DESCRIPTION OF A NEW SUBGENUS OF *OSMIA*
(Hymenoptera: Megachilidae)

Roy R. Snelling
Los Angeles County Museum of Natural History
Los Angeles, California 90007

When Sinha (1958) revised the New World subgenera of *Osmia* he erected the subgenus *Euthosmia* to accommodate three poorly known western species, *O. glauca* (Fowler), *O. nemoris* Sandhouse, and *O. claremontensis* Michener. Since only the first was known from both sexes it was selected as the type species; the other two species were known only from the males. Of necessity, the delineation of the female characteristics was based solely on *O. glauca.*

Since the publication of Sinha's work I have been able to associate a female with *O. nemoris.* This female proved to be the species described as *O. seclusa* Sandhouse, which Sinha had included in *Monilosmia* as an anomalous species. The evidence for this association is twofold. First, both *O. nemoris* and *O. seclusa* occur abundantly together over a wide area of the western United States, appearing together at the same season and frequenting the same flowers. Both species have an unusually long seasonal flight; in the San Joaquin Valley of California where I have observed this species for over ten years, I have found that the emergence begins in mid-March and the species remains abundant until mid-June. Second, a series of cells provisioned by a female in a burrow in soil yielded both males (*O. nemoris*) and females (*O. seclusa*). There is, therefore, no doubt that *O. seclusa* Sandhouse (1924) = *O. nemoris* Sandhouse (1924) (NEW SYNONYMY); both names were proposed in the same paper with *O. nemoris* having page priority.

As pointed out above, the female was believed by Sinha to be an anomalous member of *Monilosmia.* The male, however, because of the transverse, rather than strongly convex, apical margin of the second sternite, cannot be placed in that subgenus. The female, with quadridentate mandibles and a distinct clypeal brush, equally well cannot be placed in *Euthosmia.* Any attempt to force this species into any of the existing subgenera would only break down the established, and useable, characters on which these are based. Accordingly, the following new subgenus is proposed for *O. nemoris.*

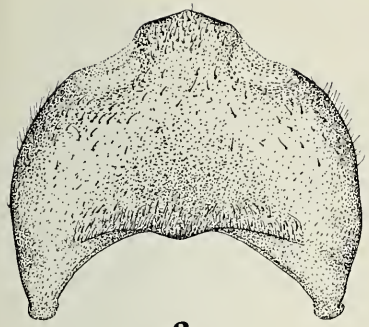
Subgenus **Mystacosmia**, New subgenus[1]

Type species: Osmia nemoris Sandhouse, 1924.

Diagnosis: Closely related to the subgenera *Euthosmia* and *Chalcosmia*. Principal features of the males are: moderate size; median flagellar segments no more than 1.5 times as long as wide; inner margins of eyes converging anteriorly; inpunctate band of clypeal margin of moderate width; hypostomal carina distinctly elevated behind angle; hind basitarsus not toothed; with head in dorsal view all ocelli anterior to line drawn between posterior margins of eyes; metasomal sterna II to IV with appressed posteriorly directed hairs, marginal hairs on these sterna convergent toward midline; metasomal terga II to V with subapical pubescent fasciae (frequently worn). The female may be recognized by the following combination of characters: mandibles quadridentate, with transverse ridge near base; tufts of orange hair arising from beneath clypeal margin; genal area distinctly wider than eye in profile; clypeal punctures contiguous; anterior clypeal margin not thickened or greatly modified; metasomal terga II to V punctate to apical margins or with extremely narrow impunctate margin; subapical pubescent fasciae present on terga II to V; scopa black.

Male. Body length 8 to 11 mm. Pubescence white. Mandible slender, bidentate, upper tooth oblique, widest basally, constricted just distad of base. Eyes wider than genae, inner margins distinctly convergent below. Clypeal apex crenulate, with moderately wide impunctate apical band; a brush of even, regularly spaced hairs arising from beneath clypeal margin. Scape about as long as following three antennal segments combined; median flagellar segments about 1.5 times as long as wide. Hypostomal carina strongly raised behind angle. Second and third segments of middle tarsus not swollen; hind basitarsus not toothed, gradually widened toward apex. Strigilus as described by Sinha for *Euthosmia*. Metasomal terga II to V with narrow to moderately broad impunctate bands along apical margins, with subapical pubescent faciae; tergum VI medially prolonged, without emargination at middle of apical margin; tergum VII produced apically, mid-apex deeply emarginate, forming two sharp teeth. Metasomal sterna II to V truncate to weakly convex along apical margin; sternum VI with apical margin broadly subtriangular; sternum VIII with basal half triangular and base

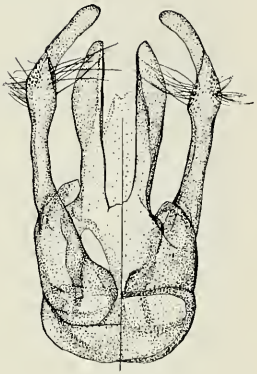
[1]*Mystax, -akos* (Gr., hair on upper lip, moustache) + *Osmia*.



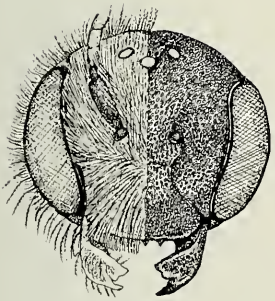
a

b

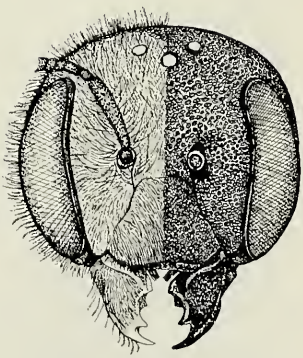
c



d



e



f

Figure 1. Osmia (Mystacosmia) nemoris Sandhouse: a-c, sternites VI, VII, VIII, respectively, of male; d, male genitalia, left side dorsal aspect, right side ventral aspect; e, male face, right side denuded; f, female face, right side denuded. Figures by Ruth DeNicola Snelling.

strongly acuminate, distal half with median projection. Gonocoxite slightly tapering from base to angulation.

Female. Body length 8 to 12 mm. Scopa black. Pubescence pale, except for fuscous hairs present on the legs. Metasomal terga with subapical pubescent fasciae. Mandible wide, slightly constricted distad of base, gradually widened to quadridentate apex which is a little wider than constriction; transverse ridge present basally. Clypeus contiguously punctate, apical truncation somewhat longer than distance from end of truncation to lateral angle of clypeus; a tuft of orange bristles arising on each side of mid line from beneath clypeal margin. Inner eye margins slightly converging below; eyes in profile much narrower than genae. Hypostomal carina sharply elevated a short distance behind angle. Hind basitarsus about three times as long as wide, rounded apically; hind tibial spurs almost straight apically; apical segments of front tarsi with a number of long, glistening, white bristles which are abruptly spatulate at the tips. Strigilus with apical spine of malus shorter than in male, inner margin of velum concave. Scopa dense, covering most of sterna II to V.

As far as known at the present time this subgenus includes only the type species.

The third species which Sinha included in *Euthosmia* was *O. claremontensis* Michener. Although superficially similar to *O. nemoris* several important characters exclude it from *Mystacosmia*; at the same time, I do not feel that *O. claremontensis* should be retained in *Euthosmia.* An important feature of this species which Sinha overlooked is that the hind basitarsus has a distinct spine; Sandhouse (1939) mentions the presence of this spine, and specimens available to me agree in this character. The second metasomal sternum of *O. claremontensis* has a very poorly indicated median concavity, while the third sternum has a distinct, deep median emargination. *Euthosmia*, as redefined below on the basis of the single species, *O. glauca*, has the margin of both the second and third sterna broadly truncate without any trace of a median emargination. The clypeal truncation of *O. glauca* is feebly, but distinctly, bisinuate; in *O. claremontensis* it is slightly convex, without a trace of sinuation. In *O. glauca*, the metasomal terga are without subapical pubescent fasciae and the apical impunctate band is narrow. Distinct subapical pubescent fasciae are present on metasomal terga II to V, and the apical impunctate band is broader in *O. claremontensis*. The median flagel-

lar segments are about 1.9 times as long as broad. In my opinion retaining *O. claremontensis* in *Euthosmia* would make an accurate characterization of that subgenus almost impossible. I suggest that this species be left unassigned until the discovery of the female, which may clarify its relationships.

The present restriction of the subgenus *Euthosmia* to its type species necessitates the following restatement of the male characters of that subgenus:

Male. Body length 4 to 6 mm. Pubescence white. Mandibles as described by Sinha. Eye wider than genal area, inner margins strongly converging below. Clypeus densely covered with erect hairs arising from fine contiguous punctures, apex truncate, margin feebly bisinuate, with narrow impunctate apical band. Antennal scape subequal to following three segments combined, median flagellar segments about 1.9 times as long as wide, flagellum extending back to apex of thorax. Hypostomal carina low and of uniform height throughout. Legs and wings as described by Sinha. Metasomal terga with narrow impunctate apical bands, without apical or subapical pubescent fasciae; tergum VI not medially prolonged, without midapical emargination; tergum VII produced, medially emarginate; sternum II not produced over base of III, margin truncate or feebly convex; sternum III without median emargination; erect hairs of sterna II–IV sparse, evenly distributed, with trace of defined cluster along midline; sternum V without median emargination; remaining abdominal characters as noted by Sinha.

The removal of the two aberrant species from *Euthosmia* has made it possible to place that subgenus on a more acceptable basis. Of course, this fact also necessitates a rearrangement of Sinha's chart (1958:218) of primitive versus derived characters. His character No. 27 in *Euthosmia* must now be changed from "O," ("some species specialized, and others generalized") to "X," (all species specialized), with the result that *Euthosmia* exhibits 24 generalized and 5 specialized characters. *Mystascosmia* has a combination of 19 generalized and 10 specialized criteria, placing it closest to *Trichinosmia* which has a formula of 18-11. This is also close to *Chalcosmia* with 17 generalized and 10 specialized.

The third couplet of Sinha's key to the males of the Nearctic subgenera may be modified to accommodate *Mystacosmia* as follows:

3(2) Genal area wider than greatest width of eye; pubescence white and black intermixed; hypostomal carina high; an-

tennal socket with upper mesal margin more strongly developed than rest of margin ..... *Cephalosmia*
Genal area narrower than greatest width of eye; pubescence white; hypostomal carina variable; antennal socket with margin uniformly developed throughout ..... 3'

3'(3) Median flagellar segments 1.5 times as long as broad; apical portion of metasomal tergum VI prolonged over VII; anterior clypeal margin crenulate ..... *Mystacosmia*
Median flagellar segments 1.9 times as long as broad; apical margin of metasomal tergum VI evenly convex not conspicuously prolonged over VII; anterior clypeal border simple ..... *Euthosmia*

The key to the females may be modified to differentiate between *Monilosmia* and *Mystacosmia* thus:

8(6) Hypostomal carina high, abruptly reduced near angle, forming a tooth; genal area wider than eye; clypeal truncation usually longer than margin from end of truncation to lateral angle of clypeus ..... 8'
Hypostomal carina low, not abruptly reduced near angle; genal area as wide as eye; clypeal truncation usually equal to margin from end of truncation to lateral angle of clypeus ..... *Chenosmia*

8'(8) Mandible with transverse ridge near base *and* clypeal margin unmodified; anterior distitarsi with long, erect spatulate bristles; metasomal terga with subapical pubescent fasciae ..... *Mystacosmia*

Mandible without transverse ridge near base, or if ridge present, *then* apical clypeal margin modified, *and/or* black pubescence present on thorax and metasomal terga; spatulate bristles absent from anterior distitarsi; subapical pubescent fasciae usually absent from metasomal terga .... *Monilosmia*

Literature Cited

MICHENER, C. D.
1936. New Californian Osmiinae. *Bull. So. Calif. Acad. Sci.*, 35:84-93.

SANDHOUSE, G. A.
1924. Bees of the genus *Osmia* in the collection of the California Academy of Sciences. *Proc. Calif. Acad. Sci.*, ser. 4, 13:341-372.

1939. The North American bees of the genus *Osmia*. *Mem. Ent. Soc. Wash.*, 1:1-167.

SINHA, R. N.
1958. A subgeneric revision of the genus *Osmia* in the Western Hemisphere. *Univ. Kans. Sci. Bull.*, 39:211-261.