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A NEW WESTERN NEARCTIC SPECIES OF *CALAMEUTA* KONOW (HYMENOPTERA: CEPHIDAE)

DAVID R. SMITH AND NATHAN M. SCHIFF

(DRS) Systematic Entomology Laboratory, PSI, Agricultural Research Service, U.S. Department of Agriculture, % National Museum of Natural History, Smithsonian Institution, P.O. Box 37012, MRC 168, Washington, DC 20013-7012 U.S.A. (e-mail: dsmith@sel.barc.usda.gov); (NMS) U.S. Forest Service, U.S. Department of Agriculture, Southern Research Station, Center for Bottomland Hardwood Research, P.O. Box 227, Stoneville, MS 38776 U.S.A. (e-mail: nschiff@fs.fed.us)

Abstract.—***Calameuta middlekauffi*, n. sp.**, is described from southern Oregon and California. It is the second species of *Calameuta* in North America and is differentiated from *C. clavata* (Norton) by head shape and coloration. Illustrations, descriptions, and a key are given to separate the two species. The food plant is unknown, but Palearctic species of *Calameuta* are known to feed in grass stems.

Key Words: Cephinae, grasses, California, Oregon

The genus *Calameuta* Konow is best represented in the Palearctic Region where about 20 species are known. Only one species, *C. clavata* (Norton 1869), is known from North America, and it occurs from California to Idaho, Oregon, and Washington (Ries 1937, Middlekauff 1969, Smith 1979). For a number of years, we noted a few peculiar specimens masquerading under *C. clavata.* These were mostly single specimens from scattered localities, that appear like and key to *C. clavata* and were considered variants of that species. Not until NMS collected a series from the same place could we substantiate that these unusual specimens represent a distinct species rather than an occasional aberration of *C. clavata.* The head shape and relatively constant color pattern are the most distinctive characteristics, and we here describe these specimens as a new species. From the few specimens available, it does not appear to be as common as *C. clavata,* and it is apparently restricted in distribution to the central valley and coastal ranges of southern Oregon to southern California.

Food plants are not known for North American *Calameuta.* Larvae of Palearctic species feed in grass stems, and for *C. clavata,* Middlekauff (1969) stated "unknown grasses" as the food plant but speculated that the grass hosts may turn out to be *Bromus laevipes* Shear and/or *Deschampsia danthomioides* Trin., which have sympatric ranges with *C. clavata.*

Calameuta clavata has been placed in *Cephus* Latreille by some North America authors (Ries 1937, Middlekauff 1969). However, we follow Benson's (1946) definition of the two genera and place it in *Calameuta,* as was followed by Smith (1979). *Calameuta* is distinguished from *Cephus* by the interantennal distance shorter than the antennal-tentorial distance; lower interocular distance usually less than the eye height; female cerci more than half as long as the sheath; and the eighth sternite of the male without a fringe of long, modified setae. In

North America, *C. clavata* and the new species below can be distinguished from *Cephus* by the bidentate left mandible, with a rounded shoulder on the inner side of the second tooth. In contrast, the left mandible of *Cephus* is tridentate.

Calameuta middlekauffi Smith and Schiff, new species

(Figs. 1–5)

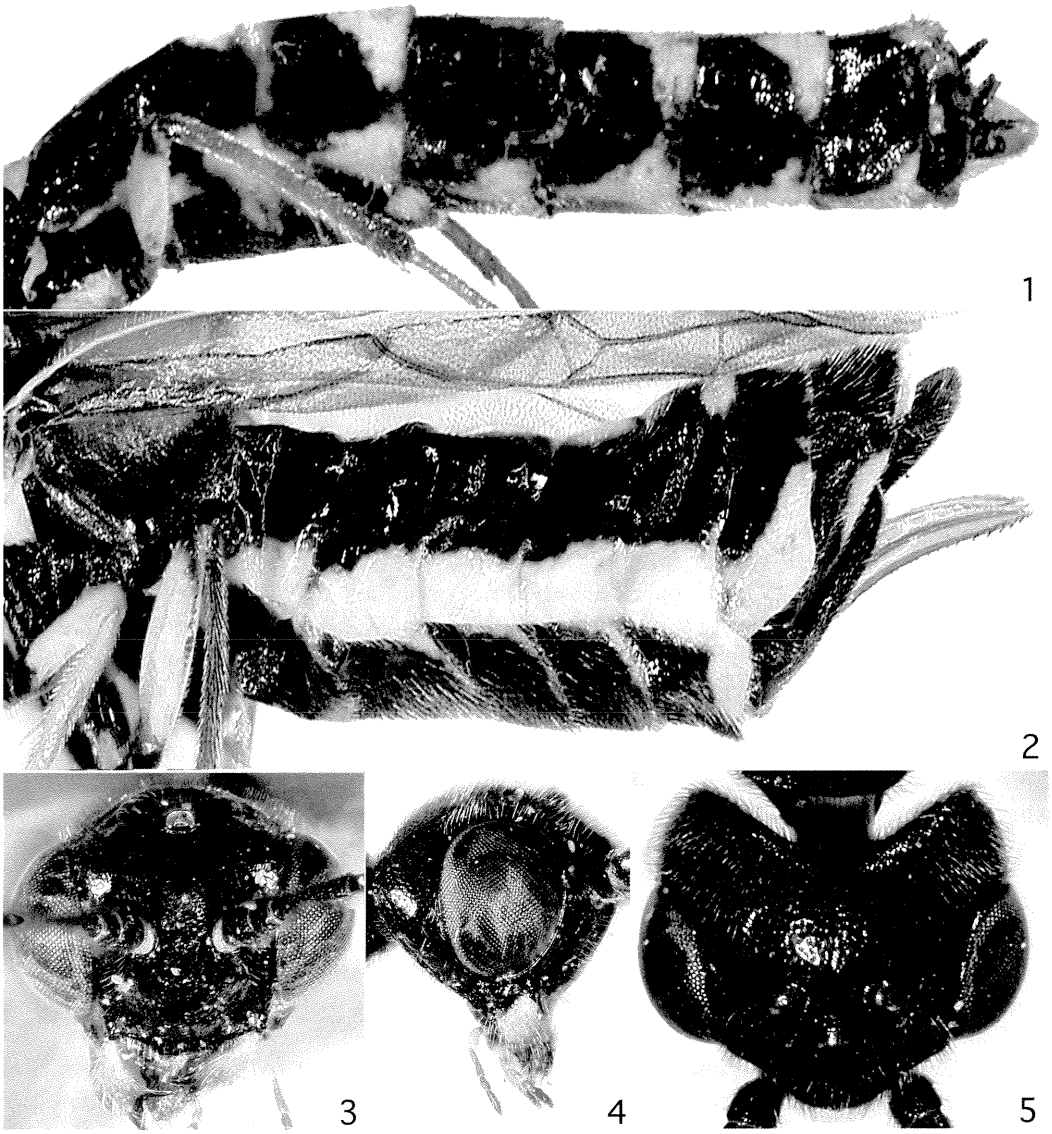
Female.—Length, 6.7–8.5 mm. Antenna and head black, sometimes faint yellow spot at center of supraclypeal area; mandible yellow with extreme base black and apex reddish brown. Thorax black with upper corner of mesepisternum and spiracular sclerite yellow. Legs with coxae and trochanters black, a small yellow spot on lower posterior margin of hind coxa; femora yellow, fore- and mid-femora with black at extreme base and hind femur with extreme apex and base black; fore- and mid-tibiae and tarsi yellowish, apical 2 or 3 segments of fore- and midtarsi infuscate; hind tibia and tarsus black, sometimes hind tibia slightly yellowish. Abdomen (Fig. 2) black with continuous lateral longitudinal yellow stripe of about equal width, yellow on 8th segment broader and extending onto posterior margin of 8th sternite, 9th segment with small yellow stripe posteriorly on lateral margin; segments 4–7 with medial dorsal yellow spots, varying in size and with faint to small spots on segments 5 and 8; apex of segments 8 and 9 with small yellow spots. Wings hyaline; veins and stigma brown; outer surface of costa of fore- and hind wing yellow.

Antenna 23–25 segmented. Left mandible bidentate, inner tooth with blunt, rounded shoulder on inner margin. Head (Figs. 3–5) round in lateral view, in lateral view and dorsal view with frons protuberant; in dorsal view head deeply emarginate behind, depth of emargination half distance from posterior corner to eye. Eye oval, about 1.3× higher than wide. Distance from antennal insertion to tentorial pits 1.3× distance between antennal insertions. Lower interocular distance slightly shorter than upper interocular distance and subequal to eye height. Distances between eye and lateral ocellus, between lateral ocelli, and from lateral ocellus to hind margin of head as 1.0: 1.0:2.2. Hind tibia with one preapical spine. Cercus about as long as sheath. Sheath in dorsal view of equal width and bluntly rounded at apex, width slightly more than width of hind basitarsus; oblong plate (valvifer 2) 2.0× longer than sheath (valvula 3).

Male.—Length, 6.5–7.0 mm. Color as for female except large yellow spot on supraclypeal area; inner surface of midcoxa yellow; most of hind coxa yellow with black spot only at extreme base; outer surface of hind tibia may be yellowish. Abdomen (Fig. 1) black with medial yellow marks on posterior halves of terga 3, 4, 6, and usually 7; small if present on 2 and 5. Lateral yellow marks on 1–8 separated by black or connected below by narrow yellow stripes; hypandrium mostly yellow. Abdominal sternite 8 apically notched at center, with fringe of very short setae on margin.

Type material.—Holotype ♀, labeled "USA: California: Solano Co., Stebbins Cold Creek Canyon, 38°27′N 122°42′W, 15-IV-1-V-96, Nathan M. Schiff, Malaise trap." Deposited in the National Museum of Natural History, Smithsonian Institution, Washington, DC (USNM).

Paratypes: CALIFORNIA: Same data as holotype (3 ♀, 1 ♂), same data as holotype except 1-14-IV-96 (2 ♀); Solano Co., Cold Cyn. Res., 11 km W Winters, 12-III-1-IV-92, S. L. Heydon, MT (2 ♀); Siskiyou Co., Hill Hungry Road, Forest Service Rd. 1, May 12, 1996, Nathan M., Schiff (1 ♀); El Dorado Co., Blodgett, 38°54′N 122°42′W, 12-V-1-VI-96, Nathan M. Schiff, Malaise trap (1 ♀); Mts. near Claremont, Baker (1 ♀, 1 ♂); Upland, 4/17/20 (1 ♀); Corte Madera Cr., IV-25–1960 (1 ♀, 1 ♂); Santa Clara Co., Mount Hamilton, 2 May 1976, Larry Bezark (1 ♀); 1.5 mi W on Mix Canyon Road, Solano Co., ele. 1,000, III-30-76, N. J. Smith, colr. (1 ♀); Green Valley, Solano

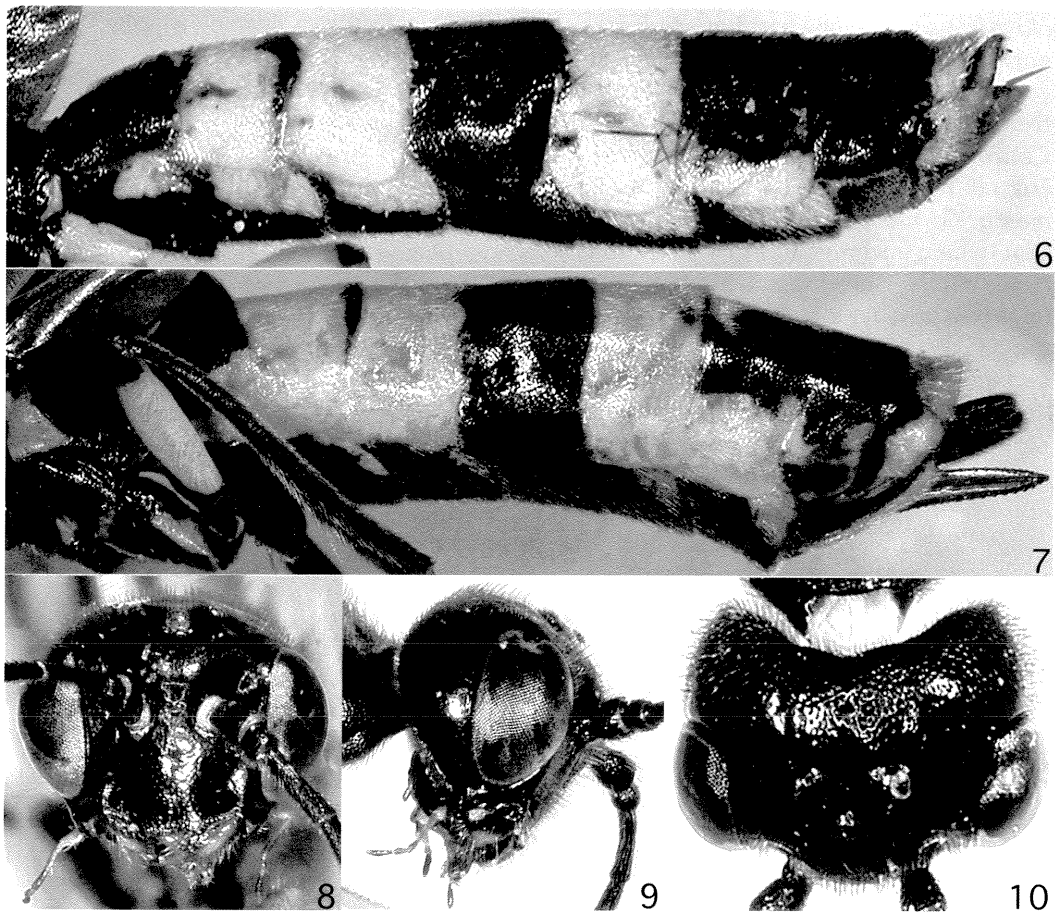


Figs. 1–5. *Calameuta middlekauffi*. 1, Male abdomen, lateral view. 2, Female abdomen, lateral view. 3, Head, front view. 4, Head, lateral view. 5, Head, dorsal view.

Co., III-24-1954, E. I. Schlinger, collector (1 ♀); Orchard Hills, Alameda Co., IV-14-74, coll. R. D. Moon (1 ♀); Round Mt., Shasta Col., V-23-1949, R. M. Bohart (1 ♀); Mt. San Jacinto, 4,000′, VI-6-42, R. Bohart (1 ♀). OREGON: 4 mi W of Selma, Josephine Co., May 23, 1964, Kenneth Goeden (1 ♀). Deposited in the USNM, University of California at Davis, and the collection of N. Schiff.

Etymology.—The specific epithet is in honor Dr. Woodrow W. Middlekauff, University of California, Berkeley, for his excellent contributions to the knowledge of North American sawflies.

Remarks.—*Calameuta middlekauffi* is distinguished from *C. clavata* by a solid lateral yellow stripe on the female abdomen, small yellow markings laterally and on the dorsum of segments 3, 4, 6, and usually 7



Figs. 6–10. *Calameuta clavata.* 6, Male abdomen, lateral view. 7, Female abdomen, lateral view. 8, Head, front view. 9, Head, lateral view. 10, Head, dorsal view.

on the male abdomen, the round head in side view, more rounded eyes, protuberant frons, and deep posterior emargination of the head as seen in dorsal view. In general, the size of *C. middlekauffi* is smaller than *C. clavata,* with most specimens of the latter being 10 mm or more in length.

The female abdomen of *C. clavata* (Fig. 7) is banded yellow on segments 3, 4, and 6, with medial and lateral spots on segment 7, segment 8 mostly black, and segment 9 black with the apical half yellow. It lacks the solid lateral yellow stripe. The male abdomen has similar yellow markings as the female (Fig. 6). The eyes are more elongate, with the height 1.6× or more their width; the head is more oval in lateral view; the frons is more evenly rounded and less protuberant in lateral and dorsal views; the posterior margin of the head in dorsal view is less emarginate, the depth of the emargination less than half the distance from the posterior corner of the head to the eye (Figs. 8–10); and the oblong plate is 1.6× the length of the sheath. The male usually has more yellow on the supraclypeal area, the coxae are yellow except at their bases, and the hypandrium is mostly yellow with a large round black spot at its base. Though the coloration of *C. clavata* is variable, as stated by Middlekauff (1969), the variation does not reach the extreme solid lateral stripe as in *C. middlekauffi.* The amount of yellow on segments 2, 3, and 5 and 6 of *C.*

clavata varies somewhat, but segment 4 is normally entirely black.

Calameuta middlekauffi has been found from southern Oregon south to southern California. Most specimens are from the coastal range in central California. *Calameuta clavata* has a much wider distribution, which encompasses that of *C. middlekauffi* and occurs from Washington and Idaho south to southern California (as far as the Mexican border) in the coastal ranges and at high elevations in the Sierras.

We have examined a number of Palearctic species of *Calameuta* and checked the literature and are not aware of a Palearctic species of *Calameuta* similar to *C. middlekauffi.*

Key to Species of North American *Calameuta*

1. Female abdomen with solid lateral yellow stripe (Fig. 2); male abdomen with dorsal yellow spots on segments 3, 5, 6, and usually 7, usually not extending laterally, and lateral spots on segments 1–8 (Fig. 1); head round in lateral view (Fig. 4), frons protuberant (Figs. 4–5), and in dorsal view with deep posterior emargination (Fig. 5) . . . . . *C. middlekauffi*

– Female and male abdomen without solid lateral stripe, tergites 3, 4, and 6 usually solidly yellow (Figs. 6–7); head more oval in lateral view (Fig. 9) frons not protuberant (Figs. 9–10), and in dorsal view with shallower posterior emargination (Fig. 10) . . . . . *C. clavata*

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