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## ESTONIAN SPECIES OF THE GENUS PLATYPALPUS MCQ. (DIPTERA, EMPIDIDAE)

### Introduction

The genus **Platypalpus** Mcq. is numerous in species. The Palaearctic Region alone has more than 200 species. Most of the species of the subfamily **Tachydromiinae** belong to this genus.

The first detailed list of the Estonian species of the **Platypalpus** was published by R. Frey in 1924. During the 50 subsequent years there was no other publications on the Estonian species of this genus and other **Empididae**. The new data on the Estonian species of **Platypalpus** were given by the author of the present article in "Определитель насекомых Европейской части СССР, т. 5, ч. 2" (Ковалев, 1969). The specific character of the book did not allow to draw a strict line between the distribution of the **Platypalpus** species in Estonia and in the adjacent territories. Some additional data were presented by me not long ago (Ковалев, 1971; Ковалев, 1973).

At the present time it is practically possible to give a complete list or the differential key of the Estonian species of **Platypalpus**. It is worth to note that up to now this dipterous genus was fairly well known only in England, Sweden, Finland and Czechoslovakia. All together, 51 species of this genus have been discovered in Estonia. The elaboration by Frey (1924) comprises all together 13 species, only. The present study is based on the revision of a great amount of materials deposited at the Zoological Institute in Leningrad, the Institute of Zoology and Botany in Tartu, Tartu University and the Institute of Evolutionary Morphology and Ecology of Animals in Moscow.

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### Notes to the key

The new key to the Estonian **Platypalpus** species is not an abridgement of the table in "Определитель". This key comprises several species new in the USSR, the species described by me in 1971 and one species new to science. Besides, a few synonyms established lately by M. Chvála (1971, 1972) are included therein. The structure of the differential key is not the same as in "Определитель", and is apparently better.

Some species from the neighbouring Leningrad Region which have not been found in Estonia, as yet, are included in the key. In such cases the remark "Not found in Estonia" is given in the key. I think that all these species will be found in Estonia. The northern and north-eastern elements in the fauna of the Leningrad Region are not included in the key.

In the key I refer to illustrations in other popular publications, where it is not possible to overburden the paper with drawings. The description of the new species and the notes on several old species (asterisked in the key) are given below the key. Detailed data on the distribution of the *Platypalpus* species in Estonia and ecological information will be published in "Entomoloogiline kogumik" (Tartu).

### Key to Estonian *Platypalpus*-species

- 1(10). Thorax yellow: mesonotum sometimes extensively darkened or with a median dark stripe, but pleura always yellow.
- 2(7). Thorax uniformly yellow.
- 3(4). Occiput yellow. Third and fourth joints of front tarsi extraordinarily dilated (Ковалев, 1969, Fig. 381, 4). A posteroventral row of yellowish bristles behind the double row of small black spines beneath middle femora. 2.25—3.5. **P. luteus** Mg.
- 4(3). Occiput dull grey. Front tarsi normal, slender. No posteroventral row of such bristles beneath middle femora.
- 5(6). No humeral bristle, acrostichals and dorsocentrals; thoracic hairs evenly distributed over disc. 2.5. **P. nonstriatus** Strobl
- 6(5). Humeral bristle present; mesonotum with biserial hair-like acrostichals separated from uniserial dorsocentrals by bare stripe. 2—2.3. **P. exilis** Mg.
- 7(2). Mesonotum brown or with a median dark stripe.
- 8(9). Mesonotum yellow or reddish yellow with a black median stripe, extending in front from yellow humeri and more narrow behind. Pleura slightly dusted with thin greyish pollen, but sternopleura with a shining blackish patch. No acrostichals and dorsocentrals; mesonotum universally clothed with short hairs. 2—2.5. **P. pectoralis** Fl.
- 9(8). Mesonotum brown or dark brown; humeri yellow. Pleura for the greater part shining yellow; sternopleura without a blackish patch. Acrostichals in four rows separated from dorsocentrals by wide bare stripe. (If pleura reddish brown with greyish pollen, only sternopleura shining, see rubric 27, *P. ciliaris*.) 2.5—3. **P. miki** Beck.
- 10(1). Mesonotum and pleura black or greyish.
- 11(38). Disc of the mesonotum at least on the hinder half shining black, without a trace of dust or microscopic pile.
- 12(31). No divergent outer vertical bristles (Ковалев, 1969, Figs. 372, 373).
- 13(18). Antennae pale on at least two basal joints.
- 14(15). Pleura shining black with silvery pubescence on upper narrow part of mesopleura and sternopleura. No humeral bristle. Middle femora without a posteroventral row of yellow bristles behind the double row of small spines. 1.9—2.7. **P. unguiculatus** Ztt.
- 15(14). Pleura with exception of major part of sternopleura dusted greyish. Humeral bristle present. Middle femora with a posteroventral row of such bristles.

- 16(17). Frons shining black. Middle femora at least twice stouter than front ones, with two rows of black spines beneath close together, becoming a single row towards base of femur. Mesonotum almost entirely polished black. 2.5—3.

**P. pseudociliaris** Strobl (*calcaratus* Collin)

- 17(16). Frons light grey. Middle femora only slightly stouter than front ones; spines in two simple rows beneath of middle femora yellow. Mesonotum light grey with a large shining black patch on hinder half. 1.8—2.6.

**P. fenestelis** V. Kovalev (not found in Estonia. Recorded in the USSR from the Leningrad, Moscow and Kaluga Regions).

- 18(13). Antennae entirely black.

- 19(22). Arista white and thickened from pubescence. Third antennal joint at least 3.5 times as long as deep at base.

- 20(21). Legs mainly brownish yellow, somewhat darkened, but front coxae always yellow. Frons in front of ocellus not wider than that ocellus. Arista slightly longer than all three joints of antennae together. 1.8—3.

**P. albisetosa** Panzer

- 21(20). Legs including front coxae black or brownish black. Frons in front of ocellus wider than that ocellus. Arista quite as long as third antennal joint. 2—3.

**P. albocapillatus** Flt.

- 22(19). Arista black or brown, not thickened. Third antennal joint not more than 2.5 times as long as deep at base.

- 23(28). Middle tibiae without an apical projection, or with a short (shorter than tibia is deep) blunt apical projection.

- 24(27). Middle femora with a posteroventral row of bristles behind the double row of small black spines. Mesonotum evenly and densely clothed with short pale hairs, no acrostichals and dorsocentrals. Apical half of middle tibia not clothed with a pollen or short pile.

- 25(26). Frons brilliantly shining black. Third antennal joint 1.4—1.8 times as long as deep at base, arista 2.5—3 times longer than third joint. Middle femora with a posteroventral row of very fine yellowish bristles. 2.7—4.

**P. maculus** Ztt.

- 26(25). Frons with a slight coating of greyish pollen, dull. Third antennal joint 2.2—2.3 times as long as deep at base, arista less than twice longer than third joint. Middle femora with a posteroventral row of blackish bristles. 2.5—3.5.

**P. pallipes** Flt.

- 27(24). Middle femora without a posteroventral row of such bristles. Mesonotum with biserial hair-like acrostichals separated from uniserial dorsocentrals by bare stripes. Apical half of middle tibia clothed with a dense dull yellowish brown pollen. 2.5—3.4.

**P. ciliaris** Flt.

- 28(23). Middle tibiae with a long (longer than tibia is deep) sharp-pointed apical projection.

- 29(30). Frons brilliantly shining black. Legs uniformly yellow. Pleura with exception of shining black sternopleura dusted greyish. 2.2—3.

**P. fuscicornis** Ztt.

- 30(29). Frons faintly dusted by greyish pollen. Legs mainly black or brownish black. Mesopleura, sternopleura and hypopleura shining black, not dusted greyish. Mesonotum with a narrow dusted median stripe. 1.5—2. See also rubric 66.

*P. niger* Mg., ab. *doormani* Theowald

- 31(12). Two pairs of vertical bristles, inner pair convergent, outer divergent (Ковалев, 1969, Fig. 364).

- 32(33). Middle femora without a posteroventral row of brownish bristles behind the double row of spines. Pleura with exception of shining sternopleura dusted greyish. Frons and vertex dulled by greyish pollen. 2—3.

*P. longicornis* Mg.

- 33(32). Middle femora with a posteroventral row of such bristles. Sternopleura, hypopleura and sometimes some other parts of pleura shining black, not dusted greyish. Vertex shining black, not pollinose.

- 34(37). Third antennal joint more than 3 times as long as greatest depth and more than half as long again as arista. Frons greyish pollinose from ocellar triangle to front margin, vertex and eye-margins shining black. Pleura pilose except the polished black sternopleura and hypopleura.

- 35(36). Male: hind tibiae simple (Fig. 3). Left cercus — Fig. 4. Female: front coxae yellow or reddish yellow with only base a little obscured. At most apical half of middle femora above brown. 2—2.5.

*P. nigritarsis* FlL.

- 36(35). Male: hind tibiae with a slight thickening on basal third and a shallow excision about middle beneath (Fig. 2). Left cercus — Fig. 1. Female: front coxae except apex brown or blackish. Middle femora above brown nearly throughout. 1.9—2.5.

*P. excisus* Beck.\* (new for the USSR).

- 37(34). Third antennal joint 1.5 times as long as deep at base, arista longer than third antennal joint. Frons polished black except extreme front margin which is greyish. Pleura mainly shining black, only slightly dusted behind front coxae. 1.2—1.7.

*P. sylviculus* Collin (not found in Estonia. Distribution: the Leningrad Region, Western Europe).

- 38(11). Mesonotum entirely dusted with a thin or dense pollen, rarely with a narrow polished black median stripe.

- 39(62). Two pairs of vertical bristles, inner pair convergent, outer divergent (Ковалев, 1969, Fig. 364).

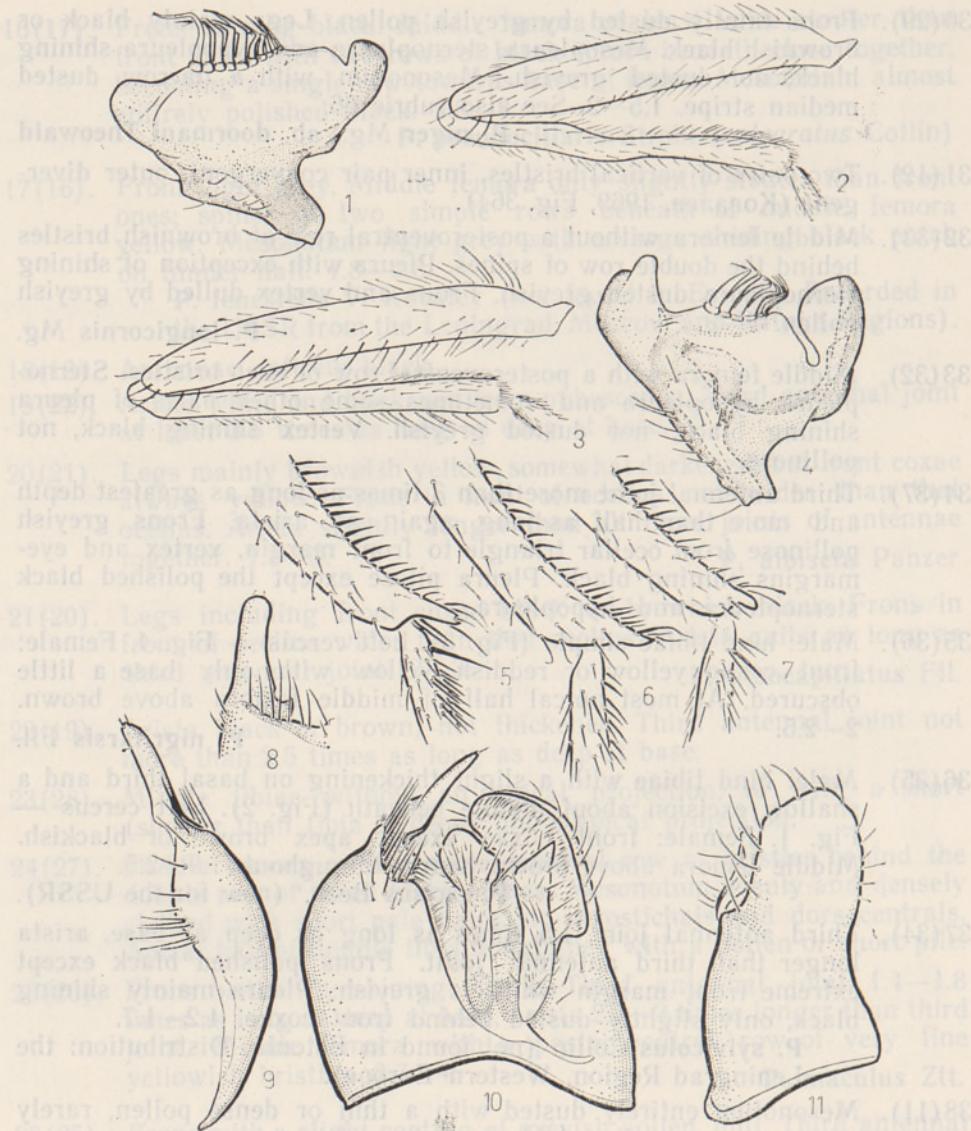
- 40(55). Middle femora with a posteroventral row of bristles behind the double row of small spines.

- 41(42). Hypopleura brilliantly shining black, not dusted. Middle tibiae with a long (longer than tibia is deep) sharp-pointed apical projection. Thoracic bristles black. Acrostichals biserial. 1.7—2.1.

*P. pallidicoxa* Frey (*agilellus* Collin)

- 42(41). Hypopleura dusted with a thin or dense pollen, dull or slightly shining.

- 43(46). Jowls rather widened and entirely dusted greyish. Humeri with several bristles, one longer than others. Middle tibiae with a short (not longer than tibia is deep) blunt or sharp-pointed apical projection (Figs. 5—7).



Figs. 1—11: *Platypalpus* Mcq. 1—2; *P. excisus* Beck., male (1 — left cercus, 2 — hind leg, 3—4. *P. nigritarsis* Fl., male, 3 — hind leg, 4 — left cercus, 5—6. *P. sordidus* Ztt., tip of middle tibia, 5 — female, 6 — male, 7 — *P. brevicornis* Ztt., tip of middle tibia, 8—11. *P. pulicarius* Mg., male genitalia, 8 — apical process to right lamella of epandrium, dextral view, 9 — right lamella, ventral view, 10—11 — epandrium and cerci, 10 — dorsal view, 11 — sinistral view).

44(45). Frons as broad above antennae as third antennal joint is deep. Palpi yellow. Femora in female yellow, in male predominantly brown to dark brown. Middle tibiae in both sexes with very short (much shorter than tibia is deep) blunt apical projection (Fig. 7). 1.9—2.7.

**P. brevicornis** Ztt. (*P. brevicornis* Frey (1913, 1943), Kovalev (1969), nec Zetterstedt, 1842, is in reality *P. hackmani* Chvála (1972). The latter was described from South Sweden,

North Finland and Kola Peninsula. I have seen one specimen of *P. hackmani* from the Leningrad Region).

- 45(44). Frons not so broad, as broad above antennae as second antennal joint is deep. Palpi blackish. Femora brown in both sexes. Middle tibiae with a long (almost as long as tibia is deep) apical projection, which is sharp-pointed in male (Fig. 6), blunt in female (Fig. 5). 2—3.4.

***P. sordidus*** Ztt. (new for Estonia).

- 46(43). Jowls linear, shining black. Humeri with a single distinct bristle. Middle tibiae with a long (longer than tibia is deep) sharp-pointed apical projection.

- 47(52). All coxae yellow, posterior four coxae sometimes brownish at base. Femora yellow.

- 48(49). Third antennal joint long, at least 2.8 times as long as deep. Acrostichals irregularly tri- or quadrilateral (at least in front). One distinct pair of praescutellar dorsocentral bristles. 2—3.5.

***P. maculipes*** Mg.

- 49(48). Third antennal joint short, not more than 2.3 times as long as deep. Acrostichals biserial. Two pairs of distinct praescutellar dorsocentral bristles, the front pair smaller than the hind, but bristle-like.

- 50(51). Frons as broad above antennae as third antennal joint. Palpi yellow. Thoracic bristles vary in the colour from yellow to dark brown, hairs yellow. Male genitalia — Ковалев, 1971, Figs. 15—18. 2—2.7.

***P. balticus*** V. Kovalev

- 51(50). Frons not so broad, as broad above antennae as second antennal joint is deep. Palpi blackish. All thoracic bristles and hairs black. Male genitalia — Figs. 25—28. 1.8—2.2.

***P. nigrosetosus*** Strobl\* (*pallidicoxa* V. Kovalev (1969), nec Frey (1913)).

- 52(47). At least posterior four coxae black or brownish black. Femora usually extensively obscured.

- 53(54). Humeri greyish pollinose, slightly shining. Legs in both sexes mostly yellow, hind femora on basal half yellow, on apical half black. Male: hind femora with a longitudinal row of light hairs beneath, these hairs being represented towards base only by dark bristles. Smaller species: 1.8—2.6.

***P. pseudorapidus*** V. Kovalev

- 54(53). Humeri at sides without coat of pollen, brilliantly shining black (Fig. 20). Legs in male mostly yellow, in female reddish brown or dark brown with black patches. Hind femora in male yellow, with a wide brown ring about middle, beneath with a longitudinal row of black spinose bristles throughout. Larger species: 2.2—3.2.

***P. agilis*** Mg.

- 55(40). Middle femora without a posteroventral row of bristles.

- 56(59). Third antennal joint at least 3.5 times as long as deep, more than half as long again as the arista. Acrostichals biserial, sometimes irregularly triserial in front; distance between the rows of acrostichals narrower than bare stripe between acrostichals and dorsocentrals.

- 57(58). Arista 3—4.2 times shorter than third antennal joint. Wings with brownish-black veins. Male: genitalia — Figs. 16—19. Female: eighth abdominal sternite wholly shining black; its hind margin concave at middle, with minute point projections at sides. 2.2—3.

**P. brunneitibia** Strobl (new for Estonia).

- 58(57). Arista 1.5—2 times shorter than third antennal joint. Veins from pale yellow to brownish yellow. Male: genitalia — Figs. 21—24. Female: eighth sternite dusted greyish wholly or posteriorly only, its hind-margin straight or rounded. 2—3.1.

**P. difficilis** Frey (*interjectus* Lundbeck)

- 59(56). Third antennal joint not more than twice as long as deep and shorter than arista. Acrostichals irregularly quadriserial on a broad median stripe that is broader than the bare stripe between outside acrostichals and dorsocentrals.

- 60(61). Middle tibiae with a rather long (slightly shorter than tibia is deep) sharp-pointed apical projection. Tarsi yellow with last joint or two brownish. Male genitalia — Figs. 8—11. 1.2—2.

**P. pulicarius** Mg. (not found in Estonia. Recorded in the USSR from the Leningrad Region).

- 61(60). Middle tibiae with a short (much shorter than tibia is deep) blunt apical projection (Ковалев, 1971, Fig. 23). Tarsal joints faintly brownish annulated, fourth and fifth joints of middle and hind tarsi nearly all brown; sometimes front tarsi almost wholly darkened. Male genitalia — Ковалев, 1971, Figs. 24—27. 1.7—2.3.

**P. stackelbergi** V. Kovalev (not found in Estonia. Recorded from the Leningrad Region only).

- 62(39). No distinct divergent vertical bristles (Ковалев, 1969, Fig. 373).

- 63(90). Antennae entirely black or brownish black, rarely two basal joints dark reddish brown (not yellow).

- 64(67). Humeri at sides shining black, not pollinose. Humeral bristle very short, hair-like.

- 65(66). Pleura with the exception of shining black sternopleural patch dusted greyish. Front tibia with a slightly projecting rim at tip beneath (Ковалев, 1969, Fig. 381, 10). Mesonotum with a narrow, not dusted, median stripe. 1.7—2.5.

**P. minutus** Mg.

- 66(65). Pleura mainly shining, not dusted. Front tibia simple. Mesonotum without a shining median stripe. 1.5—2. See also rubric 30.

**P. niger** Mg.

- 67(64). Humeri entirely greyish pollinose. Humeral bristle large, bristle-like.

- 68(73). Apical projection to middle tibia short (shorter than tibia is deep), blunt, trowel-shaped when viewed from beneath, except in male only of *cothurnatus*, where it is blunt with a tiny curved point at tip (Ковалев, 1969, Fig. 374, 3). Smaller species (0.9—2.3) with entirely pale femora and tibiae.

- 69(72). Dorsocentrals not numerous, only 5—6 in number, strong, much longer than acrostichals. Middle tibia in both sexes with a very small (much shorter than tibia is deep) apical projection; this

projection always without a curved point at tip. Male: left lamella of epandrium without any marked projection (Ковалев, 1971, Figs. 1—2). Very small species (0.9—1.7).

- 70(71). All tarsal joints with distinct black annulations. Distance between rows of acrostichals about twice narrower than bare stripe between acrostichals and dorsocentrals. Crossveins separated by a distance about twice shorter than length of vein  $m-cu$ . Male: left lamella of epandrium with small hairs on right side near tip, at tip with a very short membranous projection, on left side with a fringe of long pale hairs (Ковалев, 1971, Fig. 2). 0.9—1.7.

*P. cryptospinus* Frey (*tantulus* Collin)

- 71(70). Tarsi entirely yellow, or two last joints darkened, brownish. Rows of acrostichals rather wide apart; distance between rows 1.5—1.7 times narrower than bare stripe between acrostichals and dorsocentrals. Crossveins separated by a distance at most 1.5 times shorter than length of  $m-cu$ . Male: left lamella of epandrium with several long bristles on right side near tip, at tip with a long curved projection, on left side with inconspicuous hairs (Ковалев, 1971, Fig. 1). 1.1—1.4.

*P. aliterolamellatus* V. Kovalev (not found in Estonia. Recorded in the USSR from the Leningrad Region only).

- 72(69). Dorsocentrals numerous, short, a trifle longer than acrostichals. Apical projection to middle tibia longer (almost as long as tibia is deep), in male with a tiny curved point at tip (Ковалев, 1969, Fig. 374, 3). In male legs with tarsi scarcely annulated, just the tips of joints faintly brownish; fourth and fifth joints or fifth joint only brown. In female tarsi often practically not annulated. Male genitalia — Ковалев, 1969, Fig. 376, 1—3. Left lamella of epandrium with a large blunt projection on left side (Ковалев, 1969, Fig. 376, 3). Not very small species (1.5—2.3).

*P. cothurnatus* Mcq.

- 73(68). Middle tibia with a long (longer than tibia is deep) sharp-pointed apical projection (Ковалев, 1969, Fig. 374, 4).

- 71(77). Acrostichals at least in front quadrilateral (not bi-triserial), distance between rows of acrostichals wider than bare stripe between rows of acrostichals and dorsocentrals.

- 75(76). Acrostichals quadrilateral throughout. Legs yellow, often very extensively darkened, but all trochanters always yellow. Wings not darkened. Male genitalia — Ковалев, 1969, Fig. 378, 6—9. 2.4—4.

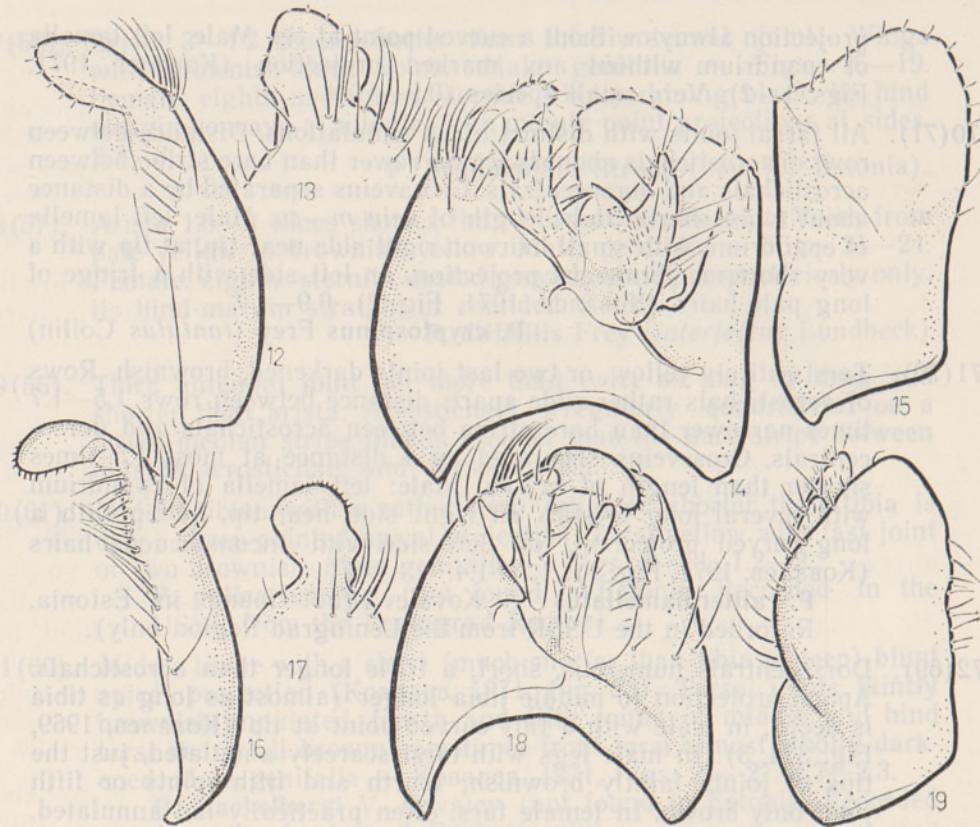
*P. annulatus* Flt.

- 76(75). Acrostichals about middle of mesonotum less distinctly quadrilateral, often only biserial. Legs usually darker, mainly black; trochanters black. Wings brownish. Male genitalia — Ковалев, 1969, Fig. 378, 11—13. 3—3.5.

*P. melancholicus* Collin (new for Estonia).

- 77(74). Acrostichals biserial, sometimes irregularly bi-triserial; distance between rows of acrostichals usually narrower than bare stripe between rows of acrostichals and dorsocentrals. In doubtful cases other characters do not agree with rubric 74.

- 78(87). Third antennal joint at least 2.5 times as long as deep. 2 or 3 notopleural bristles.



Figs. 12—19: *Platypalpus* Mcq., male genitalia; 12—15: *P. difficilis* Frey (12 — right lamella of epandrium, ventral view, 13 — apical process to right lamella, dextral view, 14 — epandrium and cerci, dorsal view, 15 — left lamella of epandrium, sinistral view, 16—19: *P. brunneitibia* Strobl; 16 — right lamella of epandrium, ventral view, 17 — apical process to right lamella, dextral view, 18—19 — epandrium and cerci, 18 — dorsal view, 19 — sinistral view).

79(80). Palpi whitish or pale yellow. Abdomen not greatly sclerotized, shining brown, often somewhat yellowish about base and tip. 2 or 3 basal joints of middle and hind tarsi entirely yellow, without dark apical annulations. Male genitalia — Ковалев, 1971, Figs. 3—6.

***P. insperatus* V. Kovalev**

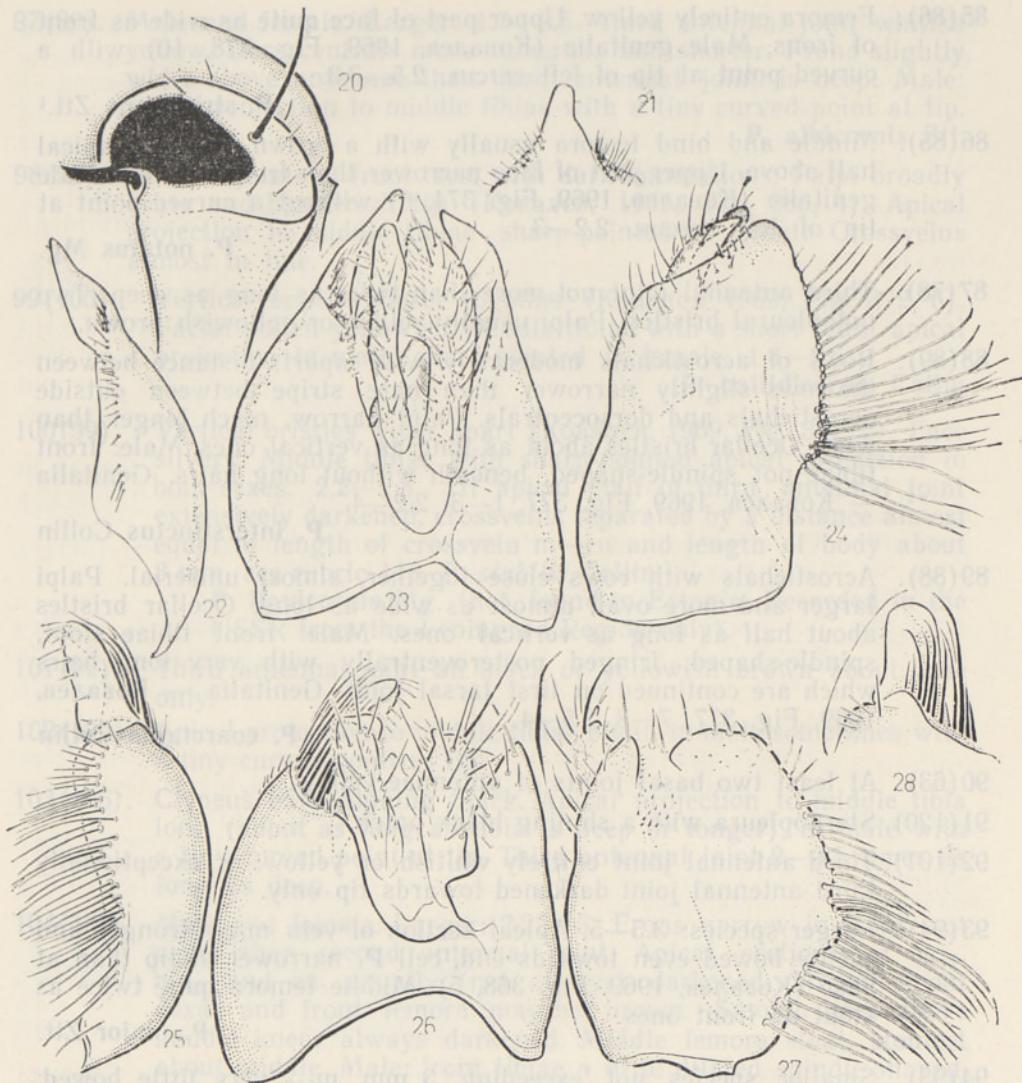
80(79). Palpi blackish, covered with grey pile. Abdomen black. Tips of all tarsal joints conspicuously darkened.

81(82). Clypeus bare, shining black. Legs partly darkened: front coxae towards base and all of four posterior coxae brownish black, middle and hind femora with a brown patch at least on apical half above. Male genitalia — Figs. 21—24. 2.2—2.3.

***P. clypeatus*, sp. n.**

82(81). Clypeus covered with greyish pile.

83(84). Distance of vertical bristles apart barely 1.5 times width of frons opposite front ocellus (Ковалев, 1969, Fig. 373, 1). 3 notopleural bristles (anterodorsal notopleural bristle present). Abdomen with



Figs. 20—28: *Platypalpus* Mcq. (20 — *P. agilis* Mg., right humeral callus, 21—24 — *P. clypeatus*, sp. n., paratype from Voore (Institute of Evolutionary Morphology and Ecology of Animals), male genitalia. 21 — apical process to right lamella of epandrium, dextral view, 22 — right lamella, ventral view, 23—24 — epandrium and cerci, 23 — dorsal view, 24 — sinistral view, 25—28 — *P. nigrosetosus* Strobl, male genitalia. 25 — right lamella of epandrium, ventral view, 26—27 — epandrium and cerci, 26 — dorsal view, 27 — sinistral view, 28 — apical projection to right lamella of epandrium, dextral view).

small slightly dusted patches at basal sides of first and second tergits. Male: front tibiae somewhat dilated spindle-shaped. 2.5—2.9.

***P. infectus* Collin**

- 84(83). Distance of vertical bristles apart about twice width of frons opposite front ocellus (Ковалев, 1969, Fig. 373, 2). Only 2 notopleural bristles (anterodorsal notopleural bristle absent). Second tergit without dusted patches. Male: front tibiae not dilated.

- 85(86). Femora entirely yellow. Upper part of face quite as wide as front of frons. Male genitalia (Ковалев, 1969, Fig. 378, 10) with a curved point at tip of left cercus. 2.5—3.3.

**P. strigifrons** Ztt.<sup>1</sup>

- 86(85). Middle and hind femora usually with a brown patch on apical half above. Upper part of face narrower than front of frons. Male genitalia (Ковалев, 1969, Fig. 374, 6) without a curved point at tip of left cercus. 2.2—3.

**P. notatus** Mg.

- 87(78). Third antennal joint not more than twice as long as deep. Two notopleural bristles. Palpi usually yellow or yellowish brown.

- 88(89). Rows of acrostichals moderately wide apart; distance between the rows slightly narrower than bare stripe between outside acrostichals and dorsocentrals. Palpi narrow, much longer than wide. Ocellar bristles about as long as vertical ones. Male: front tibiae not spindle-shaped, beneath without long hairs. Genitalia — Ковалев, 1969, Fig. 377, 1—3. 2.2—4.

**P. interstinctus** Collin

- 89(88). Acrostichals with rows close together, almost uniserial. Palpi larger and more oval, almost as wide as long. Ocellar bristles about half as long as vertical ones. Male: front tibiae stout, spindle-shaped, fringed posteroventrally with very long hairs which are continued on first tarsal joint. Genitalia — Ковалев, 1969, Fig. 377, 7—8. 2.5—4.

**P. coarctatus** Collin

- 90(63). At least two basal joints of antennae yellow.

- 91(120). Sternopleura with a shining black patch.

- 92(101). Third antennal joint entirely whitish or yellow, or exceptionally third antennal joint darkened towards tip only.

- 93(94). Larger species: 3.5—5. Apical section of vein  $m_{1+2}$  strongly and evenly bowed even towards end, cell  $P_1$  narrower at tip than at base (Ковалев, 1969, Fig. 368, 5). Middle femora quite twice as stout as front ones.

**P. major** Ztt.

- 94(93). Smaller species not exceeding 3 mm.  $m_{1+2}$  very little bowed, cell  $P_1$  not narrower at tip than at base. Middle femora not stouter or very little stouter than front ones.

- 95(98). Tarsal joints yellow, without dark annulations; fifth joint often darkened. Palpi not so broadly ovate and more pointed at tip (Ковалев, 1969, Fig. 380, 3). Middle tibiae with a blunt apical projection; this projection sometimes with a curved point at tip.

- 96(97). Only male. Smaller: 1.5. Third antennal joint dark yellow. Dorsocentrals not numerous, only 6—7 in number, much longer than acrostichals. Frons above antennae at most as wide as second antennal joint is deep. Apical projection to middle tibiae without a tiny curved point at tip. Female unknown.

**P. ochrocerus** Collin (not found in Estonia. Recorded in the USSR from the Leningrad Region only).

<sup>1</sup> In Estonian material I have seen a single female from Isl. Aegna, belonging probably to *P. strigifrons*, but the females of *P. strigifrons* and *P. notatus* can be distinguished with difficulty.

- 97(96). Male and female. Larger: 1.7—2.5. Third antennal joint whitish yellow. Dorsocentrals more numerous and shorter. Frons slightly wider above antennae than third antennal joint is deep. Male: apical projection to middle tibiae with a tiny curved point at tip. **P. albicornis** Ztt.
- 98(95). At least joints of front tarsi with dark annulations. Palpi broadly ovate and blunter at tip (Ковалев, 1969, Fig. 380, 4). Apical projection to middle tibiae sharp-pointed or blunt. Crossveins almost in line.
- 99(100). Vertical bristles closer together (Ковалев, 1969, Fig. 372, 6). Facial pollen yellowish. Middle tibiae with a short blunt apical projection in male, sharp-pointed in female. 1.8—2.5. **P. pallidicornis** Collin
- 100(99). Vertical bristles wider apart (Ковалев, 1969, Fig. 372, 5). Face silvery. Middle tibiae with sharp-pointed apical projection in both sexes. 2.2—2.8. (If apical half of third antennal joint extensively darkened, crossveins separated by a distance almost equal to length of crossvein  $m-cu$  and length of body about 3 mm, see rubric 118, *P. stabilis* Collin.)  
**P. flavigornis** Mg. (not found in Estonia. Recorded in the USSR from the Leningrad Region only).
- 101(92). Third antennal joint all black or yellowish brown about base only.
- 102(109). Apical projection to middle tibiae blunt, in male sometimes with a tiny curved point at tip.
- 103(106). Clypeus bare, shining black. Apical projection to middle tibia long (about as long as tibia is deep or longer), in male with a tiny curved point at tip. Third antennal joint 2—3.5 times as long as deep.
- 104(105). Male and female. Larger: 2.25—3. Frons narrow in front, not wider than second antennal joint. Apical sections of  $r_{4+5}$ ,  $m_{1+2}$  and  $cu_1$  usually (not always) darkened, brown. Front coxae and front femora may be brown. Smooth area above middle knees always darkened. Middle femora stout, stoutest about middle. Male: front tibiae a little dilated spindle-shaped, and with a fringe of rather long hairs posteroventrally, continued on to first tarsal joint; the hairs on first tarsal joint longer than this joint is deep. **P. annulipes** Mg.\*
- 105(104). Only female. Smaller: 1.5—2. Frons wider, as wide in front as third antennal joint. Wings with pale yellow veins. All coxae and femora entirely yellow. Smooth area above middle knees not darkened, sometimes with a small brownish spot at each side. Middle femora a little stout, stoutest on basal half. Front tibiae not dilated; hairs beneath front tibiae and first joint of front tarsi short; the hairs on first tarsal joint much shorter than this joint is deep.  
**P. subtilis** Collin, male. See rubric 114, female.
- 106(103). Clypeus covered with pale pile. Apical projection to middle tibia short (much shorter than tibia is deep), simple, in both sexes without a tiny curved point at tip. Third antennal joint at most 2 times as long as deep. Small species: 1.2—2.

- 107(108). Tarsi with tip of first joint and whole of other joints dark brown, or all tarsal joints with dark annulations, especially distinctly on front legs; in that case each dark ring on second — fourth joints of front tarsi in both sexes narrower than half length of joint. Middle knees with small blackish spot at each side. Third antennal joint about 1.5 times as long as deep. Male genitalia — Ковалев, 1969, Fig. 376, 4—6. 1.2—2.

**P. articulatus** Mcq.\*

- 108(107). Joints of front tarsi with black annulations. First — fourth joints of middle and hind tarsi entirely yellow, fifth joint black; in male width of each black ring on second — fourth joints of front tarsi wider than half length of joint. Middle knees without dark spots, or with a pale brownish spot in front only. Third antennal joint about twice as long as deep. Male genitalia — Ковалев, 1969, Fig. 376, 7—9. 2.25.

**P. articulatoides** Frey (not found in Estonia. Recorded in the USSR from Latvia and the Leningrad Region).

- 109(102). Apical projection to middle tibiae sharp-pointed, long (longer than tibia is deep) (Ковалев, 1969, Fig. 374, 4).

- 110(113). Front and hind tibiae with several small blackish bristles above. 3 notopleural bristles (anterodorsal notopleural bristle present).

- 111(112). Male: genitalia — Ковалев, 1969, Fig. 380, 1—2. Tarsi with distinct brownish black annulations to all joints. Front tibiae not dilated. Female: third antennal joint all black. Only base of first and second tergits at sides dusted greyish. 2—3.

**P. pallidiventris** Mg.<sup>2</sup>

- 112(111). Male: genitalia — Ковалев, 1969, Fig. 380, 5—7. Tarsi yellow, only fifth joint broadly black at tip. Front tibiae spindle-shaped (dilated at middle). Female: third antennal joint yellowish or reddish about base. Abdomen often with more conspicuous, narrow, dusted grey side band at base of each tergit. 2.6—3.25.

**P. longiseta** Ztt. (*extricatus* Collin)

- 113(110). Front and hind tibiae without blackish bristles above. At most 2 notopleural bristles (anterodorsal notopleural bristle not developed).

- 114(115). Only female. Tarsi with distinct black or brownish black annulations to all joints. Third antennal joint 2—2.5 times as long as deep. Frons in front almost as wide as third antennal joint. 1.5—2.

**P. subtilis** Collin, male. See rubric 105, male.

- 115(114). Male and female. Front tarsi at most with only last 1—2 joints darkened, or faint brownish annulations to all joints. (In last case length of body about 3 mm and frons parallel-sided, narrow, not wider than second antennal joint — *P. stabilis* Collin.) Third antennal joint usually not more than twice as long as deep.

<sup>2</sup> The females of *P. pallidiventris* and *P. longiseta* cannot be always well distinguished.

116(117). At least front tarsi entirely yellow. Front tibiae not dilated. Vein  $cu_2$  straight; anal vein long, even longer than hind basal cell (Ковалев, 1969, Fig. 372, 2). Frons narrow in front, gradually widening to front ocellus. Not very small species (2.2—2.8).

*P. ecalceatus* Ztt.

117(116). Front tarsi at least with 1 or 2 last joints blackish, or faint brownish annulations to all joints.

118(119). Larger species (about 3). Tarsi with faint brownish annulations. Third antennal joint obviously yellowish at base. Frons parallel-sided. Dorsocentrals numerous, short, slightly longer than dorsocentrals. Vein  $cu_2$  recurrent and slightly S-shaped; anal cell short, much shorter than hind basal cell (Ковалев, 1969, Fig. 372, 1).

*P. stabilis* Collin (new in Estonia).

119(118). Very small species (1.2—2). Legs yellow with fourth tarsal joint at tip, and fifth joint more extensively dark, brown or black. Third antennal joint entirely black. Frons widening to front ocellus. Dorsocentrals not numerous, only 6—7 in number, long, about twice as long as acrostichals.

*P. calceatus* Mg.

120(91). Sternopleura entirely dusted greyish.

121(122). Jowls rather widened and entirely dusted greyish. Frons very narrow, in front a trifle wider than width of front ocellus. Third antennal joint entirely black. 2.4—4.2.

*P. candicans* Fl.

122(121). Jowls linear, shining black. Frons in front at least twice wider than width of front ocellus. Third antennal joint yellow or pale brown at least about base.

123(124). Apical sections of  $r_{4+5}$  and  $m_{1+2}$  parallel. Dorsocentrals much longer than acrostichals, uniserial. Male genitalia — Ковалев, 1969, Fig. 381, 1—3. 2.2—3.

*P. verralli* Collin

124(123). Apical section of  $m_{1+2}$  curved up and ending in tip of wing close to end of  $r_{4+5}$  (Ковалев, 1969, Fig. 361, 7). Dorsocentrals a trifle longer than acrostichals, irregularly biserial. Male genitalia — Ковалев, 1969, Fig. 381, 7—9. 3.2—4.5, *forma denominata* — 2.2—2.5.

*P. cursitans* F.

#### Description of new species and notes on several old species

*Platypalpus clypeatus* V. Kovalev, sp. n.

Medium-sized greyish species of the *cursitans-pallidiventris* group. Antennae and palpi blackish, third antennal joint 3.5 times as long as deep. Clypeus bare, shining black. Acrostichals biserial. Legs yellow, partly darkened, middle tibiae with a long sharp-pointed apical projection. Abdominal tergits without any greyish markings.

Male. Frons, vertex and occiput black, faintly dusted greyish. Frons somewhat narrow, in front at most as wide as second antennal joint,

widening towards ocellar triangle, opposite front ocellus 1.6—2 times as wide as above antennae. Bristles yellow. No divergent outer vertical bristles. Inner vertical bristles as long as ocellar ones or shorter; distance of vertical bristles apart 1.3—1.6 times the width of vertex opposite hind ocelli; ocellar callus with 1—2 pairs of somewhat long divergent hairs behind ocellar bristles. Occiput clothed with rather long pale hairs. Face light grey, above narrower than front of frons; clypeus bare, shining black. Jowls black, linear. Antennae brownish black; third joint elongate-triangular, 3.5 times as long as deep; arista dark, not thickened, as long as third antennal joint or slightly longer. Proboscis black, not so long as head is high. Palpi blackish, quite small, elongate egg-shaped, clothed with a pale depressed pile, also bearing several erect hairs and two pale apical bristles.

Thorax black. Mesonotum slightly shining, rather thinly dusted grey, with a slight brass tinge; pleura dusted a lighter grey and without a metallic tinge; sternopleura in front with a large shining black patch. Bristles and hairs yellow. Acrostichals and dorsocentrals not numerous, rather long, acrostichals regularly biserial on a rather broad median stripe that is narrower (sometimes a little narrower) than bare line between acrostichals and dorsocentrals; in prescutellar depression rows of acrostichals diverging; dorsocentrals practically uniserial, ending behind in one long prescutellar bristle with a short one in front of it; sparse small hairs outside dorsocentrals. A distinct upcurved humeral, 2—3 notopleural bristles and several short hairs in notopleural depression, a postalar, four scutellar bristles, with apical pair being longer.

Legs yellow, partly darkened. Front coxae at base and four posterior coxae except apex dark brown. Trochanters with black markings at tip. Front femora darkened above and outside, sometimes very faintly; middle femora with a broad brown ring on apical half to two-thirds, more extensively obscured above; hind femur with a narrower ring on apical one third to half; front and hind knees with a small black spot at each side; middle ones entirely darkened above. Tips of hind tibiae darkened. Tarsi not sharply annulated: tip of first tarsal joint, at least apical half of second joint and nearly all last three joints brownish black. Front coxae whitish pilose in front. Bristles and hairs pale yellow; very small preapical bristles on femora sometimes brownish. Front femora stout, 2.3—2.6 times stouter than tibiae, anteroventrally and posteroventrally with two rows of bristly hairs extending over the whole length of femur. Middle femora 1.2—1.4 times as deep as front ones and 3 times stouter than middle tibiae, stoutest about middle, in front on apical half with 2—4 thin bristles; black spines of front row beneath not shorter than those of hind row; spines of both rows being represented towards base by pale bristles; behind these rows a posteroventral fringe of 6—8 long (about as long as femur is deep) bristles; in front of rows of spines (anteroventrally) a row of much shorter bristly hairs. Hind femora beneath (or anteroventrally) with a row of outstanding hairs throughout; these hairs not shorter than depth of femur. Front tibiae slightly thickened, clothed with short (not as long as tibia is deep) adpressed hairs, sometimes with small brown bristly hairs above. Middle tibiae nearly  $\frac{3}{4}$  as long as femur, curved, with a blackish long (longer than tibia is deep) sharp-pointed apical projection. Hind tibiae clothed with simple hairs; the length of these hairs at most as long as tibia is deep.

Wings hyaline with yellow or pale brown veins. Costal bristle yellow. Apical sections of  $r_{4+5}$  and  $m_{1+2}$  diverging about base and parallel or a

little converging about tip. Hind basal cell very slightly longer than front. Vein  $c_{u_2}$  somewhat recurrent. Anal vein very faint with basal section indistinct. Squamae orange-brown with pale yellow fringes. Halteres pale yellow with darker yellow stems.

Abdomen black or brownish black; all tergits without any greyish markings or bands. Pubescence pale yellow, short and inconspicuous except at sides and on last 2 or 3 segments. Genitalia (Figs. 21—24) sub-shining black, moderate in size,  $\frac{1}{3}$ — $\frac{1}{2}$  as long as rest abdomen, elongate, narrower than last abdominal segments. Right lamella of epandrium with right side bearing a blunt projection about middle; no long bristles near base of apical process. Left side of left lamella fringed on apical  $\frac{3}{5}$ , with long pale hairs. Cerci do not overlap lamellae of epandrium; both of about the same length, blunt, the left one more stout, when seen from above dilated on apical half.

**Female.** Hairs on front and hind legs not as long as in male. Seventh abdominal segment and eighth tergit grey; eighth sternite shining black with a grey median stripe; both last abdominal segments short. Terminal papillae at least as long as seventh and eighth segments together, near tip with several dark erect hairs.

Length: body 2.2—2.3 mm (holotype 2.2 mm), wing 2.6—2.9 mm (holotype 2.7 mm).

*P. clypeatus* closely resembles *P. notatus* Mg., which, however, has clypeus greyish pollinose, frons opposite front ocellus only 1.3—1.5 times as wide as in front, while the third antennal joint is rather shorter (about 2.5 times as long as deep).

**Distribution:** Estonia, ?GFR.

**Dates:** June.

**Holotype**, ♂: Estonia, Lake Võrtsjärv, Voore 6. VI 1957, leg. H. Remm; in the Zoological Institute.

**Paratypes**, 1 ♂, 1 ♀ of the same data; in the Institute of Evolutionary Morphology and Ecology of Animals. 1 ♂, "Harcynia, Saxesen" [?GFR, Harz; coll. Saxesen]; in the Zoological Institute. Third antennal joint broken in all specimens excl. the paratype labelled "Harcynia".

### **Platypalpus excisus** Beck.

Collin (1961) synonymized this species with *P. nigritarsis* Fl. It seems to me, however, with respect to a number of constant characters, that *P. nigritarsis* and *P. excisus* are two different species. The difference in the shape of hind tibiae and structure of the genitalia in male sex are constant (cf. Figs. 1—2 and 3—4). In the USSR I have found *P. excisus* in the material from Estonia, the Leningrad Region and Crimea. I have seen the specimens of this species from Asch (Czechoslovakia) and from the Austrian Alps ("Styria alp., coll. Strobl").

### **P. nigrosetosus** Strobl

Dr. M. Chvála kindly informed me that the species recorded by me in "Определитель" as *P. pallidicoxa* Frey is in fact *P. nigrosetosus* described by Strobl (1893) on the basis of the female specimens only. Later (1898) Strobl also described the male sex of *P. nigrosetosus* but it was a mis-identification. According to the documentary material in Strobl Collection revised by Dr. Chvála, these males belong to different species. So description of the male sex of true *P. nigrosetosus* Strobl (1893) has not been given as yet.

I have found only the females of this little-known species in the Estonian material, but both sexes are represented in the neighbouring Leningrad Region. The drawings of the male genitalia of *P. nigrosetosus* are given here for the first time (Figs. 25–28).

### **Platypalpus annulipes Mg.**

*P. annulipes* Mg. is a polymorphic species. The specimens from Estonia differ from West-European by shorter third antennal joint (about 2.5 times as long as deep in male and 2.2–2.5 times in female) and shorter arista (almost twice longer than third antennal joint). In West-European specimens the third antennal joint in the male is 3–3.5 times as long as deep, in the female 2.7–3 times. Collin (1961) used the difference in the length of antennae of *P. annulipes* and *P. subtilis* in the differential key of British *Platypalpus*-species. It is impossible to use this character for the identification of Estonian specimens of these two species. *P. annulipes* in Estonia usually belong to the pale-legged form (see Collin, 1961). They resemble *subtilis* in the colour of the legs. The smaller male specimens of our form *P. annulipes* due to two above-mentioned characters can be hardly distinguished from *P. subtilis*. But there is no doubt that the Estonian form of *P. annulipes* is conspecific with the West-European specimens. The structure of the male genitalia in Estonia *P. annulipes* is the same as that of the West-European specimens.

### **Platypalpus articulatus Mcq.**

In some specimens from Estonia and the Leningrad Region and in one male and one female from Admont (Strobl's Collection in the Zoological Institute) tarsi are extensively darkened: first tarsal joint brownish, others wholly dark brown without apical annulations. This form is new to science. The structure of male genitalia is the same as that of typical specimens.

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VLADIMIR KOVALEV

PEREKONNA PLATYPALPUS MCQ. (DIPTERA, EMPIDIDAE)  
ESTI LIIGID

## Resümee

Eestist kogutud ulatuslike materjalide põhjal on kindlaks tehtud 51 kärbseliiki perekonnast *Platypalpus* Mcq. Artiklis esitatakse Eesti liikide määramistabel, uue liigi *P. clypeatus* sp. n. kirjeldus ja liigi *P. nigrosetosus* Strobl esmakordelt leitud isase genitaliade joonised. Iseseisva liigina taastatakse *P. excisus* Beck., mida käesoleva ajani loeti ekslikult *P. nigritarsis* Fll. sünöönüümiks. Liigid *P. articulatus* Fll. ja *P. annulipes* Mg. esinevad Eestis ebatüüpiliste vormidena.

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Toimetusse saabunud  
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ВЛАДИМИР КОВАЛЕВ

## ЭСТОНСКИЕ ВИДЫ РОДА PLATYPALPUS MCQ. (DIPTERA, EMPIDIDAE)

## Резюме

Написанная на основании ревизии обширных материалов, собранных на территории Эстонии, статья содержит определительную таблицу эстонских видов рода *Platypalpus*.

Приводятся первоописание *P. clypeatus* sp. n. и рисунки гениталий неизвестного ранее самца *P. nigrosetosus* Strobl. Восстанавливается как самостоятельный вид *P. excisus* Beck., ранее ошибочно сведенный к синониму *P. nigritarsis* Fll. Указывается, что виды *P. articulatus* Fll. и *P. annulipes* Mg. представлены в Эстонии формами, отличающимися от типических.

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