

## SYNOPSIS OF POLYNESIAN CYNIPOIDEA

## (Hymenoptera: Eucoilinae)

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*Abstract*: The following report represents the information on the 9 genera and 16 species of Polynesian Eucoilinae, with keys to genera and species, and distribution records. One genus and 6 species are described as new: *Kleidotoma* (*Kleidotoma*) *kraussi*, *Episoda* *zimmermani*, *Hexacola tahitiensis*, *Endecameris* (n. gen.) *striatus*, *Pseudeucoila* (*Heptamerocera*) *lateralis*, *Pseudeucoila* (*Pseudeucoila*) *elliptica*.

Only a single paper on Polynesian Eucoilinae was reported by Kinsey (1939) in which he listed four species under the genus *Eucoila* (*Marquesiana*) from Marquesas Island. Because of its unique character and differences from other known genera, Weld (1952) placed Kinsey's four species under the provisional genus "F". Yoshimoto (1962a, 1962b) studied the Micronesian and Hawaiian Eucoilinae.

The collection represents a segment of Polynesian Eucoilinae. Most of the specimens were collected from Fiji and Samoa with a few specimens from Tonga, and the Tahitian Islands. Further field work in Polynesia is necessary to fill in the incomplete phases of systematics, distribution, and the biology of the Eucoilinae.

Several immigrants of Eucoilinae from Micronesia and Hawaii are represented in Polynesia, especially the genus *Pseudeucoila*. Of the six known species of the subgenus *Pseudeucoila*, five species, *P. vulgaris* Yshm., *P. ovata* Yshm., *P. rugipunctata* Yshm., *P. laticauca* Yshm., and *P. gressitti* Yshm. are known from Fiji and Samoa. *Eucoilidea rufula* Yshm. is present in Hawaii and Tahiti. *C. (Cothonaspis) pacifica* Yshm. is widely distributed in the Hawaiian Islands chain and in Tonga and the Wake Islands.

A single unnamed male *Kleidotoma* sp. is recorded from Micronesia. *K. (Kleidotoma) bryani* Yshm. is present in Palmyra and Hawaii, but *K. (Pentakleidota) swezeyi* Yshm. collected in Hawaii is not known in Polynesia. *K. (Kleidotoma) kraussi* n. sp. occurs in Fiji but several unstudied materials of this species were also found in the New Guinea collection, and will be included in the generic revision later.

Thus far, *Episoda zimmermani* n. sp. from Fiji is the only other representative of this group that occurs in the Pacific. The other species, male *E. luzonica* (Kieffer) is known from the Philippines. *Hexacola tahitiensis* is the first known member of this group in the Pacific area. The male *Marquesiana negatrix* (Kinsey) = (*Eucoila negatrix*) previously known only from the Marquesas is also present in Samoa. *Eucoila impatiens* (Say) occurs in Fiji and Tonga and possibly came by way of Hawaii and California. *Endecameris striatus* n. sp. is represented by a lone specimen in Polynesia; however, specimens of this genus were

noted in the New Guinea and Java Eucoilinae collections.

Principal collectors involved in this paper are E. C. Zimmerman, N. L. H. Krauss, O. H. Swezey, E. H. Bryan, Jr., C. E. Pemberton, and J. L. Gressitt to whom I wish to express my gratitude for collecting these specimens. Also, my appreciations to Dr. R. W. Strandtmann and Miss Carol Nakashige for reading this manuscript, and to the Hawaiian Sugar Planter's Association for the loan of their specimens.

#### KEY TO GENERA OF POLYNESIAN EUCOILINAE

1. Abdomen without hairy ring ..... 2  
Abdomen with hairy ring on tergite 2..... 3
- 2 (1). Parapsidal grooves distinct ..... **Eucoilidea**  
Parapsidal grooves entirely absent..... **Cothonaspis**
- 3 (1). Radial cell open..... 4  
Radial cell closed ..... 7
- 4 (3). Forewing emarginate at distal end, rarely rounded or truncate in ♂ with characteristic venation.....**Kleidotoma**  
Forewing rounded at distal end.....5
- 5 (4). Wing surface without hairs..... **Eucoila**  
Wing surface with hairs ..... 6
- 6 (5). Anterior part of scutellar disc heavily punctate; ♀ antenna 11-segmented.....  
..... **Endecameris**  
Anterior part of scutellar disc striate; ♀ antenna 13-segmented..... **Hexacola**
- 7 (3). Scutellar cup with a pit in center and a pair of hairs anteriorly ..... **Episoda**  
Scutellar cup with a pit situated posteriorly, with 2 or 3 pairs of hairs on antero-lateral margin..... 8
- 8 (7). Antennal segment 3 shorter than 4 ..... **Pseudeucoila**  
Antennal segment 3 longer than 4 or equal in length.....**Marquesiana**

#### Genus **Kleidotoma** Westwood

*Kleidotoma* Westwood, 1833, Mag. Nat. 6: 494.—Weld, 1952, Cynipoidea (Hym.) 1905–1950, 205.—Yoshimoto, 1962a, Ins. Micronesia (Bishop Mus.) 19 (3): 95–96; 1962b, Pacific Ins. 4 (4): 803–4.

#### **Kleidotoma (Kleidotoma) bryani** Yoshimoto

*Kleidotoma (Kleidotoma) bryani* Yshm., 1962b, Pacific Ins. 4 (4): 803–4.

DISTRIBUTION: Hawaii, Palmyra.

SPECIMEN EXAMINED: ♀, Palmyra I, XI. 1948, (No. 1705), Krauss.

#### **Kleidotoma (Kleidotoma) kraussi** Yoshimoto, n. sp. Fig. 1.

*Female*: Body length 1.1 mm; forewing 1.0.

Jet-black; antenna fuscous; legs brownish yellow to darker brown. Malar space 1/2 height of eye. Antennal segment 1 obconical, 2× as long as broad; 2 subcylindrical, as long as broad, shorter than 1; 3 narrow, elongate, 2× as long as 4; 4–6 subequal in length; 7–10

gradually becoming thicker apically, slightly longer than 6; 11th  $2\times$  as long as 10; club segments striate, ovate-elliptic and 3-segmented (fig. 1d). Radial vein extending along wing margin (fig. 1a). Pronotal plate hardly visible. Mesonotum with few scattered hairs, surface highly polished. Anterior part of scutellar disc wide, surface striate; scutellar cup elongate-ovate, surface convex, smooth, 2 hairs along posterolateral margin and a pit in center (fig. 1b). Abdomen  $1.6\times$  as long as broad (fig. 1c). Dense woolly hairs at base of tergite 2.

*Male*: Unknown.

Holotype ♀ (BISHOP 3198), Nandi, Viti Levu, Fiji, XI. 1957, Krauss.

This species differs from that of *Kleidotoma bryani* Yshm. by the ovate-elliptic antennal club segments, apical portion of radial vein extending beyond radial cell along the wing margin, and body jet-black.

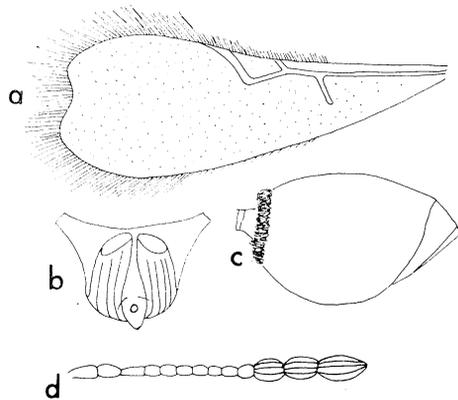


Fig. 1. *Kleidotoma (Kleidotoma) kraussi* Yshm., n. sp. a, forewing; b, scutellum; c, abdomen; d, ♀ antenna.

#### Genus *Episoda* Foerster

*Episoda* Foerster, 1869, Verh. Ges. Wien **19**: 343, 353 (type: *Episoda xanthonema* Frstr.).—Weld, 1952, Cynipoidea (Hym.) 1905–1950, 231.

Antenna of ♀ 12–14-segmented; segments 3–4 equal in length; club of 6 segments. Antenna of ♂ 15-segmented. Pronotal plate entire on dorsal margin. Few scattered hairs on anterolateral margin of pronotum. Lateral bar smooth. Scutellar disc minutely punctate or punctate-rugose and rounded behind. Scutellar cup ovate-circular, facing backward, surface depressed in center and anterior portion tapering to a narrow point. Wings hyaline, pubescent with ciliate margin; radial cell closed,  $2.6\times$  as wide as broad. Tergite 2 with a hairy ring. Abdomen as long as head and thorax combined; hypopygium projecting prominently behind.

*Episoda zimmermani* Yoshimoto, n. sp. Fig. 2.

*Female*: Body length 1.25 mm; forewing 1.5.

Brownish red to fuscous; legs testaceous, antenna brownish. Malar space  $1/4$  height of eye. Antennal segment 1 obconical,  $2\times$  as long as broad; 2 subcylindrical,  $2\times$  as long as broad, shorter than 1; 3–4 slender, equal in length; 5–6 subequal in length, slightly wider at apex than at base, and slightly shorter than 4; 7–11, equal in length, shorter than 13; antennal club striate, ovate, and 6-segmented (fig. 2d). Radial cell  $2.6\times$  as long as wide (fig. 2a). Pronotal plate subrectangular,  $1.8\times$  as broad as deep, dorsal margin entire. Mesonotum polished. Mesopleuron bare and shiny. Scutellar disc minutely punctate-rugose; scutellar cup small, ovate-circular, facing backward, anterior part tapering to a narrow point, surface smooth, shiny, a pair of hairs on anterolateral margin, rounded pit in

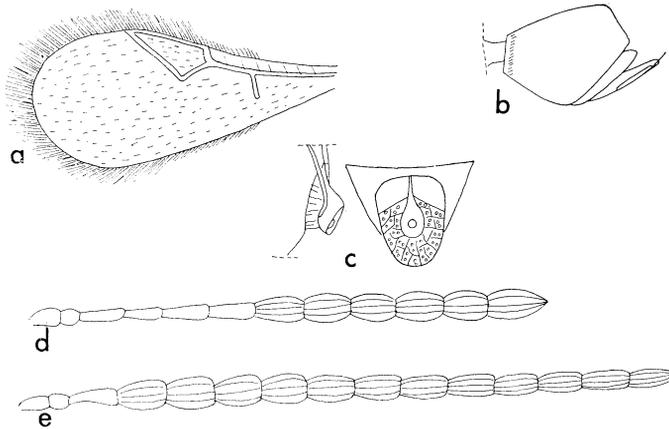


Fig. 2. *Episoda zimmermani* Yshm., n. sp. a, forewing; b, abdomen; c, scutellum; d, ♀ antenna; e, ♂ antenna.

center (fig. 2c). Abdomen nearly as long as broad, shorter than head and thorax (fig. 2b). Hypopygium projecting prominently behind. Long whitish hairs sparsely at lateral and lower part of propodeum and at base of tergite 2.

*Male*: Body length 1 mm; forewing 1.1. Similar to ♀ except as follows: Antenna 15-segmented; segment 3 testaceous, slightly bent, apex being wider than base; segments gradually reduced in thickness toward apical segment (fig. 2e).

Holotype ♀ (BISHOP 3199), Mt. Victoria, Tholo North, Viti Levu, 970–1250 m, Fiji, 13. IX. 1939, Zimmerman. Allotype ♂, Andubangda, Ovalau, 280–470 m, Fiji, 18. VII. 1938, Zimmerman. Paratype, same data as holotype, Zimmerman.

This species is distinguished by the unique characters of the scutellar cup, radial cell and abdomen. The ♂ of *E. zimmermani* can be separated from the ♂ of *E. luzonica* by the 15-segmented antennae and the curved and narrow segment 3.

#### Genus *Hexacola* Foerster

*Hexacola* Foerster, 1869, Verh. Ges. Wien **19**: 342, 349 (type: *Eucoila picicrus* Giraud; monob.).—Weld, 1952, Cynipoidea (Hym.) 1905–1950, 209.

Antenna of ♀ 13-segmented; segment 3 longer than 4; club with 6 segments. Antenna of ♂ unknown. Lateral bar smooth. Scutellar disc striate. Wing hyaline, pubescent, and ciliate; radial cell open, apex rounded or entire.

This is the first record of this genus in the Oceanic Islands. Other members of *Hexacola* are known from N. America and Europe.

#### *Hexacola tahitiensis* Yoshimoto, n. sp. Fig 3.

*Female*: Body length 0.9 mm; forewing 1.

Fuscous, head and apical part of abdomen darker, antenna brownish, legs brownish except coxae being testaceous. Malar space 1/3 height of eye. Antennal segment 1 obco-

nical,  $2\times$  as long as broad; 2 subcylindrical, nearly as long as broad, shorter than 1; 3 slender,  $2\times$  as long as 4; 4-7 subcylindrical, subequal in size; 8 longer than 7 but shorter than 9; 9-12 subequal in length,  $2\times$  as long as 7; 13 longer than 12, apex acuminate; antennal club striate, ovate, and 7-segmented (fig. 3d). Surface of wing sparsely pubescent and transparent (fig. 3c). Radial cell  $2.3\times$  as long as wide. Pronotal plate subrectangulate,  $1.5\times$  as broad as deep, dorsal margin slightly emarginate medially. Mesonotum shiny and bare. Mesopleuron bare and shiny. Anterior part of scutellar disc narrower than width of cup, surface with few striations, posterior end punctate-rugose; scutellar cup elevated, ovate, surface somewhat flattened at profile, 2 minute punctures on anterolateral margin, posterior end with a rounded pit (fig. 3a). Abdomen  $1.5\times$  as long as broad (fig. 3b). Dense hairs on lower and lateral parts of propodeum and at base of tergite 2.

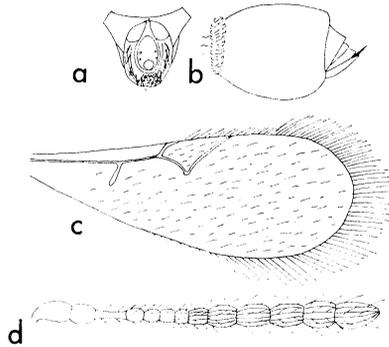


Fig. 3. *Hexacola tahitiensis* Yshm., n. sp. a, scutellum; b, abdomen; c, forewing; d, ♀ antenna.

*Male*: Unknown.

**DISTRIBUTION**: Tahiti.

Holotype ♀ (BISHOP 3200), Fautaua, 25 m, nr. Papeete, Tahiti, 5-11. VII. 1961, ex Malaise trap, Gressitt.

#### Genus *Endecameris* Yoshimoto, n. gen.

Antenna of ♀ 11-segmented; segment 3 nearly  $2\times$  as long as 4; club of 6 segments with deeply grooved striation. Antenna of ♂ unknown. Pronotal plate slightly emarginate on dorsal median margin. Few scattered hairs on anterolateral margin of pronotum. Lateral bar smooth. Scutellar disc punctate-rugose; scutellar cup small, not reaching to end of disc. Wing hyaline, pubescent with ciliate margin; radial cell entirely open,  $2\times$  as long as broad. Tergite 2 with woolly hairy ring. Abdomen nearly as long as head and thorax combined.

*Type*: *Endecameris striatus* Yshm., n. sp.; by present designation.

The ♀ of this genus differs from all other known genera of Eucoilinae by having an 11-segmented antenna with a 6-segmented club and having each antennal segment nearly as long as broad, with deep, striated grooves. At present the ♂ is unknown but will likely possess a 15-segmented antenna. Although this genus is based on a single specimen, several undetermined specimens of *Endecameris* were examined while sorting the New Guinea Eucoilinae collection. (Endeca=11, meris=segment or part; ♂ gender).

#### *Endecameris striatus* Yoshimoto, n. sp. Fig. 4.

*Female*: Body length 1.5 mm long; forewing 1.5.

Fuscous to blackish; legs and antennal segments 1-5 brownish. Front view of head (fig. 4b); malar space  $1/3$  height of eye. Antennal segment 1 obconical,  $1.5\times$  as long

as broad; 2 subcylindrical, as long as broad, shorter than 1; 3 slender, 2× longer than 4; 4 shorter in length than broad, shorter than 5; antennal club with a deep, longitudinal striation and 6-segmented (fig. 4d).

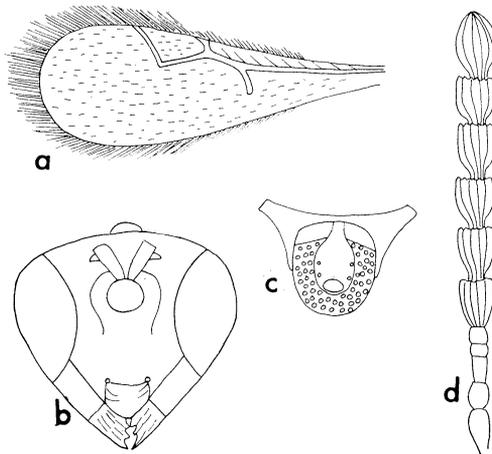


Fig. 4. *Endecameris striatus* Yshm., n. sp. a, forewing; b, head; c, scutellum; d, ♀ antenna.

Radial cell 2× as long as wide (fig. 4a). Pronotal plate rectangular, 2× as broad as deep, dorsal median margin slightly emarginate. Mesonotum shiny with rows of dorsal central hairs. Mesopleuron bare and shiny. Scutellar disc punctate-rugose, rounded behind; scutellar cup ovate, 2× as long as broad, surface smooth and slightly concave at profile and at posterior end with a large, rounded pit (fig. 4c). Abdomen 1.6× as long as broad. Sparse whitish hairs at anterolateral part of pronotum; woolly hairs on lower 1/2 of propodeum and base of tergite 2.

Male: Unknown.

Holotype ♀ (BISHOP 3201), Suva, Viti Levu, Fiji, IV. 1951, Krauss.

#### Genus *Marquesiana* Kinsey

*Marquesiana* Kinsey, 1939, B. P. Bishop Mus. Bull. No. 142, p. 195–96 (type: *Eucoila marquesiana* Kinsey; design. by Weld, 1952).

“New genus F” Weld, 1952, Cynipoidea (Hym.) 1905–1950, 226–27.

Weld in 1952 placed Kinsey’s new subgenus *marquesiana* and 4 species under the provisional genus “F”, and designated *Eucoila marquesiana* Kinsey as genotype. The holotype of the 4 described species of Kinsey’s should have been housed in the Bishop Museum coll. since 1939, but they are probably still in Kinsey’s collection at Indiana.

This genus is closely related to *Aglao-toma* but differs by the ♀ club antennae and antennal segment 3 being shorter than 4.

*Marquesiana negatrix* (Kinsey), n. comb.

Fig. 5.

*Eucoila (marquesiana) negatrix* Kinsey, 1939, Bernice P. Bishop Mus. Bull. no. 142, p. 197.

“New Genus F” Weld, 1952, Cynipoidea (Hym.) 1905–1950, 226–27.

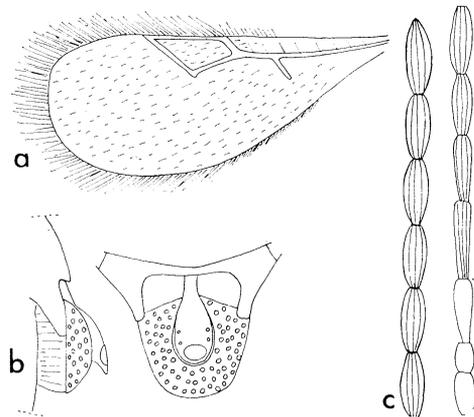


Fig. 5. *Marquesiana negatrix* (Kinsey). a, forewing; b, profile and dorsal view of scutellum; c, ♂ antenna.

DISTRIBUTION: Marquesas, Samoa.

SPECIMENS EXAMINED. SAMOA: 3♂♂, Afiamalu, Upolu, 635–670 m, 2–3. VII. 1940, Zimmerman; 2♂♂, Savaii, Salailua, 17–23. V. 1924, Bryan; ♂, Afono Trail, Tutuila, 25. IX. 1923, Swezey.

Genus **Pseudeucoila** Ashmead

*Pseudeucoila* Ashmead, 1903, Proc. Ent. Soc. Wash. 5: 222.—Weld, 1952, Cynipoidea (Hym.) 1905–1950, 234.—Yoshimoto, 1962a, Ins. Micronesia (Bishop Mus.) 19 (3): 97–104; 1962b, Pacific Ins. 4 (4): 827–38 (type: *Cothonaspis trichopsila* Hartig).

Subgenus **Pseudeucoila** Ashmead

*Pseudeucoila* Ashmead, 1903, Proc. Ent. Soc. Wash. 5: 222 (type: see above).

KEY TO SPECIES OF POLYNESIAN PSEUDEUCOILA (PSEUDEUCOILA)

1. Scutellar cup large, ovate-circular (fig. 7d) ..... **elliptica**  
Scutellar cup small, ovate, or oblong ..... 2
- 2 (1). Surface of scutellar disc punctate or punctate with ridges radiating to margin..... 3  
Surface of scutellar disc rugulose and partly smooth at anterior portion ... **laticauca**
- 3 (2). Posterior 1/2 of scutellar cup facing backward or undulate in profile ... **rugipunctata**  
Scutellar cup not so ..... 4
- 4 (3). Base of tergite 2 and lower portion of propodeum with woolly hairs; ♀ hypopygium distinct, ovipositor extending beyond apical abdominal segment... **aequorea**  
Not as above ..... 5
- 5 (4). Scutellar cup large, flat, and elevated, 1.75× as long as broad, reaching nearly to end of disc..... **gressitti**  
Scutellar cup small, 2× as long as broad, distinctly not reaching to end of disc... 6
- 6 (5). Anterior part of scutellar disc nearly as wide as cup; ♀ antennal club elliptical ..... **ovata**  
Anterior part of scutellar disc narrower than width of cup; ♀ antennal club ovate ..... **vulgaris**

Subgenus **Heptamerocera** Ashmead

*Heptamerocera* Ashmead, 1895, Proc. Zool. Soc. Lond., 762 (type: *Heptamerocera robusta* Ashm.; orig. desig.).

**Pseudeucoila (Heptamerocera) lateralis** Yoshimoto, n. sp. Fig. 6.

*Female*: Body length 1.5 mm long; forewing 1.5.

Reddish brown; antennae brownish to fuscous, legs testaceous. Malar space 1/3 height of eye. Antennal segment 1 obconical, 2× as long as broad; 2 subcylindrical, 1.5× as long as broad, shorter than 1; 3 slender, nearly 2× as long as broad, longer than 4; 4–6 equal in length, as long as broad; 7–12 subequal in length, ovate, shorter than 13; antennal club striate and 7 in number (fig. 6a). Radial cell 2.6× as long as wide (fig. 6b).

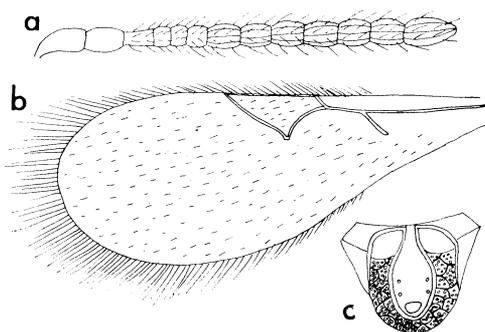


Fig. 6. *Pseudeucoila* (*Heptamerocera*) *lateralis* Yshm., n. sp. a, ♀ antenna; b, forewing; c, scutellum.

Pronotal plate rectangulate, 2.5× as broad as deep, dorsal median margin slightly sinuate. Thorax somewhat compressed; mesonotum polished, narrow and highly arched at profile. Mesopleuron bare and polished. Anterior portion of scutellar disc narrower than width of cup; surface punctate-rugose, rounded behind; scutellar cup not elevated, ovate, surface more or less flattened and shiny, anterolateral margin with 2 minute punctures and posterior end with a small pit (fig. 6c). Abdomen 1.6–1.7× as long as broad. Sparse whitish hairs at lower part of propodeum and at base of tergite 2. Tergites 3–4 not concealed under tergite 2 but exposed at apex of abdomen.

*Male*: Unknown.

Holotype ♀ (BISHOP 3202), Tutuila, Samoa, 13. X. 1915, Kellers (all wings damaged, except 1 forewing adhered to body); ♀, Afiamalu, Upolu, 700 m, Samoa, 7. VI. 1940, Swezey & Zimmerman (abdomen lost), at light.

***Pseudeucoila* (*Pseudeucoila*) *laticauca* Yoshimoto**

*Pseudeucoila* (*Pseudeucoila*) *laticauca* Yshm., 1962a, Ins. Micronesia (Bishop Mus.) **19** (3): 101–2.

DISTRIBUTION: S. Mariana Is., Samoa, Fiji.

SPECIMENS EXAMINED. SAMOA: ♀, Mafa Pass Rd., Upolu, II. 1958, Krauss. FIJI: 3 ♀ ♀, Lami, Viti Levu, IV. 1951, XI. 1957, Krauss.

This species is closely related to *P. (Pseudeucoila) aequorea* Yshm. but differs by the rugulose, and partly smooth scutellar disc and the hypopygium being less distinct with a short ovipositor extending just beyond the last abdominal segment.

***Pseudeucoila* (*Pseudeucoila*) *gressitti* Yoshimoto**

*Pseudeucoila* (*Pseudeucoila*) *gressitti* Yshm., 1962a, Ins. Micronesia (Bishop Mus.) **19** (3): 99–100.

DISTRIBUTION: Marshall and Caroline Is., Samoa, Tahiti.

SPECIMENS EXAMINED. SAMOA: ♀, Sinaele, 424 m, Upolu I., 27. VII. 1940, Swezey; ♀, Tapatapao, 300 m, Upolu I., 17. VIII. 1940, Swezey; ♀, Afiamalu, 670 m, Upolu I., 7. VI. 1940, Swezey and Zimmerman, at light. TAHITI: ♀, 25 m, nr. Papeete, Fautaua, 5–11. VII. 1961, Gressitt, Malaise trap.

The combination of smooth and flat surface, ovate, and elevated scutellar cup plus the punctate scutellar disc separates this species from other members of this genus in Polynesia.

***Pseudeucoila (Pseudeucoila) aequorea* Yoshimoto**

*Pseudeucoila (Pseudeucoila) aequorea* Yshm., 1962a, Ins. Micronesia (Bishop Mus.) **19** (3): 101-2.

DISTRIBUTION: Marshall, Caroline, Fiji Islands.

SPECIMEN EXAMINED: ♀, Lau, Naiambo, Fiji, 7. VII. 1924, Bryan, Jr.

Female *P. aequorea* Yshm. differs from other ♀ species of this genus in Polynesia by the long curved ovipositor which extends nearly 2× its length beyond the abdomen.

***Pseudeucoila (Pseudeucoila) vulgaris* Yoshimoto**

*Pseudeucoila (Pseudeucoila) vulgaris* Yshm., 1962a, Ins. Micronesia (Bishop Mus.) **19** (3): 103-4; 1962b, Pacific Ins. **4** (4): 829.

DISTRIBUTION: S. Mariana, N. Mariana, Samoa, Hawaii.

SPECIMENS EXAMINED. SAMOA: ♀, Lantana Trail, Tapatapao, 260-400 m, Upolu I., 2. VII. 1940, Zimmerman; ♀, Afiamalu, 680 m, Upolu I., 10. VI. 1940, Swezey and Zimmerman, at light.

This species is commonly found in Hawaii, Micronesia and Samoa and presumably found in other Oceanic Islands of the Pacific. This species is closely related to *P. ovata* but the anterior part of the scutellar disc is narrower than the width of the cup.

***Pseudeucoila (Pseudeucoila) rugipunctata* Yoshimoto**

*Pseudeucoila (Pseudeucoila) rugipunctata* Yshm., 1962a, Ins. Micronesia (Bishop Mus.) **19** (3): 98-99; 1962b, Pacific Ins. **4** (4): 831-32.

DISTRIBUTION: S. Mariana, E. & W. Caroline Is., Hawaii, Samoa, Fiji.

SPECIMENS EXAMINED. SAMOA: ♀, Mafa Pass Rd., Upolu, II. 1955, Krauss; 3 ♂♂, Afiamalu, 680 m, Upolu, 16. VI. 1940, Zimmerman; ♀, Northside Pago Pago, 365 m, Tutuila I., 8. VIII. 1940, Zimmerman; ♂, Tapueleele, Upolu, II. 1955, Krauss; 2 ♀♀, Savaii, Palauli, II. 1955, Krauss; ♂, Apia, Upolu, II. 1955, Krauss. FIJI: ♀, Andubangda, 275-460 m, Ovaluau, 18. VII. 1938, Zimmerman; 2 ♀♀, Mt. Victoria, Tholo North, 900-1212 m, Viti Levu, 13-18. IX. 1938 (no. 4341), Zimmerman.

***Pseudeucoila (Pseudeucoila) ovata* Yoshimoto**

*Pseudeucoila (Pseudeucoila) ovata* Yshm., 1962b, Pacific Ins. **4** (4): 831-32.

DISTRIBUTION: Hawaii, Samoa, Tonga.

SPECIMENS EXAMINED. SAMOA: ♀, Lantana Trail, Tapatapao, 360-400 m, Upolu, 21. VIII. 1940, Zimmerman; 3 ♀♀, Afiamalu, 680 m, Upolu I., 7-16. VI. 1940, Zimmerman; sweeping dead coconut frons; ♀, Savaii, Palauli, II. 1958, Krauss. TONGA: ♀, Nukualofa, Tongatabu I., II. 1956, Krauss; ♀, Ohonua, Eua I., II. 1956, Krauss.

***Pseudeucoila (Pseudeucoila) elliptica* Yoshimoto, n. sp. Fig. 7.**

*Female*: Body length 1.6 mm; forewing 2.0.

Ferruginous to fuscous; legs and antennae brownish, apical antennal segments 3-4,

testaceous. Malar space  $1/3$  height of eye. Antennal segment 1 obconical,  $1.5\times$  as long as broad; 2 subcylindrical, as long as broad; 3 slender, nearly  $1.5\times$  as long as 4; 4-6 slender, slightly longer than 7; 7-12 subequal in length; 13 slightly longer than 12 and subequal in length with 6, apex acuminate; club striate, elliptic and 8-segmented (fig. 7a).

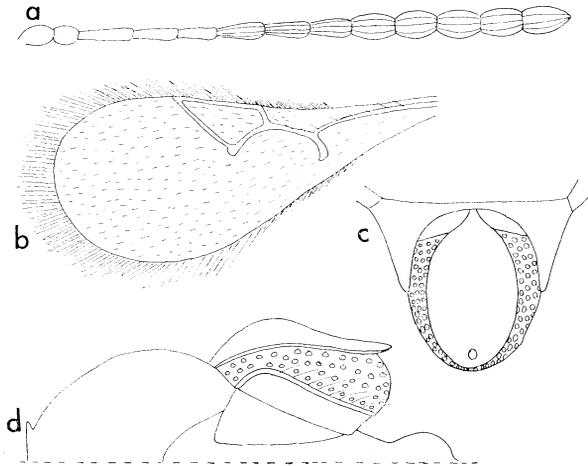


Fig. 7. *Pseudeucoila (Pseudeucoila) elliptica* Yshm., n. sp. a, ♀ antenna; b, forewing; c, dorsal view of scutellum; d, profile of scutellum.

Radial cell  $2\times$  as long as wide (fig. 7b.) Pronotal plate rectangulate,  $1.5\times$  as broad as deep, dorsal margin slightly emarginate in middle, lateral margins rounded. Mesonotum shiny and hairless. Mesopleuron bare and shiny. Anterior portion of scutellar disc extremely narrow, surface punctate; scutellar cup large, ovate-circular nearly covering entire disc, surface highly convex, smooth, without hairs along lateral margin, and posterior end with a tiny circular pit (fig. 7 c-d). Abdomen  $1.25\times$  as long as

broad. Dense woolly hairs on lateral and lower portions of propodeum and at base of tergite 2.

*Male*: Unknown.

**DISTRIBUTION**: Fiji.

Holotype ♀ (BISHOP 3203), Nandarivatu, Viti Levu, 900 m, Fiji, 10. IX. 1938, Zimmerman, ex beating shrubbery. Paratypes ♀, same locality as holotype, 200-900 m, 9. IX. 1938, Zimmerman, ex beating shrubbery; ♀, Lami, Viti Levu, Fiji, IV. 1951, Krauss.

This species can be separated from other members of this genus by the large ovate-circular scutellar cup with a small rounded pit posteriorly.

#### ***Pseudeucoila* sp. Yoshimoto**

There are 2 unique ♂ specimens of *Pseudeucoila* collected from Fiji. The scutellar cup and disc of this cynipid wasp resembles *Trybliographa daciai* Weld but differs from the latter by the closed radial cell and antennal segment 3 not being bent. Until a ♀ specimen is collected, I am hesitant to give it a name.

#### Genus ***Eucoila*** Westwood

*Eucoila* Westwood, 1833, Mag. Nat. Hist. 6: 494 (type: *Eucoila crassinerva* Wstd.; monob., subsequent desig. by Weld, 1931).—Weld, 1952, Cynipoidea (Hym.) 1905-1950, 211.  
—Yoshimoto, 1962b, Pacific Ins. 4 (4): 842-43.

#### ***Eucoila impatiens*** (Say)

*Eucoila impatiens*: Yoshimoto, 1962b, Pacific Ins. 4 (4): 842-43.

**DISTRIBUTION:** N. Y. Illinois, N. Mexico, Texas, Massachusetts, Hawaii, Fiji, Tonga.

**SPECIMENS EXAMINED:** ♀, Draiba, Ovalau, Fiji, 7. VII. 1938, Zimmerman; ♂, Tavua, Viti Levu, Fiji, II. 1951, Krauss; ♂, Nukualofa, Tongatabu I., Tonga, II. 1956, Krauss; 3 ♂♂, ♀, Suva, Fiji, 1920, Pemberton (HSPA).

This immigrant species from the mainland U. S. apparently was established in Fiji and the Tonga Islands by way of Hawaii. In Hawaii, the ♀ of this species is known to parasitize the 2 genera of the calprate flies, *Sarcophaga* and *Musca* (1962b).

#### Genus *Cothonaspis* Hartig

*Cothonaspis* Hartig, 1839 (1849), Germar Ztschr. f. Ent. **2**: 186 (type: *Cothonaspis pentatoma* Hrtg.; desig. by Foerster 1869).—Weld, 1952, Cynipoidea (Hym.) 1905–1950, 242.

#### *Cothonaspis* (*Cothonaspis*) *pacifica* Yoshimoto

*Cothonaspis* (*Cothonaspis*) *pacifica* Yshm., 1962a, Ins. Micronesia (Bishop Mus.) **19** (3): 105–6; 1962b, Pacific Ins. **4** (4): 843–44.

**DISTRIBUTION:** Wake, Kure, Hawaii, Tonga Is.

**SPECIMEN EXAMINED:** ♀, Nukualofa, Tongatabu I., Tonga, II. 1956, Krauss.

#### Genus *Eucoilidea* Ashmead

*Eucoilidea* Ashmead, 1887, Trans. Amer. Ent. Soc. **14**: 154 (type: *Eucoilidea canadensis* Ash.; design. by Ash. 1903).—Weld, 1952, Cynipoidea (Hym.) 1905–1950, 248.—Yoshimoto, 1962a, Ins. Micronesia (Bishop Mus.) **19** (3): 106–7; 1962b, Pacific Ins. **4** (4): 844–45.

#### *Eucoilidea rufula* Yoshimoto

*Eucoilidea rufula* Yshm., 1962b, Pacific Ins. **4** (4): 845.

**DISTRIBUTION:** Hawaii, Tahiti.

**SPECIMENS EXAMINED:** 18 ♀♀, Papeete, Tahiti, III. 1955, Krauss; 3 ♀♀, Fautaua, 25 m, nr. Papeete, 5–11. VII. 1961, Gressitt, ex malaise trap; ♀, Afareaitu, S. Coast Moorea, 25 m, 7. VII. 1961, Gressitt.

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