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Encyrtidae of the Marquesas and Society Islands  
(Hymenoptera, Chalcidoidea)

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INTRODUCTION

The encyrtid fauna of the Marquesas and Society Islands has not been considered previously, so far as I know. The material for the present report was collected mainly by Edward P. Mumford and A. M. Adamson in the years 1928, 1929, and 1930, and was sent to me for study by Mr. Mumford. The entire collection, including the types of new species, is stored in Bernice P. Bishop Museum.

The number of species here recorded, 12 for the Marquesas Islands and five for the Society Islands, is not great, yet the material studied probably represents a fair sample of the fauna of these islands. More intensive collecting perhaps would do little more than disclose additional species of *Anagyrus*, which is the dominant endemic genus. Another endemic group is represented by a species of *Leptomastix*, and it is possible that *Eutrichosomella insularis* Timberlake and *Mesencyrtus insularis* Timberlake are also endemic species. The two species of *Encyrtus*, *Pauridia peregrina* Timberlake and *Tachinaephagus scalandicus* Ashmead, are certainly intrusive elements of the fauna, introduced through the agency of man and probably in recent years. The same is also almost certainly true for *Ooencyrtus sphingidarum* Timberlake, which is parasitic in the eggs of an introduced sphingid.

Of the 14 species of Encyrtidae known from the two groups of islands, ten are parasitic in species of Coccidae, one in puparia of

various muscoid Diptera, and one in sphingid eggs. The habits of *Eutrichosomella* and *Mesencyrtus* are of course quite unknown. The species of *Anagyrus* and *Leptomastix*, and *Pauridia peregrina* Timberlake, attack species of mealybugs (*Pseudococcus* and allies), and the hosts of *Anagyrus* and *Leptomastix* must form an endemic element of the fauna. The two species of *Encyrtus* attack scale insects of the genus *Saissetia*.

For the skilful habit sketch of *Eutrichosomella insularis* I am under grateful obligation to my colleague, Mr. Harold Compere.

#### MARQUESAS ISLANDS

***Tachinaephagus zealandicus*** Ashmead, Carnegie Mus., Mem. 1: 304, 1904 (female).

*Tachinaephagus australiensis* Girault, Insec. Insc. Menst. 5: 142, 1917 (female, male).<sup>1</sup>

*Australencyrtus giraulti* Johnston and Tiegs, Roy. Soc. Queensland Proc., 33: 118, 1921, figs., (female, male).

*Stenosterys fulvoventralis* Dodd, Agr. Gazette N. S. Wales 32: 730, fig., 1921 (female, male).

The above synonymy has been published by Gahan (Ent. Soc. Wash., Proc., 40: 210, 1938) but was independently arrived at by each of us.

*T. zealandicus* is well known in Australia and New Zealand as a parasite in the puparia of various species of muscoid Diptera. In accordance with the meaning of the generic name, it was evidently considered by Ashmead to be parasitic on a species of Tachinidae.

It was collected by Mumford and Adamson in the Marquesas Islands as follows: one female and one male, Teuanui, Toovii [Tovii], Nukuhiva, 1,900 feet, Oct. 16, 1929; seven females, Maauu [Mauu], Nukuhiva, 2,500 feet, Oct. 22, 1930; five females, Tunoa Ridge, Puokoke, [Puokoke], Nukuhiva, 3,485 feet, Oct. 22, 1929, by beating *Glochidion ramiflorum* and shrub 565.

***Encyrtus infelix*** (Embleton).

One male, Makahetau [Hakahetau?], Uapou, 500 feet, July 13, 1929 (Whitten); one female, Tunoa Ridge, Puokoke, Nukuhiva, 3,485 feet, on *Vaccinium cereum*, Oct. 22, 1929 (Mumford and Adamson); one female, Ooumu, Nukuhiva, 3,800 feet, Nov. 10, 1929

<sup>1</sup> The spelling of the generic name of this citation is apparently a typographical error.

(Mumford and Adamson); one female, Ooumu, 4,050 feet, Nov. 12, 1929 (Mumford and Adamson); two females, Ooumu, 3,200 feet, on *Weinmannia parviflora*, May 28, 1931 (Le Bronnec and H. Tauraa); one female, Tauamaka, Nukuhiva, 2,900 feet, on *Metrosideros collina*, Nov. 10, 1929 (Mumford and Adamson); two females, north side of Muake, Nukuhiva, 2,500 feet, on *Metrosideros collina*, Aug. 3, 1931 (Le Bronnec and Tauraa); one female, Tapuaooa, Nukuhiva, 3,100 feet, Nov. 14, 1929 (Mumford and Adamson); one female, Tapuaooa Hill, Nukuhiva, 3,500 feet, on *Weinmannia parviflora*, July 20, 1931 (Le Bronnec and Tauraa); one female, Tekao Hill, Nukuhiva, 3,250 feet, on *Weinmannia parviflora*, July 23, 1931 (Le Bronnec and Tauraa); one female, Vaihakameama, Nukuhiva, 2,700 feet, July 21, 1931 (Le Bronnec and Tauraa); and one female, Kopaaftaa, Hivaoa, 2,900 feet, reared from *Saissetia hemispherica* on *Histiopteris incisa*, Feb. 26, 1930 (Mumford and Adamson).

**Encyrtus barbatus** Timberlake.

This species was described from the Hawaiian islands, but it is very widely distributed in tropical and subtropical regions. It undoubtedly occurs in Australia and presumably was described previously by Girault, but I am unable to identify the Giraultian species without viewing the types. It is parasitic in species of the genus *Saissetia*, and was taken in the Marquesas Islands by Mumford and Adamson as follows:

One female, Eiao, above Vaituha, 1,080 feet, on *Dodonaea viscosa*, July 13, 1929; one female, crest of north ridge, Uahuka, 2,000 feet, Sept. 29, 1929; one female, Kopaaftaa, Hivaoa, 2,800 feet, on *Sclerotherca* sp., Feb. 25, 1930; and one female, Anatikaue, Hivaoa, 1,750 feet, Aug. 1, 1929.

**Pauridia peregrina** Timberlake.

Two females, Tahauku, Hivaoa, July 10, 1929; and one female, Putatauuu, Vaipae [Vaipae] Valley, Uahuka, 880 feet, Sept. 20, 1929 (Mumford and Adamson).

One female from Tahauku is unusually small and with abnormal antennae, but belongs to this species without doubt. The funicle of the right antenna is six-jointed, the first five joints all small, with 1 and 2 and 3 and 4 closely joined to each other and apparently more or less consolidated. The left antenna appears to be a little shorter and its funicle is plainly three-jointed, with joint 3 about the same as the nor-

mal joint 6 in size; joint 1 about equal to 1 and 2 of normal antenna; and joint 2 longer than the first and about equal to joints 3 to 5 of normal antenna consolidated. Club in both antennae normal, three-jointed. This specimen cannot be a gynandromorph, as the male antenna of *Pauridia* has the funicle six-jointed and the club solid.

#### Genus **ANAGYRUS** Howard

Five species of this genus were discovered by Mumford and Adamson in the Marquesas Islands in 1929 and 1930. These species undoubtedly are all endemic and resemble the endemic species of the Hawaiian islands more closely than those of any other region with which I am familiar. A large proportion of the Hawaiian species are black or nearly all black, while the Marquesan species are more frequently ornamented with yellow or brown. The species may be distinguished by means of the following key:

#### KEY TO THE SPECIES OF ANAGYRUS

1. Head, thorax and abdomen black..... 2  
    Head or body partly yellow or brown..... 3
2. Frontoververtex broad, with distinct sparse punctures; head and mesonotum minutely tessellate, shining; scape long, fusiform, extending somewhat more than half its length beyond the scrobes; tegulae black; legs yellow, with hind coxae black, hind femora and tibiae rather pale brown, and hind tarsi fuscous; length, about 1.75 mm...**A. punctifrons** Timberlake.  
    Similar, but frons with less distinct punctures; scape extending rather less than half its length beyond scrobes; tegulae white; legs yellow, the front coxae white; length, about 1.5 mm...**A. marquesanus** Timberlake.
3. Head entirely pale..... 4  
    Head, thorax and abdomen black, with orbital margins of frontoververtex rather broadly yellow; tegulae white; legs yellow, the front coxae whitish, the hind coxae dark; head and thorax shining; frontoververtex with sparse punctures, the orbits diverging anteriorly; length, 1.6 mm.....**A. orbitalis** Timberlake.
4. Notum of thorax and abdomen blackish, pleura brown, and head pale orange yellow; antennae black, the scape with an oblique whitish band; legs yellowish, with apex of tarsi, front tibiae and apical half of hind tibiae, fuscous; head and notum dull, the frontoververtex impunctate; length, 1.6 mm.....**A. flaviceps** Timberlake.  
    Thorax and abdomen orange brown, the dorsal parts darker, inclining to fuscous; legs dull brownish yellow, with last joint or two of tarsi fuscous; setae of mesonotum numerous, white, appressed; discal setae on basal half of wing white, on apical half dusky; length, 1.75 mm.....**A. mumfordi** Timberlake.

**Anagyrus punctifrons**, new species.

Female. Head subhemispherical, much broader than long, the face somewhat inflexed. As seen from in front head gently rounded above, with the eyes rather prominent below and the oral margin somewhat protuberant. Eyes about 1.5 times longer than wide. Cheeks 0.33 as long as eyes, the genal suture distinct. Frontovortex about 0.33 as wide as whole head and 1.5 times as long as the posterior width, the dorsal orbits distinctly diverging anteriorly. Ocelli in an equilateral triangle, the posterior pair but little more than their own diameter from margins of eyes and occiput. Antennal sockets situated distinctly closer to oral margin than their distance apart, the distance from either to nearest point of eye subequal to the space between them, and their dorsal margin distinctly above the ocular line. Scrobes deep, rather broad, parallel, broad and sloping on the outer wall and much more abrupt on inner side. Facial ridge about as wide as either scrobe, its crest rounded and as seen in profile strongly arched at lower end. Scape narrowly fusiform, about four times as long as wide excluding radicle, and extending somewhat more than half its length beyond the scrobes. Pedicel about three times as long as thick. First funicle joint about 1.33 times longer than pedicel. (Antennae otherwise mutilated.) Axillae slightly separated at tips. Scutellum strongly depressed, about as long as wide, rather acute at apex, and the lateral margins slightly arcuate and abruptly declivous. Propodeum very short in middle and abruptly declivous behind. Abdomen subequal to thorax, the ovipositor not protruded. Fore wing rather broad, uniformly and densely hairy, the hairs on area basad of speculum a little sparser. Speculum broad, oblique, not quite reaching stigmal vein and extending not more than 0.67 of distance toward posterior margin of disk. Submarginal vein with about 18 setae, with those on proximal half distinctly longer than width of costal cell. Marginal vein about thrice as long as wide. Stigmal and postmarginal veins subequal, distinctly longer than the marginal, but not twice as long, and diverging at an angle of about 50 degrees. Stigmal vein straight, slightly thickened at apex.

Head and body shining, delicately and finely tessellate, the sculpture nearly uniform throughout except that the exposed sides of propodeum are slightly duller and venter of abdomen is polished. Frontovortex with sparse, fine, scattered punctures. Pubescence subappressed, dusky, inconspicuous, and sparse on frontovortex. Eyes with short, not very dense, fine pile. The long pair of setae at apex of scutellum inclined a little forward.

Almost entirely black, the pleura tinged with brown. Middle and declivous part of propodeum, area around root of fore wings, minute spot on lateral margins of scutellum toward base and another at apex, paler brown. Legs, except coxae, testaceous yellow, the hind pair, however, rather strongly and nearly uniformly infuscated. Antennae black (mutilated, but probably entirely black, as in *Anagyrus orbitalis* and *A. marquesanus*). Mouthparts testaceous. Tegulae entirely dark. Wings hyaline, uniformly stained with dusky yellowish. Veins pale brownish yellow.

Length in mm., 1.88; width of head, 0.574; width of vertex at anterior ocellus, 0.212; width of mesoscutum, 0.563; length of fore wing, 1.56; width of fore wing, 0.662.

One female (holotype) collected, Aug. 2, 1929, at Kopaafaa, Hi-vaoo, 2,770 feet, miscellaneous sweepings (Mumford and Adamson).

**Anagyrus marquesanus**, new species.

Female. Similar to *A. punctifrons*, but differing in following manner: Eyes less prominent at lower end in frontal view of head. Ocelli smaller, nearly twice their diameter from nearest margin of eyes and occiput. Antennal sockets barely extending above ocular line. Scape considerably shorter and broader, excluding radicle about three times as long as wide, and extending less than half its length beyond the scrobes. Pedicel hardly more than twice as long as thick. First funicle joint as long as pedicel and slightly more than twice as long as thick. Following joints becoming gradually shorter distad, the sixth being about 1.25 times longer than thick. Club hardly wider than funicle, about as long as the three preceding joints and 0.5 of fourth preceding joint combined. First two joints of club subequal, the apical joint somewhat longer. Lateral margins of scutellum almost straight, the apex more acute. Ovipositor sheaths slightly protruded. Speculum of fore wing a little narrower.

Sculpture similar, but scutellum dull, with dense microscopic thimble-like punctures. Exposed lateral parts of propodeum also dull and finely, densely sculptured. Apical half of tergum much more strongly tessellate than basal half. Pubescence similar.

Black, the frontovertex and mesoscutum faintly bluish. Middle of propodeum and base of abdomen pale brownish. Antennae entirely black. Tegulae creamy white, the apical half subhyaline. Prepectal plates whitish. Legs, including front and middle coxae, pale brownish yellow, the hind pair somewhat more brownish. Mouthparts pale yellowish, the apex of mandibles red. Wings faintly dusky hyaline, the veins pale brownish yellow.

Length in mm., 1.37; width of head, 0.507; width of vertex at anterior ocellus, 0.197; width of mesoscutum, 0.493; length of fore wing, 1.44; width of fore wing, 0.638.

One female (holotype) collected by beating *Sclerotheca* sp., March 4, 1930, Matauuna, Hivaoa, 3,700 feet (Mumford and Adamson).

**Anagyrus orbitalis**, new species.

Female. Head moderately thick, subhemispherical, with face somewhat inflexed. As seen from in front head well rounded above, the cheeks converging below. Eyes moderately large, about 1.5 times longer than wide. Cheeks about 0.33 as long as eyes, bisected by a distinct genal suture. Frontovertex broad, 1.5 times longer than wide, the dorsal orbits slightly diverging anteriorly. Ocelli in an equilateral triangle, the posterior pair not quite twice their own diameter from orbits and about the same distance from occipital margin. Scrobes separate, broad, deep and troughlike, the sloping walls of each side meeting in an angle. Wall on outer side of each scrobe extending almost to orbital margin of eye and forming the effect of a slight ridge especially near anterior end of eye. Facial ridge arched at lower end between antennae, but otherwise straight in profile, and reaching above to the rounded angle between frons and face, its crest rounded. Antennae inserted close to oral margin, with upper margin of sockets tangent to the ocular line. Scape moderately broadly fusiform, extending about half its length beyond scrobes, and about as long as pedicel and first three funicle joints combined. Pedicel a little more than twice as long as wide. Flagellum filiform, very slightly thickening distad. Funicle joints all longer than wide, but decreasing in length distad, the first as long as pedicel, the sixth about 1.5 times longer than wide. Club not distinctly wider than funicle, nearly as long as three

preceding joints combined, its three segments nearly equal. Axillae slightly separated medially. Scutellum much flattened, abruptly declivous at margins, subtriangular, with apex rather acute and lateral margins slightly arched. Propodeum strongly declivous behind. Abdomen a little longer than thorax, the ovipositor sheaths slightly protruded. Fore wing rather broad, its disk densely hairy throughout, including costal cell and region basad of speculum. Speculum very oblique, rather wide, not quite reaching to stigmal vein and extending about 0.67 of distance to opposite margin. Submarginal vein with about 16 setae. Marginal vein about twice as long as wide and about 0.5 as long as stigmal. Stigmal and postmarginal veins subequal and rather long, the former straight and hardly thickened at apex.

Head microscopically tessellate-shagreened and moderately shiny. Frontovertex with sparse scattered setigerous punctures, with a row of slightly finer punctures close to margin of each eye. Cheeks, especially behind genal suture, smooth and more shiny. Mesoscutum and axillae minutely tessellate like head. Scutellum opaque, with minute dense thimble-like shagreening. Mesopleura minutely tessellate and shiny. Exposed lateral parts of propodeum dull and densely shagreened, the median declivous portion smooth and shining. Tergum somewhat dullish and tessellate, the sculpture coarser than that of mesoscutum. Venter of abdomen smooth and shining. Pubescence inconspicuous, except a little row of short white hairs on each side of face at anterior margin of eyes. Eyes with short, rather dense pile. Pubescence of mesonotum dusky, appressed. Scutellum with a few longer setae at apex, the apical median pair inclined a little forward.

Black, the frontovertex with a yellow orbital line on each side, slightly widened anteriorly and narrowed opposite anterior ocellus. Mouthparts testaceous brown, the mandibles red at apex. Legs testaceous brown, the front pair, especially coxae, paler and the hind pair somewhat infuscated. Tegulae white at base, the apical half and prepectal plates whitish hyaline. Antennae entirely black. Wings hyaline, slightly stained with yellowish. Veins pale brownish yellow.

Length in mm., 1.64; width of head, 0.54; width of vertex at anterior ocellus, 0.206; width of mesoscutum, 0.47; length of fore wing, 1.56; width of fore wing, 0.684.

One female (holotype) collected on shrub F. no. 497, July 24, 1929, Matauuna, Hivaoa, 3,760 feet (Mumford and Adamson).

#### **Anagyrus flaviceps**, new species.

Female. Shape of head much as in *A. orbitalis*, the eyes and cheeks proportioned about the same as in that species. Genal suture very obscure. Frontovertex nearly twice as long as the posterior width, the dorsal orbits rather strongly diverging anteriorly. Ocelli in an equilateral triangle, the posterior pair about their own diameter from the eyes and rather more than twice as far from occipital margin. Antennal scrobes a little shorter than in *A. orbitalis*, about twice as long as the antennal sockets. Outer wall of each scrobe not extending outward quite so close to orbital margin as in *A. orbitalis*. Inner wall of scrobe much more sharply declivous than outer wall. Ridge between the scrobes rather broad and depressed, slightly arched between antennae as seen in profile. Antennal sockets placed about their own length from oral margin, with their dorsal margin slightly above the ocular line. Antennae similar to *A. orbitalis*. Scape extending about 0.5 its length beyond the scrobes, broadly fusiform. Pedicel about twice as long as wide. First funicle joint barely longer than pedicel and slightly more

than twice as long as wide. Sixth funicle joint about 1.33 times longer than wide. Club slightly broader than funicle, nearly as long as the three preceding joints combined and composed of three subequal joints. Axillae distinctly separated medially. Scutellum shaped nearly as in *A. orbitalis*, with the lateral margins slightly bulging on basal half and slightly incurved apically, and apex slightly reflexed. Propodeum as in *A. orbitalis*. Abdomen just perceptibly longer than thorax, the ovipositor sheaths not protruded. Fore wing much as in *A. orbitalis*, except that the setae in a rather large triangular area on the posterior margin opposite and extending inward to the inner end of speculum are weak and colorless. Submarginal vein with about 18 setae, of which those distad become smaller and weaker. Marginal vein fully thrice as long as wide, equaling the postmarginal and only slightly shorter than the stigmal vein. Stigmal and postmarginal veins slightly shorter than in *A. orbitalis* and meet in a slightly greater angle.

Head and mesonotum dull, with very minute alutaceous sculpture, the frontovertex without punctures. Sides of propodeum very finely rugose and dullish. Mesopleura dullish, minutely tessellate. Tergum of abdomen granular-tessellate, dull, more coarsely sculptured than mesonotum. Venter smooth and shining. Pubescence of head and mesonotum fine, appressed, and glistening white except on frontovertex, where it is dusky, becoming blackish behind the ocelli. Scutellum also with some much longer dark setae and pair of long reclinate bristles at apex. Eyes with fine, short, rather dense pile.

Black, the head dull orange yellow, with the face below upper end of scrobes and the cheeks somewhat infuscated. Occiput black. Mesopleura dark brown and apex of venter somewhat brownish. Legs brownish fuscous, the tibiae, especially front and hind pairs, darker than the femora. Knee joints and base of tarsi (basal half of middle pair) brownish yellow. Spur of middle tibiae yellowish white. Antennae black, the scape with a broad oblique white streak from just behind the middle on dorsal side to the inferior margin at apex. Wings hyaline, faintly stained with yellowish at the base. Veins pale brown.

Length in mm., 1.59; width of head, 0.559; width of vertex at anterior ocellus, 0.195; width of mesoscutum, 0.555; length of fore wing, 1.51; width of fore wing, 0.646.

One female (holotype) collected March 4, 1930 on *Vaccinium*, Matauuna, Hivaoa, 3,700 feet (Mumford and Adamson).

#### ***Anagyrus mumfordi*, new species.**

Female. Head moderately thin fronto-occipitally, broader than long, with face slightly inflexed. Eyes strongly diverging in front, each about 1.25 times longer than wide. Cheeks about 0.33 as long as eye, with no visible genal suture. Frontovertex about 1.33 times longer than its posterior width and becoming distinctly wider anteriorly. Ocelli in an equilateral triangle, the posterior pair each about equidistant from eye and occipital margin. Antennal scrobes distinct, rather narrow, well separated above, and extending above the antennal sockets only a short distance more than the length of a socket. Space between scrobes broad and depressed, not at all ridgelike, its margins parallel. Space between each scrobe and eye about 0.67 as wide as the interspace. Antennal sockets placed partly above the ocular line, which bisects them rather below the middle. Posterior margin of the pronotum distinctly emarginate in middle. Axillae well separated medially. Scutellum strongly depressed, the lateral margins somewhat arcuately converging, the apex blunt. Propodeum strongly declivous, the middle portion being covered by base of abdomen in the type. Abdomen as long as head and



thorax combined. Ovipositor sheaths not protruded. Fore wing moderately narrow, the speculum much as in *A. orbitalis*. Setae on basal half of wing (out as far as apex of stigmal vein and distal end of crease on posterior margin) white and becoming nearly invisible when mounted in balsam, except a few along the basal half of the submarginal vein. Submarginal vein with about 17 bristles. Marginal vein fully three times as long as wide and equaling postmarginal vein. Stigmal vein only a little longer than marginal. Hind wing with the setae white out as far as the hooklets.

Face, cheeks, frontovertex and entire notum of thorax very minutely alutaceous and dull. Frons without punctures. Mesopleura minutely tessellate, not shiny. Tergum of abdomen dull granular-tessellate, the sculpture distinctly coarser than that of thorax. Venter of abdomen smooth and shining. Pubescence of head and notum white, appressed and moderately conspicuous. It is sparse and fine on frontovertex, much denser on face and cheeks, and abundant and more conspicuous on the mesonotum. Setae on scutellum longer toward the apex, a pair at extreme apex much longer and directed forward. Disk of first tergite, as well as the concavity formed by the following segments, with sparse fine white setae. Eyes with short fine pile.

Head, under surface and pleura of thorax, tegulae, legs and venter of abdomen yellowish brown (nearly clay color of Ridgway). Posterior orbits tinged with yellow. Dorsal margin and the dorso-anterior corner of mesopleura distinctly yellow. Tibiae and apex of tarsi considerably darker brown than other parts of legs. Dorsum of thorax and abdomen dark brown (nearly auburn of Ridgway). Wings clear hyaline, the veins brown.

Length in mm., 1.81; width of head, 0.586; width of vertex at anterior ocellus, 0.215; width of mesoscutum, 0.530; length of fore wing, 1.5; width of fore wing, 0.587.

One female (holotype) from Mount Temetiu, Hivaoa, 3,620 feet, July 24, 1929 (Mumford and Adamson). The antennae are missing.

#### **Leptomastix** species.

One male, Tepuna, Hivaoa, 3,010 feet, Aug. 1, 1929.

This is presumably an undescribed species, but the specimen is too imperfect to serve as a type.

#### **Ooencyrtus sphingidarum**, new species.

Female. Head thick fronto-occipitally, as seen from in front almost circular, with the oral margin truncated. The outline in dorsal view nearly semicircular, slightly obliterated at sides. As seen from the side head strongly triangular, with the dorsal and facial sides about equal. Eyes very large, not more than 1.2 times longer than wide. Scrobal impression of face large and deep, with sloping walls, bounded laterally by a rounded ridge on each side. Lateral ridges strongly converging above and uniting in a curve between anterior ends of eyes. Ridge between antennae broad and convex, ending above near middle of scrobal impression. Middle area of scrobal impression above antennal ridge flat, quadrangular, about 1.5 times longer than wide. Frontovertex approximately three times longer than wide and not more than 0.5 as wide as eye. Ocellar triangle equilateral. Lateral ocelli almost touching eye margin and rather distant from occipital margin. Antennae slender, the club only slightly thicker than funicle. Scape slender, narrowly fusiform. Pedicel slightly more than twice as long as thick. Funicle

joints subequal, slightly increasing in width distad, the third just perceptibly longer than second, and all approximately as long as wide. Club about equal to the last three funicle joints combined, its middle joint shorter than the others. Scutellum rather depressed, not at all pulvinate, broadly rounded at apex. Propodeum very sharply declivous, almost perpendicular, and nearly divided in middle. Fore wing but little more than twice as long as wide. Submarginal vein not appreciably thickened subapically. Marginal vein punctiform. Stigmal vein of ordinary length for group. Postmarginal vein almost as long as the stigmal. Submarginal vein with about eleven setae. Speculum narrow near stigmal vein and considerably widening below. About five of the setae bounding anterior margin of speculum between stigmal vein and middle of disk considerably coarser than other discal setae. Disk of wing beyond speculum finely and uniformly setose. Disk basad of speculum largely bare, but the angle between speculum and submarginal vein thinly setose to a little below the middle of disk and there is a row of fine setae just below the submarginal vein for almost its whole length. Marginal cilia of wing very short. Abdomen distinctly narrower than thorax and about 0.67 as long. Ovipositor sheaths very shortly protruded.

Head, mesoscutum, axillae and mesopleura shining, weakly sculptured. Frontovortex minutely tessellate, with a few scattered, shallow, rather coarse punctures. Mesoscutum finely tessellate, with sparse reclinate setae. Mesopleura very delicately striato-reticulate. Scutellum very dull, except the declivous part of apical margin, which is shining, the dull portion with dense very minute thimble-like punctures. Disk of scutellum provided with about eight setae on each side and a long subapical pair.

Head blue black with blue luster on face, especially in the scrobal impression, the frontovortex with a weak bluish luster. Thorax tinged with brown, the mesoscutum and axillae darker, slightly bluish, the scutelleum opaque blackish. Antennae brown, the flagellum paler, nearly dusky testaceous. Mouthparts and legs, including coxae, yellowish white, the tarsi dusky at extreme apex. Abdomen pale yellow on basal half, dark at apex, with a blue luster especially on the sides. Ovipositor sheaths pale yellow. Wings slightly dusky hyaline, the veins testaceous, the marginal vein brownish. Setae of frons and notum dark colored and inconspicuous.

Length in mm., 0.92; width of head, 0.386; width of vertex at ocelli, 0.102; width of mesoscutum, 0.416; length of fore wing, 0.94; width of fore wing, 0.401.

Male. In general similar to the female, except in usual sexual characters. Head considerably less thickened fronto-occipitally. Frontovortex slightly wider and much shorter than in female, about twice as long as wide, the orbits slightly diverging anteriorly. Antennae slender, the pedicel and funicle joints, except the first, subequal, a little longer than wide. First funicle joint about as long as thick. Club joint slightly longer than two last funicle joints combined. Abdomen triangular as seen from above, about 0.67 as long as thorax. Coloration similar, the flagellum whitish testaceous, apex of tarsi not dusky.

Length in mm., 0.75; width of head, 0.35; width of vertex at posterior ocelli, 0.107; width of mesoscutum, 0.362; length of fore wing, 0.78; width of fore wing, 0.348.

One female (holotype), four males (allotype and paratypes) reared from eggs of a sphingid, on *Morinda citrifolia*, Nov. 25, 1929, Taiohae, Nukuhiva (Mumford and Adamson); three females, two males (paratypes), with same data, Nov. 28, 1929.

The sphingid host is probably the introduced *Chromis crotus eras* Boisduval, according to information given me by Mr. Mumford.

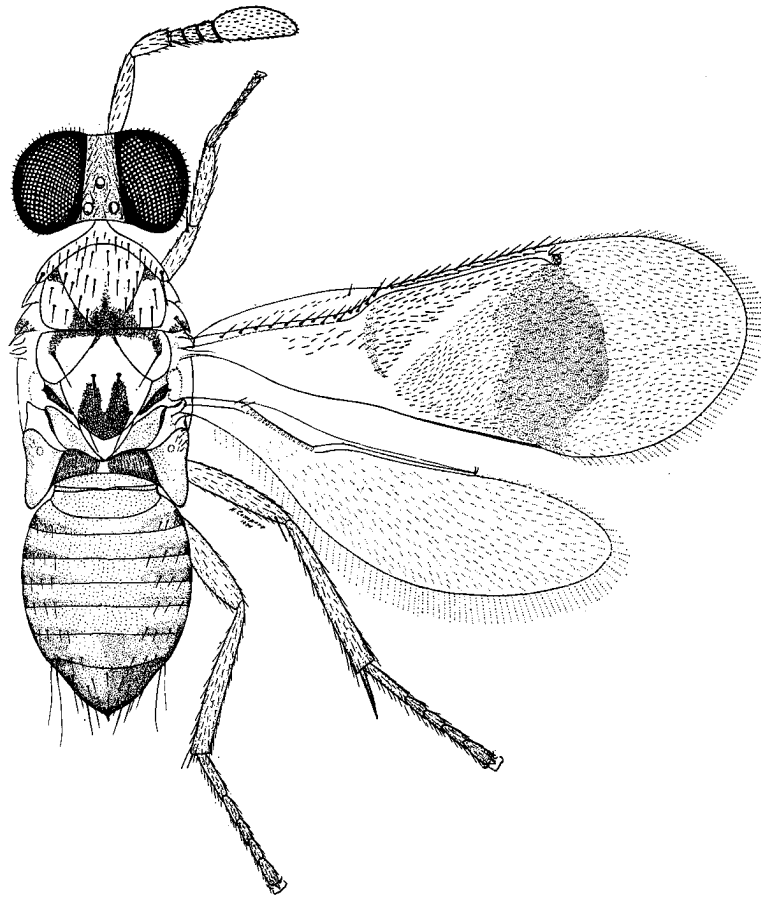


FIGURE 1.—*Eutrichosomella insularis*, female.

***Eutrichosomella insularis*, new species (fig. 1).**

Female. Head (shriveled in type) considerably broader than thick fronto-occipitally, with the anterior margin in frontal view broad and rounded. Face apparently a little concave. Antennae inserted far apart and close to oral margin, their scrobes shallow, subparallel and separated by a broad, low, slightly rounded ridge. Eyes large, occupying most of dorsal surface of head, but not descending much below the middle of head, the malar space being very long. Frontovortex narrow, about thrice as long as wide, and slightly widening behind. Ocelli in an acute angle, the posterior pair very close to eyes and only slightly more distant

from occipital margin. Thorax approximately twice as long as wide and about as thick dorso-ventrally as wide, the notum rather strongly depressed. Abdomen broadly oval, very nearly as wide as, and somewhat shorter than thorax. Ovipositor barely protruded at apex of abdomen and inserted at the beginning of the last third of the venter from apex. Wings large, much exceeding apex of abdomen. Venation and other structural features of wings, antennae, and legs as in figure. Eyes with a fine, rather dense pile. Frontovortex very minutely alutaceous, dull. Mesoscutum, axillae and scutellum dullish and minutely tessellate. Median part of propodeum nearly polished. Face, pleura and abdomen rather shiny and at most with a weak, delicate sculpture, a faint minute tessellation being visible on mesopleura. Ground color testaceous yellow, clearest on the pleura, a little paler on the face. Frontovortex and mesonotum almost a creamy white, marked with fuscous along the sutures of the latter and at apex of scutellum. Middle part of propodeum fuscous, but interrupted by a whitish spot. Abdomen suffused with fuscous, especially at apex, but the venter somewhat whitish. Antennae and legs testaceous yellow, the scape somewhat paler than flagellum. Wings somewhat whitish hyaline, with a dusky cloud suspended from the stigmal vein.

Length in mm., 1.37; width of vertex at anterior ocellus, 0.101; width of mesoscutum, 0.409; length of fore wing, 1.31; width of fore wing, 0.515.

One female (holotype), Tauamaka, Nukuhiva, 2,900 feet, on *Metrosideros collina*, Nov. 10, 1929 (Mumford and Adamson).

The little insect described above agrees with Girault's characterization of *Eutrichosomella* except that the parapsidal furrows are strong. The axillae are well separated and their anterior edge and that of the scutellum between them forms a straight transverse line. Girault compares *Eutrichosomella* with *Tanaostigmoidella* in which the axillae are well advanced into the parapsides, and thus implies, at least, that this condition obtains also in *Eutrichosomella*, but makes no assertion or denial that such is the case. It is possible, therefore, that the present insect is not a true *Eutrichosomella*, but it must be at least closely allied.

The peculiar aphelinid-like wings (similar to *Aphelinus* as Girault states) and the reduced antennal structure seem to indicate a relationship with the Aphelinidae, but the thoracic structure, excepting the well-developed parapsidal furrows, is typical of the Encyrtidae, as is also the large spur of middle tibiae. The mesopleura are formed exactly as in typical Encyrtidae. I have much doubt that the insect should be classified with the group typified by Howard's genus *Tanaostigma*.

#### SOCIETY ISLANDS

##### ***Tachinaephagus zealandicus* Ashmead.**

One female, Fautaua Valley, Tahiti, 1,500 m., Sept. 11, 1928; one female, Papenoo Valley, Tahiti, 150 m., Oct. 23, 1928; one female,

Hitiaa, Tahiti, 1,000 m., Nov. 20, 1928; one female, Papara Valley, Tahiti, 750 m., Dec. 21, 1928 (Mumford and Adamson).

**Encyrtus infelix** (Embleton) .

One female, Faa, Tahiti, 300 m., on *Inocarpus edulis*, Nov. 7, 1928 (Mumford and Adamson).

**Encyrtus barbatus** Timberlake.

One female, Faa, Tahiti, 300 m., on *Inocarpus edulis*, Nov. 7, 1928 (Mumford and Adamson).

**Anagyrus adamsoni**, new species.

Male. Head subhemispherical, moderately thin, the face slightly inflexed, about as broad as long and as seen from in front well rounded except that the cheeks converge strongly toward mouth. Eyes about 1.25 times longer than wide. Cheeks about as long as width of eyes, the genal suture not evident. Frontovortex a little broader than long, distinctly wider than half the width of head. Ocelli in a right-angled triangle, the posterior pair slightly more than their own diameter from eye margin and half their diameter from occipital margin. Antennal sockets small, situated on ocular line, and much farther from oral margin than distance from either one to nearest eye margin. Scrobes short, parallel, narrow, not very deep, their distance apart barely less than distance from either to nearest eye margin. Facial ridge low, rounded, very gently arched in correspondence with curvature of face, and extending from oral margin to a point just above middle of the scrobes. Scape small, about four times as long as thick, and excluding radicle only a little longer than the following two joints combined. Pedicel obconical, somewhat less than twice as long as thick. Flagellum cylindrical with long verticillate hairs. Funicle joints all much longer than thick, not greatly unequal in length, the third longest, a little more than three times as long as thick, the sixth shortest, nearly 0.25 shorter than the third. First funicle joint twice as long as pedicel. Each funicle joint with two whorls of hairs, but the hairs much more irregularly verticillate on last two joints. Club slender, slightly tapering, a little longer than the last two funicle joints combined, and clothed with shorter and closer hairs than the preceding joints, the hairs not whorled and decreasing in length toward apex. Club also armed beneath with six short conidial hairs, arranged in a row beginning close to base and extending a little beyond the middle. Axillae almost meeting in middle. Scutellum depressed, hardly longer than wide, rather acute at apex, the lateral margins slightly arcuate and sharply and strongly declivous. Propodeum strongly declivous, the dorsal surface in middle reduced to a very thin line. Abdomen triangular as seen from above, narrower and much shorter than thorax. Fore wing rather broad, the discal setae dense, but becoming longer and sparser in basal area. Speculum moderately wide, not quite reaching to stigmal vein and interrupted before reaching opposite margin. Submarginal vein with about 12 setae. Marginal vein about twice as long as stigmal vein. Postmarginal and stigmal veins equal, uniting at angle of about 45 degrees, the stigmal straight, hardly enlarged at apex.

Upper part of face, frontovortex, scutellum and exposed parts of propodeum dullish, with a very minute, dense, shallow, thimble-like puncturation. Remainder of head and thorax more shiny, delicately and minutely tessellate. Tessella-

tion of mesopleura and abdomen somewhat coarser, and these parts a little more shiny. Hair of frontovertex and mesonotum reclinate, dusky, the scutellum with the usual pair of long suberect bristles at apex. Face below antennae with very fine, short, pale, glittering hairs.

Head and thorax mainly very dark orange brown, the lower part of face paler. A short streak descending on cheeks from lower margin of eyes, scrobal impressions and ocular region of vertex strongly infuscated or blackish. Scutellum, except basal margin, propodeum and abdomen nearly black. Tegulae pallid at base and infuscated on outer half. Prepectal plates whitish, subhyaline. Legs pale yellowish brown. Front and hind coxae, the middle pair much less so, extreme apex of middle tibiae, and hind femora and tibiae infuscated. Middle femora also slightly infuscated on basal half of outer surface except at extreme base. Tarsi, especially middle pair, and spur of middle tibiae, paler, but the tarsi infuscated at extreme apex. Antennae rather pale brownish. Wings almost clear hyaline, the veins pale yellowish brown.

Length in mm., 0.94; width of head, 0.416; width of vertex in ocellar region, 0.213; width of mesoscutum, 0.396; length of fore wing, 1.12; width of fore wing, 0.481.

One male (holotype), Hitiaa, Tahiti, 1,000 m., three miles from sea, Nov. 20, 1928 (A. M. Adamson).

#### Genus **MESENCYRTUS**, new genus

This genus is based on a very ordinary little species, of rather slender form and metallic color, that runs persistently in various tables near *Syrphophagus* Ashmead (or what is called *Microterys* by Mercet). From *Pseudencyrtus* and *Syrphophagus*, which should be united as they are practically alike except for unimportant differences in the proportion of the marginal and stigmal veins, *Mesencyrtus* differs in its less robust form and slender antennae, with all the joints of the flagellum distinctly longer than wide. In Girault's table it runs clearly to *Parencyrtomyia*, but that was based on comparatively large and robust species, of purple and orange-yellow color, having the antennae evidently longer, with a white club, the funicle joints successively shortening distad, although the sixth joint is still a little longer than wide. Although the ovipositor of *Mesencyrtus* is distinctly protruded, being about 0.25 the length of abdomen, the insect cannot well be referred to any of the genera with strongly exerted ovipositor, such as *Cerchysius*, *Copidosoma*, *Quaylea*, etc.

Other similar encyrtids of a generalized type of structure, with more or less slender antennae include the following: *Psyllaephagus arbuticola* Waterston and Gahan, which, however, departs rather radically from typical *Psyllaephagus*; *Euchalcerinys apicicornis* Timber-

lake, which differs in shape of head, shallow scrobal impression, form of abdomen, and much shorter marginal vein in comparison with the stigmal vein; *Kakaoburra fera* Girault, which has the stigmal vein about half as long as the marginal, the last two funicle joints shorter than the preceding joints, etc.; *Helegonatopus pseudophanes* Perkins, which has a comparatively large head, that is wider than the thorax, the scrobal impression shallow and the flagellum slightly increasing in thickness distad.

Female. Form distinctly less robust than in *Pseudencyrtus*. Head not quite as wide as thorax, much thicker fronto-occipitally than in *Pseudencyrtus*. Dorsal surface of head gently rounded from side to side, the frontovertex meeting plane of face in an angle somewhat greater than a right angle. As seen from the side, the outline of head subtriangular, with the facial and occipital sides distinctly longer than the dorsal side. Eyes moderately large, a little longer than wide, the inner orbits slightly diverging anteriorly. Cheeks about 0.67 as long as width of eyes, the genal suture faint. Antennal sockets placed close to oral margin, about their own length apart. Scrobes deep, forming a common impression above, but separated below the median facial ridge. Outer walls of impression sloping, forming a rather sharp but not carinate ridge on each side, and meeting above in a curve between the anterior ends of eyes. Median facial ridge convex below, almost carinate above and a little widened at the middle. Antennae slender, about as long as the head and thorax together. Scape linear, strongly exceeding the scrobal impression and slightly longer than the funicle joints combined. Flagellum filiform. Pedicel a little more than twice as long as thick. Funicle six-jointed, the joints very nearly equal, about 1.5 times longer than thick, each distinctly shorter than pedicel. Club elongate, oval, pointed at apex, barely wider than funicle and as long as five of the funicle joints combined. First joint of club shortest, slightly shorter than pedicel. Second joint about equaling pedicel. Apical joint considerably longer than the others and somewhat more than twice as long as its greatest width. Mandibles rather narrow at apex, tridentate, the teeth short, subacute, with the two inner ones closer together and less deeply separated by a notch than the outer two. Thorax nearly twice as long as wide. Axillae acute within and almost meeting. Scutellum a little longer than wide, rounded at apex, nearly plane as seen from side, the lateral margins strongly and roundly declivous. Propodeum abruptly declivous or truncate behind, but not much narrowed in middle. Abdomen narrowly ovate-triangular, considerably narrower and somewhat shorter than thorax and not compressed at apex. Cercal plates placed close to lateral margins slightly before the middle. Ovipositor protruded nearly 0.25 the length of abdomen, its base apparently inclosed by the last visible ventrite. Wings ordinary. Submarginal vein normal. Marginal vein about thrice as long as wide, and equaling stigmal vein. The latter small, rather slender, a little narrowed at base, rounded and not broadened at apex. Postmarginal vein distinctly shorter than the marginal. Speculum distinct, bounded basad by two rows of setae as it approaches the stigmal vein. Costal cell of hind wing extremely narrow or practically obliterated. Integument of body shining, the frontovertex and mesoscutum minutely and delicately tessellate and weakly punctured.

Genotype: *Mesencyrtus insularis* Timberlake, new species.

**Mesencyrtus insularis**, new species.

Female. Head in frontal view a little longer than wide, well rounded above, the cheeks slightly converging toward the mouth. Frontovortex twice as long as its posterior width. Ocelli in an acute-angled triangle, the posterior pair nearly touching eye margins and about their own diameter from occipital margin. Scape, pedicel and funicle joints clothed with fine sparse hairs, which are shorter than the thickness of the joints, the club nude. Face and cheeks polished. Frontovortex minutely tessellate, with a few shallow scattered punctures in ocellar region. Mesoscutum and disk of scutellum a little more delicately tessellate than the frons, the mesoscutum with rather obscure scattered punctures. Sides and apex of scutellum broadly polished. Propodeum polished. Mesopleura very delicately tessellate. Tergum of abdomen or at least the first tergite, transversely lineolate-scaly. Pubescence of head and thorax fine, sparse and inconspicuous, the hair on mesoscutum appressed. Eyes with very short sparse pile. Head and body very dark bronzy purple, with variable luster, chiefly dark coppery red on mesonotum. Smoother portion of scutellum and the face and cheeks with a more brilliant luster, varying from dark green and golden to bright coppery red. Base of abdomen with a blue-green luster. Mandibles dark red, especially toward apex. Scape blackish, slightly metallic, the flagellum brownish fuscous. Legs brownish yellow, the hind coxae concolorous with body, the middle femora fuscous except at base and apex, the hind tarsi dusky at apex. Compound eyes somewhat reddish. Wings faintly dusky hyaline, more deeply clouded in a small area beneath marginal vein. Venation pale brownish, the marginal and postmarginal veins darker. Submarginal vein with 12 bristles. Speculum reaching posterior margin of wing without interruption. Area of wing basad of speculum sparsely setose in its apical half, with two rows of setae next to the marginal vein and about five or six rows on the disk opposite middle of submarginal vein. Basal half of basal area of wing nude, except for one row of fine setae along the submarginal vein. Discal setae otherwise and marginal cilia normal.

Length in mm., about 1.02; width of head, 0.352; width of vertex at posterior ocelli, 0.119; width of mesoscutum, 0.346; greatest width of thorax, 0.397; length of exerted portion of ovipositor, 0.126; length of fore wing, 0.986; width of fore wing, 0.438.

One female (holotype), Papenoo Valley, Tahiti, elev. 150 m., 10 kilometers from sea, Oct. 25, 1928 (Adamson).