LOS INSECTOS DE LAS ISLAS JUAN FERNANDEZ

28. CICADELLIDAE (Homoptera)

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Del material compilado por el Dr. G. Kuschel en las Islas Juan Fernández se crean tres géneros y ocho especies nuevas de Cicadellidae. Las nuevas especies son: *Evansiola insularis, E. selkirki, Agallia placida, A. masatierrensis, Stenagallia sagittaria, Agalita minuta, A. brachyptera,* y *Kuscheliola reticulata.* Se crea una nueva tribu, Myerslopiini, para la subfamilia Ulopinae. Se da una clave para las especies de Agalliinae de Juan Fernández.

* * *

Up to the present time only two species of Cicadellids have been described from Juan Fernández. In the collection received for study from Dr. G. Kuschel there are thirteen species of which eight are described as new.

Types of new species are in Investigaciones Entomológicas, University of Chile and paratypes in the British Museum.

Ulopinae

Recently, China (1955) has described a Ulopid from Masatierra which he named *Evansiella kuscheli.* As the generic name is preoccupied by *Evansiella* Hayward, 1948 (Lep. Hesperiidae), he proposes in this volume the new name *Evansiola,* type species, *E. kuscheli* (China).

Evansiola kuscheli (China)

Evansiella kuscheli China, Rev. Chil. Ent. 1955: 199.

The holotype ♂ was found in soil at Camote. Further specimens comprising adults of both sexes and nymphs have since been collected at the same locality.

Every specimen examined has been found coated with adhering soil. China placed *E. kuscheli* in the Megophthalmini, and I share his opinion as to its relationship with other insects in this tribe.

Evansiola insularis sp. nov. (fig. 1, A-C)

Length 4.2 mm. General coloration brown. Anteclypeus projecting anteriorly beyond the margin of the maxillary plates, transversely concave anteriorly, nearly flat posteriorly. Lora not extending as far as the edge of the maxillary plates, narrowly enfolding the sides of the ante-clypeus. Post-clypeus widely convex; sides of the face sloping steeply to below the eyes. Frons continuous with the post-clypeus, widening posteriorly and bordered laterally by the antennal ledges. Antennal depressions deep; the two basal antennal segments well developed; flagellum long. Posterior apex of the face spatulate. Crown of head flattened, the sides in front of the eyes at a wide angle to the apex; anterior margin parallel with the hind margin. Pronotum flattened, rectangular in shape, transversely ridged postero-medially. Tegmina hyaline, brown with dark brown and white markings; venation as in Fig. 1 B. Wings reduced to small functionless lobes. Hind tibiae rectangular in section with well developed widely spaced spines. Male genitalia with the sub-genital plates parallel-sided and dorsally directed apically.

Type ♂ from Plazoleta del Yunque, Masatierra, coll. F. G. Kuschel, 9/2/52. Allotype ♀ from Picacho Central, 600 m., Masatierra, 4/2/52. Numerous paratypes.

E. insularis, which has been taken on ferns, differs from the type species, *E. kuscheli* in the shape of the head, which is not grotesquely laterally produced, in size, being considerably larger and in having larger, though not fully developed, tegmina. On the anterior margin of the head of nymphs there are elongate pits which are homologous with those occurring in *Megophthalmus scabripennis* Edwards.

Evansiola selkirki sp. nov. (fig. 1, D-E)

Length 5 mm. General coloration dark brown mottled with light brown.

Face of head, ante-clypeus keel-shaped, post-clypeus convex. Frons, between the antennal ledges, postero-medially depressed. Hind margin of the face, ridged. Crown with a median and two lateral depressions and with two raised prominences close to the hind margin; these form part of the longitudinal ridges that separate the two depressions. Pronotum with the fore and hind margins parallel with each other and with a median, and ill-defined elevated ridge. Sides of pronotum curved. Tegmina reduced to short pads. Abdomen with a dorsal median keel.

Type ♀ from Miradero 50-600 m., Masatierra, coll. F. G. Kuschel 26/12/54.

1 Paratype ♀ from the same locality.

E. selkirki resembles the type species and differs from *E. insulare* in its brachypterous condition. It differs from *E. kuscheli* in size, being considerably larger and in the shape of the head.

The slight lateral expansions of the pronotum of *E. selkirki* and the fact that specimens of both *E. kuscheli* and *E. insularis* have been found encrusted with hardened soil, suggests the possibility of affinity between these insects and the ulopids, *Myerslopia* spp. from New Zealand, and *Paulianana dracula* Evans from Madagascar. A comparison of the head structure of *Evansiola* spp. with that of *Myerslopia parva* Evans (Fig. 1, F) indicates that there is no close relationship between species in the two groups of genera.

Recently I have received for examination a large collection of ulopids from New Zealand which have been lent me by Dr. T. E. Woodward. These comprise one spe-

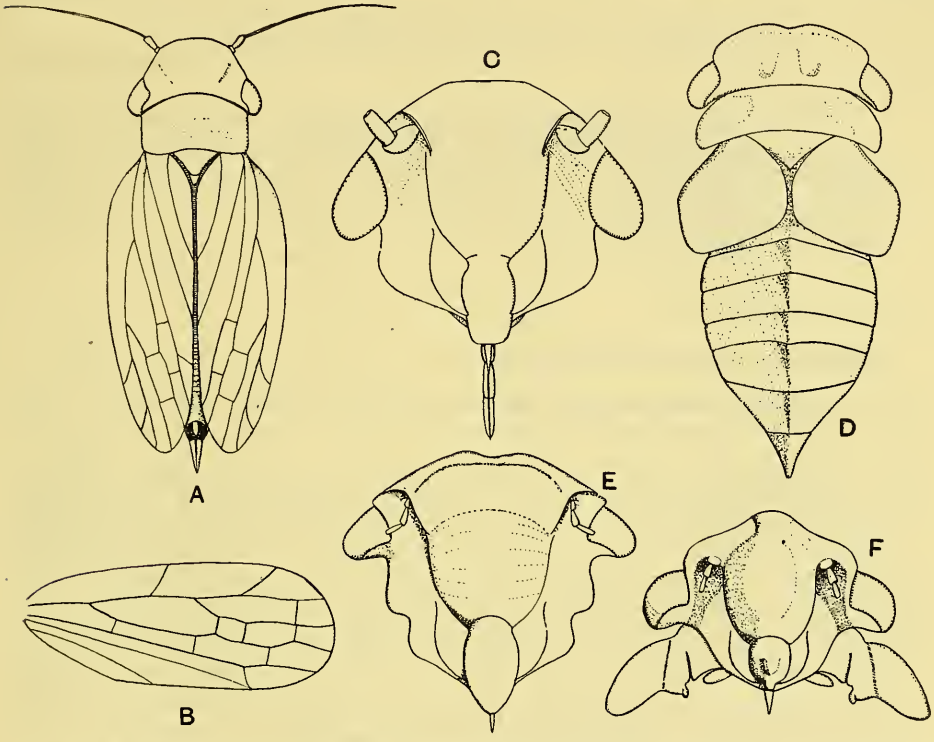

Fig. 1. A. *Evansiola insularis*. B. *E. insularis*, tegmen. C. *E. insularis*, face of head. D. *Evansiola selkirki*. E. *E. selkirki*, face of head. F. *Myerslopia parva*, face of head.

cimen of *M. magna* Evans and very numerous ones of *M. parva* which were found in leaf mould in both the North and the South Island. A study of this material has served to confirm my former opinion (Evans, 1953) that the genera *Myerslopia* Evans and *Paulianana* Evans share so many characteristics in common which are lacking in other Ulopids that they merit grouping together in a separate tribe. Accordingly a new tribe, the Myerslopiini, is created for their reception.

Key to the Tribes of the Ulopinae

1. Face of head with a well developed maxillary suture ... (See Evans, 1947, a, Fig. 1). 2

Face of head lacking a maxillary suture 3

2. Head produced to a varying extent, arrow shaped ..... Cephalelini

Head not produced, or if so, then narrowly and not arrow shaped ..... Ulopini

3. Head foliaceous; pronotom with well developed lateral expansions ..... Myerslopiini

Head not foliaceous; pronotum lacking well developed lateral expansions ..... Megophthalmini

Present knowledge suggests that the Cephalelini are confined to South Africa, Southern Australia and New Zealand; the Myerslopiini to New Zealand and Madagascar; the Megophthalmini to Europe, north and tropical Africa and to western north and south America. The Ulopini are universally distributed.

Agalliinae

Alloproctus amandatus Bergroth

Alloproctus amandatus Bergroth, Nat. Hist. Juan Fernández and Easter Is. edited by C. Skottsberg, 3: 400, 1932.

In my classification of Leaf hoppers, Pt. 3. (Evans, 1947, a) I ascribed the genus *Alloproctus* Bergroth to the sub-family Jassinae, tribe Jassini. This was an error and it is evident from Bergroth's generic description that his species is a representative of the Agalliinae. Bergroth stated that *Alloproctus* seemed to be allied to *Agallia* Curtis and *Aceratagallia* Kirkaldy but differed in having sharp supra-antennal ledges which concealed the base of the antennae. None of the specimens in the Kuschel collection which belong to the Agalliinae has antennal ledges as described for *Alloproctus*, hence it is assumed that a representative of *A. amandatus*, of which the type species was taken on Masafuera, is not included among them.

Key to the species of Agalliinae of Juan Fernández

1. Antennal ledges sharp, concealing the base of the antennae *Alloproctus amandatus* Bergroth

Antennal ledges not sharp, base of antennae exposed 2

2. Crown of head anteriorly produced (Fig. 2, G) ..... *Stenagallia sagittaria* sp. nov.

Crown of head not anteriorly produced 3

3. Tegmina and wings fully developed 4

Tegmina short and apically rounded or pad-like; wings not fully developed 6

4. Pronotum steeply declivous; venation of tegmen reticulate *Kuscheliola reticulata* sp. nov.

Pronotum not steeply declivous, venation of tegmen, not reticulate 5

5. Crown of even width throughout, insects black or brown without marked pattern development ..... *Agallia masatierrensis* sp. nov.

Crown slightly wider in the centre than against the eyes; insects with a well developed and variable colour pattern *Agallia placida* sp. nov.

6. Crown and pronotum with a well developed colour pattern *Agalita minuta* sp. nov.

Crown and pronotum lacking a well developed colour pattern ..... *Agalita brachyptera* sp. nov.

Agallia placida sp. nov. (fig. 2, D-E).

Length. ♂ 4 mm., ♀ 5 mm. Colour pattern variable, light and dark brown, buff and white. Crown of head of even width between the eyes or medially than laterally. Crown and pronotum ochreous with irregular large lateral dark brown markings. Scutellum with variable dark brown and ivory markings and with a well-defined median transverse division but not a deep sulcus.

Tegmen pale hyaline parchment brown, with pale brown, dark brown and white markings, sometimes arranged as a pattern of large oval markings. The posterior apices of the anal veins may be white. Male genitalia as in Fig. 2, E.

Holotype ♂ from B. Cumberland, Masatierra, coll. G. Kuschel, 1/1/52. Allotype ♀ from Cerro Alto, 600 m., Masatierra 1/2/52.

Agallia placida differs from all the other Agallian leaf hoppers described below in having an unusually shaped aedeagus.

Agallia masatierrensis sp. nov. (fig. 2, I).

Length, 4.8 mm. General coloration black, deep purplish-brown or chestnut brown with a few pale markings.

Face of head yellowish or brown or marked with a pattern of light or dark brown. Crown of head of even width between the eyes, chestnut brown or orange buff with two small round black markings. Pronotum black, chestnut brown or deep purplish-brown. Scutellum similarly coloured with,

or without, two small pale markings on the anterior half and with narrow paired yellow markings bordering the post-scutellum. Tegmen, black, deep purplish-brown, or chestnut brown, the posterior apices of the anal veins whitish and with a variable number of pale hyaline areas situated particularly towards the costal border. Male genitalia as in Fig. 2, J.

Holotype ♂ from Plazoleta del Yunque, 200 m., Masatierra; Coll. F. G. Kuschel 2/1/52.

Allotype. ♀ Miradero, 500 m., Masatierra, 3/12/51.

Stenagallia gen. nov.

The face of the head is diamond-shape, the labium reaches to between the middle coxae; the ante-clypeus is narrower anteriorly than posteriorly; the antennal ledges resemble a flattened semi-circle, and post-frontal sutures, which are parallel with the produced lateral margins of the face, are retained. The ocelli, which lie on the anterior edges of marginal depressions, are close to the posterior edge of the face and are nearer to the eyes on each side than to the apex of the head. The crown of the head is triangular in shape and the pronotum is on the same plane as the crown. The tegmina are fully developed and have venation of normal cicadellid type.

Type species. — *Stenagallia sagittaria* sp. nov.

This genus differs from other genera of Agalliinae in the character of the shape of the head.

Stenagallia sagittaria, sp. nov. (fig. 2, G, H)

Length 6.8 mm. General coloration pale or dark yellowish-brown. Face of head with the ante- and post-clypeus darker in colour than the rest of the face. Crown of head of variable length. Pronotum and scutellum concolorous with the crown. Tegmen pale or dark yellowish-brown, the veins sometimes darker in colour than the rest of the tegmen. Male genitalia as in Fig. 2, G. Ovipositor extending beyond the apices of the folded tegmina.

Holotype ♂ from Alto Inglés, 600 m., Masatierra. coll. F. G. Kuschel, 6/2/52.

Allotype ♀ from Picacho Central, 600 m., Masatierra 4/2/52.

Agalita gen. nov.

The face of the head is evenly convex and the labium extends to between the hind coxae. The ocelli are nearer to the eyes on each side than to each other and may lie in shallow depressions. The crown is wider in the centre than against the eyes. The pronotum is almost flat. The tegmina

which may not be fully developed are widely rounded apically and the venation may be reticulate. The wings are functionless.

Type species. — *Agalita minuta* sp. nov.

This genus differs from *Agallia* Curtis in the shape of the crown of the head and the apex of the tegmen.

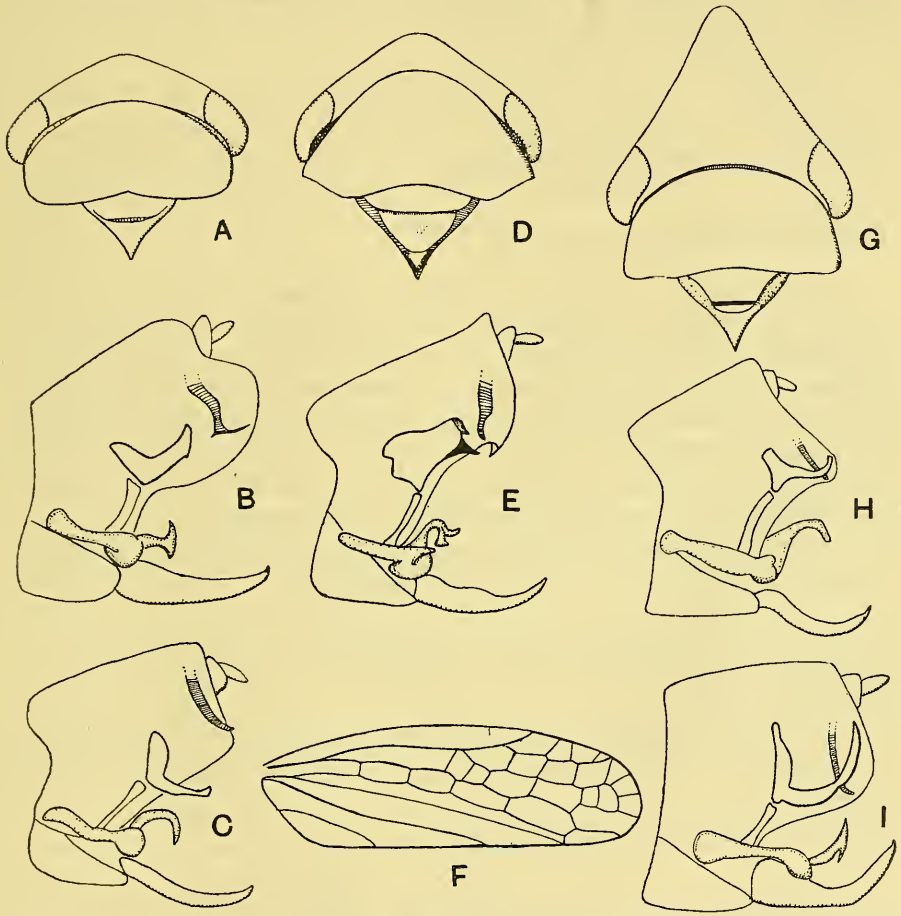

Fig. 2. A *Agalita brachyptera*, head and thorax. B. *A. brachyptera*, male genitalia. C. *Agalita minuta*, male genitalia. D. *Agallia placida*, head and thorax. E. *Agallia placida*, male genitalia. F. *Kuscheliola reticulata*, tegmen. G. *Stenagallia sagittaria*, head and thorax. H. *S. sagittaria*, male genitalia. I. *Agallia masatierrensis*, male genitalia.

Agalita minuta sp. nov. (fig. 2, C)

Length 3.8 mm. Face of head yellowish, the muscle impressions on the post-clypeus and the marginal outline of the ante and post clypeus brown,

ocelli situated on laterally flattened triangular-shaped margins of the crown.

Pronotum with the hind margin transverse, not laterally angulate; anteriorly marked with a pattern of light and dark brown, posteriorly pale buff and coarsely punctate. Tegmina, elytra-like, extending as far as the apex of the genitalia, with a variable pattern of pale and dark brown and white. Venation normal or reticulate.

Male genitalia as in Fig. 2, C.

Holotype ♂ from B. Cumberland, Masatierra, coll. F. G. Kuschel, 4/3/51.

Allotype ♀ from the same locality.

Agalita brachyptera sp. nov. (fig. 2, A, B)

Represented by a series of specimens ranging in length from 3.8-4.8 mm., in which the tegmina may extend to the apex of the abdomen, or the abdomen extend considerably beyond the apices of the folded tegmina. Differs from type species in lacking a characteristic colour pattern on the crown and pronotum and in having the pronotum transversely striated and not punctate posteriorly. General coloration, evenly pale brown or various shades of brown, with, or without, a cruciform marking on the pronotum and a whitish streak margined with black on the tegmen.

While the degree of brachyptery is variable in development the tegmina always extend beyond the middle of the abdomen.

The venation may be normal or reticulate.

Holotype ♂ from Inocentes Bajos. 1.000 m., Masafuera. coll. F. G. Kuschel, 27/1/52.

Allotype ♀ from the same locality and of same date of collection.

Paratypes from Masafuera —Q. d. l. Casas, and Masatierra— Alto Pangal.

Kuscheliola gen. nov.

The face of the head is wider than long; the labium terminates between the mid coxae; the ante-clypeus is oval in shape; the antennal ledges form a continuous curve with the sides of the post-clypeus and the epistomal suture, which is barely discernible, is transverse. The crown of the head is wider medially than against the eyes and the ocelli, which are visible in dorsal aspect, are situated on the almost vertical anterior margin of the head. The pronotum is steeply declivous and the tegmina, which are long and narrow apically have reticulate venation.

Type species *Kuscheliola reticulata* sp. nov.

Kuscheliola reticulata sp. nov. (fig. 2, F)

Length 5.2 mm. Head yellowish with pale brown markings.

Tegmen whitish-hyaline with white, brown and black markings; veins brown.

Holotype ♂ from Alto Inglés, 600 m., Masatierra, coll. F. G. Kuschel, 6/2/52.

Euscelinae

Three species occur in the collection which belong to this sub-family. Two of these are representatives of the Euselini and one the Balcluthini. Because of difficulties associated with the identification of species in this widespread group, they are not described.

Discussion

When, in 1954, Dr. Kuschel first showed me the collection of leaf hoppers he had made in Juan Fernández my interest was immediately aroused because of the presence of numerous Ulopids belonging to a single species (*Evansiola insularis*). Although no representatives of this sub-family have been recorded from South America, I assumed that the insects from Juan Fernández islands would have southern associations and it was with considerable surprise that I discovered when I gave them close study that they belonged to the Megophthalmini, an opinion, as already mentioned, which is shared by Dr. China.

Kirkaldy's (1906) description of his Australian genus *Kahavalu* suggests, in some ways, that it might be a represetative of the Megophthalmini. However, I have previously (1947, a) included this genus in the Ulopini because of the pitted appearance of the type species and the fact that no Megophthalmini are known to me from Australian collections.

Furthermore, no representatives of this tribe have been recorded from either South Africa or New Zealand, but only from tropical Africa, Europe and Western North America.

There is thus, no reason for supposing that *Evansiola* spp. are part of the Antarctic or southern fauna, and they are in fact more probably of northern derivation.

Apart from three Euscelids, of no particular zoogeographical significance, the rest of the Kuschel collection comprised Agallian leaf hoppers.

These are a group of wide distribution and though particularly well represented in the South American fauna are absent from New Zealand, and one species only is known from Australia. Like Euscelids and insects

in the genera *Jassus* Fabr. and *Eurinoscopus* Kirkaldy the Agalliinae seem capable of establishment on oceanic islands, possibly because they may have catholic feeding habits and a wide temperature – toleration range. There are two striking genera on St. Helena (*Nehela* B. W. and *Stonasla* B. W.) and one species (*Agalliopsis fasciatus* Osborn) has been described from Samoa. Accordingly, it is suggested that the scanty leaf-hopper fauna of Juan Fernández provides no indication of Antarctic associations but is probably derived from the South American mainland.

REFERENCES

Evans, J. W. 1947, a. *A natural classification of leafhoppers*, Pt. 3, Trans. R. ent. Soc. London. 98: 221.

—— 1947, b. *Some new Ulopinae*. Ann. Mag. N. H. Ser. 11, xiv; 140.

—— 1953. *Les Cicadellides de Madagascar*. Mem. Instit. Sci. Madagascar, Ser. E. iv; 91.

Kirkaldy, G. W. 1906. *Leafhoppers and their Natural Enemies*. Pt. 9. Bull. Hawaii, sug. Ass. Exp. Sta. 1: 371.