, and fovea on either side; rounded in front, arcuate behind antennæ, swelling out, and rounded at eyes. Face lobes short, deeply divided, rounded at apex, clothed with fine hairs. Antennæ short, springing from front of head, and curving round on sides: 1st-2nd joints short, thick; 3rd longest, slender; 4th-9th slender, uniform; 10th not quite as long, rounded at apex. Eyes large, projecting, reniform: central ocellus very small, at apex of median suture; lateral ocelli large, close to front margin of eyes. Thorax: pronotum very slender, curving round, and impressed with five foveæ; dorsulum spindle-shaped, broad in centre, tapering to extremities; mesonotum large, arcuate in front, swelling out on sides, rounded and sloping round to hind margin, arcuate in centre of hind margin; scutellum broad, rounded behind. Legs stout, tibiæ slender. Wings long, slender, thrice as long as broad, rounded at tip; primary stalk long; stalk of subcosta longer than stalk of cubitus; subcosta running parallel with costal nervure forming a narrow cell, but no stigma; radius long, straight, running out above tip of wing; stalk of cubitus short; upper branch of cubitus long; upper fork short, running out at tip of wing, lower fork about same length, turning down; lower branch of cubitus long, upper fork very long, curving round to cubital fork, lower fork very short, nearly transverse; clavus stout, clavical suture distinct. Genitalia: (♂) lower genital plate large, broad; forceps long, slender, turning upward; penis slender; upper genital plate broad at base, terminating in a slender pointed tip: (♀) broad at base, sabre-shaped.

Hab.—Hornsby, Botany, &c., N.S.W. (on *Eucalyptus capitellata*; W. W. Froggatt).

This is a rather common species with a wide range over the coastal districts of New South Wales. The larvæ and pupæ congregate at the extreme tips of the young foliage, and envelope

it in loose white woolly filaments, among which they feed and pupate.

Genus *SYNCARPIOLYMA*, n.g.

Head very broad, short, sharply turned down, arcuate behind, very slightly cleft in front. Face lobes short, broad. Eyes very large, flattened. Antennæ short, slender, springing from cleft below eyes. Thorax: prothorax very short, deeply curved, reaching to inner margins of eyes; mesonotum very large, arcuate at tips behind eyes, forming a slight knob in front; scutellum very large. Legs slender, tibiæ of hind pair slightly swollen at apex. Wings thrice as long as broad, rounded at tips, stalk of subcosta short; stigma wanting, subcosta forming a slender open cell; radius long; cubital cells small.

Type *Syncarpiolyma maculata*.

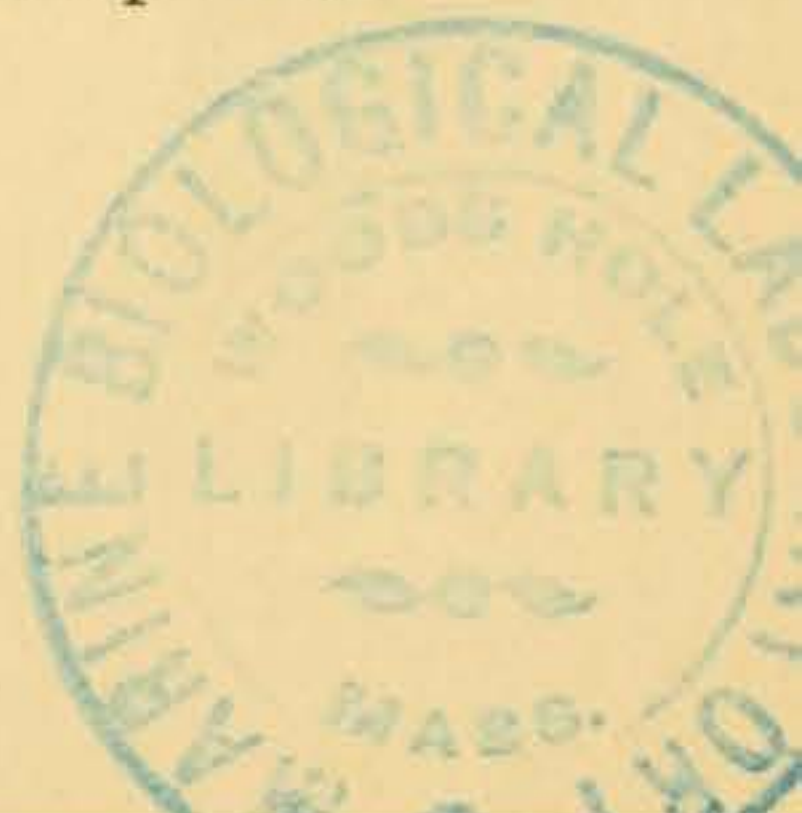
SYNCARPIOLYMA MACULATA, n.sp.

(Plates xv., fig. 2; xvi., fig. 7.)

Pupæ pale yellow, eyes bright red. Head broad, rounded in front to hind margin of eyes, broad, truncate behind; antennæ long, standing out in front of head; eyes large, rounded, projecting on sides. Thorax broad at base, swelling out on sides; wing-covers projecting, rounded at tips. Abdomen constricted at base, swelling out, broadly rounded, coming to a point at apex, which is clothed with a brush of long stout hairs.

Imago.—Length 0.04, antennæ 0.01125 inch.

General colour light brown, with darker brown spots and markings; eyes red, margined with yellow, ocelli pale orange; spots upon thorax and scutellum black; wings light brown, semi-opaque, coriaceous, lightly spotted with black, nervures clothed with fine hairs. Head short, wide between eyes, lobed in front, with a deep median suture, and a large fovea on either side; hind margin deeply arcuate. Face lobes very small. Antennæ short, slender: 1st joint stout; 2nd short, cylindrical; 3rd very long; 4th-6th shortest; 7th-8th slightly longer; 9th-10th short, swollen. Eyes very large, projecting: central ocellus at apex of



median suture, lateral ocelli close to hind margin of eye. Thorax: pronotum narrow, marked with four black spots; dorsulum slender, rounded in front, broadest in centre, tapering to extremities; mesonotum large, convex, with a fine spine on either side; scutellum slender, arcuate in front, spined on either side. Legs slender. Wings thrice as long as broad, slender and rounded to tips, delicately shagreened, a black spot at the apex of each nervure, and three black spots near apex; primary stalk short; stalk of subcosta short, subcostal nervure forming no stigma; radius straight, turning up, just above tip of wing; stalk of cubitus very long, upper branch of cubitus long and straight, upper and lower forks of about equal length, turning downward at tips; lower branch of cubitus turning down, upper fork long, curving round, lower fork short; clavus long, straight. Abdomen short, broad. Genitalia: (♂) very large, turned up over the back, lower genital plate rounded beneath; forceps slender, long, curved inwards; penis small; upper genital plate very long, broad at base, curved and tapering to tip: (♀) formed of two slender plates enclosing the ovipositor, nearly as long as the rest of abdomen.

Hab.—Termiel, N.S.W., (on *Syncarpia laurifolia*; W. W. Froggatt).

This is a rare species which I have only met with on one occasion on the South Coast. Insects in all stages of growth cluster upon the tips of the young shoots of the Turpentine Gum, enveloped in a fine white flocculent down.

Genus BRACHYPSYLLA, n.g.

Head narrow, deflexed in front, face long. Face lobes short, broad, rounded at apex. Antennæ very short, apical joints very short. Eyes very large, reniform. Thorax: pronotum large. Wings very broad and rounded at tips; stalk of subcosta very long; subcostal nervure running directly into costal nervure, forming no stigma or thickening of costa; radius curving upward at tip; stalk of cubitus short, upper branch of cubitus long,

straight. Legs long, slender, with a number of spines at apex of hind tibiae.

Type *Brachypsylla tryoni*.

BRACHYPSYLLA TRYONI, n.sp.

(Plates xv., fig. 1; xvi., fig. 1.)

Larva bright yellow, eyes bright red. General form elongate, antennae and legs stout, long. Head rounded in front. Thorax small. Abdomen short, constricted at base, swelling out on sides to rounded apex, heart-shaped. Dorsal surface fringed and covered with scattered short hairs which are again covered with fine particles of white sugary secretion, and a drop of liquid or filament on the anus.

Pupa light yellow, shaded with olive-green, thickly mottled with brown on dorsal surface; tips of antennae, tarsi, eyes, two large blotches between them, four more angular patches, and several pencil-like lines on thorax, wing-covers, five interrupted bands on upper segments and apical portion of abdomen dull brown. General form short, broad, with tip of body turned up when crawling on foliage. Head irregularly rounded in front and on sides, truncate behind, broader than long, antennae stout, pointed at tips, standing out on sides of head; eyes angular on inner margins. Thorax short, nearly square, longer than broad; wing-covers very large; legs rather long. Abdomen large, nearly hemispherical, slightly arcuate at tip. Ventral surface showing a ring of brown spots.

Imago.—Length 0.05, antennae 0.0075 inch.

General colour black, dorsal surface mottled with minute grey scales giving it a clouded appearance; legs clothed with fine grey hairs; 2nd, 3rd, and basal half of 5th antennal joint, tibiae, and tarsi ochreous; eyes reddish-brown; wings semitransparent, but so thickly blotched with dark brown that there is very little of the lighter colour; nervures fuscous, light-coloured where crossing white blotches in wing. Head small, deeply arcuate behind, turned down in front, distinctly rounded, flattened, with a slight

median suture. Face lobes short, broad at base, rounded at apex. Antennæ very short, springing up in front of eyes; 1st joint broad, stout; 2nd cylindrical, short; 3rd longest; 4th-5th long; 6th-9th very short, rounded; 10th shortest. Eyes very large, projecting, reniform viewed from above: central ocellus small, close to base of face lobes; lateral ocelli small, close to upper edge of eyes. Thorax: pronotum rather large, uniform in width, reaching to hind margin of eyes, with an impressed spot on either side; dorsulum nearly truncate in front, rounded behind; mesonotum broad, convex, deeply arcuate in front, rounded at extremities; scutellum small. Legs long, slender, hairy, spines on apex of hind tibiæ numerous. Wings more than twice as long as broad, narrow at base, broadly rounded at tip; primary stalk stout; stalk of subcosta very long; subcosta acute, running into costal, forming no cell or stigma; radius short, parallel, turning up slightly at tip; stalk of cubitus short, upper branch of cubitus long, straight, upper fork curving downward, lower fork nearly as long as upper, lower branch rather long, upper fork arched, curving round in a half circle, lower fork turning inwards; clavus stout, clavical suture slender. Abdomen short, stout. Genitalia: (♂) lower genital plate short, rounded; forceps short; upper genital plate large, broad at base, coming out into a horn-like point at apex: (♀) short, upper and lower valves coming to a point, slightly turned up at tip.

Hab. — Brisbane, Queensland (on *Conyza viscidula*; H. Tryon).

The eggs are scattered about among the hairs on the underside of the leaves of this plant, of a deep yellow colour, and more pointed than usual. I have a very fine series of this curious and very distinct species from Mr. Tryon, who says "it is rather common in the neighbourhood of Brisbane."

iv. Subfamily TRIOZINÆ, F. Loew.

Front of head either swollen or produced into two conical processes; eyes more or less prominent. Stalk of cubitus wanting; vein forking directly from junction with subcosta.

- Genus i.—PETALOLYMA, Scott, Trans. Ent. Soc. Lond. 1882, p. 459.
- ii.—BACTERICERA, Puton, Ann. Soc. Ent. France, (5), vi., 1876, p. 286.
- iii.—TRICHOPSYLLA, Thompson, Opus. Ent. 1877 (f. viii.), p. 820.
- iv.—TRIOZA, Förster.
- v.—RHINOPSYLLA, Riley, Proc. Biol. Soc. Washington, 1888, p. 71.
- vi.—PACHYPSYLLA, Riley, *l.c.*
- vii.—NEOLITHUS, Scott, *l.c.*, p. 445.
- viii.—PHACOPTERON, Buckton, Ind. Mus. Notes, Vol. iii., No. v., p. 18, 1895.
- ix.—PARHYPSYLLA, Riley, Canadian Entomologist, xv., p. 157, 1883.
- x.—CEROPSYLLA, Riley, Proc. Biol. Soc. Washington, 1888.

Genus *TRIOZA*, Förster.

Head produced into two conical processes in front. Eyes large: ocelli large. Antennæ slender from 3rd joint to apex. Wings: cubitus without a stalk; hind marginal nervure producing three branches, of which two spring from the same point; three short nervelets free on the dorsal edge of wing between the fork of cubitus.

Most of the Australian species in this subfamily appear to fit very well into the Genus *Trioza*. The larvæ of a number being gall-makers, spend the earlier stages of their existence enclosed in thick fleshy galls upon the foliage of different species of Eucalypts. I do not know of any psyllid galls on other trees than Eucalypts. Upon *Tristania* and *Eugenia* the insects form curious pits and blisters and not true galls, in which the larvæ remain until full grown in their natural state, though firmly imbedded; if the leaves are gathered too early, when they commence to dry the larvæ disconnect themselves from the leaves and crawl about quite easily.

The extraordinary form of the fish-like larvæ of the species living upon the Casuarina, shows how they adapt themselves to the slender thread-like foliage upon which they live. Scott has described several South American species producing galls, and Buckton recently described one from India, and though he figures the wings as those of a *Trioza*, he places it in the genus *Psylla*.

TRIOZA ORBICULATA, n.sp.

(Plates xv., fig. 9; xvi., fig. 22.)

Pupa large, broad; dorsal surface black, fringed right round with fine ciliated spines; ventral surface pale green, legs and antennæ black. Back flattened; head and thorax forming a rounded shield twice as large as abdomen.

Imago.—Length 0·11, antennæ 0·03 inch.

General colour brownish-yellow; eyes reddish-brown; abdominal segments darker, banded with fuscous; wings hyaline, nervures light brown. Head narrow, nearly as broad as the thorax, deeply impressed in front, with a deep median suture, and large fovea on either side wrinkling up all the front of the forehead; hind margin deeply arcuate. Face lobes small, fringed with long hairs. Antennæ very long, slender; 1st-2nd stout; 3rd-9th long, slender; 10th short, slightly clubbed. Eyes large, projecting, rounded on outer margin, deeply angled on inner margin: central ocellus hidden at apex of median suture; lateral ocelli large, in line with centre of eyes. Thorax: pronotum very narrow, curved upward, swelling out behind eyes; dorsulum very large, convex, projecting and rounded in front, sloping sharply on sides, which are rugose and slightly toothed, apex truncate; mesonotum large, curving round dorsulum on sides, truncate in centre, at base and apex; scutellum large, truncate in front, convex, rounded behind. Legs short, stout. Wings nearly thrice as long as broad; long, slender, more rounded at tips than usual; primary stalk long, turning slightly upward; stalk of subcosta very short, no costal cell or stigma; radius short, turning up, forming a lanceolate cell, stalk of cubitus wanting; upper branch of cubitus first turning

upward then downward; upper fork rather straight, running out above tip of wing; lower fork shorter, turning downward; lower branch of cubitus turning straight down, upper fork forming a large rounded curve; lower fork straight, turning in at tip; clavus thickened. Abdomen short and stout. Genitalia: (♂) forceps large, rounded, and turning upward into a pear-shaped tip.

Hab.—Bungendore, N.S.W. (on *Eucalyptus* sp.; W. W. Froggatt).

Larva producing four or five broadly rounded fleshy galls from $\frac{3}{4}$ inch to 2 lines in diameter, and $\frac{1}{2}$ inch in height upon the foliage of *Eucalyptus* sp. They are variable in form; the attachment to the leaf is slight, but the whole of the base of gall is flattened on the leaf, swelling out, rounded at apex, with from three to six tubular cells, each containing a larva. When immature these openings are very indistinct. The colour of the galls is variable, those exposed being brightly tinted with red and yellow; those hidden or sheltered of a pale sea-green colour, but all are clothed with a fine white plum-like bloom.

TRIOZA CARNOSA, n.sp.

(Plate xvi., figs. 12 and 24.)

Larva dark brown on dorsal surface, green shaded with yellow on thorax and on ventral surface; eyes red; antennæ and legs light brown. Outer margin of dorsal surface fringed with minute ciliated spines, covered with white woolly filaments which rub off very easily. Head small, imbedded in thorax but outlined with a light yellow line and suture of same colour down the centre of the back; antennæ very short, horn-shaped; eyes very small. Thorax and head combined forming a rounded shield; tips of wing-covers overlapping base of abdomen; legs short, thick. Abdomen arcuate on sides, rounded to apex. Ventral surface rounded, abdomen showing segmental divisions, with a regular upper edge or flange right round.

Pupa similar in form and colouration to larva, with the wing-covers much more prominent, and the outer margins more thickly fringed with white filaments.

Imago.—Length 0·1175, antennæ 0·03 inch.

General colour reddish-yellow, dark ochreous marks on head and thorax, abdomen yellow tinged with green and barred with brown to blackish bands; tips of antennæ black; eyes reddish-brown; wings hyaline, nervures reddish-brown. Head small, deeply cleft in centre, and wrinkled on either side of median suture; arcuate in front, rounded on sides, deeply arcuate behind. Face lobes large, rounded at tips, clothed with long hairs. Antennæ long, slender; 1st joint broad, short; 2nd short, bead-shaped; 3rd slender, very long; 4th-8th uniform, about half the length of 3rd; 9th shorter; 10th short, thickened, and rounded at tip. Eyes very large, projecting, angulated on inner margins: central ocellus large at base of central cleft; lateral ocelli vitreous at angle of inner margin of eyes. Thorax: pronotum very narrow, deeply curved round in front, arcuate behind; dorsulum convex, almost round; with a slight spine on either side; mesonotum large, deeply arcuate in front, curving round dorsulum, rounded behind; scutellum truncate in front, rounded behind; legs long, slender. Wings more than twice as long as broad, narrow at base, broadest and rounded to tip; primary stalk long, straight; stalk of subcosta short; radius short, marginal cell long, nearly reaching to tip of wing; upper branch of cubitus turning downward, long, upper and lower forks short, the former emerging above tip of wing; lower branch of cubitus short, turning sharply down, upper fork long, curving round; lower fork rather long, transverse, curving in at extreme tip; clavus short, curved; clavical suture slender: centre of cells on hind margin with fine striæ. Abdomen stout, tapering to apex. Genitalia: (♂) very short, lower genital plate short; forceps short, peg-shaped; upper genital plate broad, curving over forceps: (♀) fitting into tip of abdomen, hidden from above, formed of two slender serrate valves.

Hab.—Sydney, Mittagong, &c., N.S.W. (on *Eucalyptus* sp.; W. W. Froggatt); New Norfolk, Tasmania (on *E. obliqua*; A. M. Lea).

The larvæ produce thick fleshy soft galls of a regular oval form upon the leaves of several species of Eucalypts, measuring up to 8 lines in height and 5 in diameter at the centre, narrow and constricted at the base, brightly tinted with green and red when occurring in exposed positions; sometimes single, but generally in groups of two or three in contact with each other. The larva attacks the leaf from the undersurface, but unlike the "bubble galls," the scar heals up, and as the gall increases in size it cracks at the apex, forming an irregular slit opening into a tubular chamber, in the centre of which is to be found the larva attached by its rostrum to the bottom of the chamber, but easily detached. When full grown the psyllid casts its pupal skin and emerges through the top of the gall.

This is a widely distributed species, forming galls on several of the thick-leaved Eucalypts, but about Sydney chiefly upon *E. capitellata*. The insects are very variable in colour and size, the females being much bigger than the males. I have placed specimens received from Tasmania with our own specimens, as the galls are exactly alike and the general structure seems to agree, though the perfect insect is much larger.

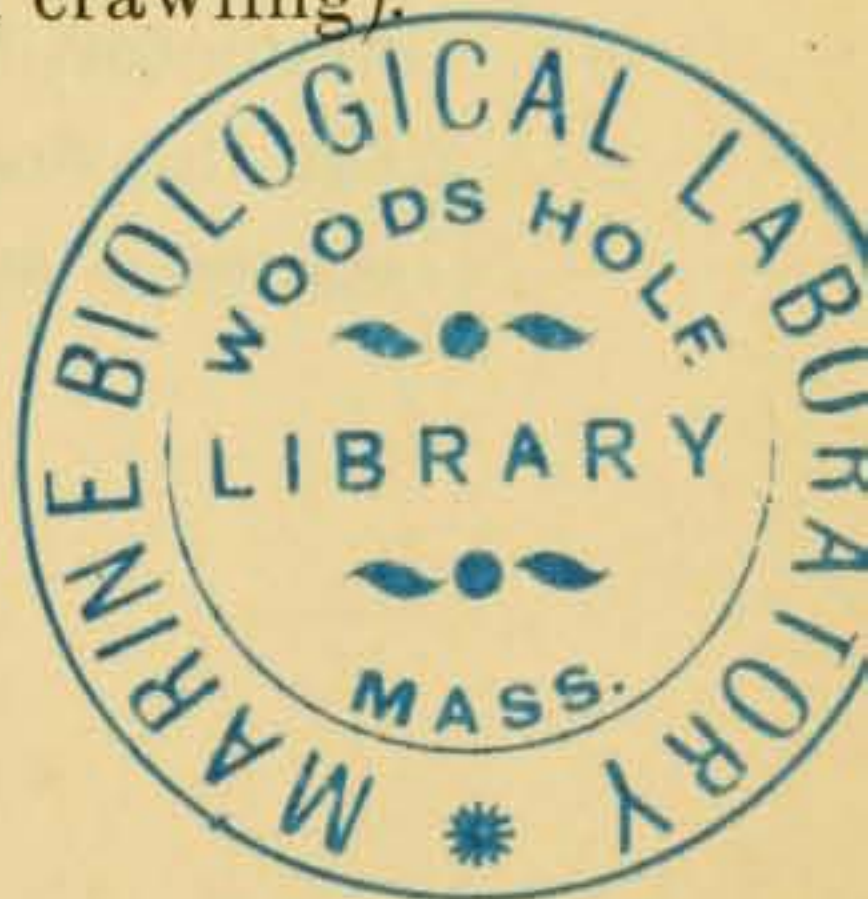
TRIOZA EUCALYPTI, n.sp.

(Plate xvi., fig. 23.)

Larva.—General colour ochreous on dorsal surface floured with white dust which forms white filaments round the outer edge beneath which is an unbroken fringe of short spiny hairs; eyes dark reddish-brown; ventral surface covered with floury secretion; head, thorax and legs ochreous; abdomen pale green. General form flattened and shield-shaped above. Antennæ short, thickened at base, curling round like a sheep's horn; legs stout, thick, with large tarsal claws; ventral surface swelling out, corrugated; abdomen convex and globose. (When the larva is removed from the gall it turns the abdomen up when crawling).

Pupa not differing from full-grown larva.

Imago.—Length 0·115, antennæ 0·04 inch.



Light reddish-brown, central segments of antennæ and base of abdomen fuscous; eyes dark reddish-brown; tarsi black; wings hyaline, iridescent, nervures ochreous. Head small, deeply cleft in front, forming a rounded lobe on either side with deep impression in centre, arcuate at base of antennæ, arcuate behind, swelling out behind eyes. Face lobes short, rounded, hidden from above. Antennæ long, slender, springing from centre of head lobes in front of eyes; 1st-2nd joints very short; 3rd very long and slender; 4th-8th much shorter, slender, uniform in length; 9th-10th very short, the latter thickened, and truncate at tip. Eyes large, rounded, prominent, slightly angular on inner margin: central ocellus at apex of cleft; lateral ocelli in line with angle of eyes. Thorax: pronotum very small, deeply convex in front, swelling out at tips behind eyes; dorsulum short, nearly circular, convex, produced into a spine at extremities; mesonotum very large, broad, arcuate in front, rounded to sides, where it is produced into an angular point, truncate behind; scutellum small, arcuate in front, rounded behind. Legs long, lightly clothed with long hairs; femora short, thickened; tarsal claws large. Wings nearly thrice as long as broad, rounded to tip; primary stalk very long, straight; stalk of subcosta very short; radius short, curving downward; upper branch of cubitus long, curving downward; upper fork longest, emerging above tip of wing, lower fork shortest; lower branch of cubitus very short, curving down, upper fork long, curving round, lower fork running straight down; clavus short, stout; clavical suture short: striæ marking the cells on hind margin of wing. Abdomen large, rounded to tip. Genitalia: (♂) short, very similar to former species: (♀) more elongate, but formed of two similar toothed valves contracted beneath the tip of abdomen.

Hab.—Mosman, near Sydney, N.S.W. (on *Eucalyptus Sieberiana*; W. W. Froggatt).

The larvæ produce thick, solid, rounded galls, four lines in diameter, flattened on the apex, sometimes scattered singly upon the leaves, but frequently clustering together so that several coalesce and grow into each other, forming an irregular mass;

when numerous the foliage of the infested tree becomes aborted and curled up from the immense number of woody galls. The insect attacks the leaf from the underside, leaving a ragged scar at place of entry; the galls grow out on the other side, of a dull yellow colour with a rounded mark on summit; the chamber small, circular, just large enough to contain the larva. The galls as they dry crack at the apex into four or five segments, curling outward in a very peculiar manner after the psyllids have abandoned them. I have cut the perfect psyllid out of perfectly closed galls in which there was no opening, so that I do not understand how the perfect insect makes its way out of the gall; probably most of them are ready to come forth just as the apex of the gall splits.

This species is closely allied to *Trioza multitudinea*, Tepper, described by Maskell from South Australia, but his description of the galls and insects does not apply to this one, which is probably a local species.

TRIOZA CIRCULARIS, n.sp.

Larva similar in colour and form to that of the preceding species. Dorsal surface flattened, thickly fringed on outer margin with fine ciliated spines, hidden beneath an upper fringe of white waxy secretion.

Imago.—Length 0.1, antennæ 0.035 inch.

General colour ochreous with yellow tints; abdominal segments banded with dark brown; antennæ yellow, apex of 4th-7th and the whole of 8th-10th joints fuscous; wings hyaline, nervures light brown. Head short, deeply divided in front, flattened, rugose, with median suture and fovea on either side; rounded in front to eyes, arcuate behind. Face lobes short, broad, rounded. Antennæ long, slender; 1st and 2nd joints short, stout; 3rd very long, cylindrical, thrice as long as broad; 4th-7th of uniform length; 8th shorter; 9th-10 very short, truncate at apex. Eyes very large, not as long as head, angular on sides: central ocellus well up in centre of median suture; lateral ocelli large, on summit

of head. Thorax : pronotum very narrow, rounded in front, arcuate behind; dorsulum very large, prominent, convex, rounded and narrow in front, swelling out and rounded behind; mesonotum large, broad, slightly depressed in front, with a faint median suture, arcuate in front, rounded on sides, truncate at apex; scutellum large, flattened, rounded behind. Legs short, stout; tibiæ long, tarsi and claws large. Wings more than twice as long as broad, rounded from front margin to tip, which is slightly acute; primary stalk long, straight; stalk of subcosta short; radius short, not reaching to tip of wing; upper branch of cubitus curving downward, upper fork emerging just above tip of wing, lower fork shorter, forming an angular cell; lower branch of cubitus turning downward, upper fork rounded, lower fork curving in at tip; clavus stout, clavical suture long, slender. Abdomen large, rounded at tip. Genitalia : (♀) very short, rounded and hidden under tip of abdomen.

Hab.—Wyong, N.S.W. (on *Eucalyptus* sp.; W. W. Froggatt).

This is not a common species. The larvæ produce much more regularly formed spherical galls than is usual, measuring from three to four lines in diameter, clustered together in such numbers as to frequently abort the leaves. The opening is on the under side of the leaf, with the walls of the gall very thick and fleshy.

TRIOZA MULTITUDINEA, Tepper.

Maskell, Trans. R. Soc. S. Aust. 1898, p. 8, pl. iii., figs. 11-17;
Ascelis (?) *multitudinea*, Tepper, *op. cit.*, Vol. xvii. p. 278,
 1893, pl. iii, figs. 15-21.

Mr. Maskell redescribed this species, originally described by Mr. Tepper in a paper entitled "South Australian Brachyscelid Galls," in which he placed it among the gall-making coccids. He sent some of these supposed coccid galls to Maskell, who found that they contained the larvæ of a psyllid from which he bred some of the perfect insects. Among others he says that Mr. Froggatt sent him specimens of the galls from New South Wales. But I doubt if he bred any specimens from the galls that I sent, and he probably concluded that the galls were the same, as I can

find no examples of the species in my collection which agree with the description of *T. multitudinea*.

He says the "adult female is almost entirely yellow, with a darker tinge on the thorax, dorsally, and at the extremities of the antennæ and feet; the eyes are red, semiglobular, faceted, placed on a short tubercular base. The head is broader than long, depressed in front and produced beneath in two moderately long sub-conical processes: the rostrum is cylindro-conical. The antennæ have 10 joints, all elongated, subequal and ringed, except first two, which are short and smooth." The genitalia are remarkable, and the wings more elongated and pointed than in most species.

Hab.—Marino, S.A. (on *Eucalyptus* sp.; J. G. O. Tepper).

TRIOZA BANKSIÆ, n.sp.

(Plates xv., fig. 4; xvi., fig. 26.)

Pupa pale greenish-yellow; eyes black; dorsal surface covered with fine silvery tinted hairs. General form oval, flattened on dorsal surface; head and thorax rounded in front and on sides; antennæ short, apical joint longest; wing-covers small, projecting slightly at apex; abdomen slightly constricted at base, rounded to apex, fringed right round with ciliated spines; ventral surface flattened; legs stout.

Imago.—Length 0.0375, antennæ 0.0075 inch.

General colour pale golden-yellow; eyes brown; wings hyaline, nervures light brown. Head large, deeply cleft in front, rounded on sides, arcuate behind. Face lobes large. Antennæ short, slender; 1st joint short, stout; 2nd twice the length of 1st; 3rd slender, thrice the length of 2nd; 4th half length of latter; 5th shortest; 6th-8th of uniform length; 9th-10th much shorter, slightly swollen to tip. Eyes large, rounded on outer margins, angulated on inner: central ocellus small, lateral ocelli close to eyes. Thorax: prothorax narrow; dorsulum large, convex, irregularly rounded; mesonotum large; scutellum large, rounded. Legs slender. Wings thrice as long as broad, rounded to an

angular tip; primary stalk long; stalk of subcosta medium, costal cell wanting; radius short, turning upward, upper branch of cubitus long, upper fork short, running out above tip of wing; lower fork shortest, turning downward; lower branch of cubitus transverse; upper fork short, arched; lower fork very short, curving in at apex. Abdomen short. [Genitalia damaged.]

Hab.—Botany, near Sydney, N.S.W. (on *Banksia serrata*; W. W. Froggatt).

This is a very rare species which does not form galls. The larvæ cling close to the undersurface of the leaves of the food-plant which they very closely resemble in colour, but produce no gall or blister. The perfect insect when at rest has the body and wings pointed upward as if it were standing on its head.

TRIOZA EUGENIÆ, n.sp.

(Plates xv., fig. 10; xvi., fig. 15.)

Larva varying from pale to dark yellow, eyes pink. General form oval; dorsal surface flattened, shield-shaped, outer margin with a rim of lace-like fringe quite different from the encircling ciliated spines in other species of this genus; ventral surface convex, margined with a fleshy flange. Antennæ 8-jointed, broad at base, coming to a point at tip, reaching edge of marginal flange. Legs short, stout. Abdomen much corrugated.

Pupa varying in colour from dark yellow to brown. More circular in form than the larva; head showing a rounded base and apex through dorsal shield; eyes large; antennæ extending beyond edge of shield; wing-covers slightly swollen on sides, overlapping the basal segment of abdomen; a broad transverse suture between thorax and abdomen.

Imago.—Length 0·0675, antennæ 0·01 inch.

Colour very variable, in freshly emerged specimens from dull yellow to ochreous; eyes reddish-brown, last two apical joints of antennæ black; thorax marbled with yellow lines; wings hyaline, nervures light brown. The whole insect clothed with fine hairs, thickest and longest on front of head, back and abdomen. Head

short, not as broad as thorax, slightly truncated in front, with a fine median suture; a small fovea on either side, and a slight transverse ridge above; arcuate behind. Face lobes large, conical, hirsute. Antennæ long; 1st-2nd joints stout, broad; 3rd very long, slender; 4th-8th about half the length of 3rd; 9th-10th much shorter, swollen, forming a slight club. Eyes very large, projecting, rounded on outer edge, truncate on inner: central ocellus small, at apex of median suture; lateral ocelli small, close to upper margin of eyes. Thorax: pronotum short, broad, rounded in front, arcuate behind; dorsulum large, hexagonal, with sides slightly tuberculate; mesonotum large, slightly arcuate in front, truncate behind, with sides sloping upward; scutellum very large, arcuate in front, rounded behind. Legs long, slender, clothed with fine hairs; apex of tibiæ of fore-legs with a stout spine on either side of the large tarsal joints. Wings large, more than twice as long as broad, front margin curved, apex forming an angular tip; primary stalk long, straight; stalk of subcosta long; radius short, forming a lanceolate cell; upper branch of cubitus long, curving downward; upper fork short, emerging above tip of wing; lower fork shorter, emerging below tip of wing; lower branch of cubitus long, sloping down; upper fork short, curving round; lower fork short, curving in at tip; clavus slender, clavical suture slender. Three wedge-shaped marks of false striæ on hind margin. Abdomen short, broad. Genitalia: (♂) lower genital plate short, broad; forceps short, broad at base, conical but dilated at apex; upper genital plate short, broad, rounded above: (♀) short, conical at tip.

Hab.—All the coastal districts of New South Wales (on *Eugenia Smithii*; W. W. Froggatt); Gippsland, Vic. (on *E. Smithii*; C. French, Junr.).

The larvæ attach themselves to the young foliage of the tree, commencing on the upper surface of the leaves (sometimes as many as 50 upon a single leaf); puncturing them with their sharp rostra, they cause small blisters to appear on the undersurface so that the insects lie in the hollow thus formed, with the dorsal surface level with the upper surface of the leaf. When immature

the outer margin of the shield-shaped larva is smooth, but in the later stages of development there is a regular marginal fringe of white waxy filaments round the pupa.

This species has a wide range, probably as wide as the food-plant, as I have them from the Northern Rivers (Lismore) to Gippsland in the south. When badly infested the foliage of the food-plant becomes much discoloured, tinted with reds and yellows, and twisted, corrugated and aborted. Though the insects seem to be firmly attached to the leaves, when they were kept in jars for observation they detached themselves and crawled about as soon as the foliage began to wither.

I have a series of specimens obtained on some undetermined shrub (probably *E. Smithii*) at Clifton some years ago, in which the cross-nervures between the primary stalk and the costal nervure are clouded with black, and the clavus is blotched, markings which I have never found on the typical form. This, however, may be a distinct species, but in the absence of more fresh material, I regard it as a seasonal variety of the typical form.

TRIOZA CASUARINÆ, n.sp.

(Plates xv., fig. 11; xvi., fig. 27.)

Pupa dark ochreous to darker brown. General form long, slender, thrice as long as broad; dorsal surface convex; head rounded in front to behind eyes, showing a fine median suture running back to base of abdomen. There is no distinct division between head and thorax. Eyes large, projecting; antennæ represented by two small pointed horns between eyes. Thorax constricted behind head, swelling out again and sloping round to base of abdomen; wing-covers not showing, legs hidden from above; abdominal segments tapering slightly to a rounded tip, divisions distinct; ventral surface flattened, showing a fine median suture, and small legs. Front of head fringed with fine hairs; the outer margin forming a slender flange which encircles the whole insect.

Imago.—Length 0.0625, antennæ 0.015 inch.

General colour dark brown to ochreous, marked with yellow, eyes reddish-brown, basal joints of antennæ brown, apical ones black; wings hyaline, nervures light brown, all the inner ones broadly marked with dark brown. Head broad, deeply cleft in front, sides sloping round to eyes, deeply arcuate at base. Face lobes large, conical, turning downward. Antennæ short; 1st-2nd joints short, broad; 3rd very long, slender; 4th-9th short, uniform; 10th short, slightly thickened, truncated at tip. Eyes very large, rounded, projecting: central ocellus very small, at apex of cleft; lateral ocelli vitreous, close to hind margin of eye. Thorax: prothorax angulated in front, short, deeply arcuate behind; dorsulum rounded in front, truncate behind, rounded on sides; mesothorax broad, of uniform width to wings; scutellum truncate in front, rounded behind. Legs rather long, slender, thighs stout, tarsi large. Wings slightly more than twice as long as broad, rounded on both sides, terminating in a rounded tip; primary stalk long, parallel; stalk of subcosta rather long, sloping upward, no costal cell or stigma, cross nervure running straight into costal nervure; radius very short, turning up into costal nervure; no cubital stalk; upper branch of cubitus long, arched, turning downward; upper fork very short, turning upward, emerging above the tip of wing; lower fork shorter, turning down below the tip; lower branch of cubitus long, upper fork short, arched; lower fork very short, running straight down into margin of wing; clavus very long and stout, clavical suture very slight. Abdomen short, coming to a rounded tip. Genitalia: (♂) very short, broad, and turned up over the back; lower genital plate very large, broad, round; forceps large, peg-shaped; upper genital plate peg-shaped, turned backward.

Hab.—Manly, near Sydney, N.S.W. (on *Casuarina distyla*; W. W. Froggatt).

This is a very remarkable species, the larval and pupal forms being quite different from any other known to me, their slender, elongate forms being admirably adapted for clinging to the slender foliage of the she-oak.

v. Subfamily PRIONOCNEMINÆ, Scott.

Head small, crown measured down the centre more or less than one-half the width between eyes. Face lobes short (wanting?); antennæ long, slender. Eyes large. Thorax: pronotum narrow, broadest in middle, as long as outer edge of eyes; mesonotum convex, widest at insertion of elytra. Wings elongate, more or less acute at apex, with a stigma (?); cubitus petiole short, dorsal margin with two or four nervelets. Legs: tibiæ of 3rd pair with stout, curved, angular tooth at base, apex dilated, with a more or less serrate margin.

Genus i.—CARSIDARA, Walk. } Journ. Linn. Soc. Zool., Vol. x.,
 „ ii.—TYORA „ } pp. 329-330.

In the two following species I have found so many affinities to the genus *Tyora* that I refrain from forming a new genus for their reception, and so I have placed them in this. Walker formed the genus on one specimen (minus the head) from Mysol; but in Scott's definition of the genus he says "head wanting," though in that of the subfamily containing the two genera he says "face lobes short, antennæ long, slender, eyes large." Walker, however, in his description, says "antennæ graciles, filiformes," but he does not note anything about the face lobes. Walker does not say whether there is a stigma in the forewing; and though Scott figures the wing of this species, with the remarkable cross nervure and no stigma exactly as my species, he says "stigma joined to radial by a transverse nerve."

Genus TYORA, Walker.

"Body slender, antennæ slender, filiform, much longer than the thorax; 1st and 2nd joints incrassated. Legs stout, rather short. Fore wings narrow, with three longitudinal veins, which are connected near the base; first vein emitting an oblique vein, and an exterior short directly transverse vein to the costa; second vein emitting three oblique veins to the hind border (of these secondary veins the first and second are connected by a transverse vein, third vein extending obliquely to the hind border)."

Type *Tyora congrua*, Walker.

TYORA HIBISCI, n.sp.

(Plates xv., fig. 8; xvi., fig. 18.)

Larva semitransparent, abdomen pale yellow. General form shorter and broader than usual, lightly clothed with white filaments on dorsal surface. Crawling about on the underside of leaves among the fine hairs of the foliage.

Pupa green, richest towards abdomen; antennæ and legs semitransparent, tips of former and tarsi of latter fuscous, eyes reddish brown; front of head, wing-covers, thorax and basal joint of antennæ clouded with bright yellow. Head short, broad, deeply cleft in front, sloping on sides to eyes; antennæ very long and slender; eyes small, not projecting, arcuate behind. Thorax short; wing-covers very broad, swelling out on sides; legs very long, slender, tarsal joint long, slender, second joint terminating in two small curved claws, quite different from the digitales observed in other species in the pupal stage. Abdomen broad at base, rounded, longer than broad, covered with white filaments, that in some cases also cover the whole of the dorsal surface.

Imago.—Length 0·085, antennæ 0·04 inch.

General colour bright green, clouded with yellow on head and thorax; apex of 3rd-4th and base of 10th antennal joints, apex of tibiæ and tarsi black; eyes dark brown; four slender white parallel lines on dorsal surface of head; irregular white lines dotting the abdomen; wings hyaline, nervures ochreous, each blotched with a rounded spot where they cross or emerge on outer margin of wing. Head very short, broad, deeply cleft in front, each side forming a lobe from which the antennæ spring; median suture distinct, arcuate behind. Face lobes wanting. Antennæ very long, slender; 1st joint very short, broad; 2nd short, cylindrical; 3rd longest; 4th-7th of uniform length; 8th shorter; 9th short, slightly swollen at apex; 10th short, swollen at base, pointed at tip. Eyes very large, as broad as head: central ocellus large, at apex of median suture; lateral ocelli small, close to eyes. Thorax large, narrow to base of wings, swelling out behind; pronotum broad, rounded at apex; dorsulum very broad, rounded in front,

coming to a point on either side; mesonotum large, arcuate in front, rounded to apex. Legs long, slender, a claw at apex of hind femora, last joint of tarsi long; apex of tibiæ of hind legs dilated, with marginal spines forming a group of three on inner margin and one on either side, a slight spine also at apex of first tarsal joint. Wings thrice as long as broad, curved round on costal margin to tip, sharply rounded at tip; primary stalk rather short, stout; stalk of subcosta very long, as long as radius, subcosta short, transverse; no stigma; radius very short, turning upward, with a transverse nervure crossing from centre to the junction of furcation of upper* branch of cubitus; stalk of cubitus short, one-half length of stalk of subcosta; upper branch of cubitus long; upper fork long, curving upward then turning down below tip of wing, lower fork shorter; lower branch of cubitus short, upper fork curving round then out at tip, lower fork short, curving inwards; clavus long, clavical suture slender: granulated spots on lower margin of wings, in centre of first cubital cell, and between it and second. Abdomen stout, tapering to extremity. Genitalia: (♂) lower genital plate broad, rounded; forceps slender, elbowed at base, curved in and pointed at apex; penis long, slender; upper genital plate stout, curving over forceps, with a keyhole-like notch on inner edge fringed with fine hairs: (♀) upper and lower genital plates short, slightly curved at tips.

Hab.—Brisbane, Q. (on *Hibiscus tiliaceus*; H. Tryon).

The larvæ and pupæ of this species are so thickly enveloped in white flocculent filaments that the undersurface of the leaves of the infested bush becomes quite sticky and smothered with their exudations. Mr. Tryon informs me the insects are very plentiful upon this plant all round Brisbane.

This is one of the most remarkable species that I have studied; related in the form and structure of head and legs to the species on the Kurrajong, which it also resembles in habits and earlier stages of its life history; but the venation of the wings is very distinct. The want of any costal cell or stigma, short radius, and remarkable transverse cross nervures between the centre of radius to furcation of cubitus place it quite alone.

TYORA STERCULIÆ, n.sp.

(Plates xv., fig. 5; xvi., fig. 10.)

Larva semitransparent; eyes, centre of thorax and abdomen red. General form elongate, uniform in width from sides of head to rounded tip of abdomen. Head slightly lobed in front, with a distinct median stripe; antennæ standing out straight on either side of head, thick at base, tapering to tips. Abdominal segments very distinct; apex clothed with a tuft of white filaments.

Pupa dull olive-green, thighs and inner margins of wing-covers light green; legs light brown, apex of tibiæ and tarsi black; wing-covers, head, spots on thorax and tip of abdomen brown; a dorsal stripe of red running from centre of head to tip of abdomen. Head broad, truncate between antennæ, rounded to eyes, swelling out and truncate behind; antennæ very long, slender, apex of each joint black; eyes large, projecting, rounded on outer and angled on inner margins. Thorax broader than head; wing-covers short, elongate-oval; legs stout, long. Abdomen swelling out at base, broadest across centre, slightly arcuate on sides near apex; tip of abdomen ornamented with a number of thick woolly filaments from two to five in number trailing out on sides and base to $\frac{1}{4}$ inch in length.

Imago. —Length 0·07, antennæ 0·0425 inch.

General colour bright green, ocelli yellow, eyes red, antennæ and tarsi brown; head, thorax and abdominal segments marked with black, wings hyaline, nervures dark brown. Head small, deeply cleft in front, rounded behind. Face lobes wanting. Antennæ projecting from rounded tubercle on either side of a median cleft, very long, slender; 1st joint broad at base; 2nd more slender at base, rounded at apex; 3rd longest; 4th-8th shorter; 9th shortest; 10th slightly thickened, short, rounded at tip. Eyes large, rounded on outer and angled on inner margin: central ocellus small, at base of median cleft; lateral ocelli elongate, on centre of inner margin of eyes. Thorax: pronotum lobed in front, rounded, projecting over base of head, sloping

away on sides, hind margin deeply arcuate in centre, swelling out and pointed on sides; dorsulum convex, broad, rounded on both sides, elongate on outer margins; mesonotum large, arcuate both in front and behind, rounded on sides; scutellum convex rounded behind, fitting close into mesonotum. Legs long, slender, a short black curved spine at apex of femora; 1st tarsal joint long, with spines on inner edge; 2nd long, slender. Wings long, slender, more than twice as long as broad, rounded on costal margin, pointed at apex; primary stalk short; stalk of subcosta very long; subcosta turning up, then running parallel with costa, and again turning into costa, forming a narrow tail to the median cell, no transverse nervure or stigma; radius short, parallel, then turning sharply upward and coming out on upper margin of wing; stalk of cubitus very long, longer than that of subcosta, upper branch of cubitus almost straight (a little longer than stalk), upper fork long, curving round and emerging just below tip of wing, lower fork shorter, lower branch of cubitus short, upper fork curving round, lower fork curving in; clavus long, clavical suture slight: an irregular spotted or granulated mark on hind margin of wing in centre of first cubital cell, and another between it and second cubital cell. Abdomen constricted at base, slender. Genitalia: (♂) slender, lower genital plate broad, rounded on lower edge; forceps forming two slender curved processes turned inwards; penis slender; upper genital plate broad, conical, curved, truncate at tip: (♀) slender, pointed at tip.

Hab.—Forbes, N.S.W. (on *Brachychiton populneum*; W. W. Froggatt) Brisbane, Q. (on *Brachychiton* sp.; H. Tryon)

This is one of the most anomalous species I have found; and the living psyllid with its bright green tints, delicate transparent wings, and long slender legs and antennæ might easily be passed over at first sight as an aphis. The deeply cleft head, absence of face lobes, and the peculiar venation of the wings render it a very distinctive insect. The eggs are horn-colour, elongate-oval in form, and deposited in patches containing from 30-40 in number on the upper surface of leaves. The larvæ and pupæ cluster together where they emerge from the eggs, the long filaments

trailing out all round giving them a star-like appearance, and each family makes a large white blotch on the foliage. This species will probably be found in all localities where its food-plant is a native, and may also infest other species, as Mr. Tryon recently sent it to me from Brisbane.

SUPPLEMENT.

In the following pages are described several additional species belonging to the subfamily *Aphalarinae*, which have been obtained or determined since the first portion of this paper was published. I hope to be able to add a considerable number to the already large list of Australian *Psyllidæ*, as I still have the earlier stages of a number of species worked out, but am waiting for more material to enable me to describe the perfect insects.

APHALARA FUSCIPENNIS, n.sp.

(Plate xiv., fig. 10.)

Larva bright orange-yellow, eyes red, tips of antennæ black. Head truncate in front, sloping round to eyes, truncate behind; nearly twice as long as thorax; antennæ stout, standing out on either side; eyes small, set far back in head; thorax very short; legs stout; abdomen constricted at base, rounded on sides, elongate. Front of head and legs clothed with a number of fine hairs, with much longer ones fringing the apical segments of abdomen, from which project a number of long white filaments.

Pupa light brownish-yellow; antennæ and legs fuscous, the tips of both black; two club-shaped blotches on head, wing-covers, two fine spots on sides and eight in centre of thorax, four slender marks on basal and the whole of the apical segments of abdomen dark brown. Head broad, rounded, truncate at base; antennæ short; eyes large, elongate, slightly projecting; thorax almost angular, wing-covers long, rounded at tips; legs long, stout; abdomen large, constricted at base, swelling out, rounded on sides, anal segment arcuate at tip, with numerous long filaments forming quite a tail behind.

Imago.—Length 0·05, antennæ 0·0125 inch.

General colour pale yellow to light green, marked with brown, tips of antennæ and eyes black; wings hyaline, with tip of marginal and submarginal cells clouded with brown, nervures light brown. Head long, broad, turning downwards in front, a deep median suture with fovea on either side; arcuate behind. Face lobes short, broadly rounded, hirsute. Antennæ springing out in front of eyes, short, slender; 1st and 2nd joints short, broad; 3rd very long, cylindrical, as long as next four combined; 4th-8th uniform; 9th-10th forming a slender club rounded to apex. Eyes large, hemispherical: central ocellus small, at apex of median suture; lateral ocelli close to hind margin of eyes. Thorax: pronotum convex in front, sloping down on sides; dorsulum narrow, truncate in front, rounded behind and tapering to a spindle-shaped point on sides; mesonotum large, arcuate in front, rounded behind; scutellum large. Legs rather long; femora stout; tibiæ long, broad at apex, and lightly clothed with hairs. Wings thrice as long as broad, slightly rounded in front to tip; costal and inner nervures lightly fringed with fine hairs; primary stalk short; stalk of subcosta long, subcosta long, running close to costa, forming no stigma but a long slender tail to median cell; radius very long, curving downward to tip of wing; stalk of cubitus long, as long as stalk of subcosta, upper branch of cubitus long, curving slightly upward. upper and lower forks short, turning downward below tip of wing, both short and nearly of equal length; lower branch of cubitus long, upper fork rather long, rounded; lower fork very short, nearly transverse; clavus rounded, slender; clavical suture long, slender. Abdomen short, broad. Genitalia: (♂) short, broad; lower genital plate short, rounded; forceps short, slender, upper genital plate indistinct.

Hab.—Botanic Gardens, Sydney (on *Eucalyptus robusta*; W. W. Froggatt).

The larvæ cluster together in little families of as many as half-a-dozen upon the broad leaves, producing a patch of delicate white flocculent down in which they lie close to the surface of the leaf.

SPONDYLIASPIS GRANULATA, n.sp.

(Plate xvi., fig. 25.)

Lerp convex, longer than broad, opaque white to pale yellow, sides and ends sloping up to centre; 2 lines in length, 1 in width; attached on the sides to the upper surface of a leaf, with the ends open and a convex arch through which the larva can be seen. These lerp-scales are never plentiful, not more than one or two on a leaf, and resemble the lerp of *S. eucalypti* in general structure but are quite different in shape.

Larva differing very slightly from pupa, except in coloration; general colour dull yellow.

Pupa.—General colour pale yellow, abdomen pale green, antennæ and legs pale ochreous; two large blotches on head extending on to prothorax with two spots behind them; eight irregular spots on thorax and wing-covers light brown; a double row of impressed black spots down the centre and tip of abdomen black. Head short, slightly arcuate in front and behind; antennæ stout, thickened, curved round on sides, slightly pointed at apex; eyes very large. Thorax large; prothorax not as wide as eyes, sloping out to base of wing-covers; wing-covers narrow, pointed at apex; legs stout, tarsi slender at tips. Abdomen very broad, narrow at base, swelling out, rounded on sides to the tuberculate anal process.

Imago.—Length 0.065, antennæ 0.0325 inch.

General colour light green; face lobes, basal joints of antennæ and tarsi dull yellow; dorsal surface of thorax slightly tinged with yellow; legs and antennæ semitransparent, wings hyaline, nervures pale brown. The whole of the upper surface finely shagreened. Head wider than prothorax, slightly arcuate behind; deeply cleft and lobed in front, with a deep median suture and a shallow rounded fovea on either side; sides of face arcuate in front of eyes. Face lobes very long, opening out at base, curving round at tips, finger-shaped, rounded at tips, clothed with fine hairs. Antennæ and eyes as in *S. eucalypti*. Thorax: pronotum

not as wide as head, rounded in front, arcuate behind inner margin of eyes, rounded on sides, deeply arcuate behind; dorsulum small, rounded in front; mesonotum broadly heart-shaped. Legs moderate, stout. Wings long, more than twice as long as broad, slightly angulated at tip, similar in structure to *S. eucalypti* except that the pterostigma is more slender and tapering, and the cubital nervures more like those of *S. mannifera*. Abdomen long, slender. Genitalia: (♀) forming a slender tapering point on last rounded abdominal segment.

Hab.—Botany, near Sydney, N.S.W. (on *Eucalyptus robusta*; W. W. Froggatt).

THEA OLIVACEA, n.sp.

(Plates xv., fig. 3; xvi., fig. 4.)

Larva semitransparent; eyes, dorsal suture from head to base of abdomen, transverse lines behind head, on thorax, and basal segments of abdomen red; central portion of head, thorax and base of abdomen tinted with yellow. Head as broad as thorax, deeply lobed in front, sloping on sides to front of eyes; antennæ 5-jointed, pointed at tips; eyes warty, apparently formed of several divided sections. Wing-covers forming rounded knobs on sides. Abdomen constricted at base, rounded and sloping behind to a truncate tip.

Pupa varying in colour from pale to reddish-yellow; antennæ, eyes, two blotches on head, legs, wing-covers, a double row of seven spots on either side of thorax, an interrupted bar on first three and the whole of the apical segments of abdomen from dark brown to black. Entire dorsal surface, legs and antennæ clothed with coarse hairs. Head large, rounded in front of eyes, truncate behind; antennæ long, pointed at tips; eyes flattened, hemispherical. Thorax large, broad; wing-cases short, rounded; legs short and thick. Abdomen large, rounded on sides, segmental divisions distinct, irregularly rounded at apex.

Imago.—Length 0·08, antennæ 0·02 inch.

General colour pale yellow to olive-green; head, pronotum, and metathorax pale olive-green; antennæ and legs dull yellow; eyes

and ocelli red; dorsulum and mesonotum pale yellow, thickly mottled with light chestnut; wings semitransparent with an opaline tint, nervures light brown; abdomen red to reddish-brown, finely barred with black. Head short, broad, fitting very close against thorax, rounded in front, arcuate behind, without the usual frontal cleft but with a fine median suture without fovea. Face lobes short and rounded, hidden when viewed from above. Antennæ very slender, but short; 1st joint very short; 2nd more elongate, longer than usual; 3rd longest, slender at apex; 5th-8th shorter; 9th shorter; 10th shorter, truncate at tip. Eyes large, projecting, angular on inner margin: central ocelli at base of median suture; lateral ocelli large, not as close to the eyes as in most species. Thorax: pronotum narrow, rounded in front, extremities reaching to inner margin of eye; dorsulum small, rounded in front, arcuate on either side, forming a truncate tip, rounded behind; mesonotum large, arcuate in front, swelling out and rounded on both sides to scutellum. Legs stout, rather long. Wings thrice as long as broad, rounded in front, pointed at tips; primary stalk long, stalk of subcosta short; subcostal nervure forming a stout angulated stigma; radius long, turning slightly upward, running out at tip of wing; stalk of cubitus long, turning downward, upper branch of cubitus arching upward; upper fork longest, curving upward; lower fork a little shorter, turning downward; lower branch of cubitus short, slightly curved; upper fork sharply rounded, turning down; lower fork short, turning inward; clavus long, stout; clavical suture long. Abdomen short, stout. Genitalia: (♂) lower genital plate short, conical, forceps broad at base, tapering to tip; upper genital plate large, and longest: (♀) very large, long, and sabre-shaped, upper genital plate thickest, shorter, ribbed on sides; lower genital plate longest, finely toothed on upper edge, truncate at tip.

Hab.—Mittagong, N.S.W. (on *Eucalyptus capitellata*; W. W. Froggatt).

The larvæ and pupæ in all stages of growth cluster over the bark of the branches of the Eucalypt, enveloped in a white sticky secretion, which envelopes the whole of the insect, and appears

to come from the dorsal surface of the abdominal segments. The small branches of infested trees are quite whitened.

CARDIASPIS TEXTRIX, n.sp.

(Plates xv., fig. 6; xvi., fig. 19.)

Lerp. —A delicate net-like basket attached to the leaves in the centre of a discoloured patch caused by the larva; $3\frac{1}{2}$ lines in length, 4 in breadth, $2\frac{1}{2}$ in height; constructed with a number of pale red, semitransparent, parallel ribs arching over in the form of a dome, rounded at the base and swelling out on the apical edges, recrossed with finer transverse threads of a similar colour, producing a fine net-like pattern.

Pupa dull yellow to pink; antennæ, large blotches on head, wing-covers, spots on thorax and abdomen black. Head short, broad, rounded; antennæ slender, standing out on side of head; eyes small, rounded. Thorax swelling out towards thorax, covered with impressed black spots; wing-covers very small, rounded at tips; legs short, stout. Abdomen large, globular, narrow at base, swelling out on sides and pointed at apex; segmental divisions very distinct.

Imago.—Length 0·0875, antennæ 0·0175 inch.

General colour varying from pink, marbled with greyish-brown to ochreous marbled with black; antennæ pink, apex of 3rd-9th and the whole of 10th joint black; face lobes bright red; head and thorax mottled with grey; lines between head and thorax, spot at base of wings, and broad transverse bands on abdomen black; wings transparent, nervures red. Head short, turning downward, not as broad as thorax, lobed in front, with a deep median suture and a slight fovea on either side; deeply arcuate behind. Face lobes very large, broad, rounded, clothed with fine hairs. Antennæ very short, slender; 1st-2nd joints short, broad; 3rd longest; 4th-8th uniform in length; 9th larger; 10th short, rounded at tip. Eyes very large, hemispherical: central ocellus at apex of median suture; lateral ocelli large. Thorax: pronotum rather broad, rounded in front, arcuate behind, curved and

wrinkled at extremities; dorsulum large, convex, rounded on either side, tips coming to a point; mesonotum very large, arcuate in front, rounded behind; scutellum unusually long, slender. Legs rather long, stout; femora stout, tarsi large. Wings nearly thrice as long as broad, sharply rounded in front, with thickened costal nervure at base, tip broad; primary stalk short, stalk of subcosta short; subcosta parallel, running into costa past centre of wing; radius short, coming out at upper edge of wing; stalk of cubitus long, upper branch of cubitus and upper fork running parallel with radius, turning upward at tip; lower fork of same length, turning downward at tip; lower branch of cubitus short, upper fork curving round, lower fork transverse; clavus short, stout; clavical suture very slender. Abdomen short, broad. Genitalia: (♂) short, turned upward; lower genital plate short, angular; forceps short, slender, curving upward; upper genital plate broad, truncate at tip: (♀) forming a short rounded point.

Hab. —Adelong, N.S.W. (on *Eucalyptus melliodora*; W. W. Froggatt).

This is a rare species, and certainly its lerp structure is one of the most beautiful. The enclosed pupa has plenty of room to move about in its regular little cage.

EXPLANATION OF PLATES.

Plate xiv.

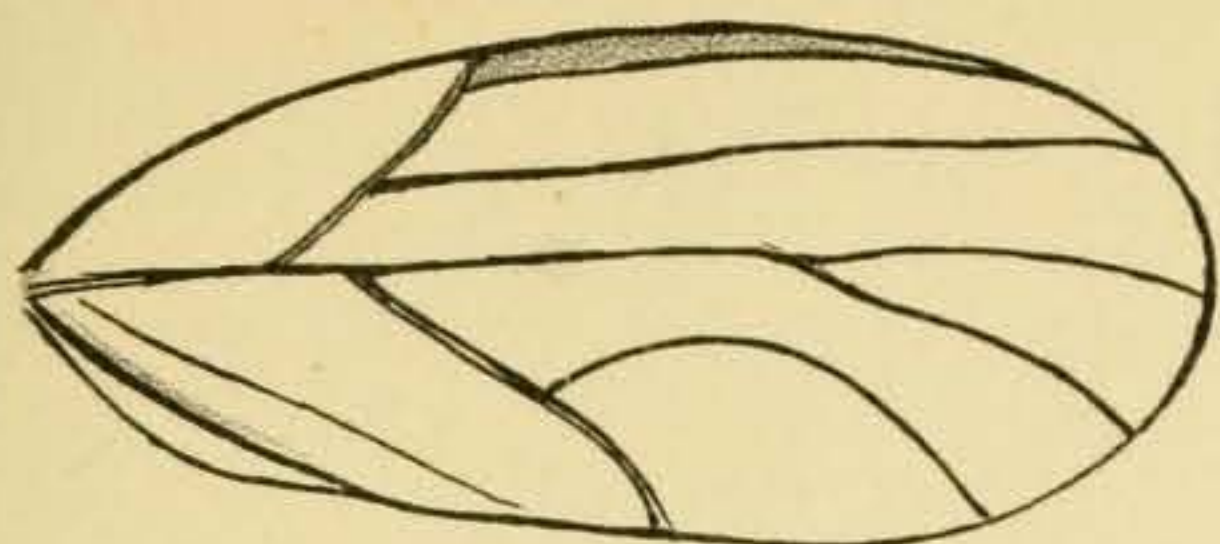
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|-----------|---------------------------------------|-------|
| Fig. 1.— | <i>Psylla acaciæ-pendulæ</i> , n.sp.; | wing. |
| Fig. 2.— | <i>acaciæ-baileyanae</i> , n.sp.; | wing. |
| Fig. 3.— | <i>schizoneuroides</i> , n.sp. | „ |
| Fig. 4.— | <i>frenchi</i> , n.sp. | „ |
| Fig. 5.— | <i>acaciæ-pycnanthæ</i> , n.sp. | „ |
| Fig. 6.— | <i>capparis</i> , n.sp. | „ |
| Fig. 7.— | <i>acaciæ-decurrentis</i> , n.sp. | „ |
| Fig. 8.— | <i>Eucalyptolyma erratica</i> , n.sp. | „ |
| Fig. 9.— | <i>maideni</i> , n.sp. | „ |
| Fig. 10.— | <i>Aphalara fuscipennis</i> , n.sp. | „ |
| Fig. 11.— | <i>Eriopsylla gracilis</i> , n.sp. | „ |
| Fig. 12.— | <i>Psylla candida</i> , n.sp. | „ |

Plate xv.

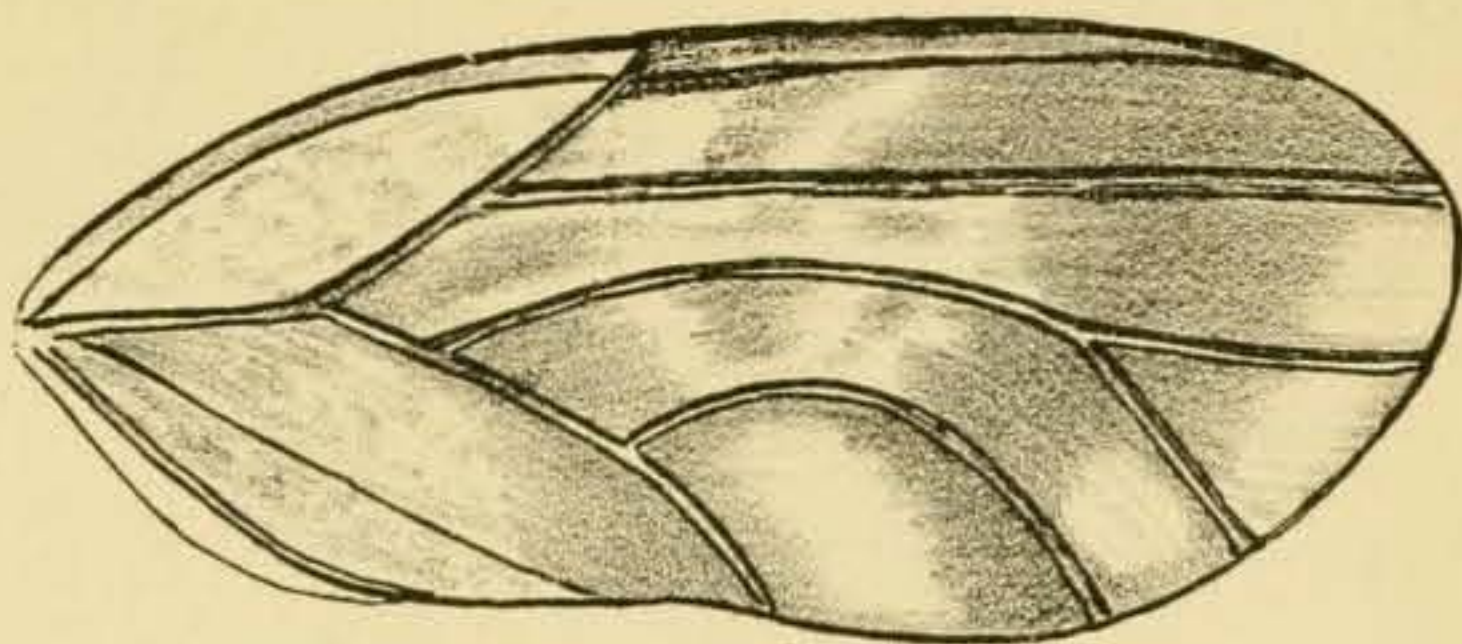
- Fig. 1.—*Brachypsylla tryoni*, n.sp.; wing.
 Fig. 2.—*Syncarpiolyra maculata*, n.sp.; wing.
 Fig. 3.—*Thea olivacea*, n.sp. ,,
 Fig. 4.—*Trioza banksiæ*, n.sp. ,,
 Fig. 5.—*Tyora sterculiæ*, n.sp. ,,
 Fig. 6.—*Cardiaspis textrix*, n.sp. ,,
 Fig. 7.—*Mycopsylla fici*, Tryon ,,
 Fig. 8.—*Tyora hibisci*, n.sp. ,,
 Fig. 9.—*Trioza orbiculata*, n.sp. ,,
 Fig. 10.—————— *eugeniæ*, n.sp. ,,
 Fig. 11.—————— *casuarinæ*, n.sp. ,,
 Fig. 12.—————— *carnosa*, n.sp. ,,
 Fig. 13.—*Psylla sterculiæ*, n.sp. ,,

Plate xvi.

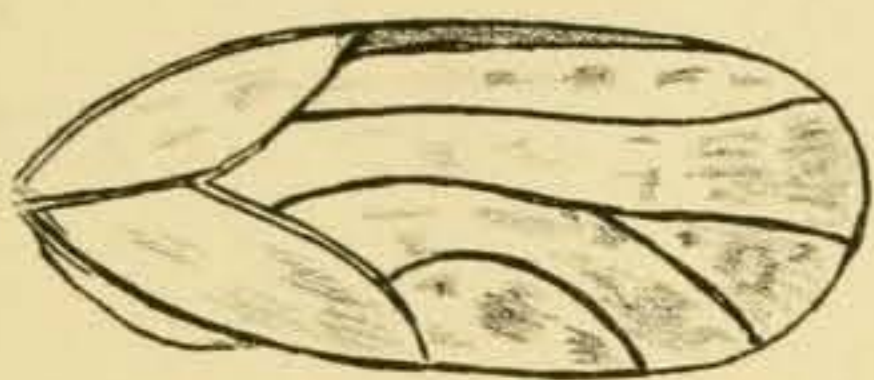
- Fig. 1.—*Brachypsylla tryoni*, n.sp.; genitalia (♂).
Fig. 2.—*Psylla frenchi*, n.sp. „
Fig. 3.————— *acaciæ-baileyanae*, n.sp. „
Fig. 4.—*Thea olivacea*, n.sp. „
Fig. 5.—*Psylla acaciæ-decurrentis*, n.sp. „
Fig. 6.—*Eriopsylla viridis*, n.sp. „
Fig. 7.—*Syncarpiolyma maculata*, n.sp. „
Fig. 8.—*Mycopsylla proxima*, n.sp. „
Fig. 9.—*Eriopsylla gracilis*, n.sp. „
Fig. 10.—*Tyora sterculiæ*, n.sp. „
Fig. 11.—*Eucalyptolyma maideni*, n.sp. „
Fig. 12.—*Trioza carnosæ*, n.sp. „
Fig. 13.—*Psylla acaciæ-pendulae*, n.sp. „
Fig. 14.————— *capparis*, n.sp. „
Fig. 15.—*Trioza eugeniæ*, n.sp. „
Fig. 16.—*Psylla candida*, n.sp. „
Fig. 17.—*Mycopsylla fici*, Tryon „
Fig. 18.—*Tyora hibisci*, n.sp. „
Fig. 19.—*Cardiaspis textrix*, n.sp.; lerp-net.
Fig. 20.—*Eucalyptolyma maideni*, n.sp.; lerp scale.
Fig. 21.————— *erratica*, n.sp.; „ „
Fig. 22.—*Trioza orbiculata*, n.sp.; lerp gall.
Fig. 23.————— *eucalypti*, n.sp.; gall.
Fig. 24.————— *carnosæ*, n.sp.; „
Fig. 25.—*Spondylaspis granulata*, n.sp.; lerp.
Fig. 26.—*Trioza banksiæ*, n.sp.; pupa.
Fig. 27.————— *casuarinæ*, n.sp.; pupa.



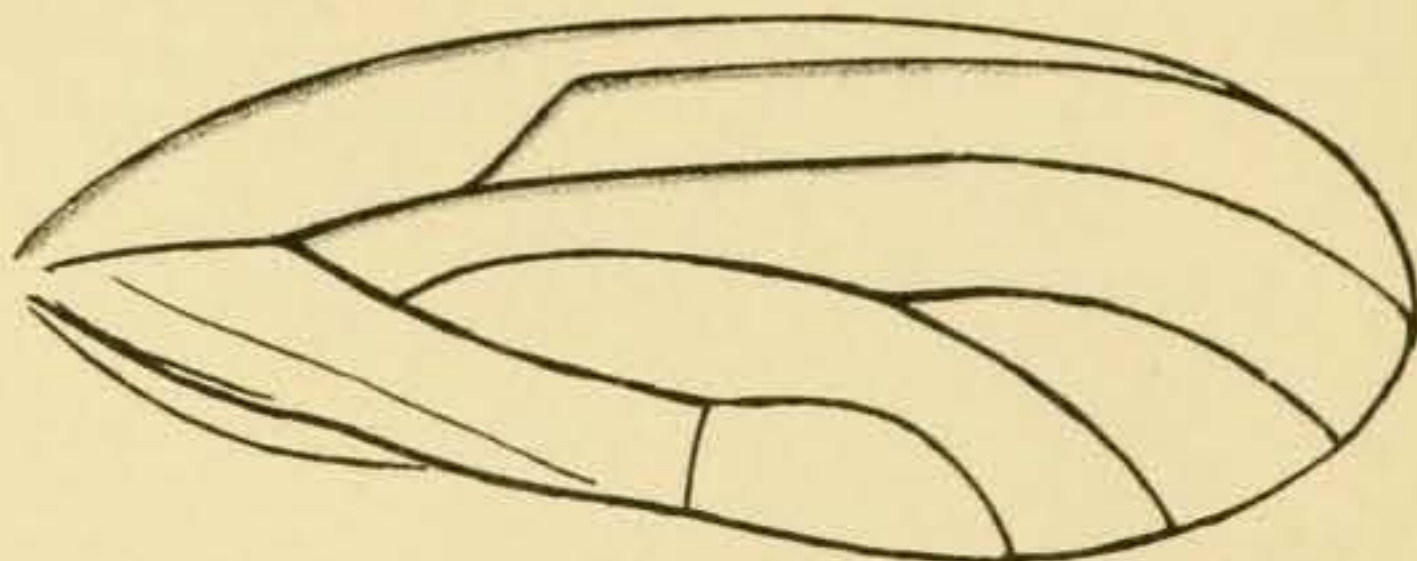
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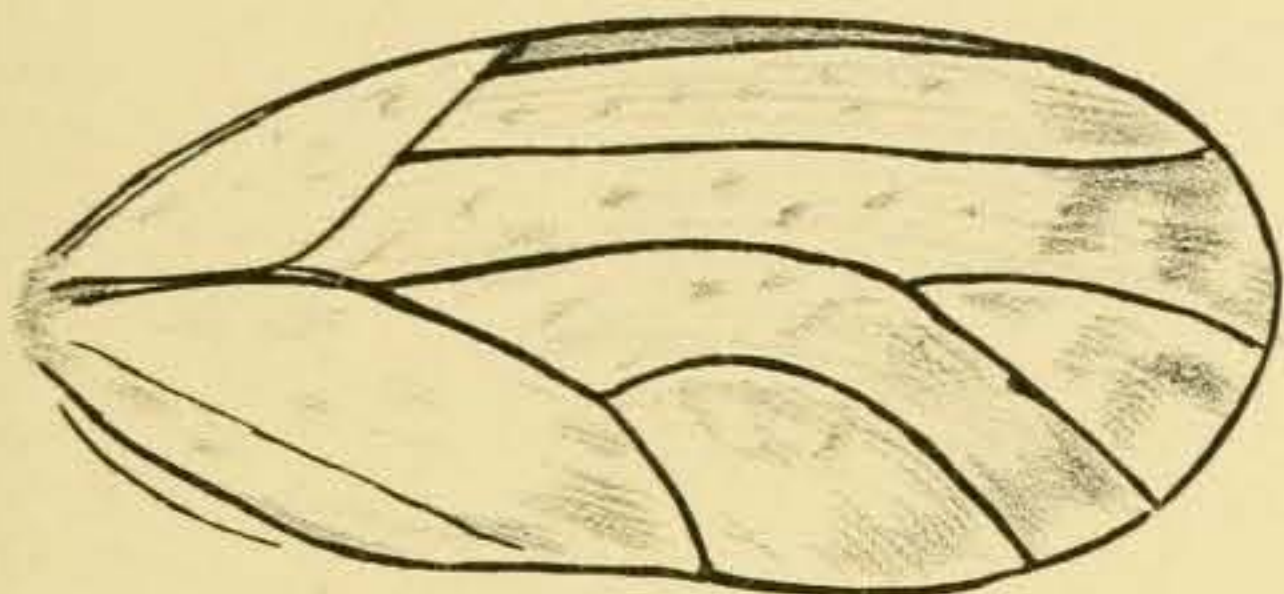
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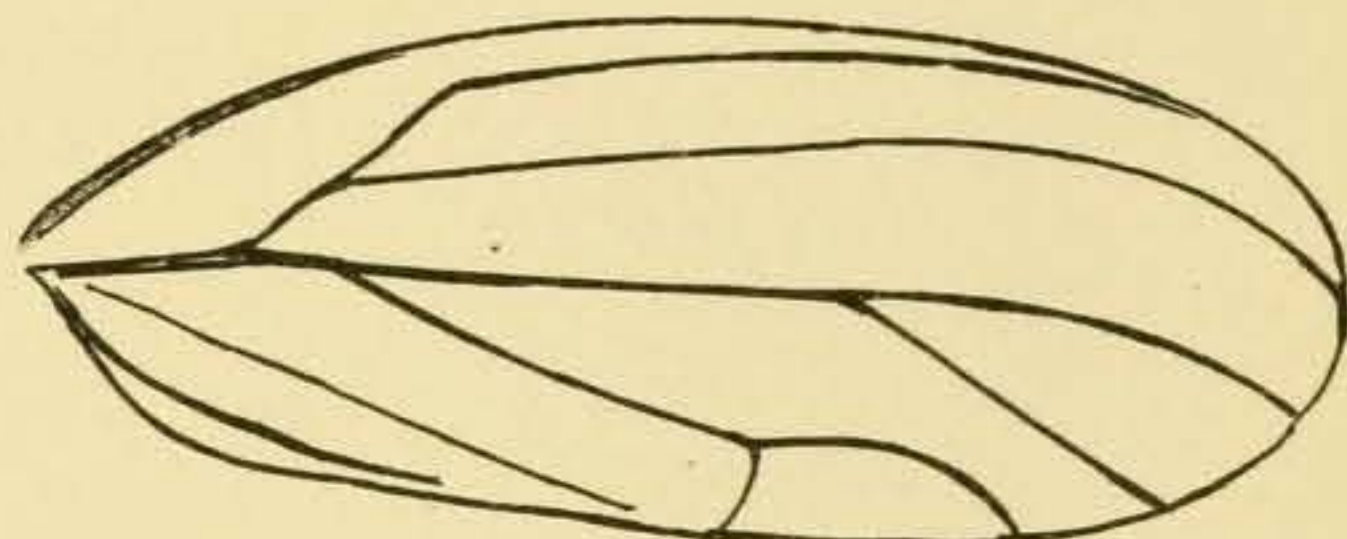
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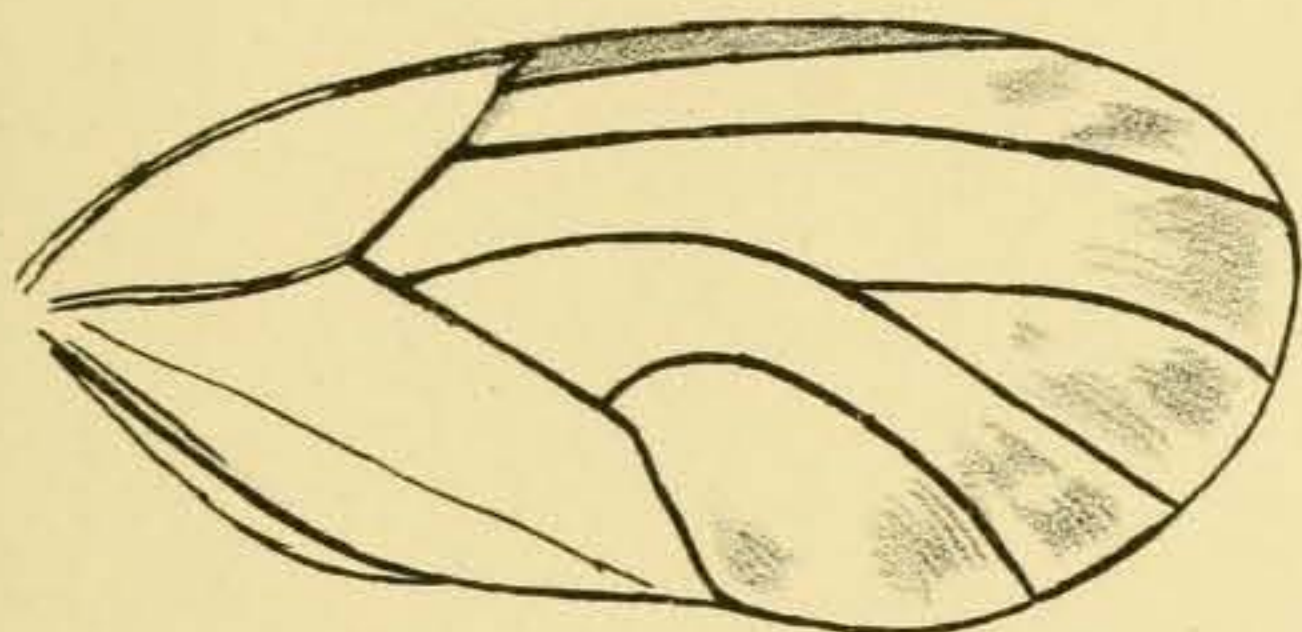
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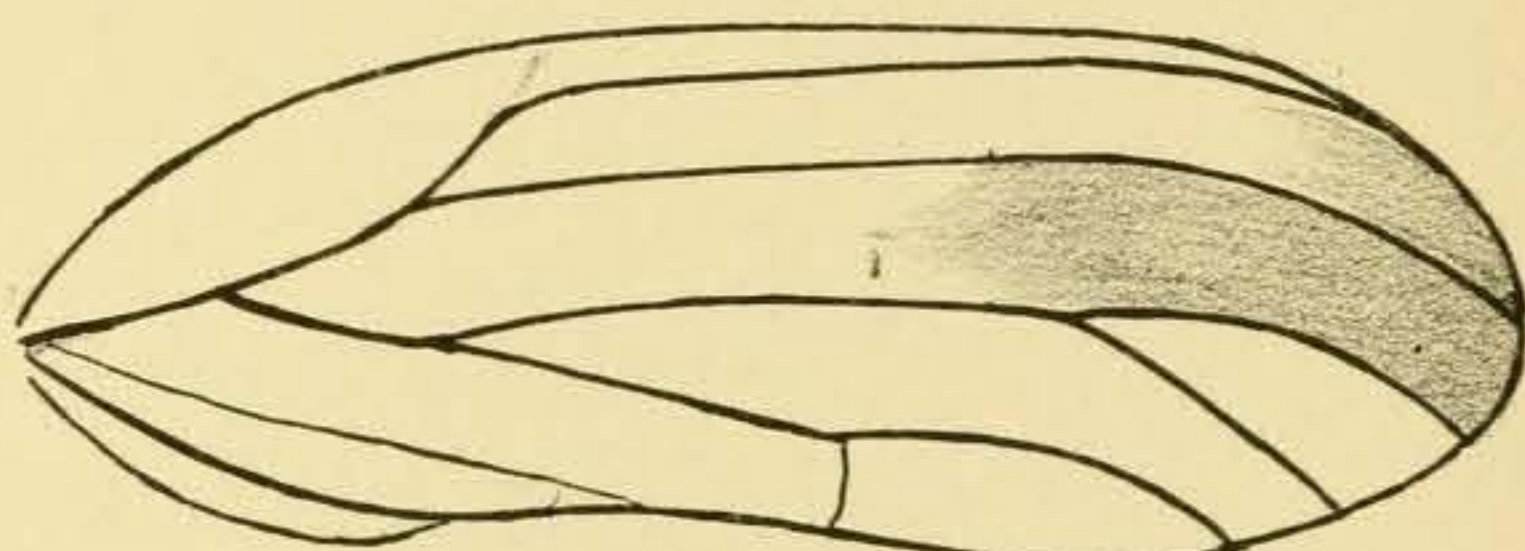
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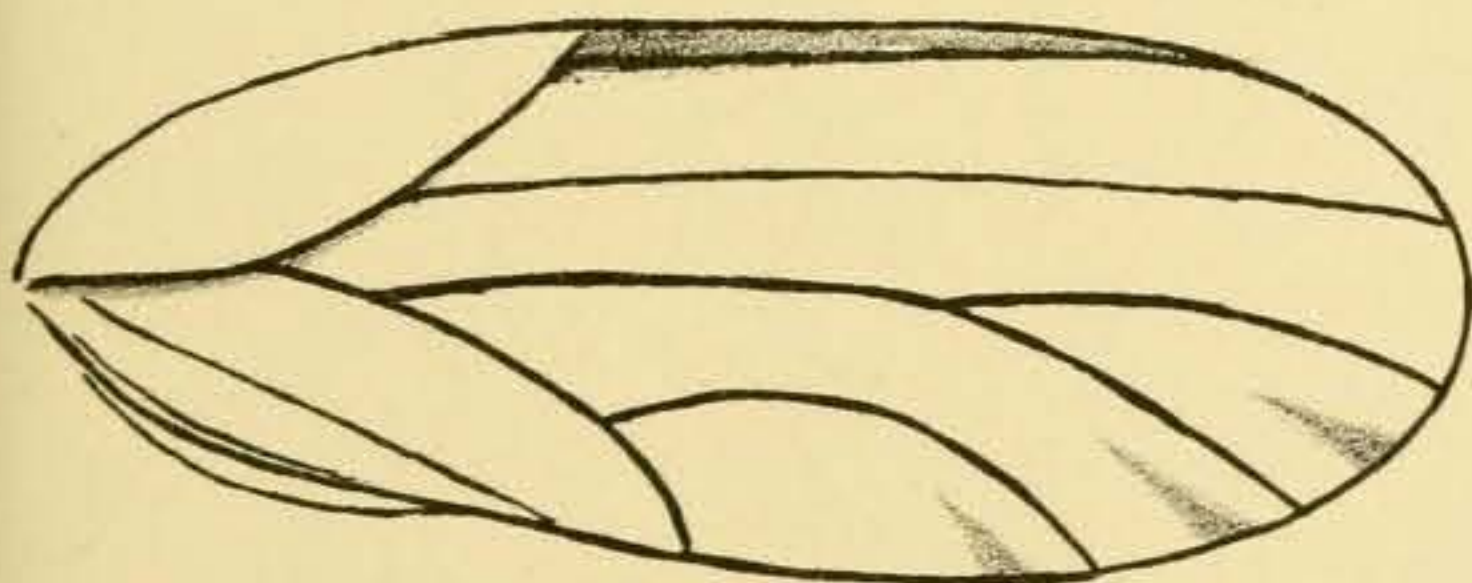
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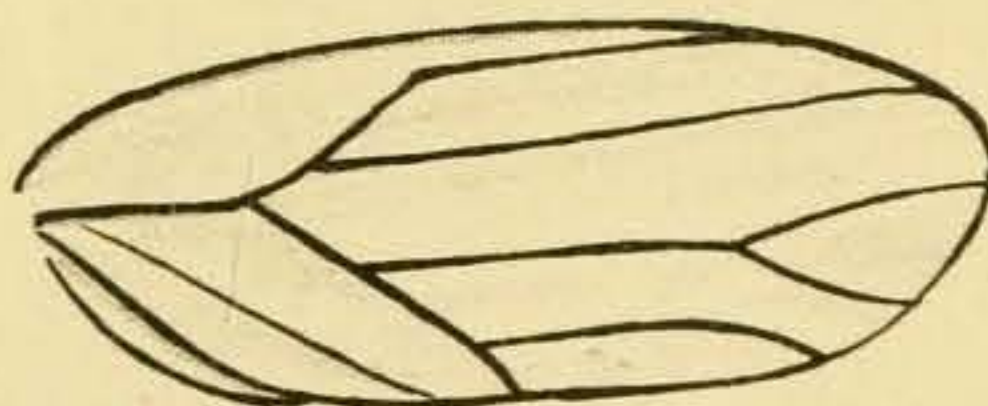
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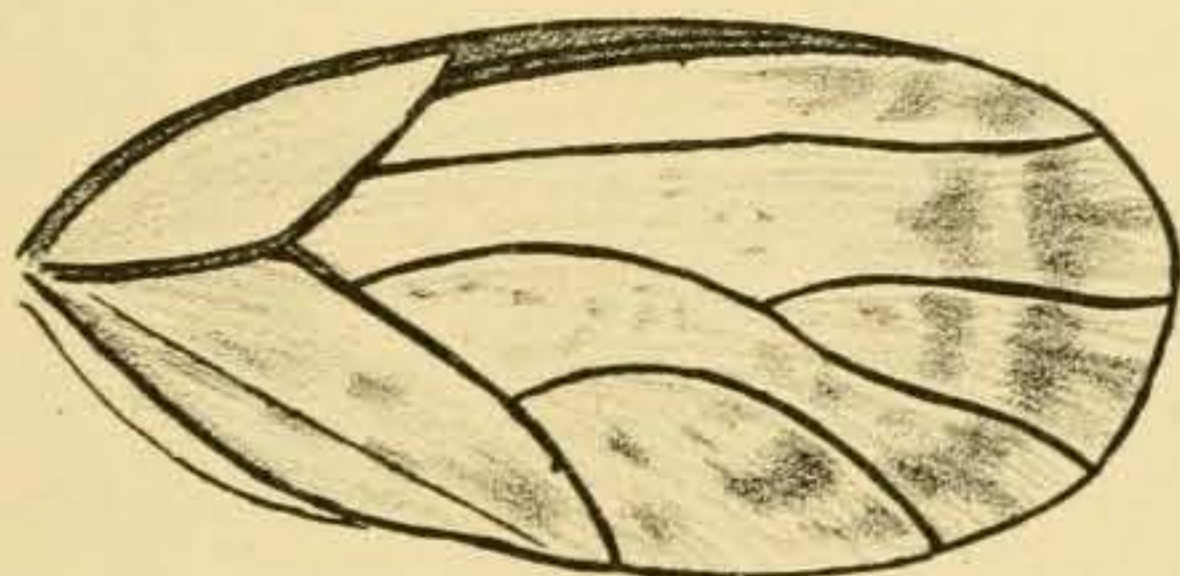
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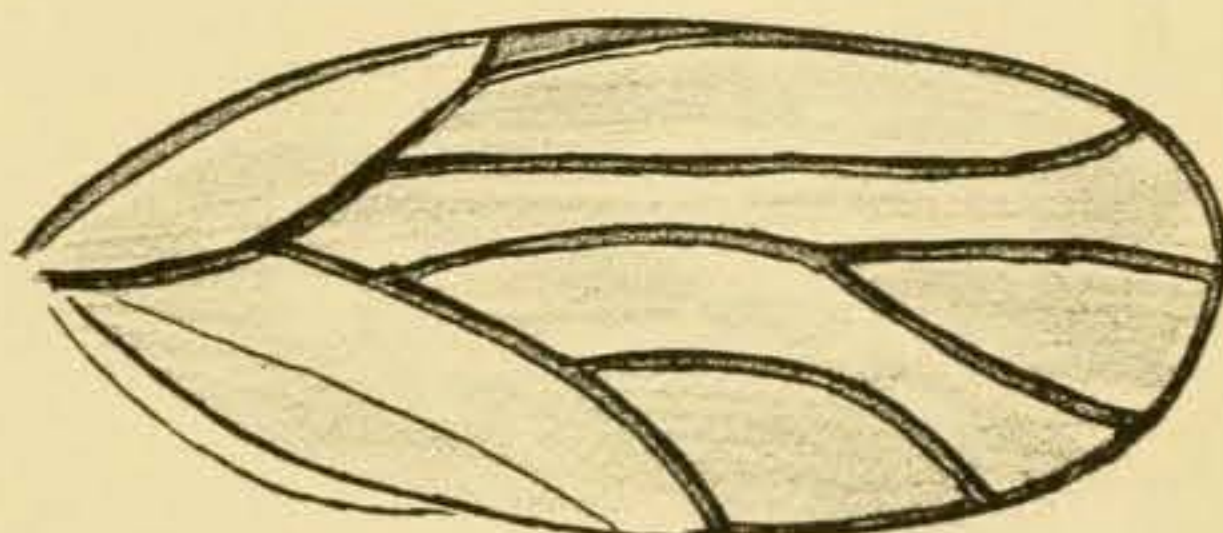
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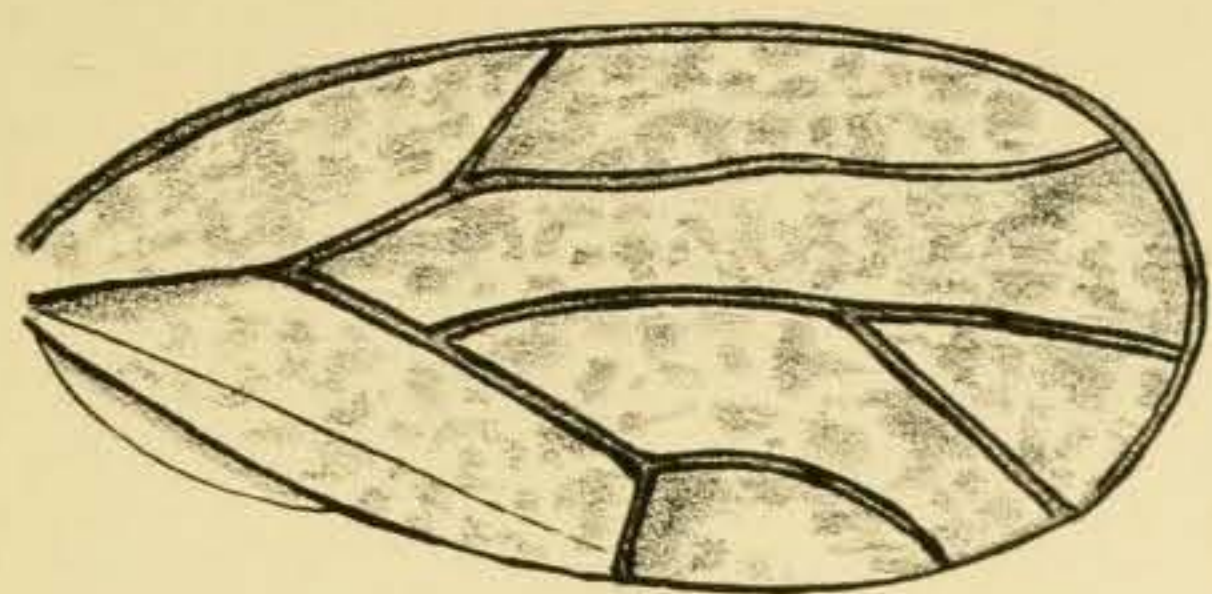
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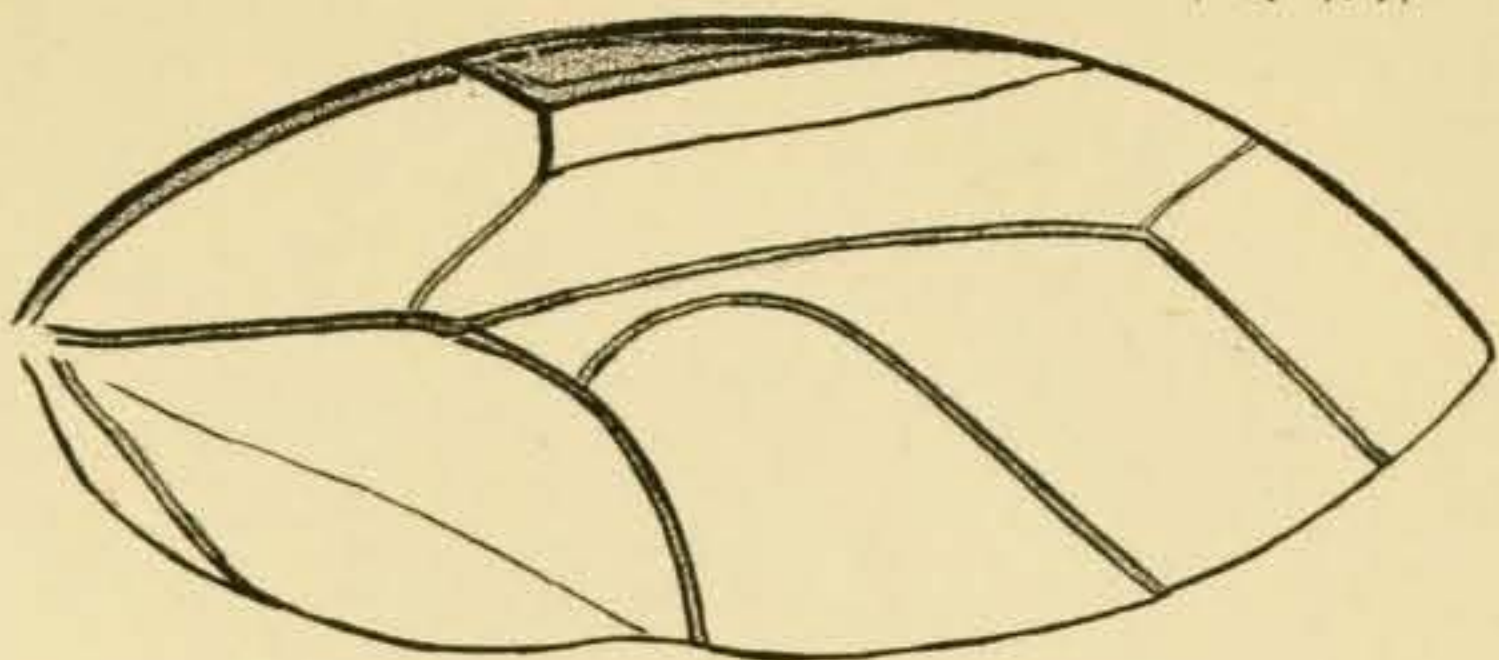
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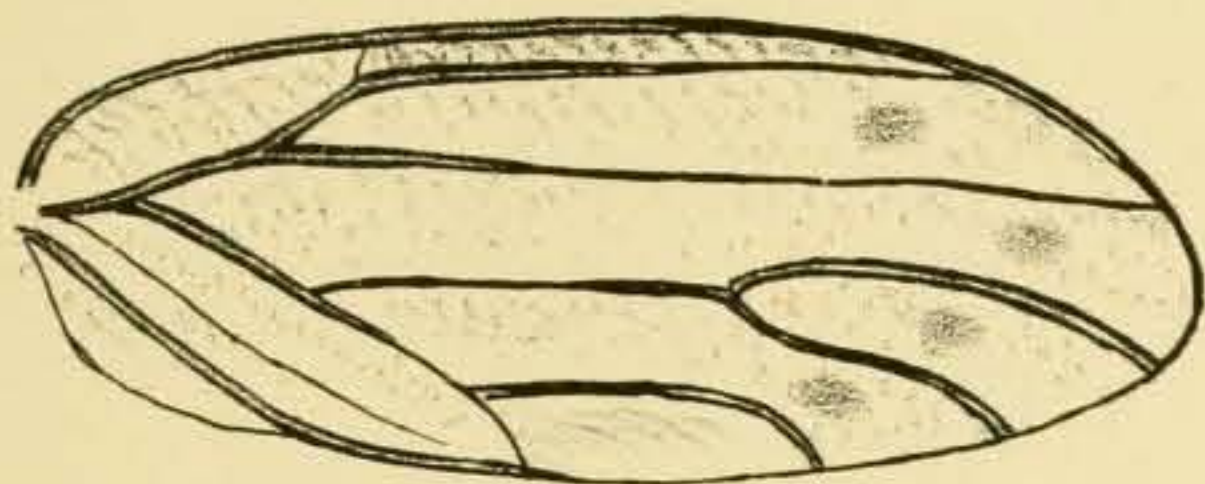
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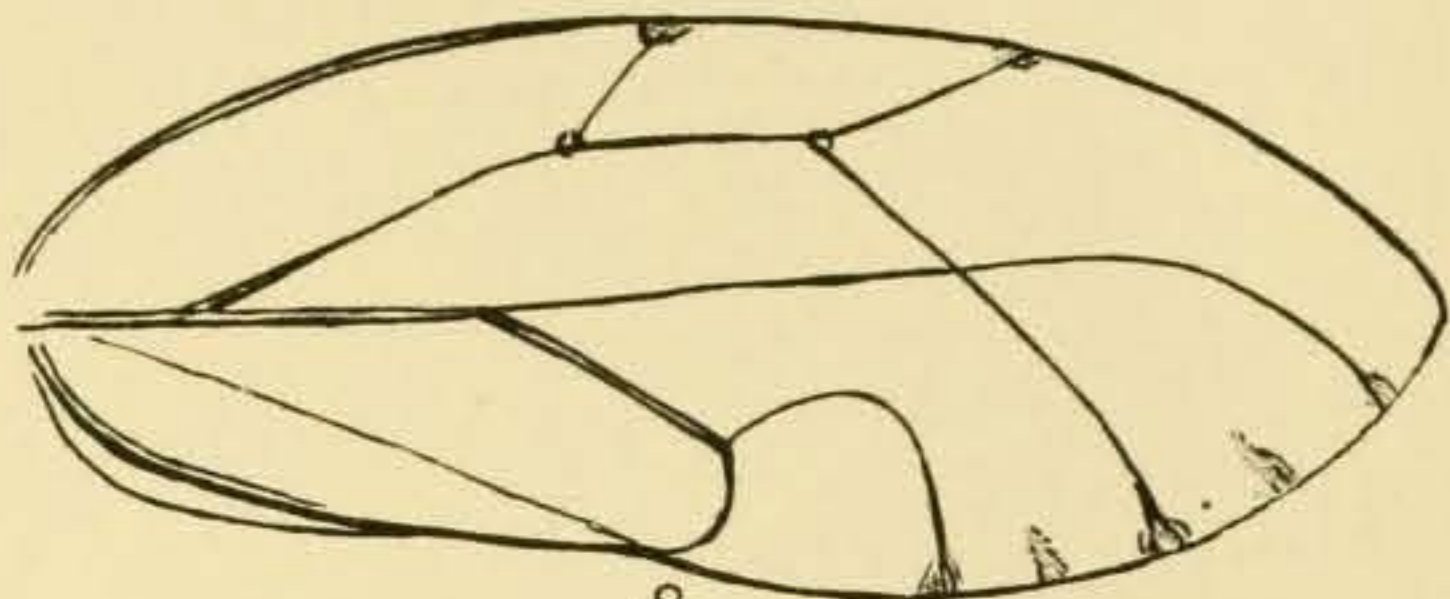
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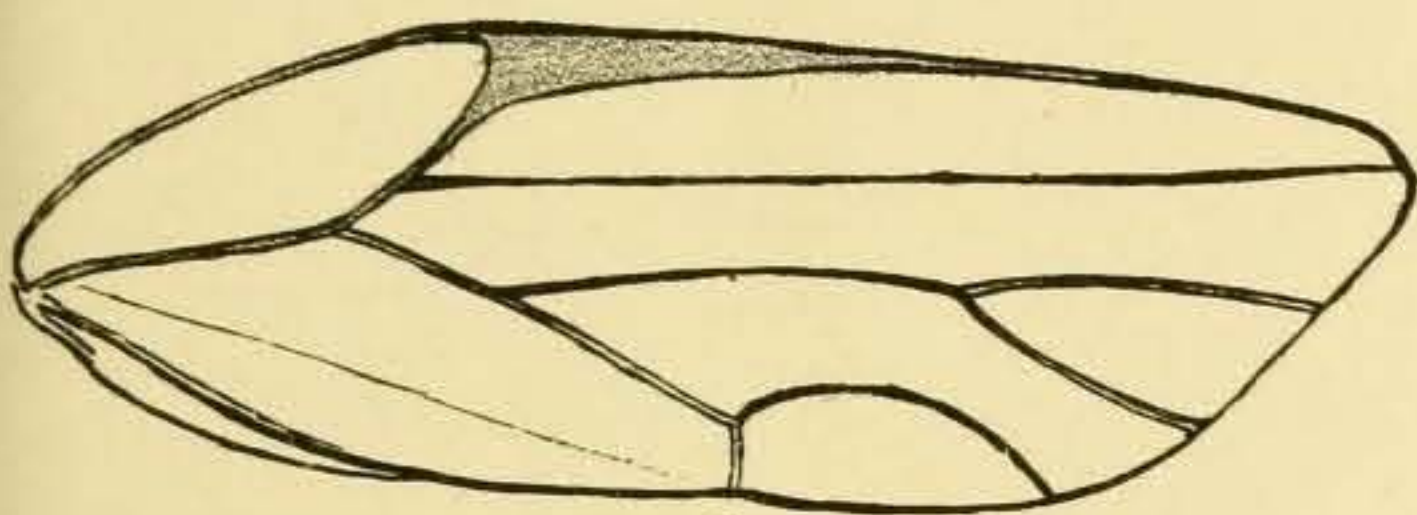
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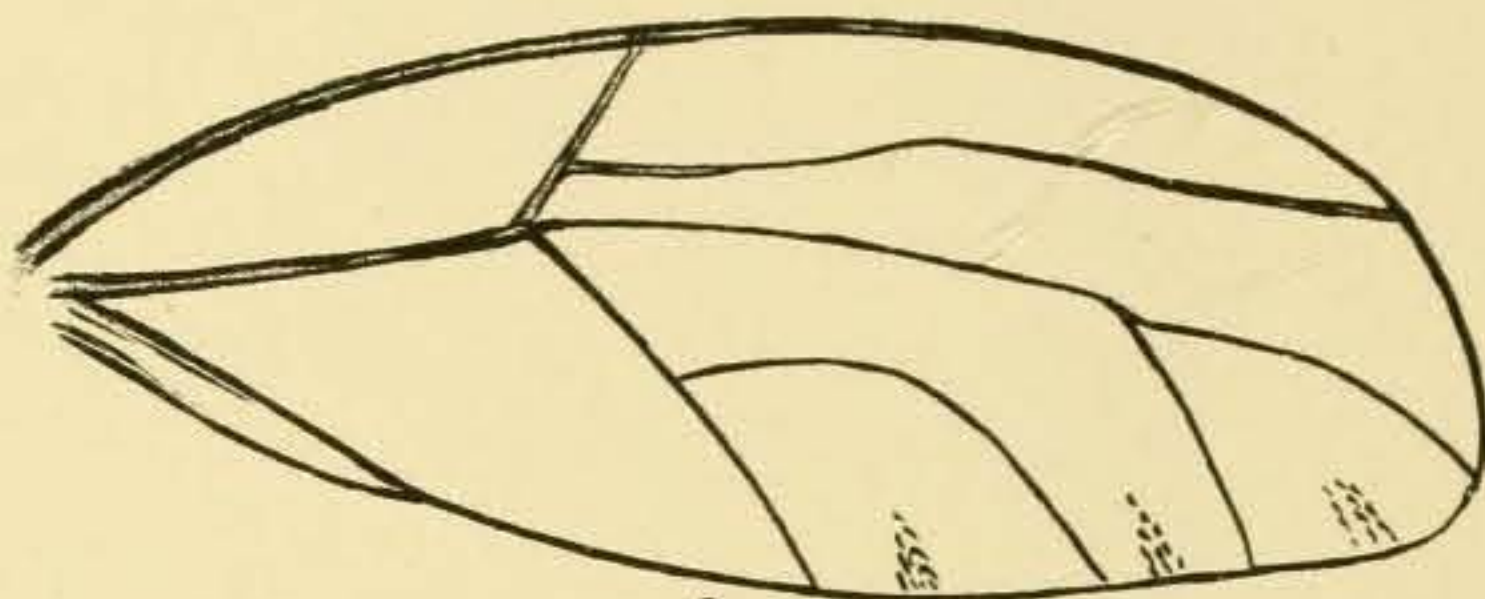
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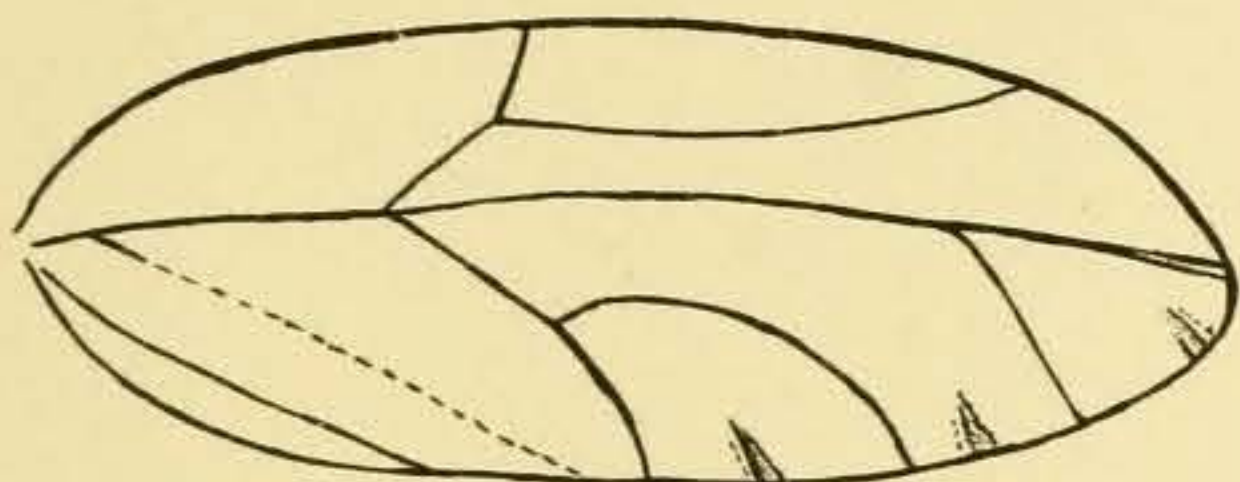
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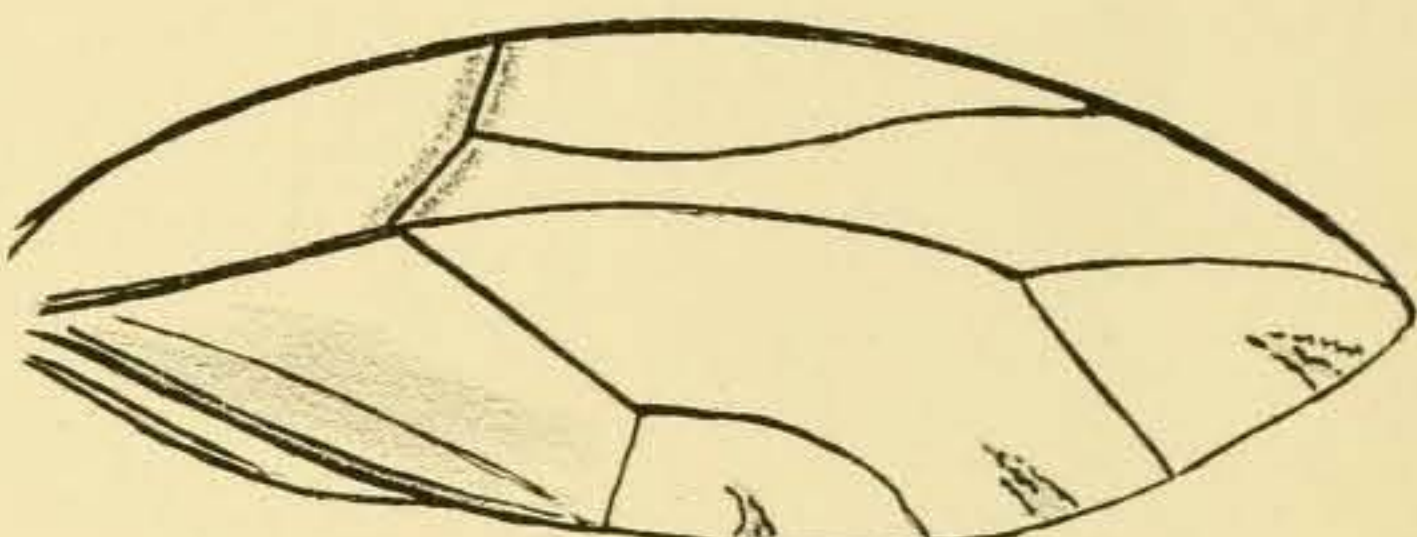
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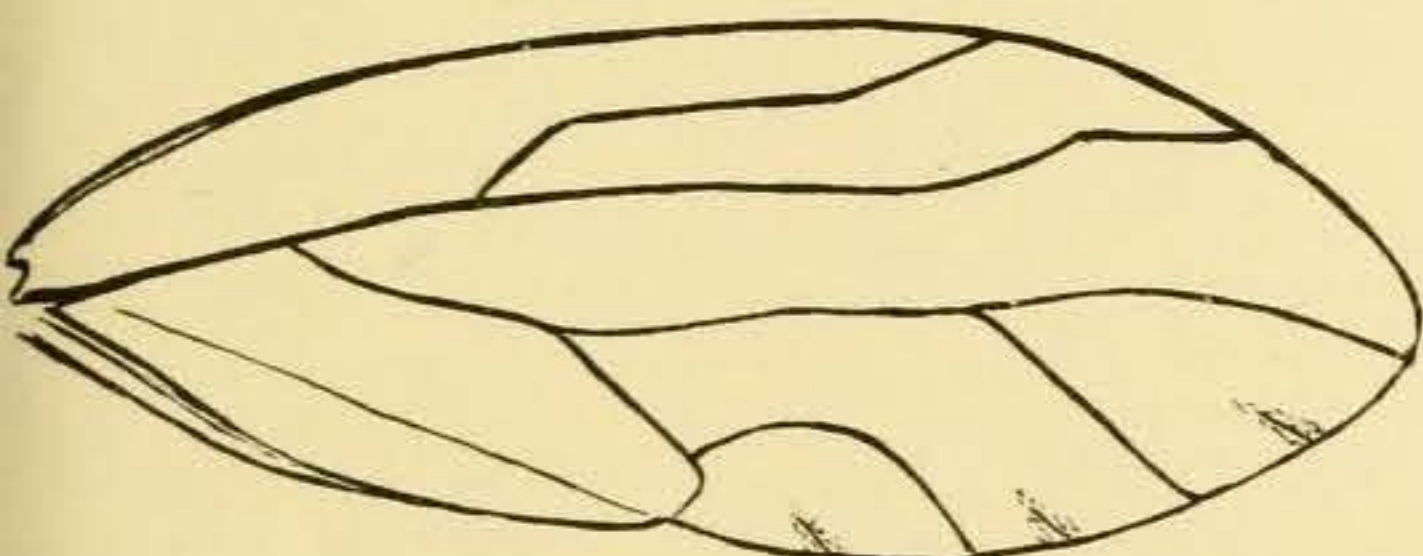
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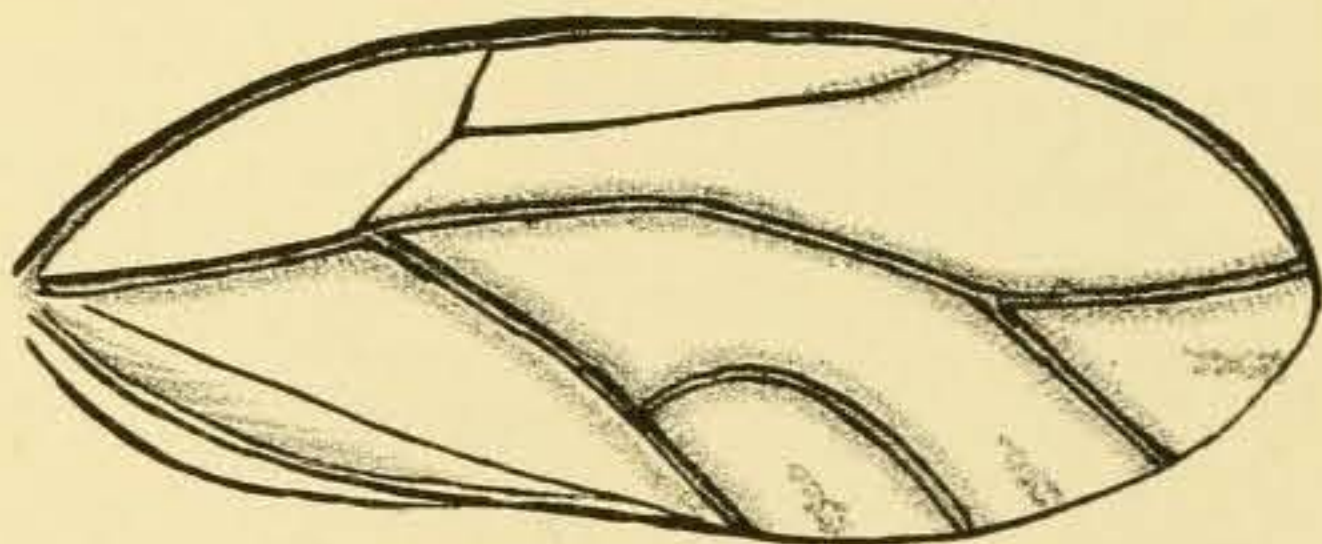
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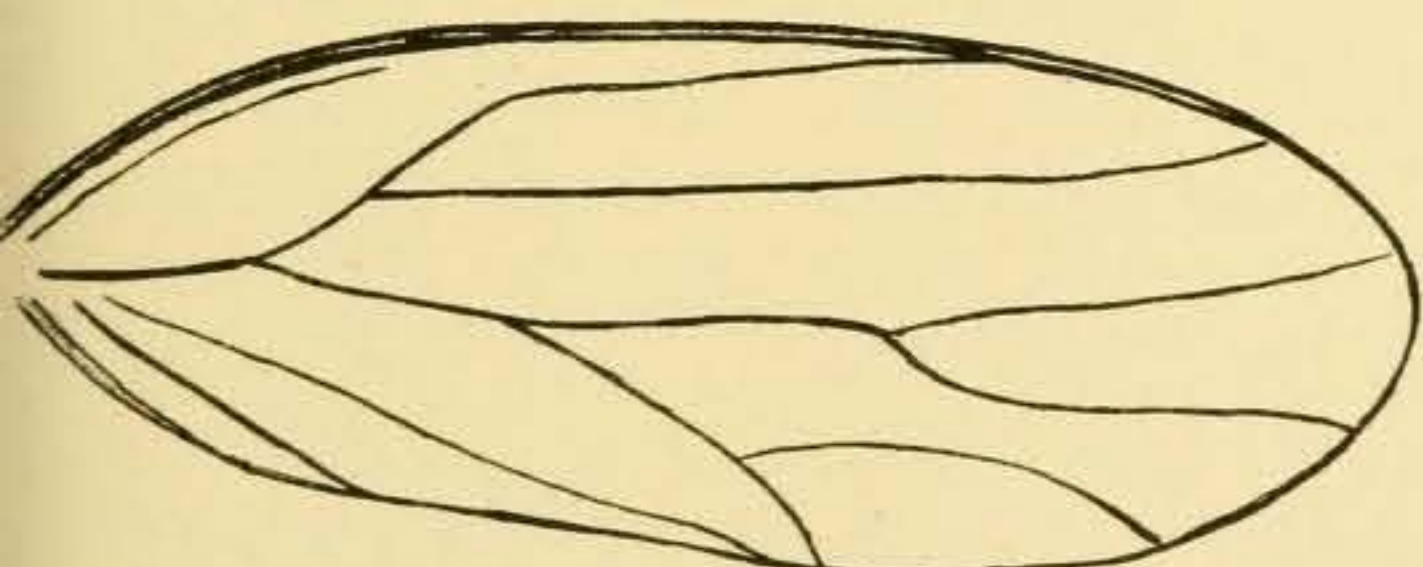
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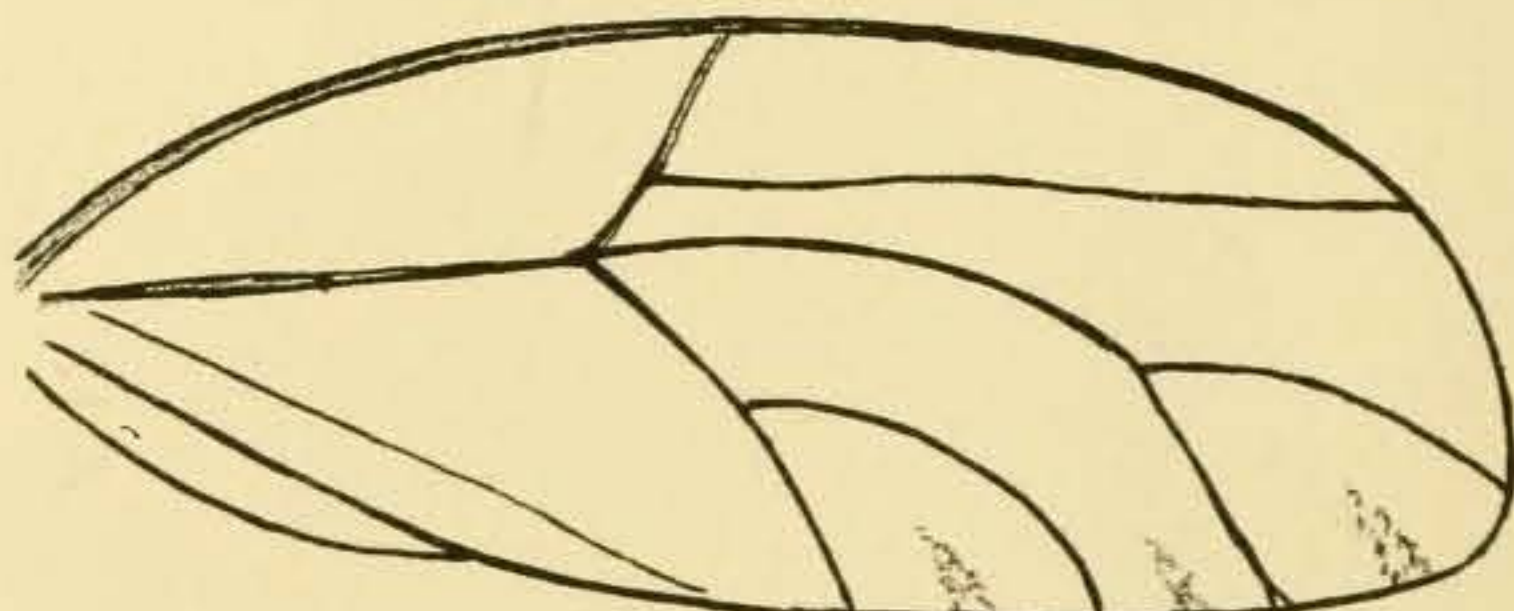
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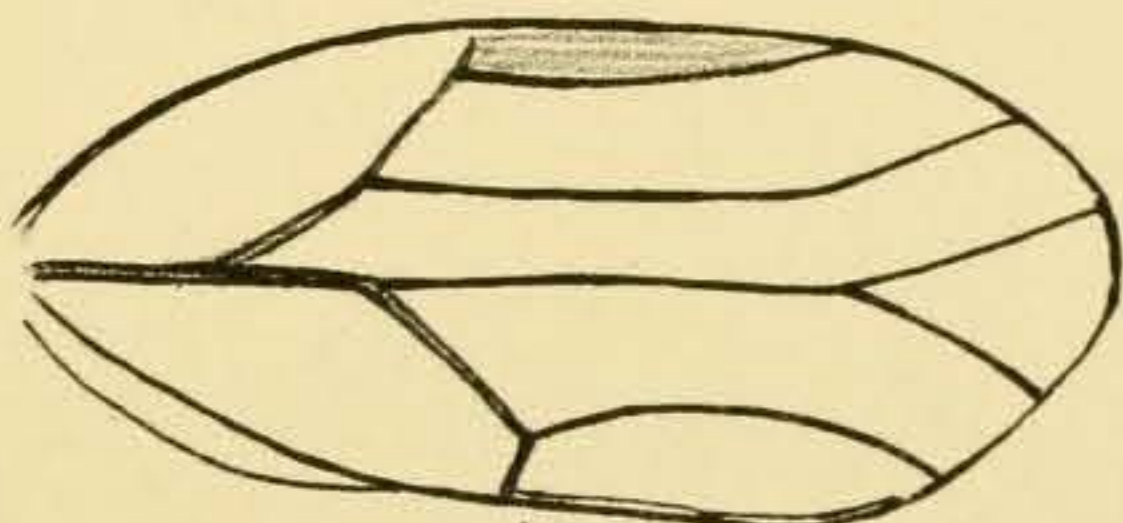
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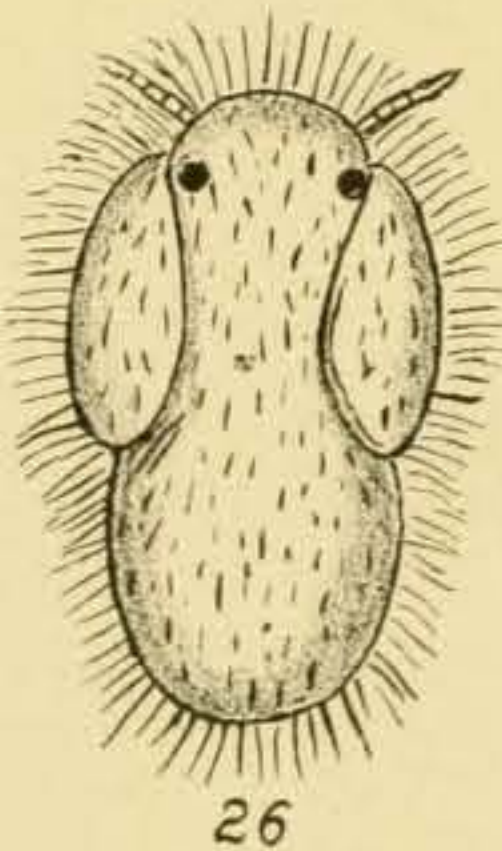
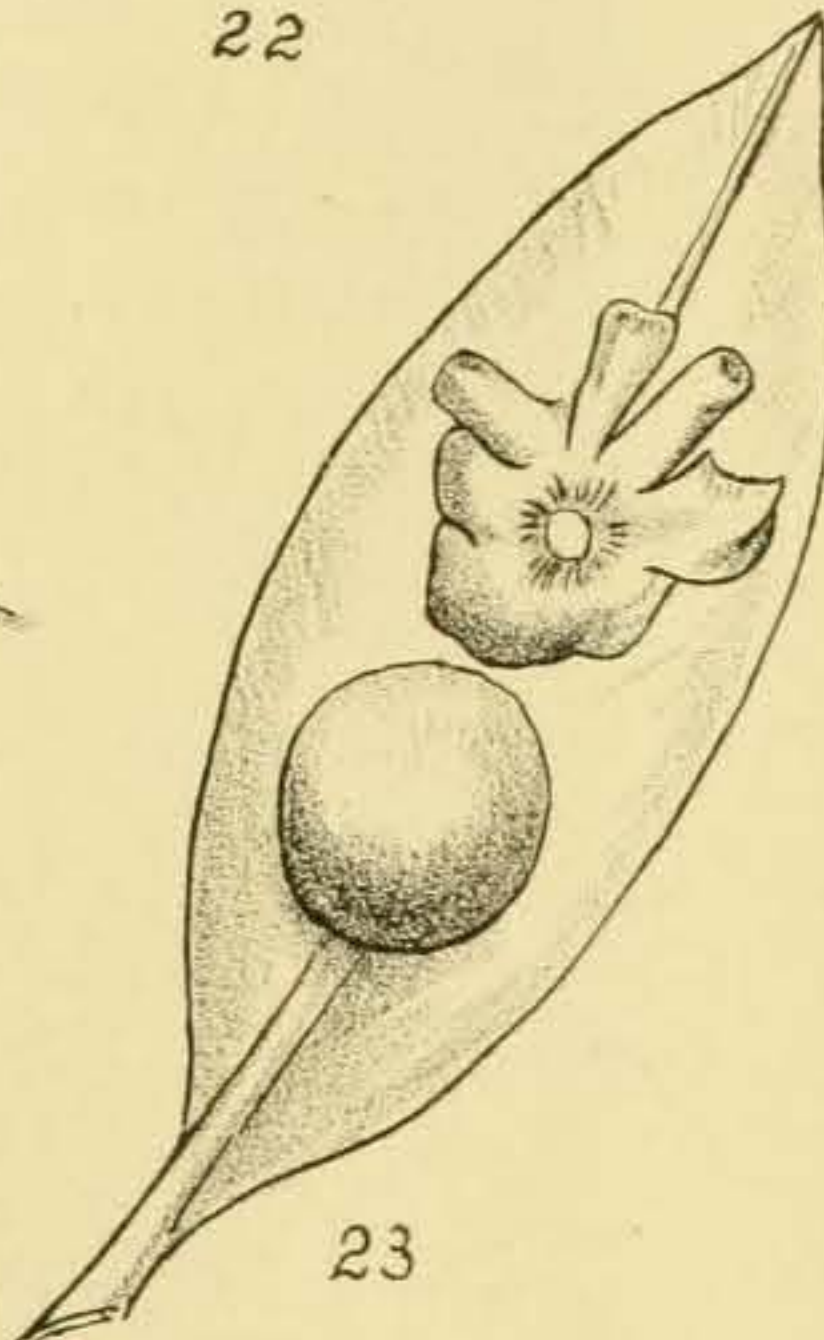
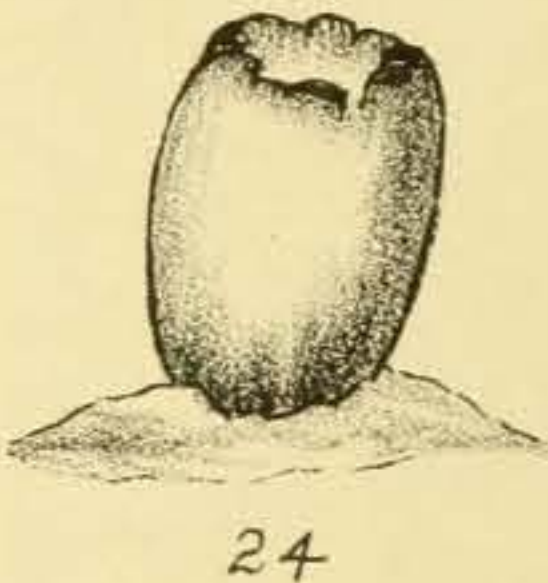
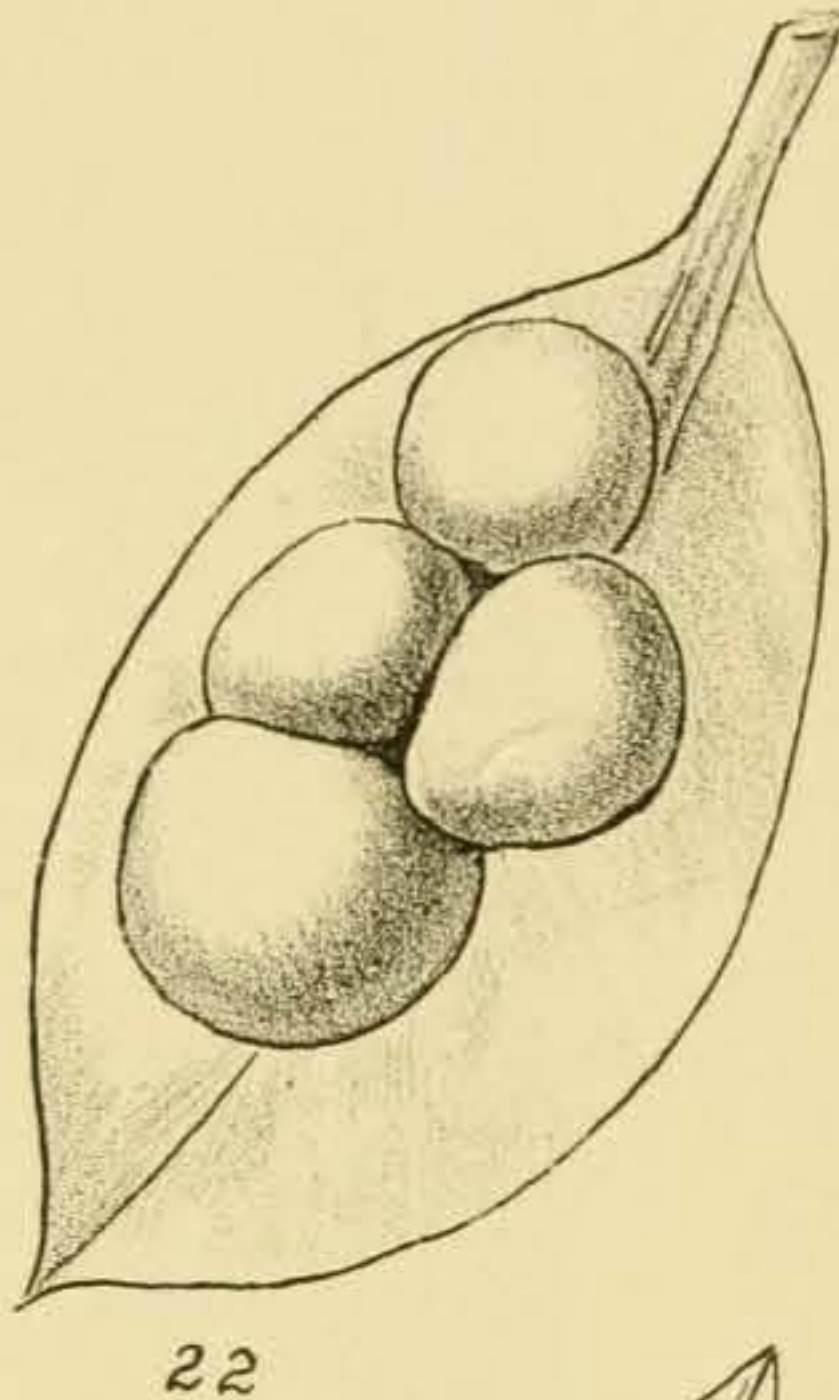
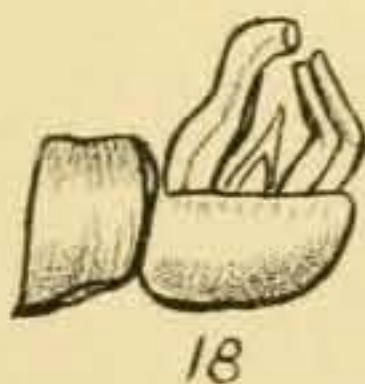
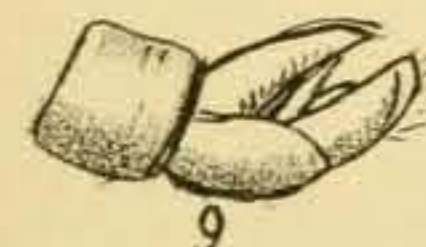
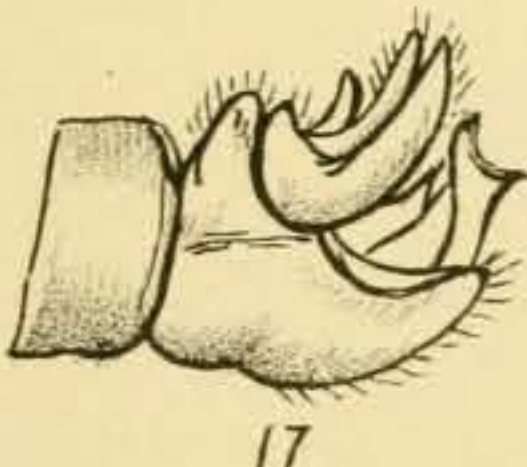
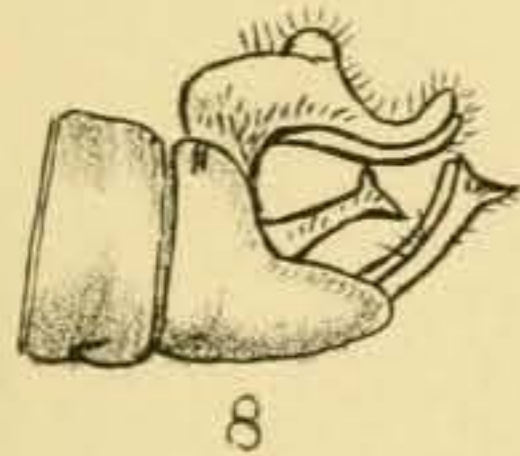
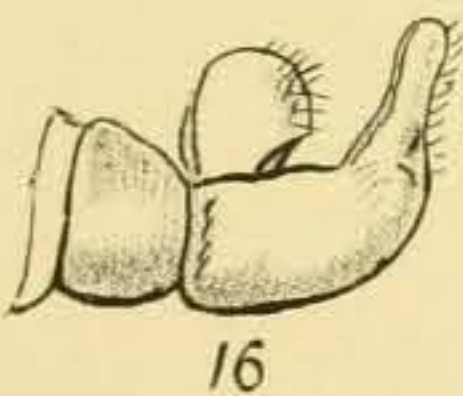
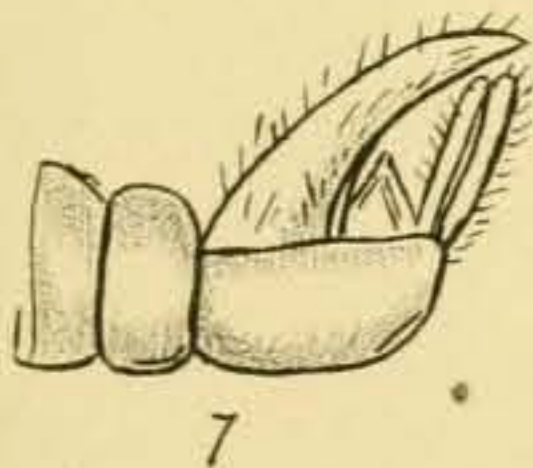
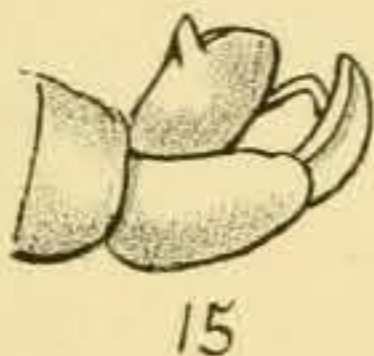
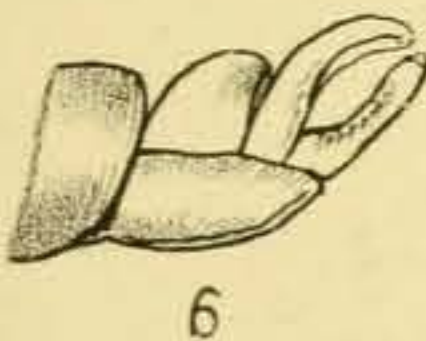
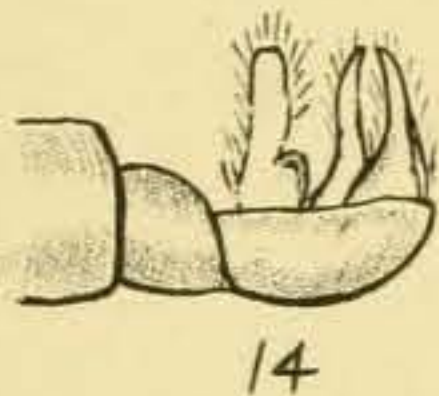
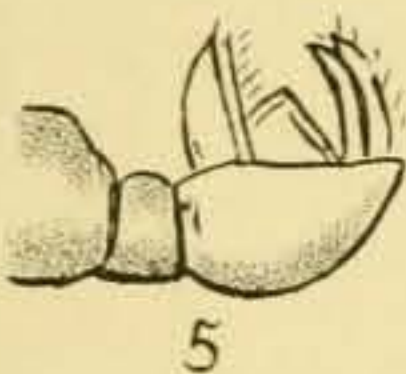
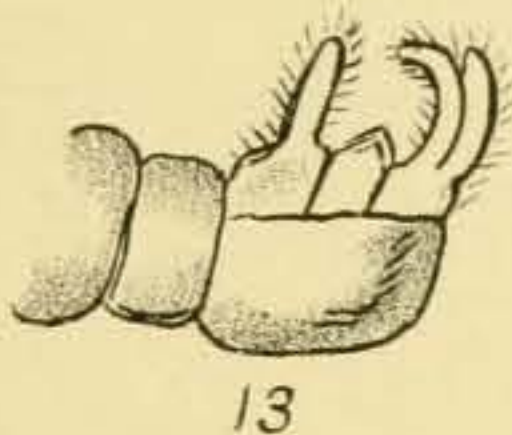
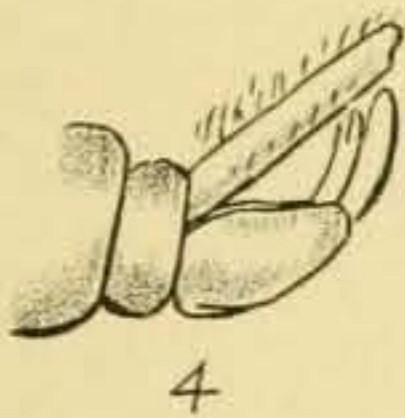
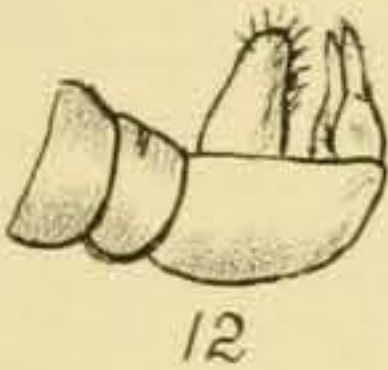
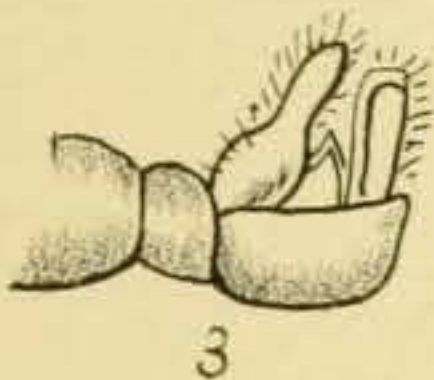
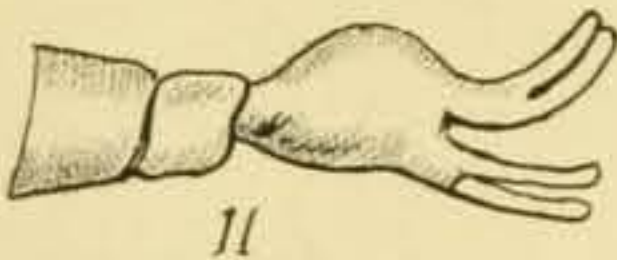
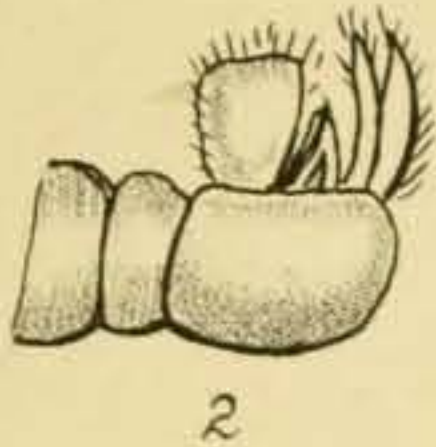
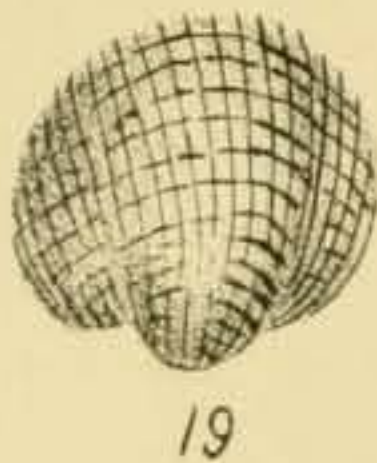
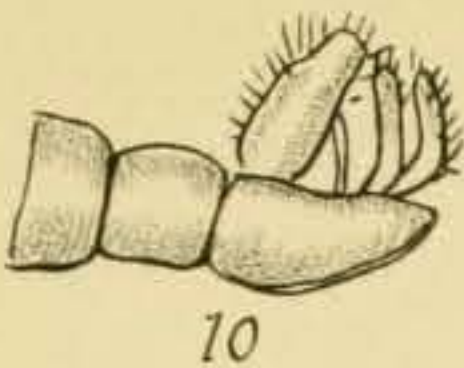
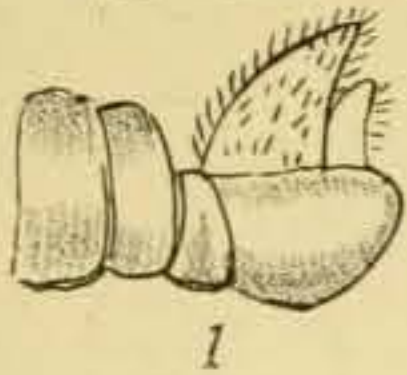
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THE
PROCEEDINGS

OF THE

LINNEAN SOCIETY

OF

NEW SOUTH WALES.

FOR THE YEAR

1901.

Vol. XXVI.

WITH FORTY-THREE PLATES.

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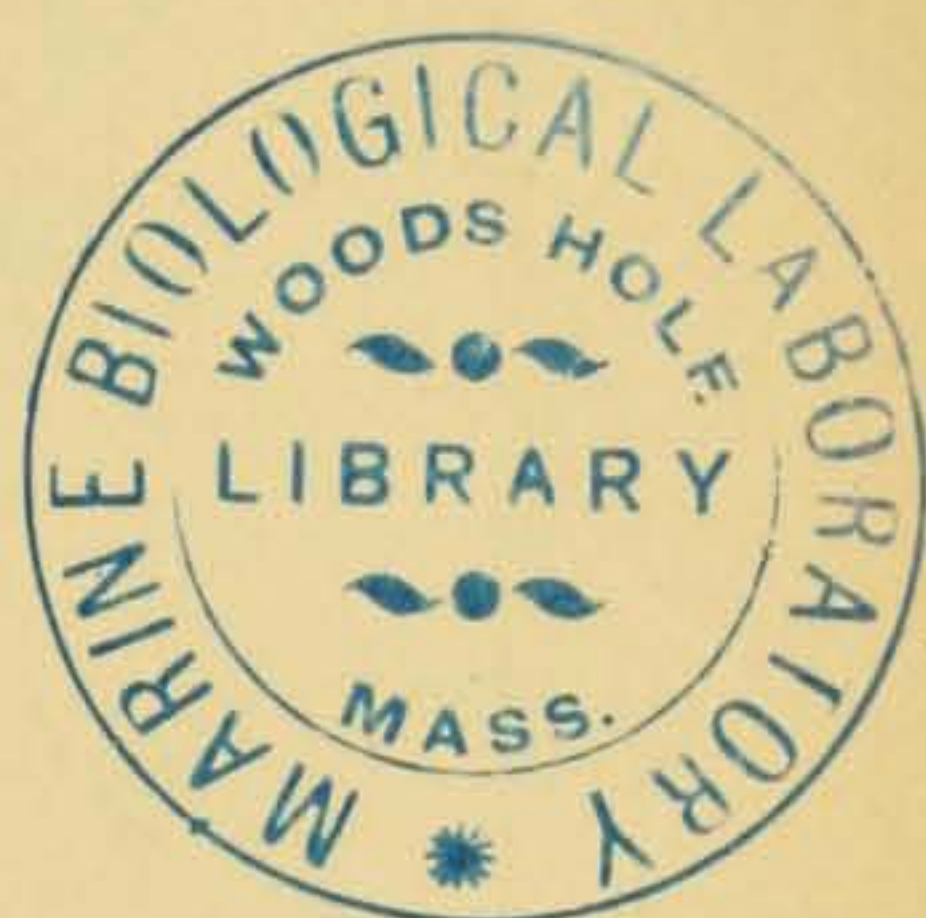
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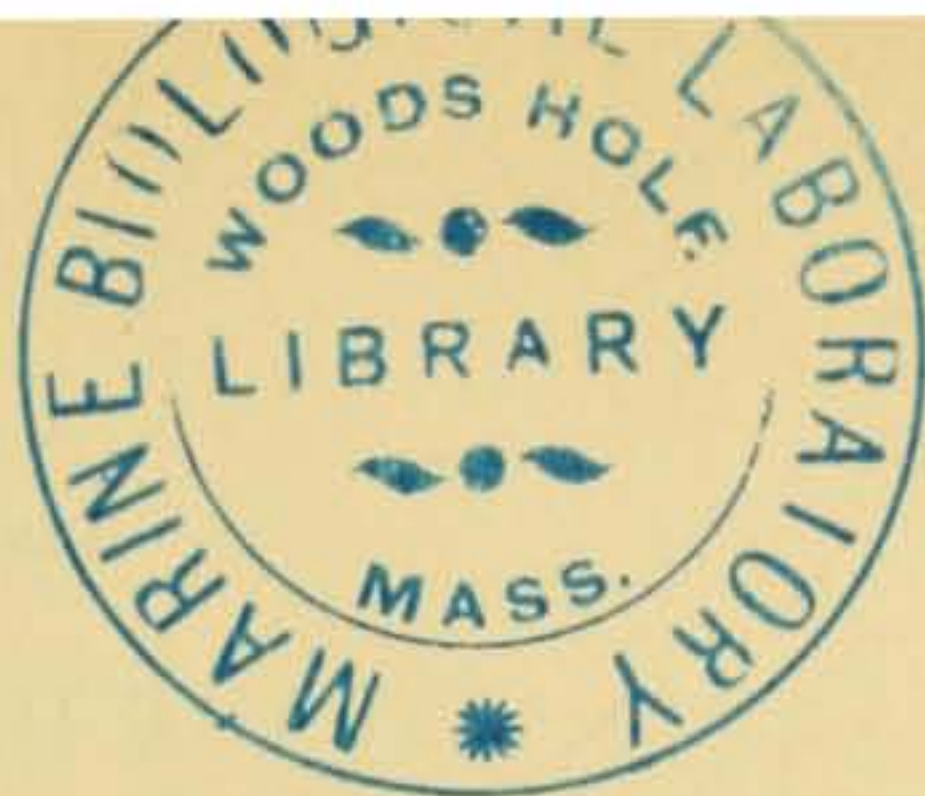
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CONTENTS OF PROCEEDINGS, 1901.

PART I. (No. 101).

(Issued August 13th, 1901.)

	PAGE
Description of a new Species of <i>Acacia</i> . By J. H. MAIDEN, F.L.S. (Plate i.) 12	12
Note on the Subgenus <i>Salinator</i> of Hedley. By EDGAR A. SMITH, F.Z.S., Corresponding Member 14	14
Studies on Australian Mollusca. Part iv. By C. HEDLEY, F.L.S. (Plate ii.) 16	16
Geological Notes on Kosciusko, with special Reference to Evidences of Glacial Action. By Professor DAVID, B.A., F.R.S., RICHARD HELMS, and E. F. PITTMAN, Assoc. R.S.M. (Plates iii.-x.) ... 26	26
Notes from the Botanic Gardens, Sydney. No. 7. By J. H. MAIDEN, F.L.S., &c., and E. BETCHE 79	79
Notes on the Caves of Fiji, with special reference to Lau. By B. SAWYER, B.E., and E. C. ANDREWS, B.A. 91	91
Bacteria and the Disintegration of Cement. By R. GREIG SMITH, M.Sc., Macleay Bacteriologist to the Society 107	107
Notes on <i>Vibrio denitrificans</i> , Sewerin. By R. GREIG SMITH, M.Sc., Macleay Bacteriologist to the Society. (Plate xi.) 118	118
Observations on the Eucalypts of New South Wales. Part viii. By HENRY DEANE, M.A., F.L.S., &c., and J. H. MAIDEN, F.L.S., &c. 122	122
The Nature of the Bacteroids of the Leguminous Nodule, and the Culture of <i>Rhizobium leguminosarum</i> . By R. GREIG SMITH, M.Sc., Macleay Bacteriologist to the Society 152	152
On one of the so-called Honeysuckles of Lord Howe Island. By J. H. MAIDEN, F.L.S., Botanic Gardens, Sydney 156	156
Revision of the Genus <i>Paropsis</i> . By Rev. T. BLACKBURN, B.A., Corresponding Member. Part vi. 159	159
Donations 1, 75, 147	1, 75, 147
Elections and Announcements 1, 75, 147	1, 75, 147
Notes and Exhibits 74, 145	74, 145

NOTE.—On page 136, line 13—For *E. paludosa*, read *E. camphora*.

27784

PART II. (No. 102).

(Issued November 7th, 1901.)

	PAGE
Notes on the Botany of the Interior of New South Wales. Part iii. By R. H. CAMBAGE. (Plate xii.)	197
Note on the Nomenclature of <i>Cingulina Brazieri</i> , Angas, a Port Jackson Mollusc. By Professor RALPH TATE	214
Note on some Richmond River Hepatics. By Rev. WALTER W. WATTS	215
The "Shot-Hole" Fungi of Stone-fruit Trees in Australia. By D. McALPINE. (<i>Communicated by J. H. Maiden, F.L.S., &c.</i>) ...	221
On the "Onvar" of Malekula, New Hebrides. By WALTER R. HARPER	233
Notes on an Aboriginal Grave in the Darling River District, N.S.W. By GRAHAM OFFICER, B.Sc. [<i>Communicated by R. Etheridge, Junr.</i>] (Plate xiii.)	238
Australian <i>Psyllidæ</i> . Part ii. By WALTER W. FROGGATT, F.L.S. (Plates xiv.-xvi.)	242
Note on the Occurrence of Diatoms, Radiolaria and Infusoria in the Rolling Downs Formation (Lower Cretaceous), Queensland. By W. S. DUN, W. H. RANDS, F.G.S., and PROFESSOR DAVID, B.A., F.G.S., F.R.S. (Plates xvii.-xix.)	299
Notes on the Botany of the Interior of New South Wales. Part iv. By R. H. CAMBAGE. (Plates xx.-xxi.)	317
Contributions to a Knowledge of Australian Entozoa. No. i. On a new Species of <i>Distomum</i> from the Platypus. By S. J. JOHNSTON, B.A., Economic Zoologist, Technological Museum, Sydney. (Plate xxii.)	334
Further Notes on supposed Hybridisation amongst Eucalypts (includ- ing a Description of a new Species). By H. DEANE, M.A., F.L.S., &c., and J. H. MAIDEN, F.L.S., &c.	339
Notes and Exhibits	213, 310
Donations	217, 312
Elections and Announcements	217

PART III. (No. 103).

(Issued December 19th, 1901.)

PAGE

A Revised Census of the Marine Mollusca of Tasmania. By PROFESSOR RALPH TATE and W. L. MAY. (Plates xxiii.-xxvii.)	344
Notes and Exhibits	471, 472

PART IV. (No. 104).

(Issued May 20th, 1902.)

PAGE

Additional Notes on the Mosses of New South Wales. By Rev. W. WALTER WATTS	473
Descriptions of New Species of Australian Coleoptera. Part vi. By ARTHUR M. LEA	481
Arachnida from the South Seas. By W. J. RAINBOW, F.L.S., F.E.S., Entomologist to the Australian Museum. (Plate xxviii.) ..	521
The Systematic Position of <i>Purpura tritoniformis</i> of Blainville. By H. LEIGHTON KESTIVEN (Plate xxix.)	533
1.—Notes on <i>Eucalyptus pulverulenta</i> , Sims. By J. H. MAIDEN, Botanic Gardens, Sydney	547
2.—On <i>Eucalyptus Stuartiana</i> , F.v.M. By J. H. MAIDEN, Botanic Gardens, Sydney	556
3.—On <i>Eucalyptus Gunnii</i> , Hook. f. By J. H. MAIDEN, Botanic Gardens, Sydney	561
The Gum Fermentation of Sugar Cane Juice. By R. GREIG SMITH, M.Sc., Macleay Bacteriologist to the Society. (Plate xxx.) ..	589
The Chemical Properties of Bacterial Gum Levan. By THOS. STEEL, F.L.S., F.C.S.	626
Note on the Synonymy of <i>Malurus cyaneus</i> and <i>M. superbus</i> . By A. J. NORTH, C.M.Z.S.	632
Notes on some New South Wales Hepatics. By Rev. WALTER W. WATTS	633
Descriptions of New Australian Lepidoptera. By OSWALD B. LOWER, F.E.S., Lond., &c.	639

PART IV. (*continued.*)

	PAGE
Studies in Australian Entomology. No. xi. Description of a new Ground Beetle from Victoria. By THOMAS G. SLOANE	672
The Deterioration of Raw and Refined Sugar Crystals in Bulk. By R. GREIG SMITH, M.Sc., Macleay Bacteriologist to the Society ...	674
The Acid Fermentation of Raw Sugar Crystals. By R. GREIG SMITH, M.Sc., Macleay Bacteriologist to the Society	684
Notes on the Botany of the Interior of New South Wales. Part v. By R. H. CAMBAGE. (Plates xxxi.-xxxiii.)	685
Studies on Australian Mollusca. Part v. By C. HEDLEY, F.L.S. (Plate xxxiv.)	700
The Protoconchs of certain Port Jackson Gasteropoda. By H. LEIGHTON KESTEVEN. (Plates xxxv.-xxxvi.)	709
On the Skeleton of the Snout of the Mammary Fœtus of Monotremes. By Professor J. T. WILSON, M.B., Ch.M. (Plates xxxvii.-xlii.)...	717
Presidential Address delivered at the Twenty-seventh Annual General Meeting, March 26th, 1902. By J. H. MAIDEN, F.L.S., &c. (Plate xliii.)	740
Supplementary Note to the Hon. Dr. Norton's Presidential Address (Proceedings, 1900, p. 794)	809
Elections and Announcements	517, 541, 635
Donations	477, 517, 541, 635
Notes and Exhibits	473, 514, 539, 631, 738
Title-page, Contents, Index, &c.	

LIST OF PLATES.

PROCEEDINGS, 1901.

Plate I.—*Acacia Dorothea*, Maiden, sp. n.

Plate II.—Australian Mollusca.

Plate III.—Map showing Evidences of Glacial Action, Mt. Kosciusko, N.S.W.

Plate IV.—Map and Sections illustrating Glaciation, Mt. Kosciusko, N.S.W.

Plate V.—Sections illustrating Glaciation, Mt. Kosciusko, N.S.W.

Plate VI.—Geological Section from Cooma to Mt. Kosciusko, N.S.W.

Plate VII.—Roche Moutonnée of Granite showing Glacial Grooves.

Plate VIII.—Striated Quartzite Boulder.

Plate IX.—Grooved and Striated Quartzite Boulder.

Plate X.—Fig. 1. Grooved Pavement of Granite, Lake Albina, and Granite Erratics.

Fig. 2. Relic of Lateral Moraine.

Plate XI.—*Vibrio (Mycobacterium) denitrificans*, Sewerin.

Plate XII.—Fig. 1. *Pittosporum phillyræoides*, DC., (Berrigan), Nymagee, N.S.W.

Fig. 2. *Eremophila longifolia*, F.v.M., (Emu Bush), Bourke, N.S.W.

Plate XIII.—Two views of an Australian Aboriginal Grave, Darling River District, N.S.W.

Plates XIV.-XV.—Australian *Psyllidæ* (wings).

Plate XVI.—Australian *Psyllidæ* (genitalia, lerp scales, galls, and pupæ).

Plate XVII.—Section showing the Horizon of the Lower Cretaceous Limestone containing Diatoms, &c., Maranoa River, Q.

Plate XVIII.—Fig. 1. *Coscinodiscus* sp. Fig. 2. Diatom. Fig. 3. Radiolarian Shell (? *Astrophacus*).

Plate XIX.—Fig. 1. Diatom. Fig. 2. *Tintinnus* sp. Fig. 3. Radiolarian Shell.

Plate XX.—Fig. 1. *Capparis Mitchelli*, Lindl., (Wild Orange), Cobar, N.S.W.

Fig. 2. *Flindersia maculosa*, F.v.M., (Leopard-tree), Bourke, N.S.W.

Plate XXI.—Fig. 1. *Eucalyptus microtheca*, F.v.M., (Coolabah), Bourke, N.S.W.

Fig. 2. *Atalaya hemiglauca*, F.v.M., (Whitewood), Bourke, N.S.W.

LIST OF PLATES (*continued*).

Plate XXII. —*Distomum ornithorhynchi*, Johnston, sp. n.

Plates XXIII.-XXVII. —Tasmanian Mollusca.

Plate XXVIII. —Arachnida from the South Seas.

Plate XXIX. —*Purpura tritoniformis*, and *P. succincta*.

Plate XXX. —*Bacillus levaniformans*, R. G. Smith, sp. n.

Plate XXXI. —Fig. 1. *Acacia pendula*, A. Cunn., (Myall or Boree), Forbes, N.S.W.

Fig. 2. *A. aneura*, F.v.M., (Mulga); *Geijera parviflora*, Lindl., (Wilga), on the left; a young tree of *Grevillea striata*, R.Br., (Beefwood), on the right; Bourke, N.S.W.

Plate XXXII. —Fig. 1. *Heterodendron oleæfolium*, Desf., (Rosewood), Forbes, N.S.W.

Fig. 2. *Casuarina Luehmanni*, R. T. Baker (Bull Oak), Peak Hill, N.S.W.

Plate XXXIII. —*Casuarina glauca*, Sieb., on the right near saltwater; *C. Cunninghamiana*, Miq., large trees in fresh water.

Plate XXXIV. —Australian Mollusca.

Plates XXXV.-XXXVI. —Port Jackson Gasteropoda.

Plates XXXVII. } Skeleton of Snout of *Ornithorhynchus*.
XXXVIII. }

Plate XXXIX. —Skeleton of Snout of *Echidna*.

Plates XL. } Coronal Sections through the Region of the Snout of
XLI. } *Ornithorhynchus*.

Plate XLII. —Portion of Coronal Section of the Snout of *Ornithorhynchus*.

Plate XLIII. —Botanical Map of New South Wales.

CORRIGENDA.

Page 136, line 13—for *E. paludosa* read *E. camphora*.

Page 200, line 25—for *Beyeria vicosa* read *Beyeria viscosa*.

Page 465, line 32 should read—*Syrnola Harrissoni*, Tate & May; from the type. [*S. micra* is a different species, and is not figured].

Page 531, line 22—for *Hasaris diloris* read *Hasarius diloris*.

Page 600, line 3—for Lime water gives no precipitate read Lime water in excess (20-30 volumes) gives a precipitate.