Belgian Journal of Entomology 4 (2002) : *105-112*

Notes on the *Platypalpus luteoloides* complex in Central Asia (Diptera Hybotidae) : an example of latitudinal variation in the Palaearctic

by Igor SHAMSHEV[1] and Patrick GROOTAERT

Department of Entomology, Royal Belgian Institute of Natural Sciences, Vautierstreet 29, B-1000 Brussels, Belgium.

[1] permanent address : All-Russian Institute of Plant Protection, Schosse Podbel'skogo, 3, 188620 St. Petersburg-Pushkin, Russia.

Summary

The latitudinal variation of *Platypalpus* in the *luteoloides* complex is examined. Although no significant external somatic characters could be found, there is a gradation in the bristling of the left epandrial lamella. Two species are distinguished : *P. kandybinae* sp. nov. from Kyrgyzstan and *P. luteoloides* GROOTAERT, 1983, with a distribution from western Europe till Mongolia. The eastern representatives of *P. luteoloides* have slightly different male genitalia.

Introduction

Almost no records on *Platypalpus* are available from Central Asia (SHAMSHEV, 1998). We had the chance to examine a few specimens of yellow species related to *P. albicornis* and *P. luteoloides* from Tajikistan, Kyrgizstan and central Mongolia which are present in the collections of the Zoological Institute of St. Petersburg. Ordinarily these yellow species are quite rare in western Europe and therefore it seems worthwhile to examine the relationship between such distant populations.

Within the *P. pallidiventris* group (sensu CHVÁLA, 1975; GROOTAERT & CHVÁLA, 1992) there is a subgroup of closely related species which we could call the "*albicornis*"-group. They are characterised by a pale white to yellowish white third antennal segment, a rather large, white, generally rounded palpus set with white bristly hairs. The thorax is generally dark in ground-colour covered by a whitish dusting. However, there are also a few completely yellow species (yellow thorax) as well such as *P. luteolus* and *P. luteoloides*. The abdominal terga are often broadly dusted and the male

genitalia have long bristles on the side of the left epandrial lamella. These bristles are evenly set along the whole left border or grouped on a tubercle.

All the material under study here from Central Asia resembles *P. luteoloides* quite well in the somatic characters. However, when studying the male genitalia we could distinghuish two species. A male and female from Tajikistan and a single male from Mongolia are considered to belong to *P. luteoloides*. The small differences in the male genitalia are attributed to variability. A male and two females from Kyrgyzstan which somatically resemble *P. luteoloides* very well, have more distinct male genitalia, and are therefore considered as new species. The long bristles on the left epandrial lamella are grouped on a tubercle in the new species while they cover almost the whole border in the true *P. luteoloides*.

The *P. luteoloides* complex can be characterised by species having a white third antennal segment being about twice as long as deep; the arista is white in the basal half but darkened in the apical half; the palpi are white and circular and set with white bristly hairs; the thorax is completely yellow as well as the legs and the abdomen. The mid tibia has a short spur. The male genitalia are yellow but the hypandrium is generally black and sometimes the left epandrial lamella too.

***Platypalpus kandybinae* sp. n.**
Figs 1-6

Material examined

Holotype male : Kyrgyzstan : Kirg. [=Kirgizskaya] SSR, Issyk-kul [Lake], Cholpon-ata, lake shore, 8.VIII. [1]972, leg. Kandybina.
Paratypes : 2 females, same data as in the holotype. All in the collections of the Zoological Institute at Sankt Petersburg.

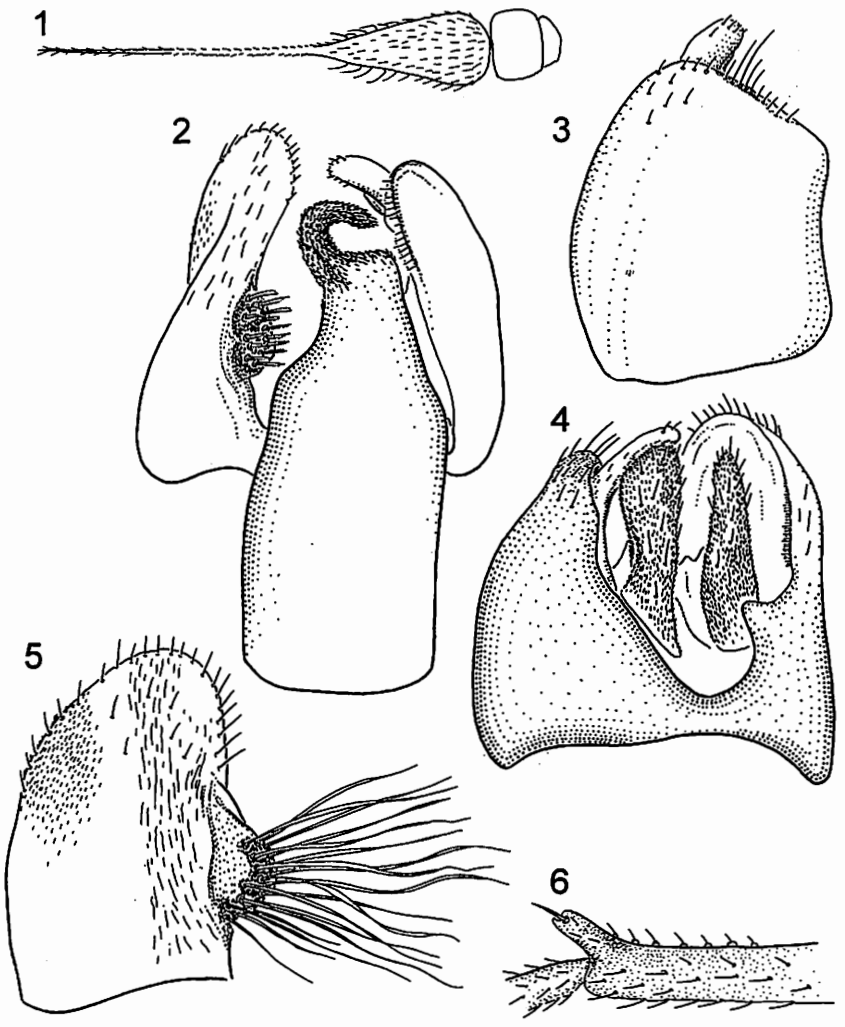
Diagnosis

Yellow species with a single pair of vertical bristles. Third antennal segment white, 2-2.5 times as long as deep. Acrostichals biseriate. Legs also completely yellow. A short black spur on mid tibia in both sexes. Hypopygium yellow, only the hypandrium with a black tip. The long bristles on the side of the left epandrial lammela grouped on a basal tubercle.

Male

Length body : 1.8 mm; wing : 2.25 mm

Frons broad, broader than second antennal segment; almost parallel-sided, just widening a little at the level of the ocellar callus. Frons covered with a dense white dusting. Anterior ocellars long, mid ocellars short. A pair of long white verticals. Face as wide as front of frons, white dusted. Occiput black in ground-colour and covered with a grey dusting. Postocular hairs white, long



Figs 1-6. *P. kandybinae* sp. n. holotype male. 1. antenna; 2. hypandrium; 3. right epandrial lamella; 4. hypopygium; 5. left epandrial lamella; 6. spur on mid tibia.

and densely set below. Third antennal segment (Fig. 1) white, 2-2.5 times as long as wide. Arista 1.5 times third segment; basal half white, apical half brown (not black). Proboscis yellow. Palpus white, large, circular and set with white bristly hairs.

Thorax yellow in ground-colour and thinly yellowish-grey dusted except for the polished sternopleura. All hairs and bristles yellow. A long humeral, acrostichals biseriate, the rows distinctly separated. Dorsocentrals uniseriate ending in 2 pairs of longer prescutellars. The last pair very long. Two notopleurals, the uppermost the longest, a postalar and a pair of very long

scutellars with a fine hair at each side.

Legs including all bristles yellow, only claws black. Anterior coxae white dusted in front. Fore femora wider than mid femora; thickened in basal third and ventrally set with bristles a little short than width of femur. Mid femur long and more slender than fore femur with posteroventral bristles nearly as long as femur is wide. Mid tibia with ventral spiny bristles at most brown and with a short black blunt spur (Fig. 6). Hind femur long and slender with ventral hairs about as long as femur is wide.

Wing faintly yellowish with yellow veins. R4+5 and m ending parallel in costa. Cross veins separated. Halters yellowish white.

Abdomen yellow in ground-colour with terga broadly dusted. Hypopygium (Figs 2-4) yellow, but tip of hypandrium contrastingly black. Left periadrial lamella with long bristles at side grouped on a basal tubercle (Fig. 5).

Female

Length body : 2.5 mm; wing : 2.8 mm.

Identical to male. Arista completely brownish. Segment 8, 9 and cerci contrastingly brownish compared to the rest of the abdomen. Spur like in male, nearly as long as tibia is wide.

Derivatio nominis

The new species is dedicated to the collector Dr. M. KANDYBINA, specialist in Tephritidae.

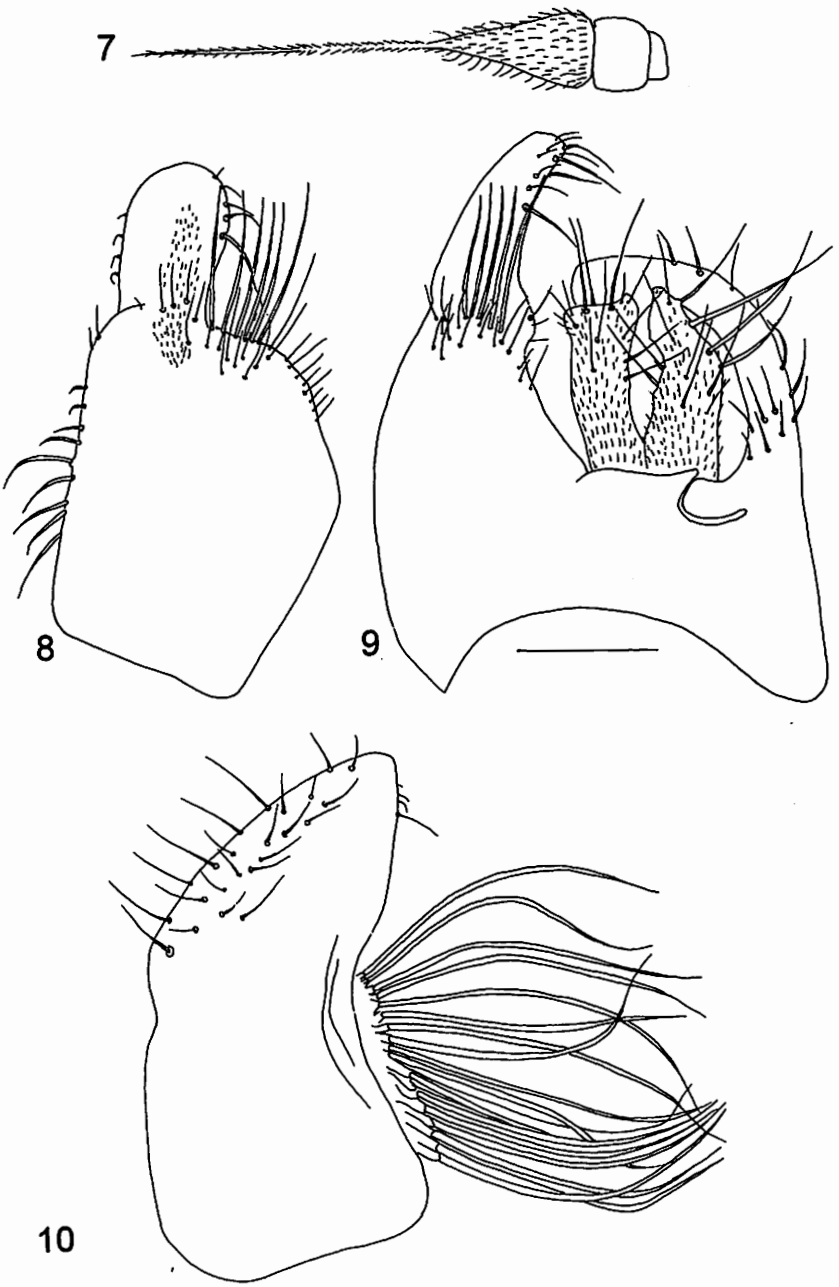
Discussion

As said in the introduction the differences with *P. luteoloides* in the somatic characters are minor, but the bristles on the left epandrial lamella are confined to a basal tubercle insteas of occupying the whole left border of the lamella.

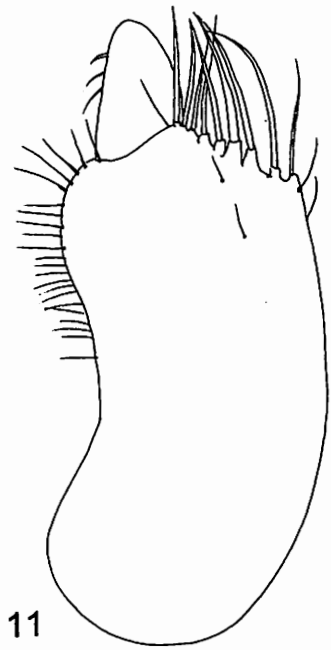
***P. luteoloides* GROOTAERT, 1983**
Figs 7-10, 11-13

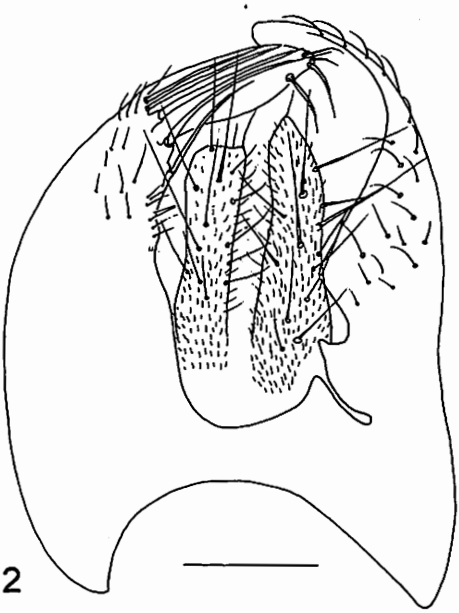
Bull. Annls Soc. r. belge Ent., 119.

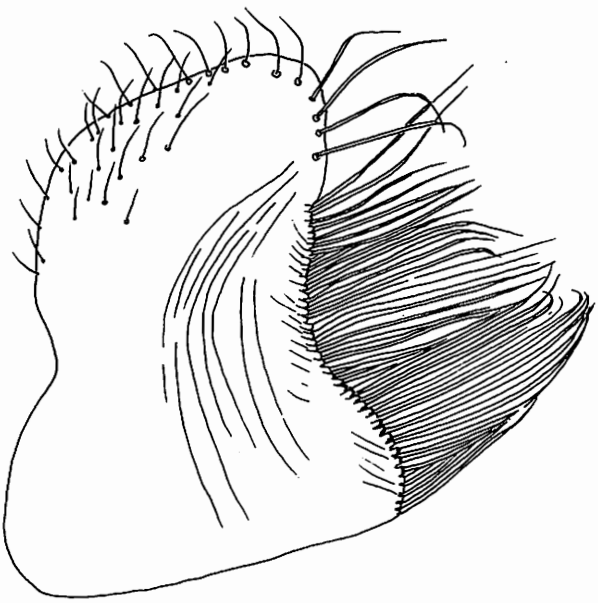
Material examined : 1 male, Tajikistan : u. [=urochische] Kondara, 1100 m, d. [=dolina, =valley] Varzoba [Varzob River], Tadzh. [=Tajikistan], 14.VI. [1]939, leg. Gussakovsky; 1 female, same data (coll. St. Petersburg). Mongolia : Eastern Aimak, Numregin-Gol River, 32 km SE of Salkhit, 23.VII.1971 (leg. Kerzhner) (coll. St. Petersburg).



Figs 7-10. *P. luteoloides* Grootaert male (Mongolia). 7. antenna; 8. right epandrial lamella; 9. hypopygium; 10. left epandrial lamella. Scale 0.1 mm.







Figs 11-13. *P. luteoloides* male (Wemmel, Belgium). 11. right epandrial lamella; 12. hypopygium; 13. left epandrial lamella. Scale 0.1 mm.

Additional material : Belgium : 37 specimens in 7 localities : Bilzen, Bléret, Gembloux, Ingelmunster, Ottignies, St. Martens-Latem, Wemmel (coll. RBINS).

Diagnosis

Yellow species with a single pair of vertical bristles. Third antennal segment white, 2-2.5 times as long as deep. Acrostichals biseriate. Legs also completely yellow. A short black spur on mid tibia in both sexes. Hypopoygium yellow, but left epandrial lamella brown to black. The long bristles on the side of the left epandrial lammela are not grouped on a basal tubercle but regularly set along the border of the lamella.

As can be seen by comparing the figures of the male genitalia of *P. luteoloides* from Tajikistan and Mongolia (Figs 7-10) with those of *P. luteoloides* from Belgium (Figs 11-13), there are a number of differences. The Belgian specimens have the bristles at the base of the surtstylus of the right epandrial lamella on pronounced tubercles (Fig. 11) and the border of the left epandrial lamella has a regularly set of bristles from its base to the tip of the lamella (Fig. 13). The eastern Palaearctic specimens have weaker bristles on the top of the right epandrial lamella and lack long bristles near the tip of the left epandrial lamella (Fig. 10).

We attribute these differences in the genitalia to latitudinal variation. Further we could not find somatic differences and therefore we consider them conspecific. They could be considered as subspecies, but this is a taxon that is not often used in *Platypalpus*.

Distribution

P. luteoloides seems to have a wide distribution from Belgium in the west, over Czechia and at least till Tajikistan and Mongolia in the East.

General discussion

The *P. luteoloides* complex is a group of two species, with an intermediate form. The group is easily recognised being composed of completely yellow species, with a whitish third antennal segment, white round palpi and a short spur on the middle tibia. The bristles on the border of the left epandrial lamella are set from the base till the top, linear regularly spaced below or can be grouped on a basal tubercle. There is an intermediate form in Tajikistan and Mongolia lacking some bristles in the apical area, but not having the basal tubercle.

Acknowledgements

The first author acknowledges a grant from the Belgian ministry : Services for Scientific, Technological and Cultural Affairs.

References

CHVÁLA M., 1975. - The Tachydromiinae (Dipt. Empididae) of Fennoscandia and Denmark. *Fauna Entomologica Scandinavica*, 3, 336 pp. Klampenborg.

GROOTAERT P., 1983. - Description of three new *Platypalpus* species (Diptera Empididae) from Belgium. *Bulletin et Annales de la Société royale belge d'Entomologie*, 119 : 123-137.

GROOTAERT P. & CHVÁLA M., 1992. - Monograph of the genus *Platypalpus* (Diptera : Empidoidea, Hybotidae) of the Mediterranean region and the Canary Islands. *Acta Universitatis Carolinae - Biologica*, 36 (1-2) : 226 pp.

SHAMSHEV I.V., 1998. - Two new species of the genus *Platypalpus* Macquart (Diptera, Empidoidea : Hybotidae) from Middle Asia. *International Journal of Dipterological Research*, 9 : 123-126.