POLSKIE PISMO ENTOMOLOGICZNE
BULLETIN ENTOMOLOGIQUE DE POLOGNE

Tom XXXVI Wrocław 1966 Nr 4

# The identity of *Parapsammophila lutea* TASCHENBERG, 1869* (*Hymenoptera, Sphecidae*)

## Rewizja typu *Parapsammophila lutea* TASCHENBERG, 1869 (*Hymenoptera, Sphecidae*)

by

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Modern workers have always followed KOHL's (1907, p. 304) interpretation of *Parapsammophila lutea*. KOHL stated in his description of *lutea* that he had seen TASCHENBERG's syntypes (apparently about twenty years earlier), and that the male and female represented two different species, the male being a variety of *Eremochares dives* (BRULLÉ). Consequently, KOHL based his interpretation of *lutea* on the female. My examination of the syntypes indicates, however, that the two sexes of *lutea* are conspecific and furthermore, represent a species of *Eremochares* (sensu MENKE, 1966) related to *dives*.

It is apparent that somehow KOHL misidentified the female syntypes of *lutea* as a glance at his description and figure of the female face clearly demonstrate. The two female syntypes have the inner orbits of the eyes strongly converging towards the clypeus, whereas KOHL's *lutea* has the inner orbits essentially parallel in the female. Unfortunately, TASCHENBERG did not describe the condition of the inner orbits in either sex of *lutea*, but there can be little doubt that the females I have examined are the true syntypes because they agree in all details of color as given in TASCHENBERG's original description, even down to the dark masking

* I would like to thank Dr. J. O. HÜSING, Martin Luther Universität, Halle, for loaning the syntypes of *lutea*.

of the dorsal surface of the hind coxa, trochanter, and femur, and the distinctive abdominal markings. In contrast, KOHL's color description of female *lutea* differs considerably from the syntypes as well as TASCHENBERG's description. KOHL described the gaster as entirely red except for a black petiole (occasionally in some females he noted evanescent black spots on tergites III–V). In the female syntypes of *lutea* tergites I and III–IV have large black spots but V is entirely red. KOHL also stated that the scape was entirely red but in the syntypes it is largely black. Furthermore, KOHL stated that the mesosternum did not have an antero-median process, but the syntypes have a very strong mesosternal process. In fact it is stronger than in any of the other species of *Eremochares*.

KOHL appears to have correctly associated the sexes of his "lutea" and his description of the male agrees well with that of *Parapsammophila turanica* MORAWITZ (described from a male), thus it would appear that *turanica* is the proper name for *lutea* of KOHL. GUSSAKOVSKIJ (1928) also came to this conclusion. It is interesting to note that KOHL also was confused about the identity of MORAWITZ' species. He described what he thought was the female of *turanica*, but from his description and figure of the clypeus it appears that he may have had a specimen of true *lutea*! In any case KOHL did not describe the true female of *turanica*. GUSSAKOVSKIJ (1928, p. 7, footnote) noted KOHL's mistake and proposed the name *kohlii* for the female of *turanica* KOHL, nec MORAWITZ. Dr. Max FISCHER of the Naturhistorisches Museum, Vienna, has informed me that this female cannot be located in the collection, so that for the present it is not possible to determine the identity of *kohlii*.

### *Eremochares lutea* (TASCHENBERG)

*Parapsamophila lutea* TASCHENBERG, 1869. Z. Ges. Naturwiss. Halle, 34, 431.

Lectotype male, Khartoum, Sudan (Martin Luther Universität, Halle), present designation. Two lectoparatype females with same data as lectotype. The lectotype bears a handwritten KOHL label: "Gehört nicht zu *lutea* female" (the next line is undecipherable), "*A. dives* BRULL. var."

Description of lectotype male: length 24 mm.

Color: Black, following parts red: apex of scape ventrally (flagellomeres reddish brown beneath); apical half of clypeus; mandible except tip; tegula; all coxae ventrally; front and middle trochanters and femora, and all tibiae and tarsi; hind trochanter ventrally; hind femur except

for dorsobasal darkening. Gastral color as follows: sternite of segment I (= petiole) black at base and at point of tergite I attachment, and dorsally between these two points, remainder red. Sternites II–V red, VI–VII brownish. Tergites I–III largely red but each with a black spot

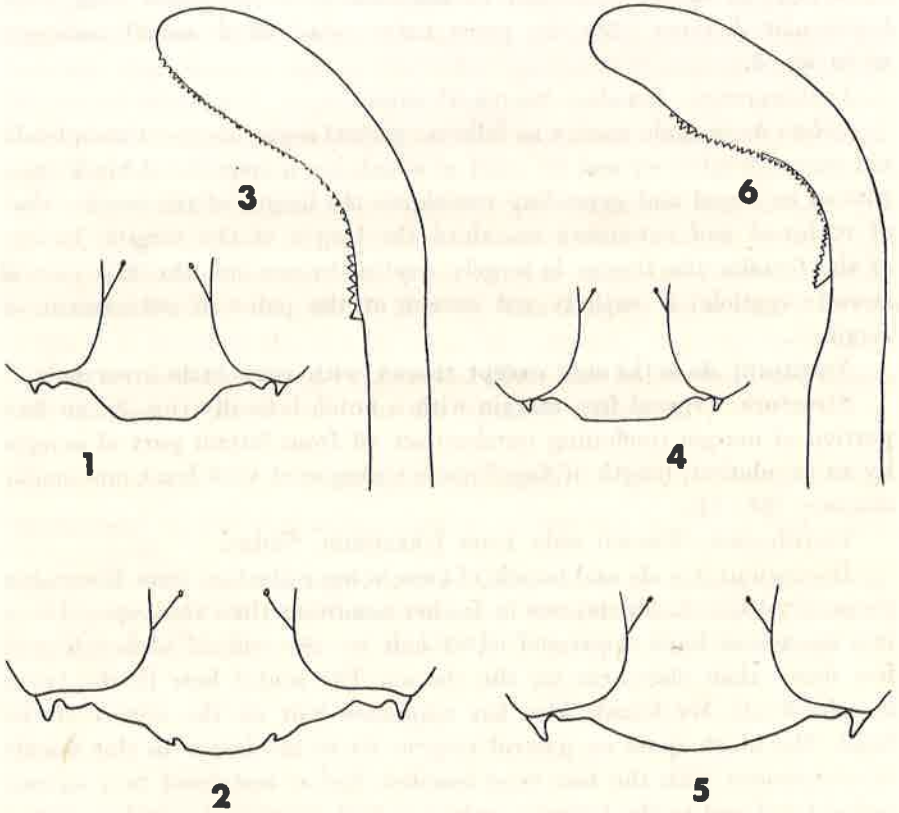


Fig. 1–3. *Eremochares lutea*: 1 — clypeal outline of lectotype male; 2 — female clypeal outline; 3 — right penis valve head of dissected aedeagus of lectotype. Fig. 4–6. *E. dives*: 4 — male clypeal outline; 5 — female clypeal outline; 6 — right penis valve of dissected aedeagus

at base, that of I narrow and extending two-thirds the length of the tergite, that of III broader than long and extending only one half the length of the tergite; tergites IV–VII largely black with red restricted to extreme sides and a narrow band at their apices. Wings clear, veins reddish brown.

Vestiture: Head and thorax covered with dense appressed silver hair which obscures the underlying sculpture except at the following

areas which are glabrous*: vertex of head, propodeal enclosure laterally, and superior metapleural area. Head and thorax with much erect silver hair.

Structure: Inner margin of mandible without a tooth; free margin of clypeus as in fig. 1; length of flagellomere I compared with least interocular distance (39 : 36); penis valve head of dissected aedeagus as in fig. 3.

Lectoparatype females: length 24 mm.

Color: As in male except as follows: gastral segments II–VI completely red except tergites III and IV, each of which has a large basal black spot, that of III broad and extending two-thirds the length of the tergite, that of IV broad and extending one-third the length of the tergite. In one of the females the thorax is largely reddish brown and the first gastral sternite (petiole) is entirely red except at the point of attachment of tergite I.

Vestiture: As in the male except thorax with very little erect hair.

Structure: Clypeal free margin with a notch laterally (fig. 2), median portion of margin (including notches) set off from lateral part of margin by an angulation; length of flagellomere I compared with least interocular distance (38 : 51).

Distribution: Known only from Khartoum, Sudan.

Discussion: A male and female of *lutea* in my collection from Khartoum (Sept. 20, 1935, A. Mochi) are in fresher condition than the types. These two specimens have appressed silver hair on the scutum although it is less dense than elsewhere on the thorax. The scutal hair in the types is rubbed off. My female also has appressed hair on the vertex of the head. The black spots on gastral tergites III–IV are larger in this female in comparison with the two type females. Red is restricted to a narrow apical band and to the lateral portions of both tergites. Gastral sternite I is completely black in my male.

The strongly converging inner orbits, the well developed mesosternal process, and the configuration of the petiole socket (see MENKE, 1966) make *lutea* a typical *Eremochares*. The clypeal notches in the female (fig. 2) and the clypeal outline of the male (fig. 1) are distinctive features of *lutea*. For comparison I have figured the same structures in *E. dives* (BRULLÉ), a species which also occurs in northern Africa (figs. 4, 5). Males of *lutea* lack the blunt tooth found on the inner margin of the mandible of *dives* males. In *lutea* males the length of flagellomere I is greater than

* The scutal hair is rubbed off in the male, and also the two females.

the least interocular distance. In *dives* males flagellomere 1 is equal to or less than the least interocular distance. The penis valves also display good differences between the two species (compare figs. 3 and 6).

*Eremochares kohlii* GUSSAKOVSKIJ, based on a female from Central Turkestan, may be a synonym of *lutea* as suggested by the clypeal outline figured in KOHL (1907, plate 10, fig. 74), however, there is a large gap between their known ranges. The other species of *Eremochares*, *mirabilis* (GUSSAKOVSKIJ) and *ferghanica* (GUSSAKOVSKIJ) also are known only from southern and southwestern Asia. I have seen females of *mirabilis* and they are immediately separable from *lutea* and *dives* by the narrower least interocular distance. In *mirabilis* the length of flagellomere 1 is greater than the least interocular distance (40 : 35), whereas in *lutea* and *dives* females flagellomere 1 is much shorter than the least interocular distance (*lutea*: 38 : 51; *dives*: 30 : 45). The clypeus in *mirabilis* is not notched. *E. mirabilis* females are of course very easy to recognize because of the very dense covering of appressed silver hair on the head and thorax and the lack of black color on the legs and abdomen.

## LITERATURE CITED

GUSSAKOVSKIJ, V., 1928, Sphecidarum species novae, Bull. Inst. Zool. Appl. Phytopathol., 4, p. 3–19.

KOHL, F. F., 1907, Die Hymenopterengruppe der Sphecinen, III: Monographie der Gattung *Ammophila* W. KIRBY, Ann. Naturhist. Hofmus. Wien, 22, p. 228–382.

MENKE, A. S., 1966, The genera of the *Ammophilini*, Canad. Entomol, 98, p. 147–152.