

INSECTS OF MICRONESIA

Hymenoptera: Eucoilinae (Cynipoidea)¹

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BERNICE P. BISHOP MUSEUM

INTRODUCTION

Up to the present, no cynipids have been reported from Micronesia. The present study is based on 57 specimens from Micronesia, all belonging to the subfamily Eucoilinae.

The specimens were collected by P. A. Adams, J. W. Beardsley, G. E. Bohart, H. S. Dybas, T. Esaki, J. L. Gressitt, R. J. Goss, N. L. H. Krauss, T. Lyons, I. La Rivers, R. W. L. Potts, and C. W. Sabrosky. I wish to express my appreciation to Dr. J. L. Gressitt for the opportunity to study the Micronesian Eucoilinae. Especial thanks are due to Mr. Lewis H. Weld, who kindly examined the specimens and made suggestions concerning the manuscript, and to D. Rainwater who made the drawings.

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The following symbols indicate the museums in which specimens are stored: US (United States National Museum), MCZ (Museum of Comparative Zoölogy), CAS (California Academy of Sciences), BISHOP (Bernice P. Bishop Museum), CM (Chicago Natural History Museum), KU (Kyushu University), and BM (British Museum of Natural History).

ZOOGEOGRAPHY

The Micronesian cynipid fauna consists of eight genera and 13 species as listed in the distribution table. More can be expected to appear in future collecting. Of the two genera described as new, one also occurs in New Guinea, the other is not known from outside of Micronesia.

¹ This represents, in part, Results of Professor T. Esaki's Micronesian Expeditions (1936-1940), No. 114.

DISTRIBUTION OF MICRONESIAN EUCOILINAE

	MICRONESIAN ISLAND GROUPS								Other Localities
	S. Mariana	Carolines						Marshall	
		Palau	Yap	Caroline Atolls	Truk	Ponape	Kusaie		
1. <i>Odonteucoila floccosa</i> *						×			
2. <i>Leptolamina ponapensis</i> *						×			
3. <i>Trybliographa</i> (<i>Pentaplastidia</i>) <i>beardsleyi</i> *		×							
4. <i>Kleidotoma</i> sp.		×							
5. <i>Micreriodes guamensis</i> *	×								
6. <i>Pseudeucoila</i> (<i>Pseudeucoila</i>) <i>rugipunctata</i> *	×	×	×	×					Wake, Hawaii, Samoa
7. <i>P. gressitti</i> *					×			×	
8. <i>P. aequorea</i> *	×		×			×		×	
9. <i>P. laticauca</i> *	×								
10. <i>P. weldi</i> *	×	×							
11. <i>P. vulgaris</i> *	×	×		×		×		×	Hawaii, Samoa
12. <i>Cothonaspis</i> (<i>Cothonaspis</i>) <i>pacifica</i> *									Wake, Hawaii
13. <i>Eucoilidea guamensis</i> *	×								

* Described as new.

Odonteucoila is represented by one species from Ponape. Its closest relatives are from South America; the genus is also known from Madagascar, East Himalayas, Bohemia, Kenya, Pretoria, Ontario, Maryland, Massachusetts, Mexico, and Panama.

Trybliographa is widely distributed throughout the world, but only one species, from Palau, is found in Micronesia.

Pseudeucoila is the most common genus found in Micronesia, and includes six species. *P. (Pseudeucoila) vulgaris* is found in the Mariana Islands, Gilbert Islands, Hawaii, and Samoa; *P. (Pseudeucoila) laticauca* ranges from Mariana Islands to Wake; *P. (Pseudeucoila) rugipunctata* is found on S. Mariana Islands, Caroline Islands, Wake, Hawaii, and Samoa, and possibly other Polynesian islands.

Cothonaspis is represented by one species, *C. (Cothonaspis) pacifica*, which is also found in Hawaii. Other species of this genus are found in Borneo, Madagascar, Philippines, Bismarck Archipelago, and North America.

Eucoilidea guamensis, from the Marianas, is the only representative of its genus in Micronesia. Other species of *Eucoilidea* are known from Hawaii, North and South America, Cuba, Philippines, and Bismarck Archipelago.

Six genera are reported from Hawaii: *Eucoilidea* Ashmead, *Cothonaspis* Hartig, *Nesodiranchis* Perkins, *Hypodiranchis* Ashmead, *Eucoila* Westwood, and *Kleidotoma* Westwood (Ashmead, 1901; Perkins, 1910; Kotinsky, 1907; Yoshimoto, 1962, in press), besides about four undescribed genera. The only other record from Oceania is one unnamed genus from the Marquesas (Kinsey, 1939 IN Weld, 1952).

The Eucoiline genera recorded in the western Pacific are *Eucoila* (*Psichacra*), *Kleidotoma* (Japan; Hujimatsu, 1938, Ishii, 1939); *Cothonaspis*, *Eucoila* (*Psichacra*) (Formosa; Hedicke, 1913); *Pseudeucoila* (*Pentamerocera*), *P.* (*Hexamerocera*), *Kleidotoma*, *Cothonaspis*, *Ganaspis*, *Eucoila*, *Eucoilidea* (Philippines; Ashmead, 1905, Kieffer, 1906, 1914, 1916); *Psilosema* (Borneo; Cameron, 1808); *Kleidotoma*, *Trybliographa*, *Ganaspis*, *Eucoila* (Java; Kieffer, 1906); *Cothonaspis* (*Erisphagia*), *C.* (*Cothonaspis*), *Pseudeucoila* (*Hexamerocera*), *Eucoila* (Bismarck Archipelago; Hedicke, 1922); and *Trybliographa*, *T.* (*Hexaplata*), *Pseudeucoila* (*Heptamerocera*), *Gronotoma* (Australia; Ashmead, 1900, Cameron, 1912, Girault, 1930, 1932).

The biology of the Eucoilinae is little known; the female wasps parasitize acalypterate and calypterate Diptera and the imagos emerge from the puparia.

SYSTEMATICS

SUBFAMILY EUCOILINAE

Small to medium-sized insects, 1 to 6 mm, body color black, ferrugineous, fuscous, brownish, or yellowish, smooth and polished, without sculptures. Antenna of female usually 13-segmented, terminal segments in most cases forming a club. Antenna of male usually 15-segmented, filiform. Scutellar cup elevated, of various sizes and shapes. Pronotum touching tegula (fig. 1). Fore wing without true stigma; radial cell either open or closed on frontal margin. Abdomen laterally compressed with ovipositor ventrad at apex.

In the classification of the subfamily, the number of antennal club segments in the female is used to separate the different subgenera. The males cannot be assigned to subgenera unless they are reared and associated with the females. The outstanding morphological character of Eucoilinae is the elevated scutellar "cup" (see fig. 2, *d*). The "cup" varies in characters and is of aid in separating genera and species. The Micronesian species have the wing surface pubescent and wing margin ciliate. The body length as given in this paper is measured at the side from the anterior end of the head capsule to the tip of the abdomen.

KEY TO MICRONESIAN GENERA AND SUBGENERA OF EUCOILINAE

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|--|--------------------|
| 1. Abdomen without hairy ring on tergite 2..... | 2 |
| Abdomen with hairy ring on tergite 2..... | 3 |
| 2. Parapsidal grooves present on mesonotum..... | Eucoilidea |
| Parapsidal grooves not present on mesonotum..... | Cothonaspis |

- | | |
|--|--|
| 3. Scutellar disc, seen from above or in profile, conical or apically tapering to a point..... | <i>Odonteucoila</i> |
| Scutellar disc rounded as seen from behind..... | 4 |
| 4. Radial cell closed..... | 5 |
| Radial cell open..... | 6 |
| 5. Surface of scutellar disc smooth, polished, rectangular..... | <i>Leptolamina</i> |
| Surface of scutellar disc rugose punctate or with radiating ridges..... | <i>Pseudeucoila</i> (<i>Pseudeucoila</i>) |
| 6. Fore wing emarginate at distal end..... | <i>Kleidotoma</i> |
| Fore wing rounded at distal end..... | 7 |
| 7. Antenna of female 12-segmented..... | <i>Micreriodes</i> |
| Antenna of female 13-segmented..... | <i>Trybliographa</i> (<i>Pentaplastidia</i>) |

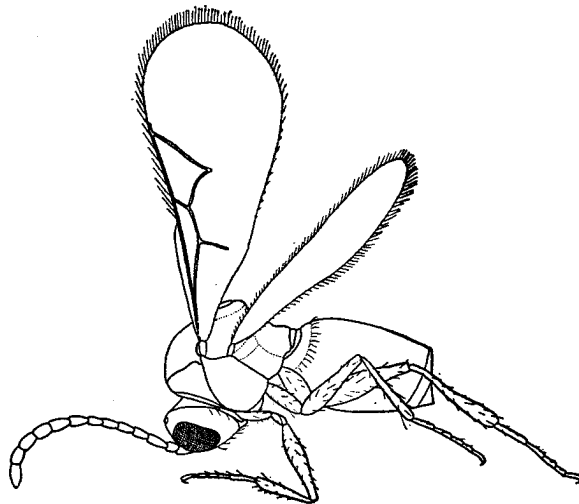


FIGURE 1.—A cynipid wasp.

Genus *Odonteucoila* Ashmead

Odonteucoila Ashmead, 1903, Ent. Soc. Washington, Proc. 5: 222.—Weld, 1921, U. S. Nat. Mus., Proc. 59: 441; 1952, Cynipoidea 1905-1950, 191.—Masner, 1960, Casopsis Cespo. Spol. Ent. 57 (4): 348-464.

Type: *Odonteucoila chapadae* Ashmead, designated by Weld, 1903.

Antenna of female 13-segmented; antennal segments 1 and 2 broader than 3 or 4; segment 3 longer than 2, shorter than 4, 5; club composed of five to eight segments. Pronotal plate rectangular, upper margin sinuate medially. Anterior margin at lateral surface of prothorax with woolly hairs; lateral bar smooth. Scutellar disc punctate, hind end tapering to a point which does not reach beyond end of propodeum; scutellar cup elliptical with three small pits on anterior part of lateral margin and a large, deep pit at posterior end. Wing hyaline, pubescent, and ciliate at margin; radial cell closed. Tergite 2 with woolly-hairy ring.

1. *Odonteucoila floccosa* Yoshimoto, n. sp. (fig. 2).

Female: Fuscous; antennal segments 1 and 2 and legs testaceous; abdomen brown; rim of scutellar cup blackish.

Front view of head as in figure 2, *c*; malar space equal to one-third height of eye; hairs on frons evenly spaced, forming a column at each side extending from base of antennal fossa to posterior margin of clypeus; clypeus with one long hair at postero-lateral margin and shorter ones mesad along anterior margin; mandible with few long hairs. Antennal segment 2 as long as broad, shorter than 1; segment 3 longer than 2; 4 to 6 each twice as long as broad and subequal in length to one another. Segments of club all elliptical and striate. Pronotal plate with a deep transverse groove at middle; posterior plate subrectangular, rounded at angles. Posterior pronotal margin with a row of evenly spaced hairs. Mesonotum with a single series of hairs along anterior and lateral borders and with

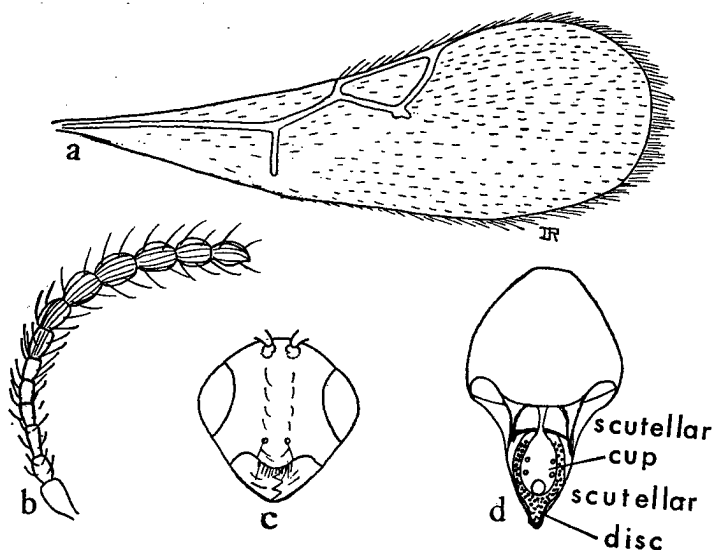


FIGURE 2.—*Odonteucoila floccosa*: a, wing; b, antenna; c, head; d, thorax.

a pair of hairs at disc. Lateral bar apically acuminate and reaching anterior portion of cup. Propodeum with two parallel, highly raised lines; lateral areas of raised lines covered with woolly hairs. Abdomen 1.7 times as long as broad; tergites 2 to 4 visible for one-fourth distance. Length 1.3 mm.; forewing 1.3 mm.

Male: Unknown.

Holotype, female (US 66360), Awakpa District, Ponape, in banyan log, Mar. 2, 1948, Dybas.

DISTRIBUTION: Eastern Caroline Is. (Ponape).

Genus *Leptolamina* Yoshimoto, new genus

Female antenna 13-segmented; antennal segment 3 slightly longer than 4; club composed of four segments. Forewing pubescent, ciliate along margin; radial cell closed, slightly more than twice as long as broad. Lateral part of postocciput, lateral part of an-

terior margin of prothorax and sternites thickly covered with woolly hairs. Scutellar disc smooth, rectangular, bluntly rounded at posterior end; lateral bar striate. Scutellar cup 11 to 12 times as long as broad with inconspicuous ovate pit at posterior end arched in profile, reaching end of disc. Propodeum and base of tergite 2 with unusually dense white woolly ring.

Type: *Leptolamina ponapensis* n. sp., by present designation.

This genus can be easily separated from other genera by the exceedingly narrow, long scutellar cup, smooth disk, and densely pubescent propodeum.

2. *Leptolamina ponapensis* Yoshimoto, n. sp. (fig. 3).

Female: Brownish yellow, legs and antennal segments 1 and 2 testaceous.

Front view of head as in figure 3, c; malar space equal to one-third height of eye; few scattered hairs on frons below antennal fossa. Surface of mandible with densely covered hairs. Antennal club striate with last four elliptical segments not strongly clubbed; antennal segment 3 longer than 4; segments 4-9 subequal in length. Pronotal plate small, rectangular, 2.5 times as wide as deep, upper margin without dorsal sinuation. Mesonotum with a series of short hairs along posterior and lateral borders. Lateral margin of scutellar disc with tall, thin carina; lateral bar striate, apically acuminate and reaching three-fourths distance of cup. Propodeum thickly covered with woolly hair and reaching base of petiole. Entire sternite covered with woolly hair. Abdomen slightly longer than broad; tergites 3 and 4 visible. Length 1.3 mm.; forewing 1.13 mm.

Male: Unknown.

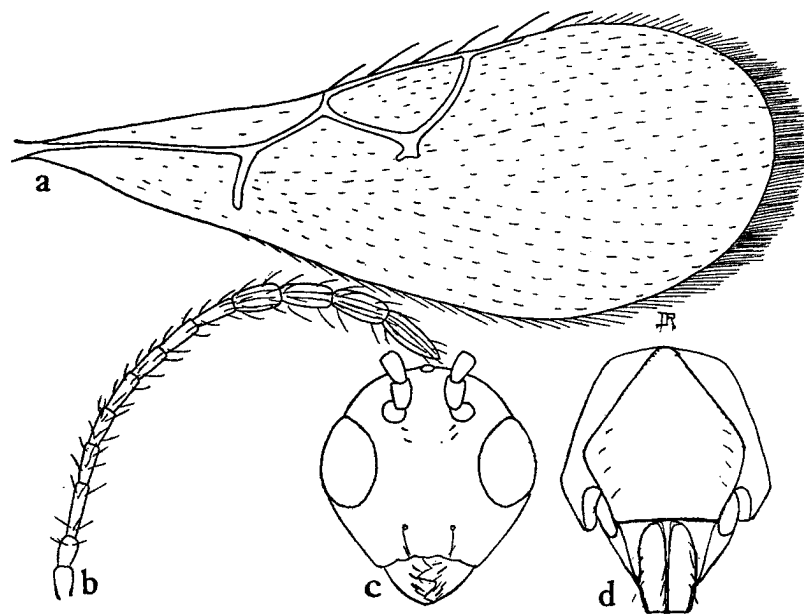


FIGURE 3.—*Leptolamina ponapensis*: a, wing; b, antenna; c, head; d, thorax.

Holotype, female (US 66361), Airfield, Ponape, June-Sept. 1950, Adams.
Paratype, female, Jokaj I., Ponape, Feb. 26, 1948, Dybas.

DISTRIBUTION: Eastern Caroline Is. (Ponape).

Genus *Trybliographa* Foerster

Trybliographa Foerster, 1869, Zool.-Bot. Ges. Wien, Verh. 19: 345, 359.—

Weld, 1952, *Cynipoidea* 1905-1950, 215.—Kerrich and Quinlan 1960,

Opusc. Ent. 25 (3): 179-196.

Type: *Cothonaspis scutellaris* Hartig, by original designation.

Antenna of female 13-segmented, segment 3 longer than 4; club 5- to 8-segmented. Pronotal plate rectangular. Scutellar disc punctate; scutellar cup elevated; lateral bar striate. Wing hyaline, pubescent, ciliate at margin, radial cell open. Tergite 2 with a hairy ring.

Subgenus *Pentaplastidia* Weld

Pentaplastidia Weld, 1951, Ent. Soc. Washington, Proc. 53 (4): 223-226.

Type of subgenus: *Cothonaspis (Pentarhoptra) clarimontis* Kieffer, designated by Weld, 1951.

3. *Trybliographa (Pentaplastidia) beardsleyi* Yoshimoto, n.sp.

Female: Malar space equal to one-half height of eye. Surface of mandible with few scattered hairs. Antennal club striate with five elliptical segments; antennal segment 2 is 1.5 times as long as broad, shorter than 3; segment 3 twice as long as 4; segments 4 to 7 equal in length; segments 9 to 12 equal in length; segment 13 slightly longer than each of segments 9 to 12. Pronotal plate subrectangulate, corners rounded, twice as long as broad. Lateral part of postocciput and base of pronotum with small, narrow patch of woolly hairs. Posterior part of lateral bar acuminate and reaching one-half distance of cup. Scutellar cup small, ovate, surface slightly concave. Propodeum with two parallel strongly raised lines and entire propodeum covered with long sparse hairs. Base of tergite 2 with dense woolly hairy ring. Abdomen 1.4 times as long as broad. Tergite 3 slightly visible at apex. Length 1 mm.; forewing 1.1 mm.

Male: Unknown.

Holotype, female (US 66362), Palau, Koror, June 1953, Beardsley.

DISTRIBUTION: Western Caroline Is. (Palau).

Genus *Kleidotoma* Westwood

Kleidotoma Westwood, 1833, Mag. Nat. Hist. 6: 494.—Weld, 1952, *Cynipoidea* 1905-1950, 205.

Type: *Kleidotoma psiloides* Westwood, monobasic.

Antenna of female 13-segmented, with 3- to 7-segmented club or without club; segment 3 longer than 4. Antenna of male 15-segmented. Pronotal plate rectangular or semi-circular, not emarginate on dorsal margin. Scutellar disc striate, scutellar cup narrow and ovate; lateral bar smooth. Wing hyaline, pubescent, ciliate at margin, radial cell open; forewing of female hollowed or emarginate at distal end; males often with rounded distal end. Tergite 2 with hairy ring.

This genus is known from Europe, Africa, North America, Cuba, Philippines, Australia, Japan, Java, and Polynesia.

4. *Kleidotoma* sp.

Male: Fuscous; antennal segments brownish except segments 1 and 2 and legs, testaceous; abdomen ferrugineous.

Malar space equal to one-half height of eye; hairs on frons evenly spaced forming a column at each side, extending from base of antennal fossa to posterior margin of clypeus; clypeus with a column of long hairs at lateral margin; mandible with few long hairs at its base. Antennal segments striate, filiform; segment 1 obconical, twice as long as broad; segment 2 subcylindrical, as long as broad, shorter than 1; segment 3 longitudinally emarginate at inner side; other segments subequal in length, decreasing slightly in thickness toward apical segment. Prothorax hemispheric, three times as broad as deep. Prothorax with a column of evenly spaced hairs longitudinally behind pronotal truncation. Mesonotum with a single series of hairs along anterior and lateral borders. Scutellar disc narrow, angulate; scutellar cup elongate-ovate, anterior portion prolonged into a point, surface longitudinally convex; anterior lateral margin with a single hair and a rounded pit at posterior end. Dense whitish hairs on anterior dorsal portion of pronotum and propodeum, and woolly hairy ring at base of tergite 2 plus sternite. Tergites 2 and 4 visible at apex. Length 1.0 mm.; forewing 1.5 mm.

Female: Unknown.

Koror, Palau Is., Nov. 30, 1947, Dybas.

DISTRIBUTION: Eastern Carolines (Palau).

Lacking the female, I am hesitant to give this unique male specimen a specific name.

Genus *Micreriodes* Yoshimoto, new genus

Female antenna 12-segmented; segments 1 and 2, 1.5 times as long as broad, 2 shorter than 1, 3 shorter than 2, 4 to 7 subequal in length, shorter than 3, together shorter than antennal club composed of five segments. Pronotal plate ovate. Forewing hyaline, pubescent, cilia very long on margin; radial cell open on front margin, twice as long as broad. Scutellar disc smooth anteriorly and punctate rugose posteriorly; lateral bar smooth. Scutellar cup elevated, surface slightly concave and polished. Prominent white, woolly patches on pronotum, propodeum, and tergite 2.

Type: *Micreriodes guamensis*, n. sp., by present designation.

The female *Micreriodes* appears to belong to the *Pseudeucoila* because of similar wing pattern and body characteristics, but *Micreriodes* has 12 antennal segments, with the third segment shorter than the second, whereas *Pseudeucoila* has 13 antennal segments and the third antennal segment is longer than the second. Also, the radial cell is open in *Micreriodes* and closed in *Pseudeucoila*.

5. *Micreriodes guamensis* Yoshimoto, n. sp. (fig. 4).

Female: Ferruginous to brownish; legs and antennal segments 1 and 2 testaceous.

Front view of head as in figure 4, *c*; malar space equal to one-third height of eye; hairs on frons evenly spaced, forming a column at each side extending from base of antenna to posterior margin of clypeus; several short hairs evenly spaced on anterior margin of clypeus. Surface of mandible with several short hair tufts near base. Segments of antennal club striate, globose, except apical segment which is elliptical; antennal segments 1 and 2 are 1.5 times as long as broad, segment 3 shorter than 2; segments 4 to 7 subequal in length, but shorter than 3 and together shorter than club. Pronotal plate small, ovate with a slight median emargination on dorsal margin. Mesonotum with several scattered

fine short hairs. Pronotum with dense woolly hairs along latero-anterior margin. Posterior part of metapleuron with several long fine hairs mixed with woolly hairs. Scutellar disc smooth on anterior part of lateral margin and punctate rugose at posterior end; apical portion of lateral bar acuminate and reaching three-fourths distance of cup. Scutellar cup 3 times as long as broad, surface slightly concave with two minute hairs on anterior part of lateral margin and a small pit at posterior end. Propodeum with two parallel raised lines; lateral areas of raised lines with dense woolly hairs. Abdomen 1.5 times as long as broad. Tergites 3 and 4 distinctly exposed at apex. Length 0.6 mm.; forewing 0.9 mm.

Male: Unknown.

Holotype, female (US 66363), Oriote Pt., Guam, Oct. 29, 1947, Dybas. Paratypes, 2 females, Oriote Pt., Guam, "drowned in basin," Oct. 29, 1947, Dybas.

DISTRIBUTION: S. Mariana Is. (Guam).

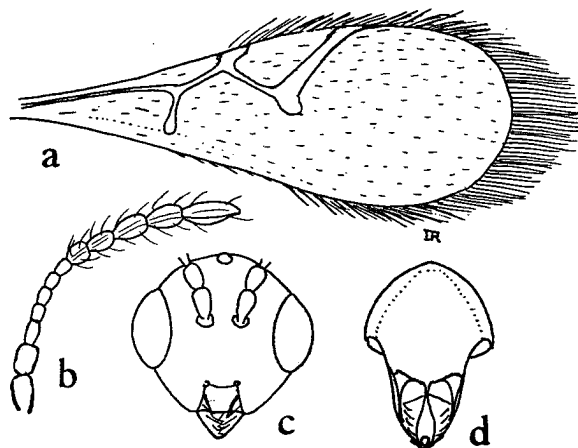


FIGURE 4.—*Micreriodes guamensis*: a, wing; b, antenna; c, head; d, thorax.

Genus *Pseudeucoila* Ashmead

Pseudeucoila Ashmead, 1903, Ent. Soc. Washington, Proc. 5: 222.—Weld, 1952, Cynipoidea 1905-1950, 234.

Type: *Eucoela* (*Cothonaspis*) *trichopsila* Hartig, monobasic.

Antenna of female 13-segmented with 4- to 9-segmented club. Pronotal plate with emargination on median dorsal margin. Patch of woolly hairs on anterior lateral margin of pronotum. Scutellar disc with two large anterior pits; scutellar cup elevated and surface concave as seen from behind; lateral bar smooth. Wing hyaline, pubescent, with ciliate margin; radial cell closed. Tergite 2 with hairy ring.

The Micronesian *Pseudeucoila* is represented by subgenus *Pseudeucoila* Kieffer, and six species.

KEY TO SPECIES OF PSEUDEUCOILA

1. Pronotal plate ovate, 1.4 times as wide as deep.....7. *gressitti*
Pronotal plate subrectangular or T-shaped (upper portion crescent-shaped)..... 2
2. Pronotal plate subrectangular, rounded at corners.....6. *rugipunctata*
Pronotal plate T-shaped (upper portion crescent-shaped)..... 3
3. Surface of scutellar cup more or less flattened, ovate, and polished.....11. *vulgaris*
Surface of scutellar cup concave, not shiny; ovate or elliptic..... 4
4. Forewing whitish, fewer cilia at base of wing.....10. *weldi*
Forewing brownish to yellowish, entire wing uniformly ciliate..... 5
5. Scutellar cup elliptic-ovate; scutellar disc punctate posteriorly.....8. *aequorea*
Scutellar cup ovate; scutellar disc rugose.....9. *laticauca*

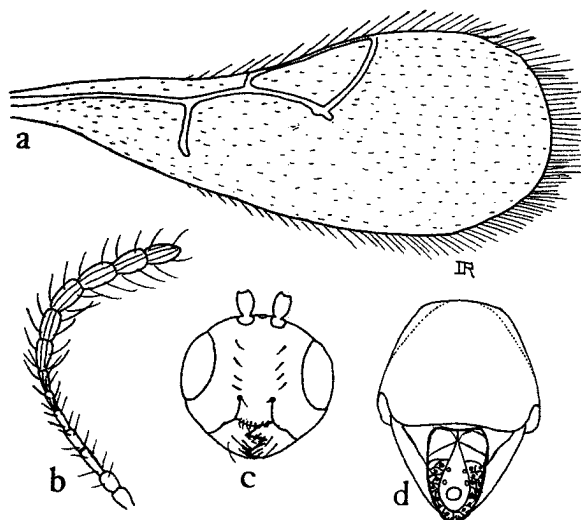


FIGURE 5.—*Pseudeucoila* (*Pseudeucoila*) *rugipunctata*: a, wing; b, antenna; c, head; d, thorax.

6. *Pseudeucoila* (*Pseudeucoila*) *rugipunctata* Yoshimoto, n. sp. (fig. 5).

Female: Ferruginous to brownish; legs and antennal segments 1 to 7 testaceous, rim of scutellar cup yellowish.

Front view of head as in figure 5; malar space equal to one-third height of eye; hairs on frons evenly spaced, forming a column at each side extending from base of antennal fossa to posterior margin of clypeus. Surface of mandible with few scattered long hairs. Segments of antennal club striate and elliptic; antennal segment 2 shorter than 3; segment 3 narrow, longer than 4 or 6. Pronotal plate 2.2 times as broad as deep, subrectangular, rounded at corners with slight emargination on median dorsal margin. Metapleuron with carina near posterior margin. Scutellar disc punctate with radiating ridges on posterior end; apical portion of lateral bar acuminate and reaching one-fourth distance of cup. Scutellar cup elliptical with two small pits, each with a fine hair at anterior part of lateral margin and a large, deep pit at posterior end. Propodeum with two parallel, strongly raised lines; lateral areas with dense minute hairs. Abdomen 0.7 times longer than broad.

Tergite 2 with narrow hairy ring, and visible over three-fourths of its length; tergites 3 and 4 slightly visible at apex. Length 1.16 mm.; forewing 1.1-1.2 mm.

Male: Unknown.

Holotype, female (US 66364), Utagal I., Woleai Atoll, Sept. 26, 1952, Krauss. Paratypes, female, Talofoto, Guam, Aug. 1952, Krauss; female, Fadang, Guam, June 3, 1945, Dybas; female, Babelthuap I., Ngerchelong, May 7, 1957, Sabrosky; female, As Mahetog Area, Saipan I., Jan. 1, 1945, Dybas; female (KU), Colonia-Jokaji, Ponape, July 24, 1939, Esaki.

Other specimens: Female, Wake, Peale I., July 1940, Lyon, hatched from rotted tomato root.

DISTRIBUTION: S. Mariana Is., Eastern and Western Caroline Is., Eastern Micronesia, Wake I.

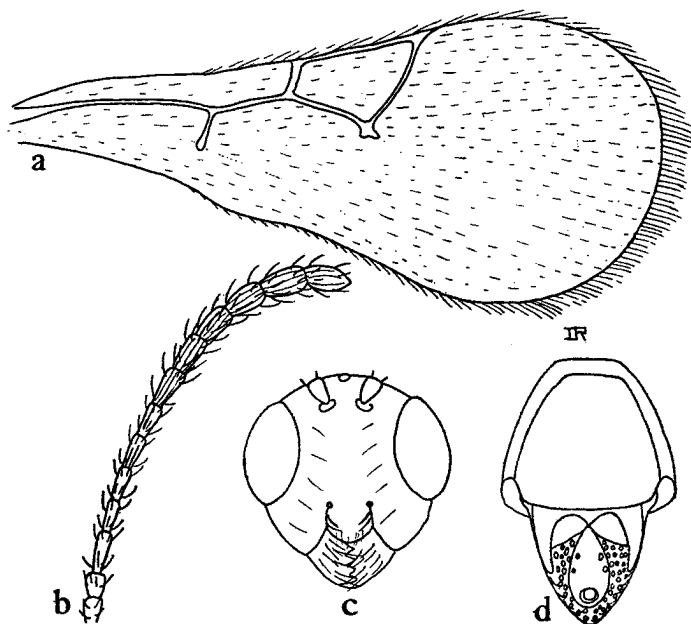


FIGURE 6.—*Pseudeucoila* (*Pseudeucoila*) *gressitti*: a, wing; b, antenna; c, head; d, thorax.

7. *Pseudeucoila* (*Pseudeucoila*) *gressitti* Yoshimoto, n. sp. (fig. 6).

Female: Black; anterior portion of abdomen ferrugineous, antennal segments 1 to 7 brownish, legs testaceous, rim of scutellar cup yellowish.

Front view of head as in figure 6, c; malar space equal to one-third height of eye; hairs on frons evenly spaced, forming a column on each side, extending from base of antennal fossa to posterior margin of clypeus; clypeus with two long fine hairs on posterior part of lateral margin; anterior margin of clypeus with a row of short hairs evenly spaced. Surface of mandible with 8 to 9 long hairs converging mesad. Antennal club striate

and elliptical; segments 1 and 2, 1.25 times as long as broad; segment 3, 2.5 times as long as broad, longer than 2, 4, or 7. Pronotal plate 1.4 times as wide as deep, large, flat, ovate, slightly emarginated on median dorsal margin. Metapleuron with two hairs on posterior dorsal portion separated by a carina. Apical portion of lateral bar acuminate and reaching one-half distance of cup. Scutellar disc punctate. Scutellar cup large, ovate, twice as long as broad, with two small pits on anterior part of lateral margin and a large, deep pit on posterior end. Propodeum with two parallel raised lines; lateral areas of raised lines covered with dense long whitish hairs. Abdomen 0.7 times longer than broad. Tergite 2 visible, 3 slightly visible at apex. Length 1.3 mm.; forewing 1.4 mm.

Male: Unknown.

Holotype, female (BISHOP 3336), Jabor I., Jaluit Atoll, Marshall Is., May 1, 1958, Gressitt. Paratypes, 2 females, Lejrok I., Jaluit Atoll, Apr. 25, 1958, Gressitt, ex *Anous* nest; female, Mt. Tonaachau, Truk, South Valley, Apr. 2, 1949, ex papaya log, Potts.

DISTRIBUTION: Marshall and Caroline Is.

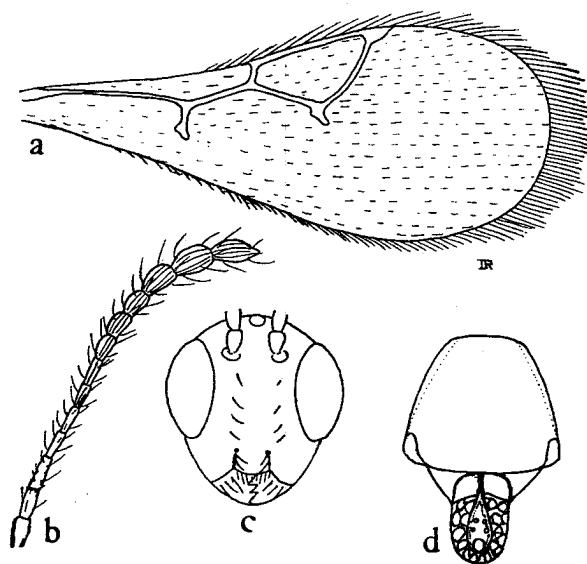


FIGURE 7.—*Pseudeucoila (Pseudeucoila) aequorea*: a, wing; b, antenna; c, head; d, thorax.

8. *Pseudeucoila (Pseudeucoila) aequorea* Yoshimoto, n. sp. (fig. 7).

Female: Brownish yellow; fuscous along dorsal part of thorax, head, apical abdominal segments and antennal segments 3 to 13; legs and antennal segments 1 and 2 testaceous; rim of scutellar cup fuscous.

Front view of head as in figure 7, c; malar space equal to one-third height of eye; hairs on frons evenly spaced, forming a column on each side extending from base of antennal fossa to posterior margin of clypeus; clypeus with two long fine hairs on posterior part of lateral margin and shorter hairs on anterior margin. Surface of mandible with

short hairs separated close to base. Antennal club segments striate and elliptic; antennal segment 3 elongate, slightly longer than 4; segments 4 and 7 shorter than 3. Pronotal plate T-shaped, upper part crescent-shaped, 1.8 times as wide as deep with slight emargination on median dorsal margin. Anterior part of pronotum with scattered long hairs. Metapleuron with three long hairs on posterior and dorsal margin, and a single hair separated from others by a carina. Apices of lateral bar acuminate and reaching one-fourth distance of cup. Scutellar disc rugose; scutellar cup elliptical, 2 times as long as broad, surface concave with two minute pits, each with a hair on anterior part of lateral margin, and a deep pit on posterior end. Propodeum with two parallel strongly raised lines; lateral areas of raised lines with dense, long, whitish hairs; woolly hairs beneath. Abdomen 1.3 to 1.5 times as long as broad. Tergites 3 and 4 visible at apex. Length 1.0-1.15 mm.; forewing 1.1 mm.

Male: Unknown.

Holotype, female (US 66365), Agric. Expt. Sta., Ponape, June-Sept. 1950, Adams; paratypes, female, Agric. Expt. Sta., June-Sept. 1950, Adams; female, Dugoi, Yap I., July-Aug. 1950; female, Tomil Dist., Yap I., July-Aug. 1950, Goss.

Other specimens: Female, Colonia, Ponape, June-Sept. 1950, Adams; female, Ine I., Arno Atoll, Marshall Is., Aug. 5, 1950, La Rivers.

DISTRIBUTION: Caroline Is. (Ponape, Yap); Marshall Is. (Arno).

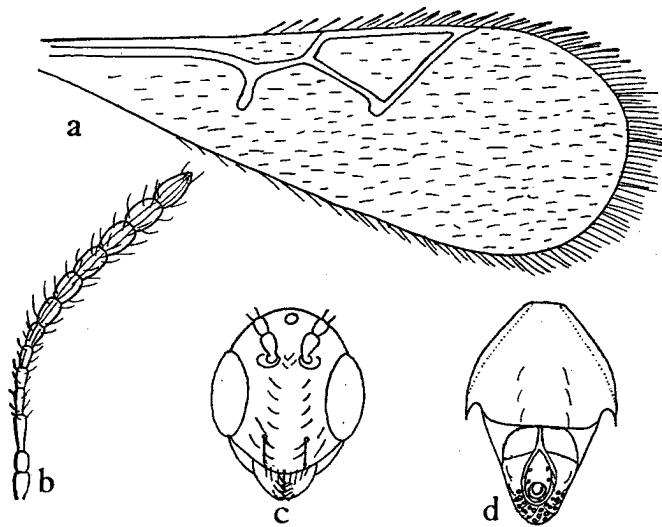


FIGURE 8.—*Pseudeucoila* (*Pseudeucoila*) *laticauca*: a, wing; b, antenna; c, head; d, thorax.

9. *Pseudeucoila* (*Pseudeucoila*) *laticauca* Yoshimoto, n. sp. (fig. 8).

Female: Ferruginous to fuscous; legs and antennal segments 1 to 7 testaceous.

Front view of head as in figure 8, c; malar space equal to one-half height of eye; hairs on frons evenly spaced, forming a column on each side extending from base of an-

tenna to anterior margin of clypeus; four short hairs evenly spaced between antennal fossa; clypeus with two long fine hairs on posterior lateral margin; several shorter hairs evenly spaced along anterior margin of clypeus. Surface of mandible with several fine hairs. Segments of antennal club striate, elliptical; antennal segments 1 and 2 twice as long as broad, segment 2 shorter than 3; segment 3 narrow at base and broader at apex, longer than 4; segments 5 and 6 shorter than 3 or 4. Pronotal plate T-shaped, upper part crescent-shaped, 1.8 times as wide as deep. Mesonotum with two rows of fine long hairs evenly spaced dorso-centrally. Metapleuron with two hairs separated by a horizontal carina. Lateral bar apically acuminate and reaching one-fourth distance of cup. Scutellar disc punctate posteriorly. Scutellar cup ovate, twice as long as broad, with two minute pits on anterior part of lateral margin and a deep, large pit on posterior end. Propodeum with two parallel raised lines; lateral areas of raised lines with dense, long, fine whitish hairs. Abdomen 1.4 times as long as broad. Tergites 3 and 4 visible at apex. Length 1.25 mm.; forewing 1.5 mm.

Male: Unknown.

Holotype, female (CM), Fadang, Guam, May 30, 1945, Dybas, under bark of breadfruit tree. Paratypes (BISHOP), female, Fadang, Guam, May 30, 1945; 3 females, Port Ajayan, Guam, June 6, 1945; female, Amantes Point, Guam, May 27, 1945, Dybas; female, Beach Cove, south of Gurgan Point, Tinian I., Apr. 5, 1945, sifting leaf-litter, Dybas.

Other specimens: Female, near Lake Susupe, Saipan, Mar. 3, 1945, Dybas.

DISTRIBUTION: S. Mariana Is.

This species resembles *P. (Pentamerocera) pacifica* Ashmead (US, type no. 8444), but differs in the number of segments in the club.

10. *Pseudeucoila (Pseudeucoila) weldi* Yoshimoto, n. sp. (fig. 9).

Female: Fuscous to blackish; legs testaceous and antennae brownish-yellow.

Front view of head as in figure 9, *c*; malar space equal to one-third height of eye; hairs on frons evenly spaced, forming a column on each side extending from base of antenna to anterior margin of clypeus; lateral margin of clypeus with three fine hairs; anterior margin of clypeus with several short hairs evenly spaced. Surface of mandible with four hairs near apex and three hairs close to base. Segments of antennal club striate and elliptical; antennal segment 1 conical and segment 2 subcylindrical, 2 slightly shorter than 1; segment 3, 1.5 times longer than 2; segment 4 equal in length to 2; segments 5 and 6 equal in length; segment 7 equal in length to 4. Pronotal plate T-shaped, upper part crescent-shaped, 1.5 times as broad as deep, a slight emargination on median dorsal margin. Posterior pronotal margin with a row of evenly spaced hairs. Mesonotum with scattered minute hairs. Metapleuron with two hairs on posterior part of dorsal margin. Apical portion of lateral bar acuminate, reaching three-fourths distance of cup. Scutellar disc punctate; scutellar cup ovate, 1.5 times as long as broad, two minute pits at anterior part of lateral margin and a large, deep pit at posterior end. Wing whitish hyaline, fewer cilia near its base. Propodeum with two parallel raised lines; adjacent areas of raised lines with long white hairs. Abdomen 1.25 times as long as broad. Tergites 3 and 4 visible. Length 1.5 mm.; forewing 1.7 mm.

Male: Unknown.

Holotype, female (US 66366), Sonsorol Is., Caroline Is., Sept. 13, 1952, Krauss. Paratypes (CM, BISHOP), 2 females, Saipan, southern part, Apr. 21, 1945, in decaying *Pandanus* fruit, Dybas; female, Saipan, As Mahetog Area, Mar. 4, 1945, on *Pandanus*, Dybas.

Other specimens: Female, Pt. Oca, Agana, Guam, at light, May 28, 1945, Bohart and Gressitt; female, Peleliu, July 31, 1951, "Parasite on phorid feeding on dead *Oryctes* larva," Gressitt.

P. (Pseudeucoila) weldi is closely related to *P. (Hexamerocera) kiefferi* Ashmead (US, type no. 8445) from the Philippines, but differs in the whitish transparent forewing and fuscous to blackish body as compared with brownish-yellow forewing and entirely black body in *kiefferi*.

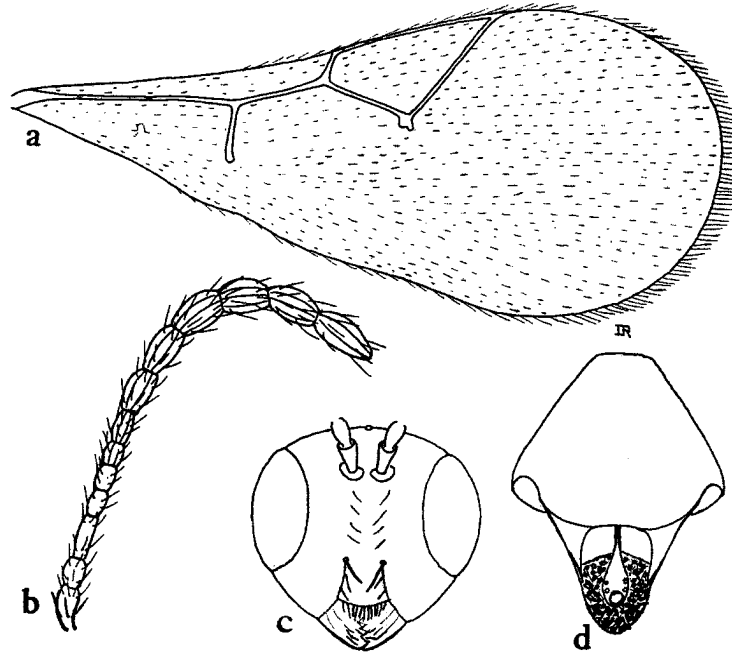


FIGURE 9.—*Pseudeucoila (Pseudeucoila) weldi*: a, wing; b, antenna; c, head; d, thorax.

11. *Pseudeucoila (Pseudeucoila) vulgaris* Yoshimoto, n. sp. (fig. 10).

Female: Ferruginous to fuscous; legs testaceous.

Front view of head as in figure 10, c; malar space equal to one-third height of eye; hairs on frons evenly spaced, forming two columns at each side extending from base of antenna fossa to posterior margin of clypeus; lateral margin of clypeus with three fine hairs; anterior margin of clypeus with several short hairs evenly spaced. Surface of mandible with four hairs near base. Segments of antennal club striate and elliptical; antennal segments 1 and 2 twice as long as broad, shorter than 3; segment 3 four times as long as broad; segments 4 to 6 shorter than 3. Pronotal plate T-shaped, upper part crescent-shaped, 2.2 times as broad as deep, with a slight emargination on median dorsal margin. Metapleuron with two hairs separated by a horizontal carina at posterior portion of dorsal margin. Lateral bar apically acuminate and reaching one-half distance of cup. Scutellar disc minutely punctate. Scutellar cup 1.5 times as long as broad, ovate, surface polished,

with two minute pits, each with a hair at anterior part of lateral margin and a large pit at posterior end. Propodeum with two parallel strongly raised lines; entire area of propodeum covered with sparse whitish hairs. Abdomen 1.5 times as long as broad; tergite 2 covering entire abdomen. Length 1.2 mm.; forewing 1.2 mm.

Male: Unknown.

Holotype, female (US 66367), Ine Is., Arno Atoll, Marshall Is., Aug. 5, 1950, La Rivers; paratypes, 2 females (BISHOP, MCZ), Agric. Expt. Sta., Colonia, Ponape, Jan. 6, 1953, Gressitt; female, Agric. Expt. Sta., Ponape,

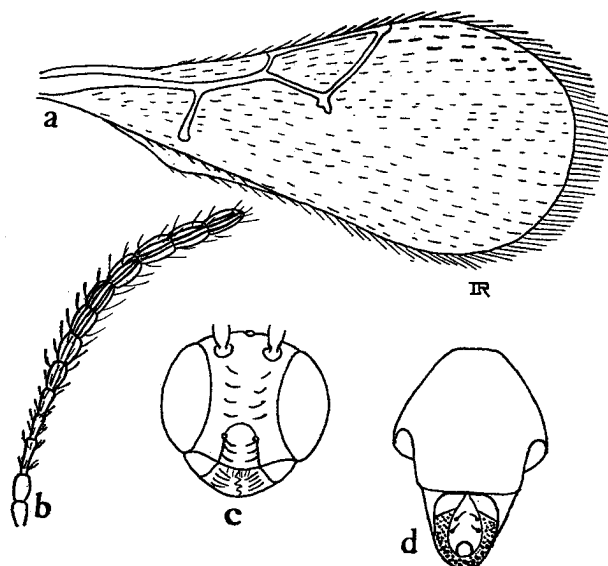


FIGURE 10.—*Pseudeucoila* (*Pseudeucoila*) *vulgaris*: a, wing; b, antenna; c, head; d, thorax.

June-Sept. 1950, Adams; female (US), Pilgo River, Guam, May 26, 1945, Bohart and Gressitt; female, Talofoto, Guam, Aug. 1952, Krauss; female, Butaritari I., Butaritari Atoll, Gilbert Is., Dec. 1957, Krauss.

Other specimens: female, Mt. Temwetemwensekir (Tamatomansakir), 180 m., Jan. 19, 1953, Gressitt; Babelthuap I., Ngerehelong, May 6, 1957, along stream, Sabrosky; female, Airai, tree fern ravine, Ngerimal R., Palau, May 26, 1957, Sabrosky; female, north central Peleliu, Aug. 4, 1945, Dybas; female, Matanluk (Yepan), Kusaie, Jan. 23, 1953, Gressitt; female, Mt. Lam-lam, Guam, Oct. 1952, Krauss.

DISTRIBUTION: S. Mariana Is., N. Mariana Is., Caroline Is., Marshall Is.

Genus *Cothonaspis* Hartig

Cothonaspis Hartig, 1839 (1849) IN Germar, Zeitschr. für Ent. 2:186.—
Weld, 1952, Cynipoidea 1905-1950, 242.

Type: *Cothonaspis pentatomus* Hartig, designation by Foerster, 1869.

Antenna of female 13-segmented; antennal segment 3 slightly shorter than 4; apical segments forming club. Prothorax broadly truncate. Scutellar cup large, ovate, with small pits at lateral margin, cup not reaching as far back as disc; scutellar disc with ridges radiating from cup to margin of rim, punctate-rugose. Wing pubescent, ciliate, radial cell closed; tergite 2 without a hairy ring.

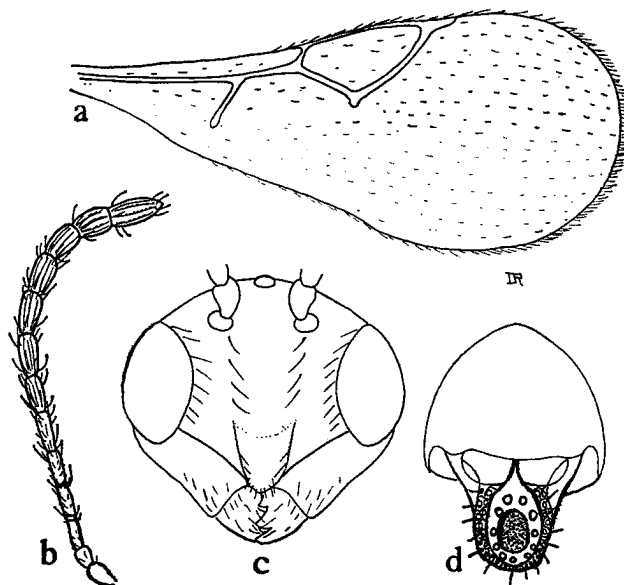


FIGURE 11.—*Cothonaspis (Cothonaspis) pacifica*: a, wing; b, antenna; c, head; d, thorax.

12. *Cothonaspis (Cothonaspis) pacifica* Yoshimoto, n. sp. (fig. 11).

Female: Black; antennae and legs ferrugineous, abdomen fuscous.

Front view of head as in figure 11, c; malar space equal to one-half height of eye; hairs on frons evenly spaced, forming a column on each side extending from base of antennal fossa to posterior margin of clypeus. Surface of mandible with few scattered hairs. Antennal club striate and with seven indistinct elliptical segments; antennal segments 1 and 2 half as long as broad; segments 3 to 5 equal in length, segments 6 to 13 slightly longer than 3 to 5. Pronotal plate rectangular, median-dorsal margin deeply emarginate; posterior margin of pronotum with a row of evenly spaced hairs. Lateral part of post-occiput and base of pronotum with patch of sparse hairs. Metapleuron with three long whitish hairs evenly spaced at anterior part of dorsal margin, and 6 to 7 hairs evenly spaced at posterior part of lateral corner. Lateral bar apically acuminate and reaching one-third distance of cup. Scutellar cup ovate, surface with a large depression just beyond

center of cup, margin with 8 small pits. Propodeum with two parallel strongly raised lines; sparse hairs over entire propodeum. Abdomen 0.4 longer than broad. Only tergite 2 visible. Length 1.1 mm.; forewing 1.2 mm.

Male: Unknown.

Holotype, female (BISHOP 3337), Wake, Peale I., Aug. 1, 1940, on radish leaf, Lyons.

DISTRIBUTION: Eastern Micronesia (Wake I.).

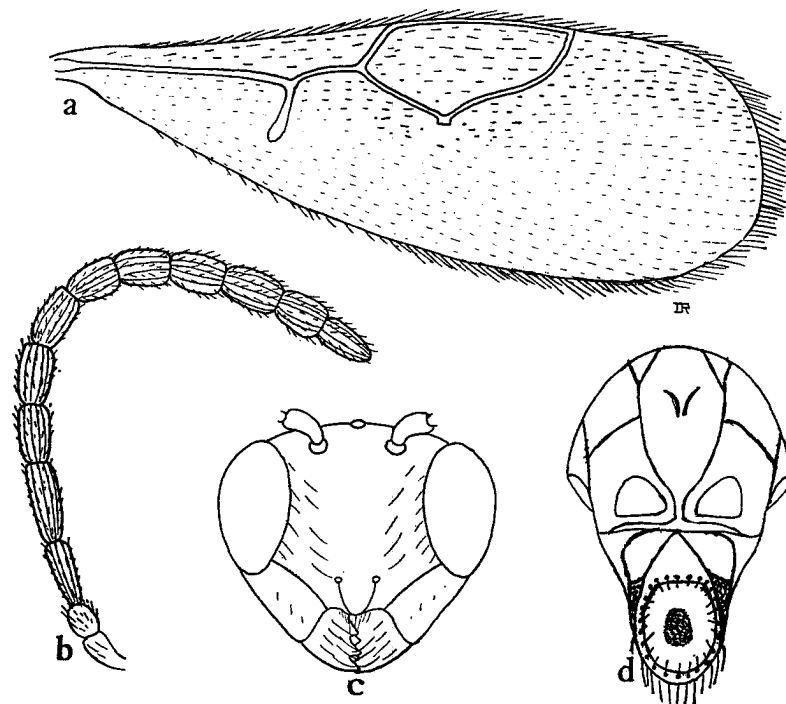


FIGURE 12.—*Eucoilidea guamensis*: a, wing; b, antenna; c, head; d, thorax.

Genus *Eucoilidea* Ashmead

Eucoilidea Ashmead, 1887, Am. Ent. Soc., Trans. 14: 154.—Weld, 1952, Cynipoidea 1905-1950, 248.

Type: *Eucoilidea canadensis* Ashmead, designated by Ashmead, 1903.

Antenna of female 13-segmented, without distinct club; antennal segment 3 slightly bent at base, shorter than 4. Prothorax broadly truncate with deep, median emargination on dorsal margin. Mesothorax with parapsidal grooves united at two-thirds of way back, continued as a median dorsal carina. Scutellar cup large, elliptical to ovate, reaching nearly to end of disc, surface with a deep depression and an elongate pit in center and a row of punctures on each side of depression. Scutellar disc punctate, rounded behind. Wing pubescent, ciliate at margin, radial cell closed. Tergite 2 without a hairy ring.

13. *Eucoilidea guamensis* Yoshimoto, n. sp. (fig. 12).

Female: Black; antennae and legs brownish, abdomen fuscous.

Front view of head as in figure 12, *c*; malar space equal to one-half height of eye; hairs on frons evenly spaced, forming two columns at each side extending from antennal fossa to posterior margin of clypeus; middle of frons with two pairs of hairs. Surface of mandible with dense long hairs. Antennal club striate, of eight elliptic segments; antennal segments 1 and 2 subequal in length; segment 3 slightly bent at base, shorter than 4; segments 5 to 7 equal in length. Pronotal plate twice as broad as deep, subrectangular, median dorsal margin deeply emarginate. Pronotal surface muricate with sericeous hairs. Parapsidal groove distinct. Mesopleuron with a wide, curved groove. Scutellar disc punctate-rugose, rounded as seen from behind. Scutellar cup 1.7 times as long as broad, large, ovate, anterior portion slightly raised and convex, middle of cup with a large depression covering nearly all of posterior part and, lateral margin of cup with minute punctures with hairs. Propodeum with two parallel strongly raised lines; patch of hairs on anterior and lateral areas of propodeum. Petiole sulcate. Abdomen as long as broad; tergite 2 visible only. Length 1.3-1.5 mm.; forewing 1.5-1.6 mm.

Male: Unknown.

Holotype, female (BISHOP 3338), Umatac, Guam, Oct. 1957, Krauss. Paratypes (BISHOP, US), female, Umatac, Guam, Oct. 1957, female, Nimitz Beach, Guam, Aug. 1952, Krauss.

DISTRIBUTION: Mariana Is. (Guam).

This species is related to *Eucoilidea micromorpha* Perkins of Hawaii, but differs in size and shape of scutellar cup. The pronotal surface is muricate, with interspersed sericeous hairs in *guamensis*; much smoother with no sericeous hairs in *micromorpha*.

