

A Review of the Leaf-Beetle Genus *Psylliodes* Latreille (Coleoptera, Chrysomelidae) from Russia and Neighboring Countries: I. A Key to Subgenera, Species-Groups, and Species

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Abstract—An illustrated key to subgenera, species-groups, and species of *Psylliodes* Latreille from all republics of the former USSR and Mongolia is given. A total of 62 species are included in the key, among which 55 have been recorded from this territory.

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The genus *Psylliodes* Latreille includes about 200 worldwide distributed species (Konstantinov and Vandenberg, 1996). The genus was considered in a significant number of publications; however, some of morphological structures of the genus remain insufficiently studied and its position in the subfamily Galerucinae and classification require specification. In particular, Leonardi's (1970) classification based on examination of 47 species from the Western Palaearctic Region was regarded to be artificial (Nadein, 2005, 2006).

The present study is a stage of realization of a revision of the genus *Psylliodes* within the limits of the fauna of the former USSR and Mongolia. The study includes keys to 62 species of the genus *Psylliodes*. Among these, records of 55 species in the territory have been confirmed by the study, and records of 9 species are rather probable or remain not confirmed. A restricted volume of the paper has not allowed the author to describe groups of species and to state the bases of the classification of the genus.

A KEY TO SUBGENERA OF THE GENUS *PSYLLIODES* LATREILLE

1. Dorsal side (pronotum and elytra) covered with well-visible hairs. Body strongly flattened, pronotum nearly square, sides of elytra in middle parallel (Fig. 126), coloration rufescent brownish. The only species, *Psylliodes pubipennis* Lop. Body length 1.8–1.9 mm *Psyllobactra* Lop.
- Dorsal side glabrous; body varying in shape, always more or less convex 2.

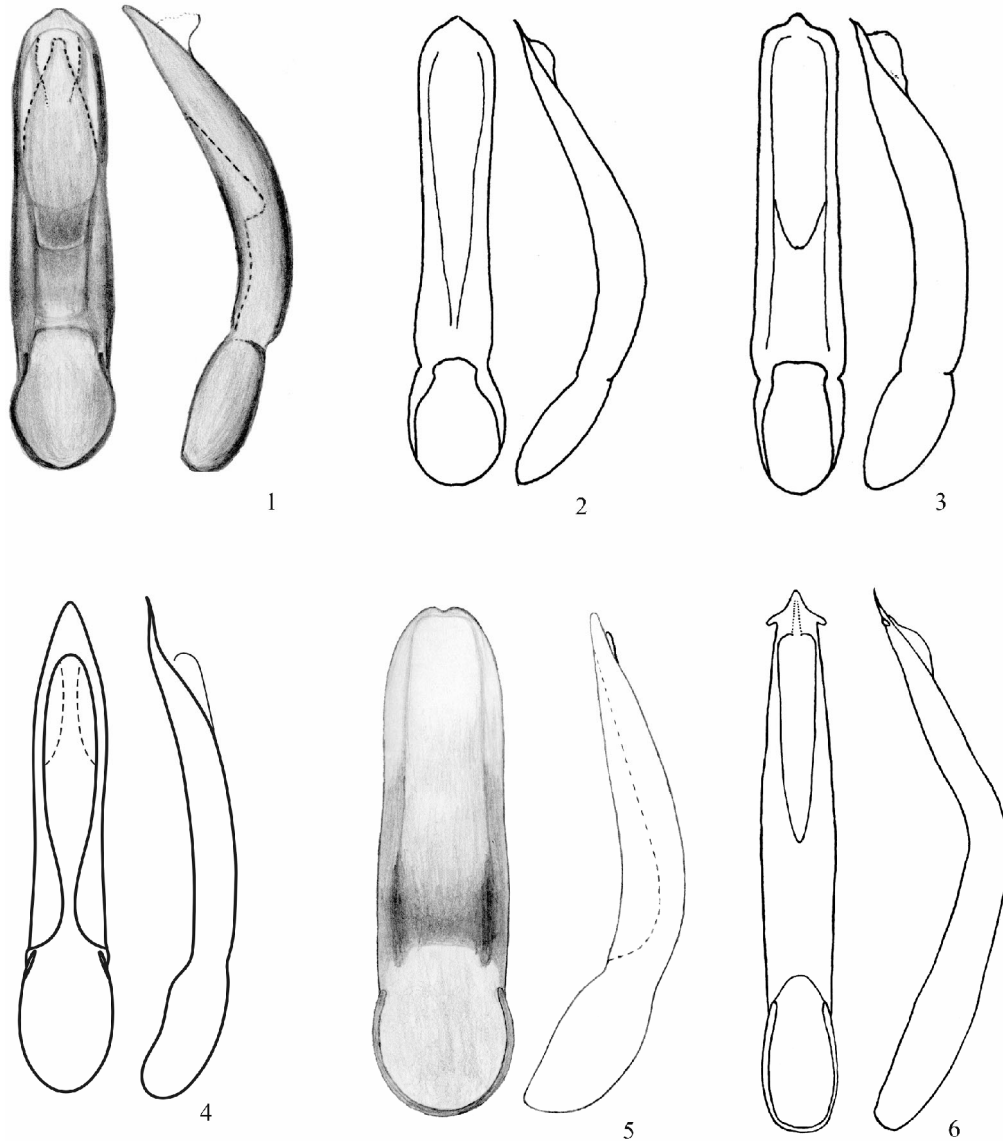
2. Mandible narrow, strongly curved, sickle (Fig. 233); hind tibia narrow, long, saw-shaped; hind tarsus attached in middle of tibia; body elongate, parallel-sided (Fig. 127), moderately convex; rows of punctures very distinct, depressed in striae; head very wide; frontal ridge short and wide, not convex; eyes small; tegmen typical
..... *Semicnema* Wse.
- Mandible wide, weakly curved, not sickle (Fig. 232); hind tibia not saw-shaped; hind tarsus attached near apex of tibiae (on average, in apical 1/3 or less), body with more or less rounded margins *Psylliodes* s. str.

A KEY TO SPECIES OF THE SUBGENUS *SEMICNEMA* WEISE

1. Labrum trapeziform, with roof-like elevated anterior margin; body more flattened; dorsal side dark, metallic-green, shining (subspecies *P. reitteri reitteri* Wse.) or yellow (subspecies *P. reitteri parallela* Wse.). Body length 2.8–3.6 mm. Aedeagus as in Fig. 43, spermatheca as in Fig. 108, contour of body as in Fig. 127 *P. reitteri* s. l.
- Labrum pentagonal, roof-like elevated transversely in middle, coloration entirely black, body more convex. Body length 2–3 mm. Aedeagus as in Fig. 36, tegmen as in Fig. 221, spermatheca as in Fig. 105 *P. macellus* Wse.

A KEY TO GROUPS OF SPECIES OF THE SUBGENUS *PSYLLIODES* S. STR.

1. Supracallinal, subcallinal, and ocular sulci distinct, deep; frontal calli well outlined, convex 2.



Figs. 1–6. *Psylliodes* Latr., aedeagus, ventral and lateral view: (1) *P. aeneolus*, (2) *P. aereus* (after: Doguet, 1994), (3) *P. affinis* (after: Doguet, 1994), (4) *P. agropyri*, (5) *P. amurensis*, (6) *P. analogicus*.

—Sulci of head, especially supracallinal ones, less strongly developed, frequently superficial and indistinct, occasionally absent; frontal calli usually indistinct, weakly convex or flat 3.

2. Elytral apices rufescent red, other parts of dorsal side metallic-green, shining; body narrow, pronotum coarsely and distinctly punctate, tegmen modified. Only species, *P. attenuatus* Koch. Body length 2.0–2.6 mm. Aedeagus as in Fig. 9, tegmen as in Fig. 205, spermatheca as in Fig. 93, head as in Fig. 157 *attenuatus* group.

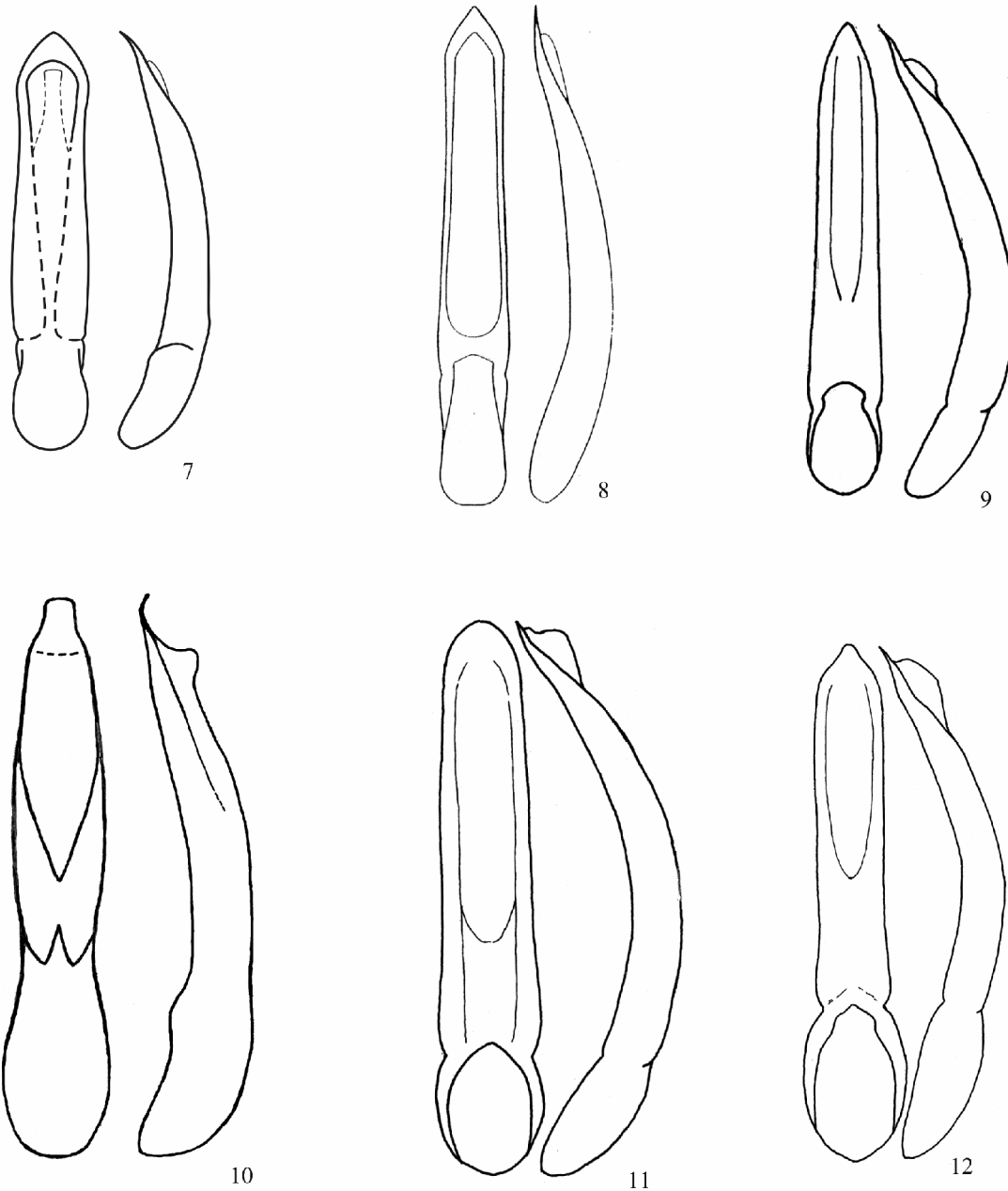
—Elytra entirely metallic-green, blue or nearly black; body wide; pronotum distinctly, but finely punctate;

tegmen typical (Fig. 207); hind tibia narrow, curved (Fig. 141) *hyoscyami* group

3. Labrum pentagonal, transversely roof-like elevated in middle 4.

—Labrum rectangular, flat, not elevated in middle 5.

4. Hind tibia incurved in dorsal view, distance between attachment of hind tarsus and apex of tibia about equal to 1/3, occasionally half of length of tibia (Fig. 139); 1st segment of hind tarsus widened at base and more or less curved; head large and wide; anterior margin of frons usually distinctly triangularly concave; hind wing shortened or strongly



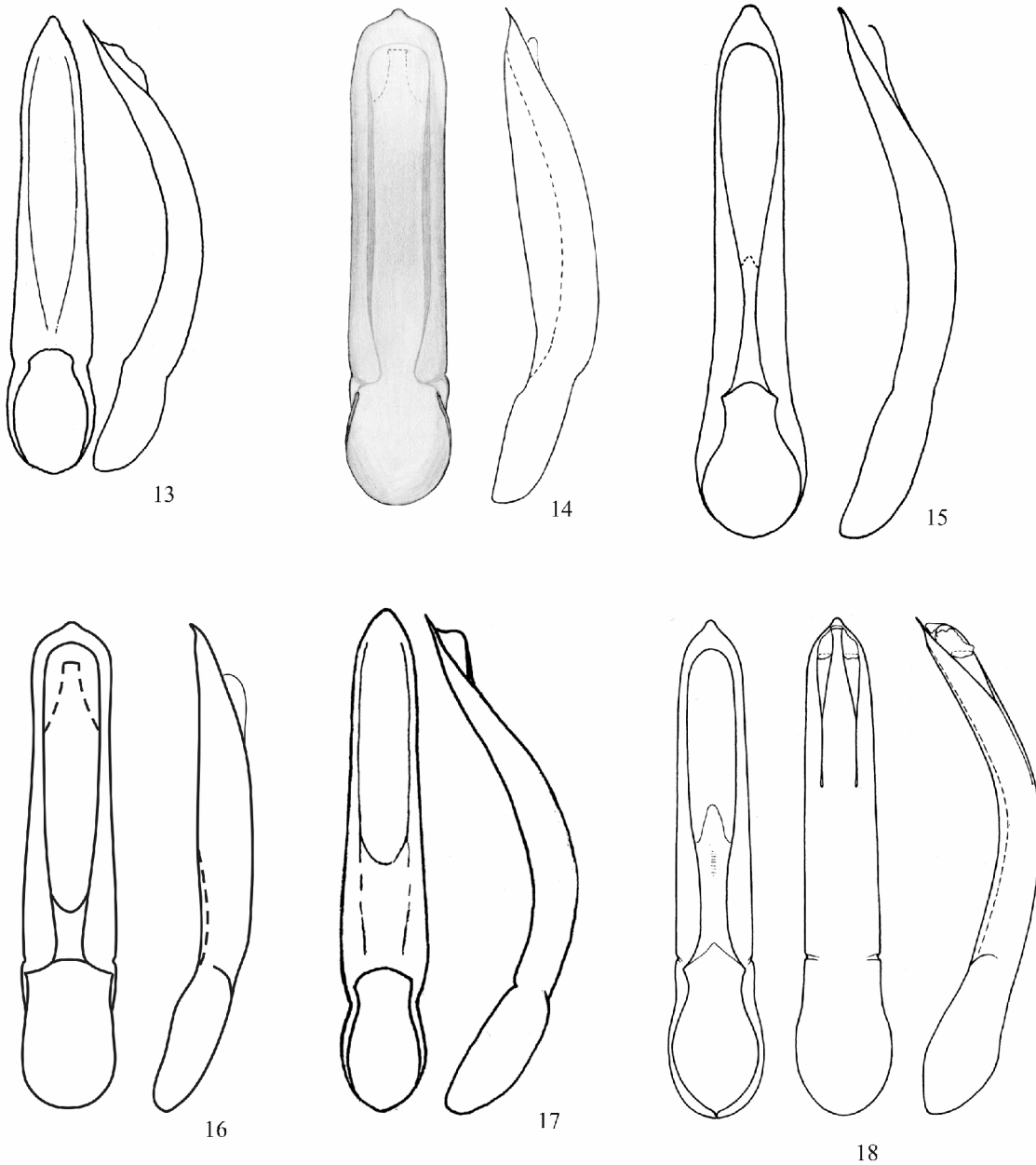
Figs. 7–12. *Psylliodes* Latr., aedeagus, ventral and lateral view: (7) *P. angusticollis*, (8) *P. aristus* (after: Biondi, 1997), (9) *P. attenuatus* (after: Doguet, 1994), (10) *P. brettinghami*, (11) *P. chalcomerus* (after: Doguet, 1994), (12) *P. chrysocephalus* (after: Doguet, 1994).

developed; tegmen modified (Fig. 211); spermatheca with short spherical nodulus; ductus very short and thick; body black, with well-visible or weak metallic shine *cucullatus* group.

—Hind tibia straight in dorsal view, hind tarsus attached at distance from apex of tibia reaching 1/3 length of tibia, occasionally rather closely to apex (Fig. 142); 1st segment of hind tarsus not widened at base, straight; head large, wide; anterior margin of frons straight, not concave; hind wing always

reduced; tegmen modified; spermatheca with longer ductus, not forming loops; nodulus longer, not spherical; body black, usually with weak metallic shine *glaber* group.

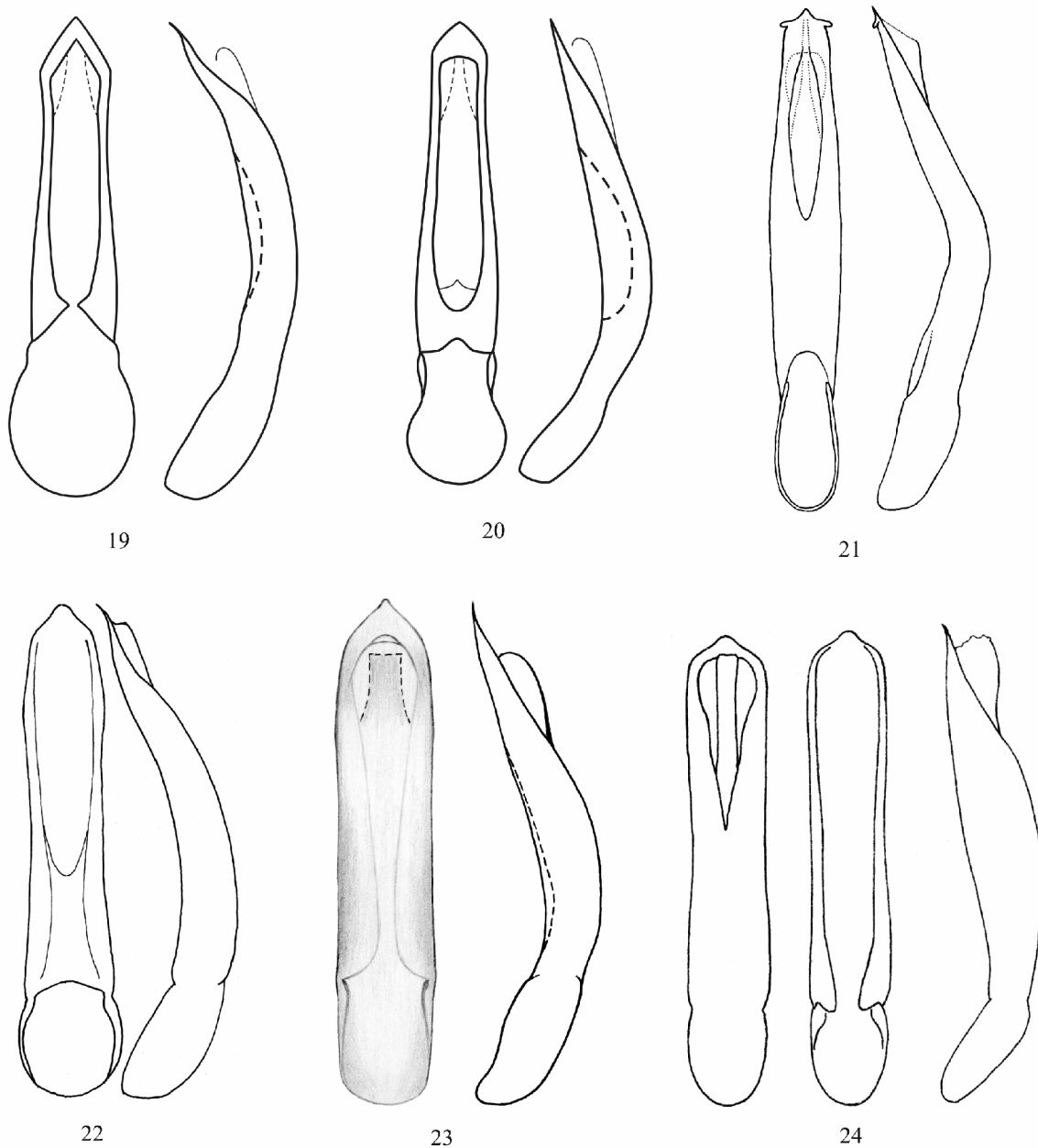
5. Hind tibia strongly saber-shaped curved, wide (Fig. 151); spines in apical third rather fine and sparse; hind femur large, wide, short; apices of frontal calli elongate and merged with areas inward from eyes (Fig. 166); body yellow, rufous, brown, or black, with, or without weak metallic shine 6.



Figs. 13–18. *Psylliodes* Latr., aedeagus, ventral and lateral view: (13) *P. circumdatus* (after: Doguet, 1994), (14) *P. concolor*, (15) *P. crambicola* (after: Leonardi, 1971), (16) *P. cucullatus*, (17) *P. cupreatus* (after: Doguet, 1994), (18) *P. cupreus* (after: Leonardi, 1975).

- Hind tibia straight or weakly curved, not saber-shaped; hind femur usually narrow and more elongate; apices of frontal calli separated from margin of eyes by sulcus; coloration various, frequently with metallic shine: blue, green, bronze 7.
- 6. Body more convex and shorter, tegmen modified (Fig. 224) *pycinus* group.
- Body less convex, longer; tegmen typical (Fig. 220) *luteolus* group.

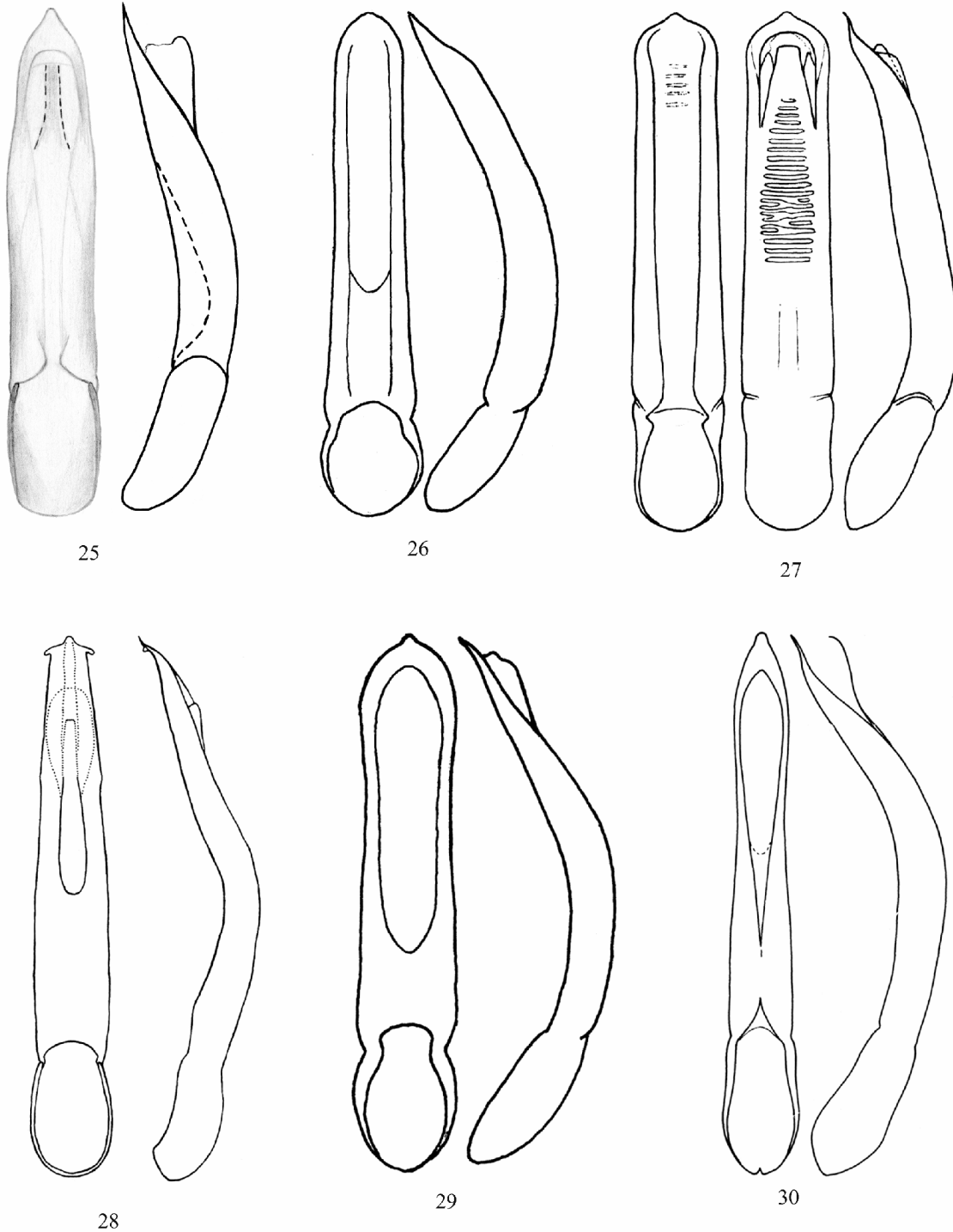
- 7. Elytra yellow or rufous, with dark pattern in form of darkened suture; or suture and elytral apices black 8.
- Dorsal side of various coloration, always without pattern 9.
- 8. Vertex impunctate, with fine distinct shagreenity; only suture of elytra darkened; tegmen typical; spermatheca with curved ductus. Only species, *P. affinis* (Payk.). Body length 2.0–2.6 mm.



Figs. 19–24. *Psylliodes* Latr., aedeagus, ventral and lateral view: (19) *P. cyanescens*, (20) *P. deplanatus*, (21) *P. dilutellus*, (22) *P. dulcamarae* (after: Doguet, 1994), (23) *P. frivaldszkyi*, (24) *P. fusiformis* (after: Warchalowski, 2000).

Aedeagus as in Fig. 3, tegmen as in Fig. 204, spermatheca as in Fig. 58, contour of body as in Fig. 115, hind tibia as in Fig. 133 *affinis* group.
 —Vertex punctate, suture and elytral apices darkened, tegmen modified, spermatheca with straight ductus. Only species, *P. circumdatus* (Duft.). Body length 2.0–2.9 mm. Aedeagus as in Fig. 13, spermatheca as in Fig. 61, contour of body as in Fig. 117 *circumdatus* group.

9. Spiculum ventrale with very wide apical lobe limited at sides by short pointed processes, lobe usually separated from long narrow process by fine line (Fig. 237); vaginal palpus short and wide (Fig. 234); body rather small; head and pronotum large, wide; pronotum usually only slightly narrower than elytral base, one row of well-visible hairs present on both anterior and lateral margins; setae on anterior angles very long; hind wing shortened; spermatheca with long and strongly curved ductus and long nodulus (Fig. 89); aedeagus



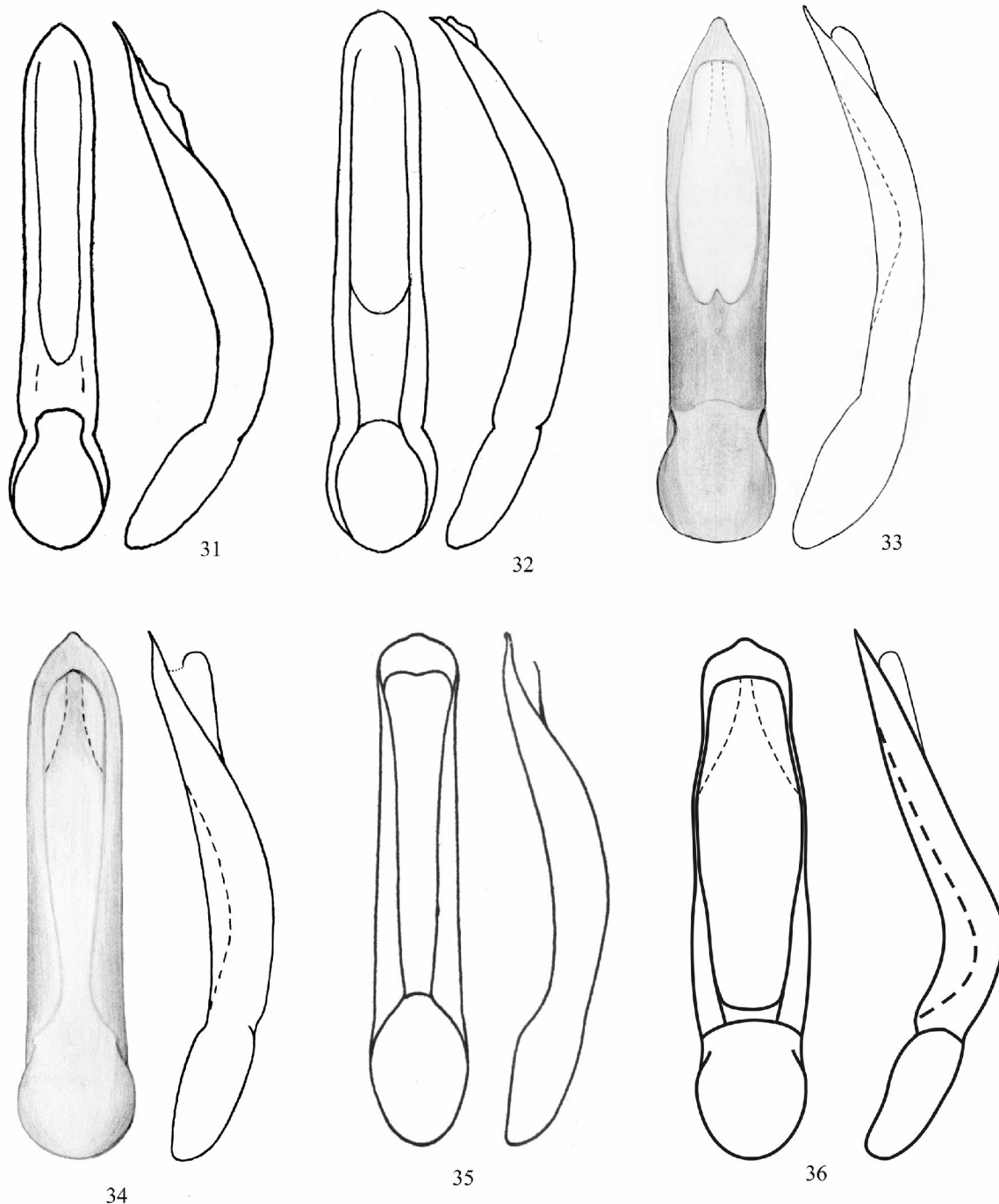
Figs. 25–30. *Psylliodes* Latr., aedeagus, ventral and lateral view: (25) *P. glaber*, (26) *P. hyoscyami* (after: Doguet, 1994), (27) *P. illyricus* (after: Leonardi and Gruev, 1993), (28) *P. infandus*, (29) *P. instabilis* (after: Doguet, 1994), (30) *P. isatidis* (after: Leonardi, 1975).

with 3 short thick teeth at apex (Fig. 46) (then coloration always yellow) or without teeth (then coloration always dark brown, with bronze shine), tegmen typical (Fig. 227)

bes separated by membrane; median lobe not separate from long narrow process by fine line (Fig. 236); vaginal palpi narrow and long (Fig. 235); aedeagus always without teeth at apex

—Spiculum ventrale with rather narrow, occasionally pointed lobe; at sides of this lobe, paired narrow lo-

10. Apex of aedeagus simple, without teeth; body dark brown, with bronze shine; apex of hind tibia

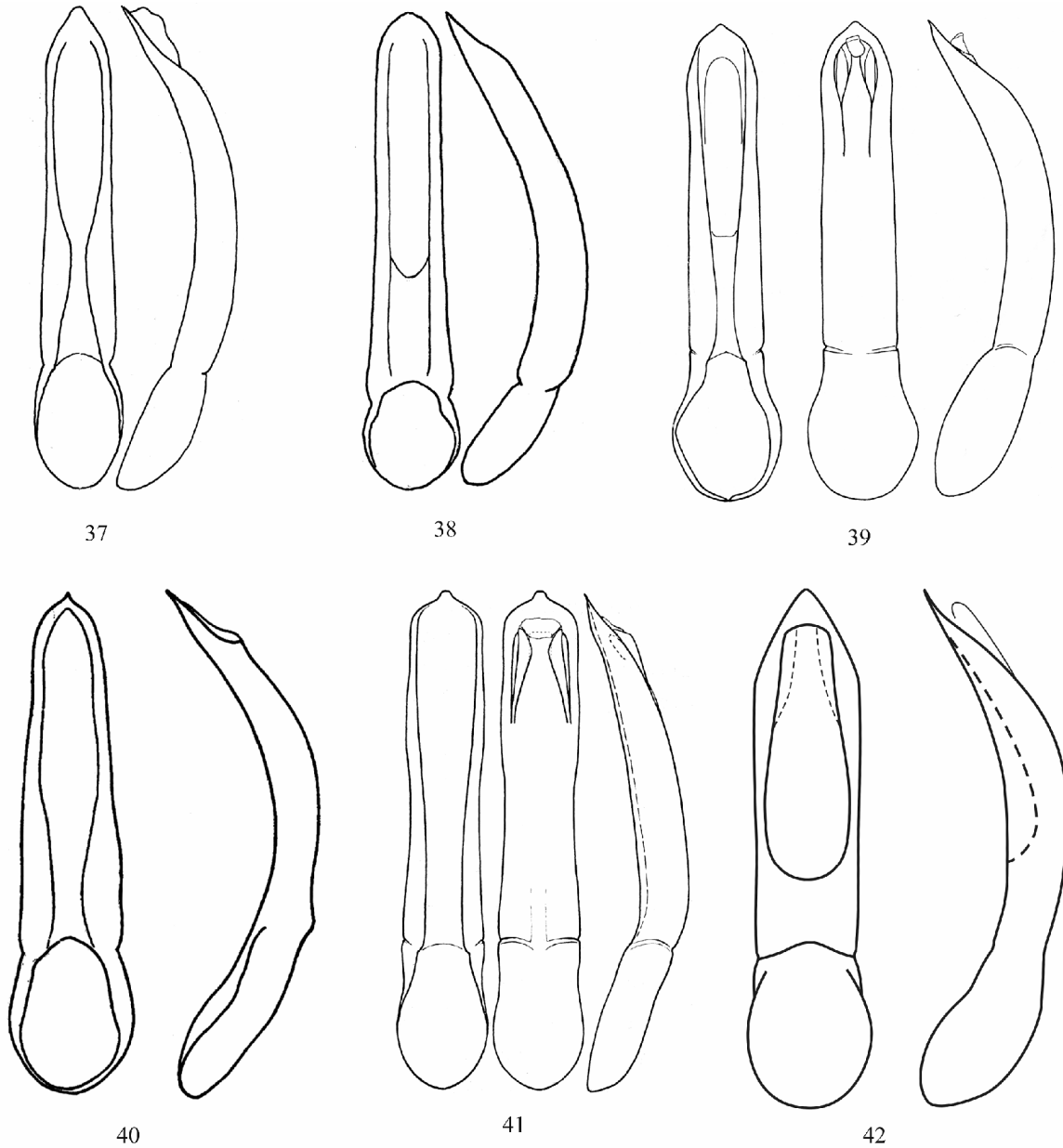


Figs. 31–36. *Psylliodes* Latr., aedeagus, ventral and lateral view: (31) *P. picipes* (after: Doguet, 1994), (32) *P. laticollis* (after: Doguet, 1994), (33) *P. latus*, (34) *P. longicollis*, (35) *P. luteolus* (after: Doguet, 1994), (36) *P. macellus*.

with very long sparse spines. Only species, *P. aeneolus* Hktg. Body length 1.9 mm. Aedeagus as in Fig. 1, tegmen as in Fig. 202, spermatheca as in Fig. 90 *aeneolus* group.

—Aedeagus with 3 teeth at apex (Fig. 46); apex of hind tibia with short, more or less dense spines; coloration yellow, rufous to pale brown, occasionally with metallic shine *saucyi* group.

11. Body two- or three-color, elytra metallic-blue or green, head and pronotum red or rufous red; when body three-color, head red to dark red, pronotum rufous red to dark red or metallic-blue or black, elytra usually metallic-blue or green; body large (3.0–4.9 mm); tegmen modified (Fig. 208); spermatheca with narrow collo; nodulus moderately long, occasionally weakly curved; ductus short, not



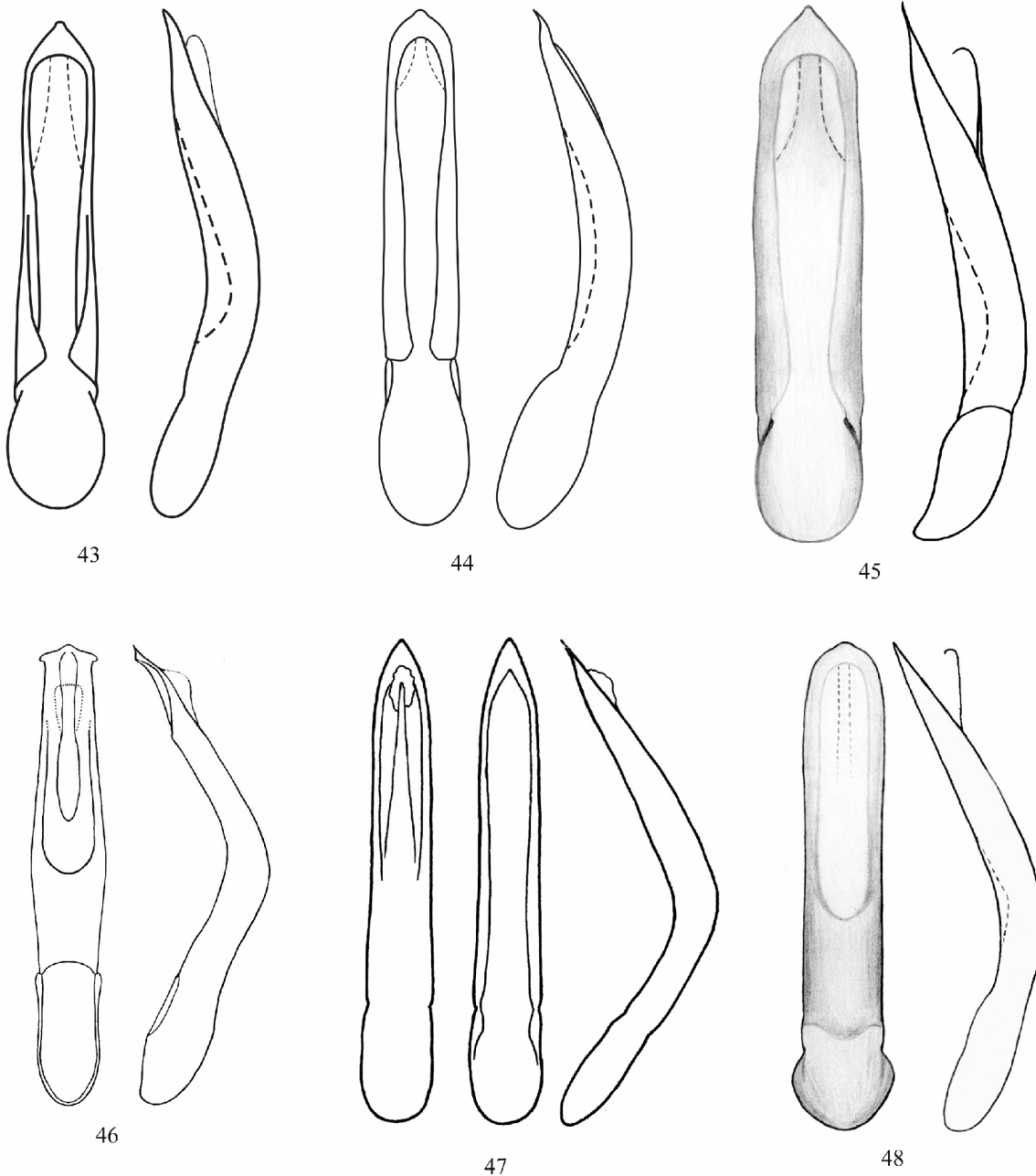
Figs. 37–42. *Psylliodes* Latr., aedeagus, ventral and lateral view: (37) *P. marcidus* (after: Doguet, 1994), (38) *P. napi* (after: Doguet, 1994), (39) *P. ozisiki* (after: Leonardi and Arnold, 1995), (40) *P. persicus* (after: Doguet, 1994), (41) *P. picinus* (after: Leonardi, 1978), (42) *P. punctifrons*.

curved (Fig. 60); (almost entirely yellowish rufous coloration occurring: elytra and pronotum yellow or rufous, lower side and hind femur always black, or elytra yellow and pronotum black—color forms of *P. chrysocephalus*: f. *anglica*, f. *kunzei*, f. *nucea*, f. *sordida*); other species of this group entirely yellow or rufous yellow, see following couplet *chrysocephalus* group.

—Coloration always one-color, varying, usually dark, with metallic shine of different tones (blue, green, bronze), less frequently pale 12.

12. Body entirely rufous or yellowish rufous 13.
 —Body dark, with various metallic shine 15.

13. Hind tibia very strongly widened in apical third in dorsal view (Fig. 150); vertex flat, covered with large, dense, coarse punctures separated by convex and coarsely shagreened intervals (Fig. 167)
 *chrysocephalus* group (*P. marcidus*).
 —Hind tibia not widened in apical third, vertex flat or convex to various extent, without dense coarse punctures; intervals weakly convex or flat, without coarse shagreenity 14.



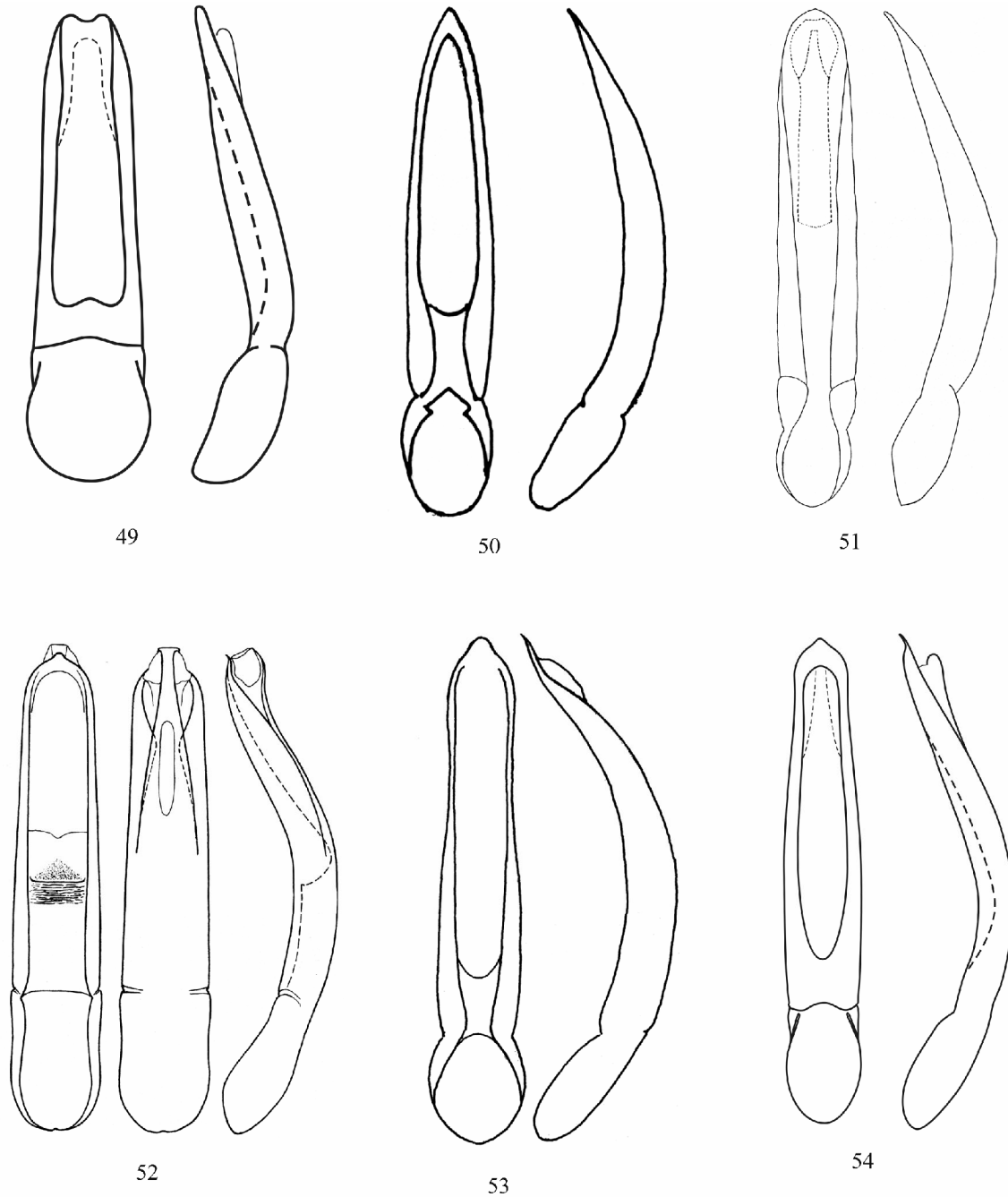
Figs. 43–48. *Psylliodes* Latr., aedeagus, ventral and lateral view: (43) *P. reitteri*, (44) *P. rhaicus*, (45) *P. rubroaeneus*, (46) *P. saulcyi*, (47) *P. subaeneus* (after: Warchałowski, 2000), (48) *P. submontanus*.

14. Body larger and more convex, shagreenity poorly developed, tegmen modified, ocular sulci larger and wider *chrysocephalus* group (*P. rhaicus*).

—Body smaller and less convex, shagreenity strongly developed, tegmen typical, ocular sulci narrow and superficial. Only species, *P. testaceoconcolor* Hktg. Body length 3 mm. Aedeagus as in Fig. 51, spermatheca as in Fig. 79 *testaceoconcolor* group.

15. Body very convex; head not visible or hardly visible in dorsal view; prothorax very large; legs and antennae short and thickened; hind wing reduced; hind tarsus attached rather closely to apex of tibia 16.

—Body less convex or flattened, head always visible in dorsal view, prothorax not large or small, legs and antennae long and slender, hind wing usually developed 17.

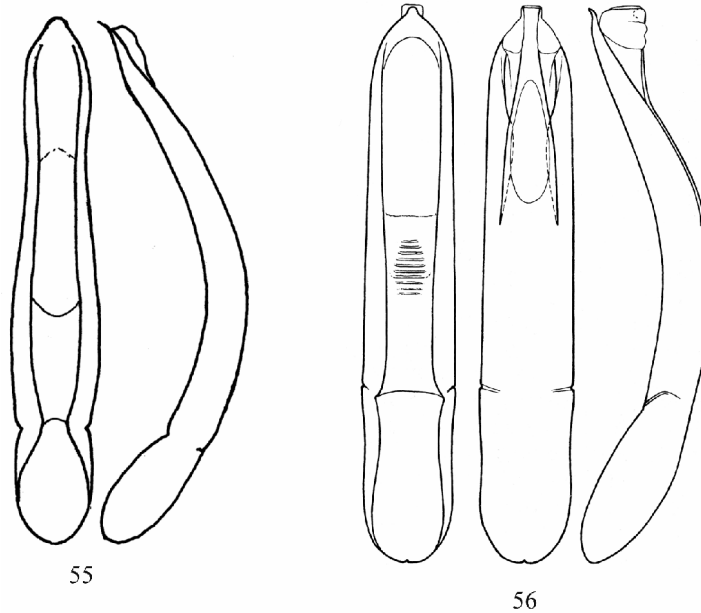


Figs. 49–54. *Psylliodes* Latr., aedeagus, ventral and lateral view: (49) *P. subrugosus*, (50) *P. takizawai* (after: Gruev, 1990), (51) *P. testaceoconcolor* (after: Furth, 1983), (52) *P. thlaspis* (after: Leonardi and Arnold, 1995), (53) *P. tricolor* (after: Doguet, 1994), (54) *P. validus*.

16. Punctuation of vertex and pronotum coarser and denser, pronotum in anterior part wider and convex; body black, with greenish shine; tegmen modified; spermatheca with long collo and nodulus; ductus weakly curved, forming no loops; endemic of the Caucasus. Only species, *P. validus* Wse. Body length 3.0–3.9 mm. Aedeagus as in Fig. 54,

tegmen as in Fig. 231, spermatheca as in Fig. 113, contour of body as in Fig. 131 *validus* group.

—Punctuation of vertex and pronotum fine and sparse; pronotum in anterior part more strongly narrowed and less convex; dorsal side black with silk shine; tegmen typical; spermatheca with long and narrow

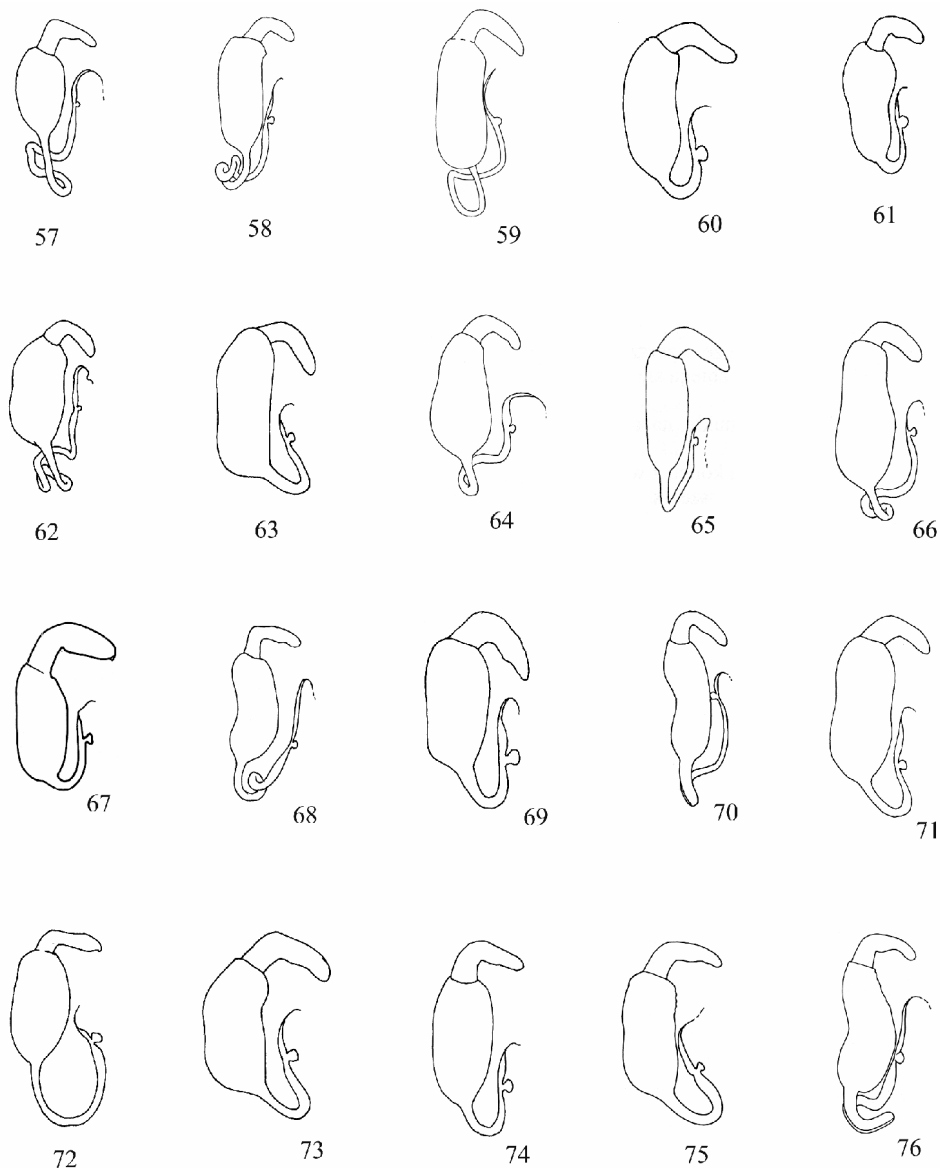


Figs. 55, 56. *Psylliodes* Latr., aedeagus, ventral and lateral view. (55) *P. vindobonensis* (after: Doguet, 1994), (56) *P. wrasei* (after: Leonardi and Arnold, 1995).

- collo and nodulus; ductus long, curved, forming no loops; mountains of Western and Central Europe. Only species, *P. subaeneus* Kutsch. Body length 2.0–2.7 mm. Aedeagus as in Fig. 47, tegmen as in Fig. 228, spermatheca as in Fig. 78 *subaeneus* group.
17. Tegmen typical, spermatheca varying in structure 18.
- Tegmen modified, spermatheca with not curved ductus 22.
18. Spermatheca with long curved ductus occasionally forming loops 19.
- Spermatheca with not curved ductus 21.
19. Body large, moderately or weakly convex; hind tibia long, frequently weakly curved; dorsal side not shagreened or weakly shagreened, strongly shining, with well-developed metallic shine; base of pronotum angularly projecting (Fig. 174); ocular sulci wide and deep; Far East *brettinghami* group.
- Body small or medium-sized; hind tibia rather short, usually straight; shagreenity moderate or strongly developed; base of pronotum not projecting angularly, widely rounded; Western Palaearctic Region 20.
20. Body small or medium-sized, moderately or weakly convex; head short, with wider frontal

ridge; frontal calli almost flat; shagreenity rather poorly developed; coloration usually with well-developed bronze shine; outer carina of hind tibia occasionally with row of teeth *pyritosus* group.

- Body small, distinctly convex; head and frontal ridge wide, less frequently more elongate; frontal calli weakly or distinctly convex; shagreenity strongly developed, fine; coloration dark with metallic or silvery shine, less frequently with weak bronze shine; outer carina of hind tibia without teeth *aereus* group.
21. Body distinctly flattened, prothorax small, elytra elongate, shagreenity moderately developed or nearly absent, hind tibia straight and narrow *persicus* group.
- Body distinctly or moderately convex, prothorax rather large, elytra usually rather short, shagreenity moderately developed, hind tibia wider and occasionally slightly curved *napi* group.
22. Body large, moderately or weakly convex; prothorax rather large; hind tibia long, not curved; dorsal side strongly shagreened, with silk shine; Western Palaearctic Region *cupreus* group.
- Body medium-sized, shagreenity rather strongly developed or moderate, hind tibia shorter and weakly curved in lateral view; Far East *punctifrons* group.



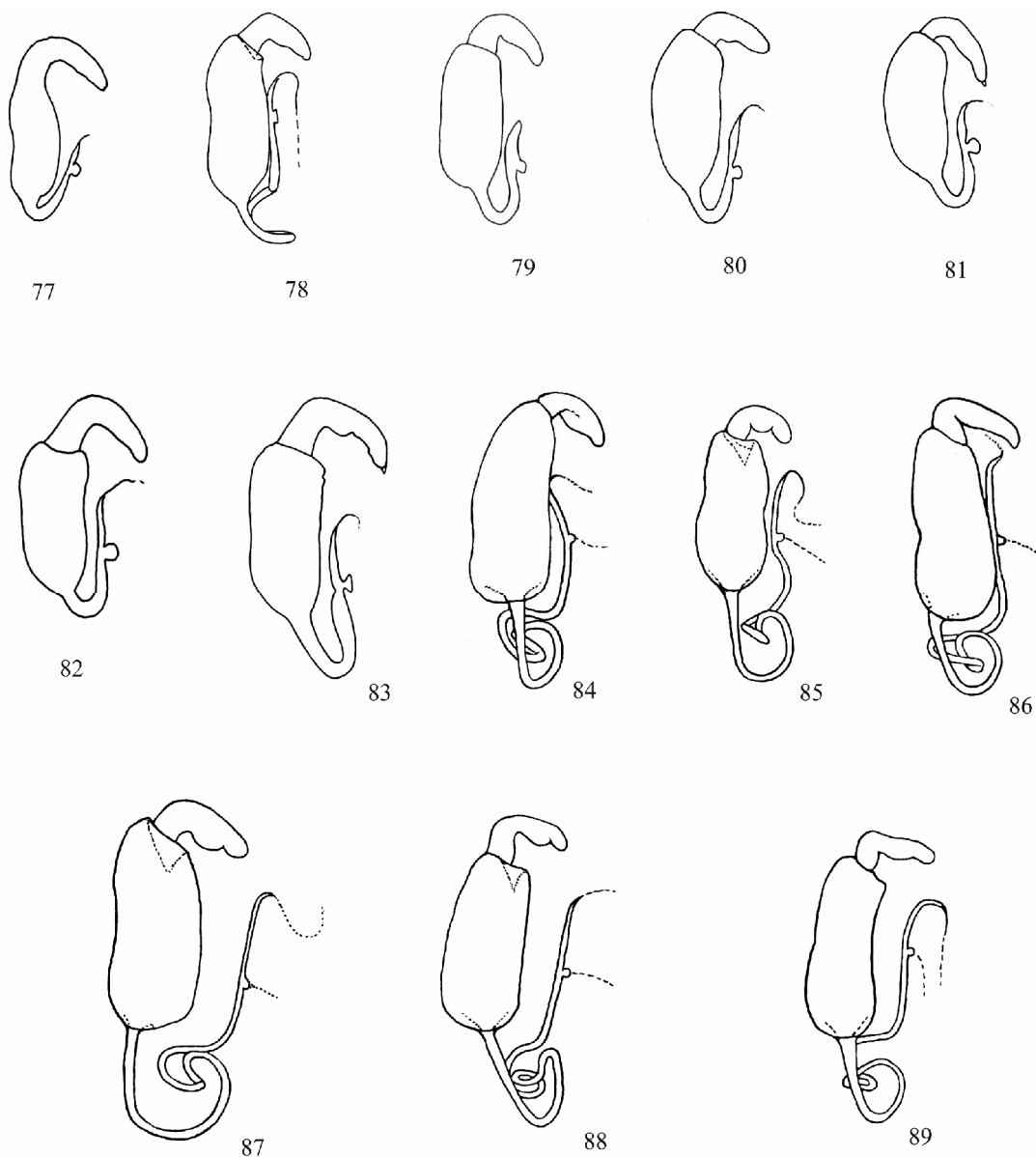
Figs. 57–76. *Psylliodes* Latr., spermatheca: (57) *P. aereus* (after: Doguet, 1994), (58) *P. affinis* (after: Doguet, 1994), (59) *P. aristus* (after: Biondi, 1997), (60) *P. chrysocephalus* (after: Doguet, 1994), (61) *P. circumdatus* (after: Doguet, 1994), (62) *P. cupreatus* (after: Doguet, 1994), (63) *P. cupreus* (after: Doguet, 1994), (64) *P. dulcamarae* (after: Doguet, 1994), (65) *P. fusiformis* (after: Warchałowski, 2000), (66) *P. hyoscyami* (after: Doguet; 1994), (67) *P. illyricus* (after: Leonardi and Gruev, 1993), (68) *P. instabilis* (after: Doguet, 1994), (69) *P. isatidis* (after: Doguet, 1994), (70) *P. picipes* (after: Doguet, 1994), (71) *P. laticollis* (after: Doguet, 1994), (72) *P. luteolus* (after: Doguet, 1994), (73) *P. marcidus* (after: Doguet, 1994), (74) *P. napi* (after: Doguet, 1994), (75) *P. ozisiki* (after: Leonardi and Arnold, 1995), (76) *P. pallidicornis* (after: Leonardi, 1975).

A KEY TO SPECIES OF THE *GLABER* GROUP

1. Species from Caucasus 2.
- Species from Europe 3.
2. Eyes small and less convex, body usually black, punctuation of vertex and pronotum finer and sparser, frontal calli frequently split, pronotum longer and less transverse, sutural angle forming sharp tooth, anterior angles of pronotum poorly de-

veloped, posterior angles less stretched downwards, inner carina of hind tibia with large tooth, outer carina with several notches. Body length 1.9–2.6 mm. Aedeagus as in Fig. 34, tegmen as in Fig. 219, spermatheca as in Fig. 104, head as in Fig. 165, contour of body as in Fig. 122, hind tibia as in Fig. 148 *P. longicollis* Wse.

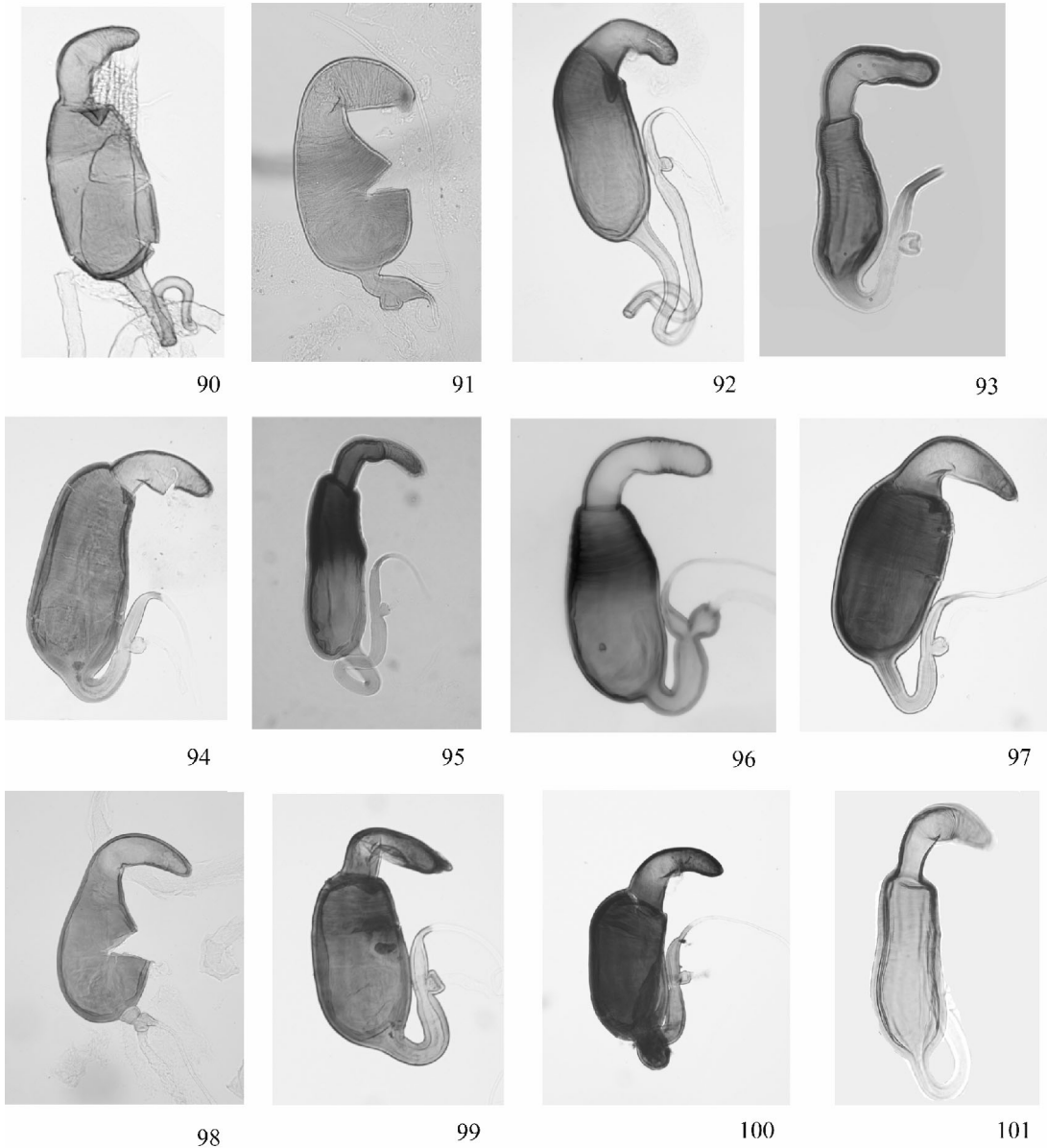
—Eyes large, body brown with bronze shine, punctuation of vertex and pronotum dense, frontal calli not



Figs. 77–89. *Psylliodes* Latr., spermatheca: (77) *P. picinus* (after: Doguet, 1994), (78) *P. subaeneus* (after: Warchałowski, 2000), (79) *P. testaceoconcolor* (after: Furth, 1983), (80) *P. thlaspis* (after: Doguet, 1994), (81) *P. tricolor* (after: Doguet, 1994), (82) *P. vindobonensis* (after: Doguet, 1994), (83) *P. wrasei* (after: Leonardi and Arnold, 1995), (84) *P. analogicus*, (85) *P. astenicus*, (86) *P. dilutellus*, (87) *P. grigorievi*, (88) *P. infandus*, (89) *P. saulcyi*.

split, pronotum more transverse, sutural angle without elongate sharp tooth, anterior angles of pronotum more strongly projecting, posterior angles distinctly stretched downwards, inner carina of hind tibia without tooth, outer carina smooth and without notches. Body length 2.2–2.5 mm. Aedeagus as in Fig. 45, tegmen as in Fig. 226, spermatheca as in Fig. 110, head Fig. 170, contour of body as in Fig. 128, hind tibia as in Fig. 152 *P. rubroaeneus* Hktg.

3. Hind tarsus attached to tibia rather closely to apex (Fig. 143); body very convex and distinctly rounded, wider, entirely black; pronotum wider. Body length 2.0–2.5 mm. Aedeagus as in Fig. 25, tegmen as in Fig. 215, spermatheca as in Fig. 102, contour of body as in Fig. 120, head as in Fig. 161 *P. glaber* Duft.
—Hind tarsus attached to tibia at some distance from tibial apex (Fig. 142); body and pronotum narrower; body entirely black. Body length 2.0–



Figs. 90–101. *Psylliodes* Latr., spermatheca: (90) *P. aeneolus*, (91) *P. agropyri*, (92) *P. angusticollis*, (93) *P. attenuatus*, (94) *P. bretinghami*, (95) *P. chalcomerus*, (96) *P. concolor*, (97) *P. crambicola*, (98) *P. cucullatus*, (99) *P. cyanescens*, (100) *P. deplanatus*, (101) *P. frivaldszkyi*.

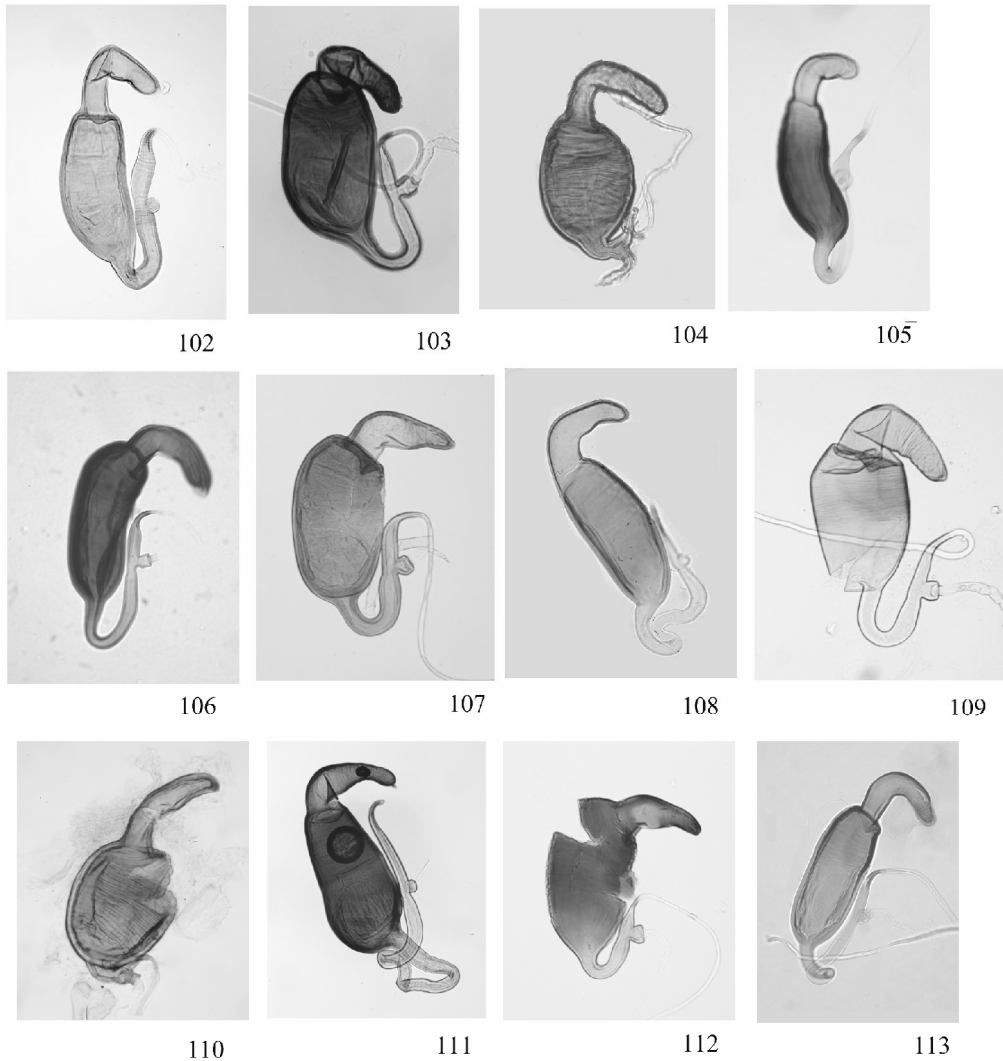
2.4 mm. Aedeagus as in Fig. 23, tegmen as in Fig. 214, spermatheca as in Fig. 101, contour of body as in Fig. 119 *P. frivaldszkyi* Wse.

A KEY TO SPECIES OF THE *CUCULLATUS* GROUP

1. Body elongate, not very convex; pronotum medium-sized; anterior angles of pronotum visible in dorsal view; punctation coarse, deep, very dense; distance between punctures subequal to half of their diameter; intervals convex; elytra parallel-sided in middle, with moderately deep rows of

punctures; intervals between rows convex, subequal to diameter of punctures; hind tibia in lateral view not curved, narrow, saw-shaped (Fig. 145); hind tarsus attached nearly in middle of tibia. Dorsal side nearly black, strongly shining; ventral side slightly paler; tibiae brown; femora darker; 5 basal antennal segments yellow, apical ones darker. Body length 2.4–2.8 mm. Aedeagus as in Fig. 4, tegmen as in Fig. 203, spermatheca as in Fig. 91, contour of body as in Fig. 116 *P. agropyri* Palij.

—Body more rounded, oval and convex; pronotum large, convex, distinctly narrowed dorsally



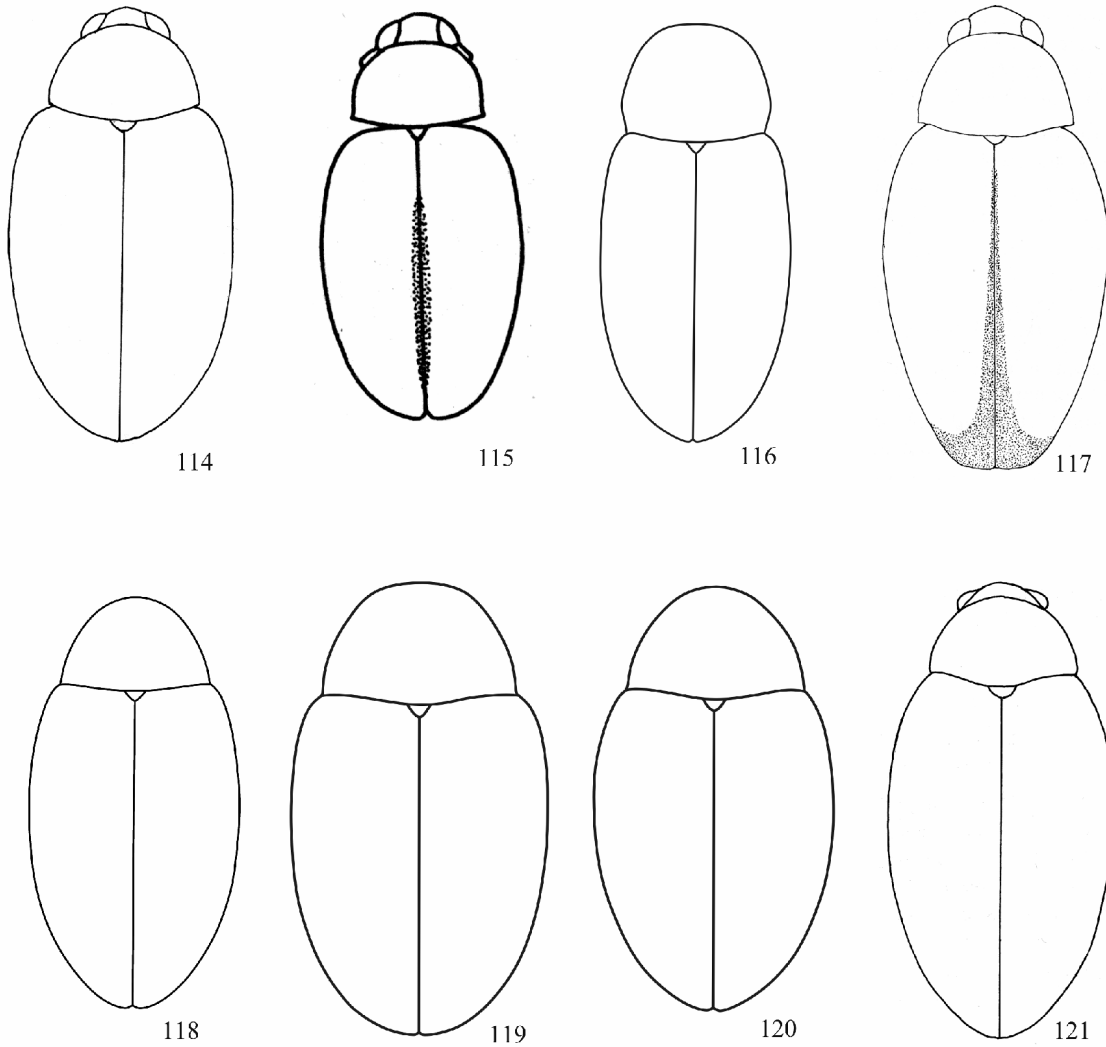
Figs. 102–113. *Psylliodes* Latr., spermatheca: (102) *P. glaber*, (103) *P. laxus*, (104) *P. longicollis*, (105) *P. macellus*, (106) *P. persicus*, (107) *P. punctifrons*, (108) *P. reitteri*, (109) *P. rhaicus*, (110) *P. rubroaeneus*, (111) *P. submontanus*, (112) *P. subrugosus*, (113) *P. validus*.

(Fig. 177); anterior angles almost not visible in dorsal view; punctation coarse; intervals moderately convex, usually distinctly shagreened on disc; sides shagreened very coarsely and granularly; elytra weakly rounded in middle, with rows of punctures almost not forming depressed striae; intervals weakly convex or flat, distance between rows up to 2.5 times diameter of punctures; hind tibia in lateral view curved, not saw-shaped; hind tarsi attached at distance from apex of tibia subequal to 1/3 of length of tibia. Elytral apices distinctly rounded; body dark brown to black, with well-developed bronze or greenish shine; fore and middle tibiae and tarsi rufous brownish, darker than femora. Body length 2–3 mm. Aedeagus as in Fig. 16, tegmen as in Fig. 211, spermatheca as in Fig. 98, contour of body as in Fig. 118, fore tarsus

of male as in Fig. 191, hind tibia as in Fig. 139 *P. cucullatus* (III).

A KEY TO SPECIES OF THE *PERSICUS* GROUP

1. Dorsal side with very large dense punctures; intervals convex, with well-developed coarse secondary punctation; pronotum with distinct shagreenity and convex intervals between punctures; rows of punctures of elytra forming moderately deep striae; intervals between rows convex, smooth, 1.0–1.5 times diameter of punctures; head longer; pronotum less convex; antennal segments, especially basal ones, very long and fine; dorsal side blue or green, with metallic shine. Body length 2.9–3.3 mm. Aedeagus as in Fig. 20, spermatheca as in Fig. 100 *P. deplanatus* L. Medv.



Figs. 114–121. *Psylliodes* Latr., contour of body: (114) *P. aereus* (after: Doguet, 1994), (115) *P. affinis* (after: Warchałowski, 1978), (116) *P. agropyri*, (117) *P. circumdatus* (after: Doguet, 1994), (118) *P. cucullatus*, (119) *P. frivaldszkyi*, (120) *P. glaber*, (121) *P. instabilis* (after: Doguet, 1994).

—Dorsal side with smaller, medium-sized punctures sparser on elytra; secondary punctuation fine, sparse 2.

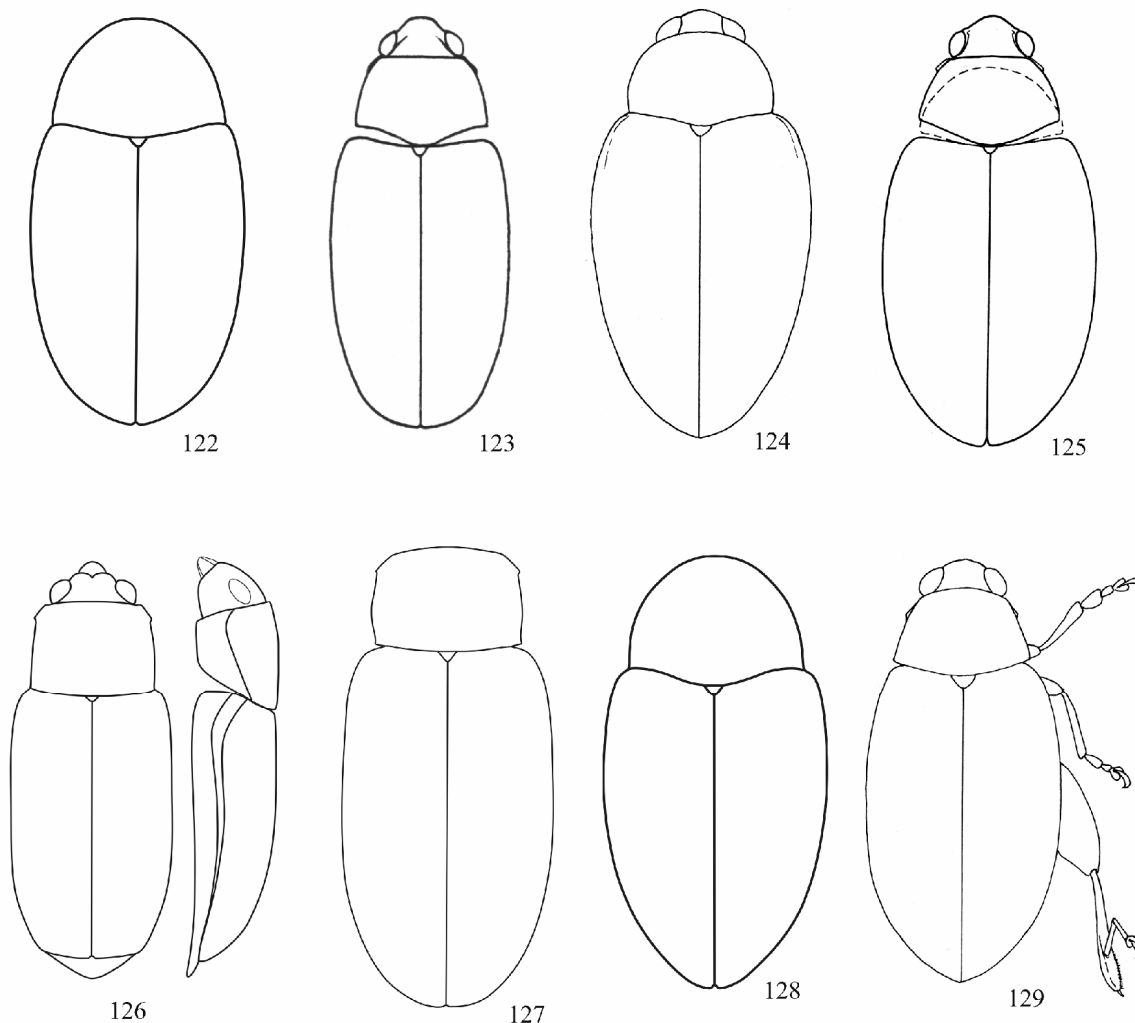
2. Dorsal side with bronze shine; shagreenity of dorsal side less strongly developed; frontal calli weakly convex; frontal ridge wider and shorter; vertex entirely and regularly punctate; elytra longer; hind tarsus attached at distance from apex of tibia; inner margin of apex of tibia emarginate; aedeagus not narrowed in middle. Body length 2.5–3.0 mm. Aedeagus as in Fig. 40, tegmen as in Fig. 223, spermatheca as in Fig. 106 *P. persicus* All.

—Body metallic-green, shining; shagreenity of dorsal side more strongly developed; frontal calli distinct,

more convex; frontal ridge longer and narrower, vertex punctate mainly near frontal calli; elytra shorter; hind tarsus attached very closely to apex of tibia; inner margin of apex of hind tibia not emarginate; aedeagus slightly narrowed in middle. Body length 2.2–2.8 mm. Aedeagus as in Fig. 8, spermatheca as in Fig. 59 *P. aristus* Khnzr.

A KEY TO SPECIES OF THE *PYRITOSUS* GROUP

1. Hind tibia with row of large teeth on outer carina; body with bronze shine; head and pronotum wide; vertex frequently also coarsely punctate; intervals between rows of punctures on elytra smooth, shining, with coarse, moderately dense secondary punctuation; anterior angles of pronotum large, sharp,



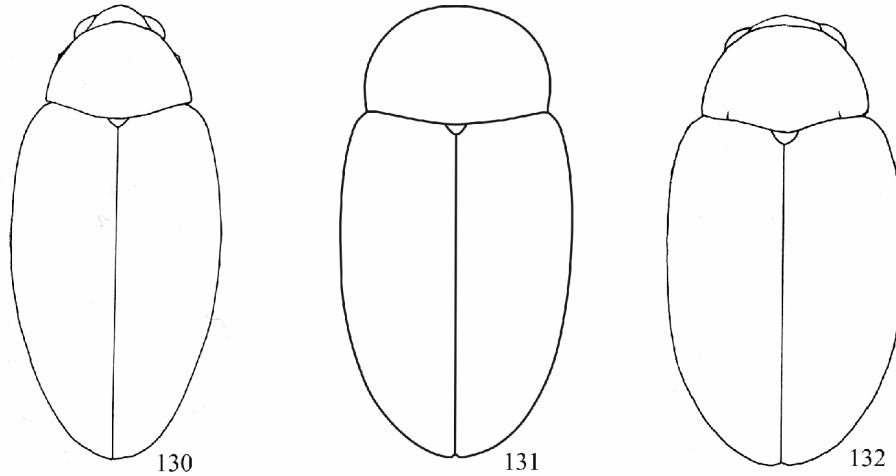
Figs. 122–129. *Psylliodes* Latr., contour of body: (122) *P. longicollis*, (123) *P. luteolus* (after: Leonardi, 1972), (124) *P. napi* (after: Doguet, 1994), (125) *P. pallidicornis* (after: Leonardi, 1975), (126) *P. pubipennis*, (127) *P. reitteri*, (128) *P. rubroaeneus*, (129) *P. thlaspis* (after: Doguet, 1994).

projecting beyond contour. Body length 2.2–2.4 mm. Aedeagus as in Fig. 17, tegmen as in Fig. 212, spermatheca as in Fig. 62, head as in Fig. 160, hind tibia as in Fig. 140 *P. cupreatus* Duft.

—Hind tibia without row of large teeth on outer carina, occasionally only with fine notches; body usually black, matte, with weak metallic shine; punctation of vertex, pronotum, and elytra indistinct, partly vague and finer; frontal ridge narrow; hind tibia wider, moderately curved in lateral view; secondary punctation of elytra poorly developed or nearly absent; pronotum wider and more convex. Body length 2.0–2.8 mm. Aedeagus as in Fig. 29, tegmen as in Fig. 216, spermatheca as in Fig. 68, head as in Fig. 164, contour of body as in Fig. 121, pronotum as in Fig. 179, hind tibia as in Fig. 144 ..
..... *P. instabilis* Foudr.

A KEY TO SPECIES OF THE *AEREUS* GROUP

1. Frontal calli moderately convex, narrow, smooth, well outlined (but not separated by distinct deep lines); body less convex; frontal ridge narrow and moderately convex, triangular, as smooth as anterior margin of frons; punctation of vertex rather fine and sparse, badly distinguishable against background of coarse and convex shagreenity; head narrow and elongate; punctures in elytral rows separated by intervals equal to 0.5–1.0 their diameters; intervals between rows flat or weakly convex; rows of punctures not depressed in striae or weakly depressed; secondary punctation fine; shagreenity of pronotum coarse; punctures dense, separated by flat intervals; hind tibia with large tooth on inner carina, moderately widened in apical third, not narrowed at apex; anterior angles strongly developed,



Figs. 130–132. *Psylliodes* Latr., contour of body: (130) *P. toelgi* (after: Doguet, 1994), (131) *P. validus*, (132) *P. picinus* (after: Doguet, 1994).

distinctly projecting beyond contour; 1st segment of fore tarsus of male distinctly widened. Aedeagus narrowed in middle, with shortly triangular apex bearing no tooth; coloration with bronze or silvery shine, rarely with weak bluish shine; hind femur metallic-shining; fore and middle femora dark brown; tibiae and tarsi brown. Body length 1.5–2.2 mm. Aedeagus as in Fig. 2, tegmen as in Fig. 201, spermatheca as in Fig. 57, head as in Fig. 154, contour of body as in Fig. 114, hind tibia as in Fig. 134 *P. aereus* Foudr.

—Frontal calli not convex, indistinct, not separated clearly from vertex and frons; frontal ridge wide, flattened; body more convex; punctuation of vertex coarser and more distinct; punctures deep; intervals with coarse granulate shagreenity; head wider and shorter; punctures in elytral rows very densely arranged, forming depressed striae with convex intervals; hind tibia slightly narrowed at apex; secondary punctuation coarse; anterior angles of pronotum strongly developed, distinctly projecting beyond contour; 1st segment of fore tarsus of male distinctly widened. Apex of aedeagus nearly straight, with small tooth. Dorsal side black, with intensive bronze-silvery shine; legs pale brown; bases of femora and middles of tibiae darkened; apical antennal segments and hind femur dark brown; latter with weak bronze shine. Body length 2.0–2.8 mm. Aedeagus as in Fig. 31, spermatheca as in Fig. 70, pronotum as in Fig. 181 *P. picipes* Redt.

A KEY TO SPECIES OF THE NAPI GROUP

1. Punctuation of dorsal side and head coarse, distinct, dense; shagreenity nearly absent; body strongly

shining; elytral intervals with rather large and dense secondary punctuation; body large, weakly convex; pronotum moderately transverse, with well-developed anterior angles; frontal ridge narrow; eyes large, convex; hind tarsus attached not closely to apex of tibia; lower surface of hind tibia distinctly curved in lateral view; ocular sulci deep, distinct; frontal calli more or less distinct. Body length 2.8–3.5 mm. Aedeagus as in Fig. 24, spermatheca as in Fig. 65 *P. fusiformis* (Ill).

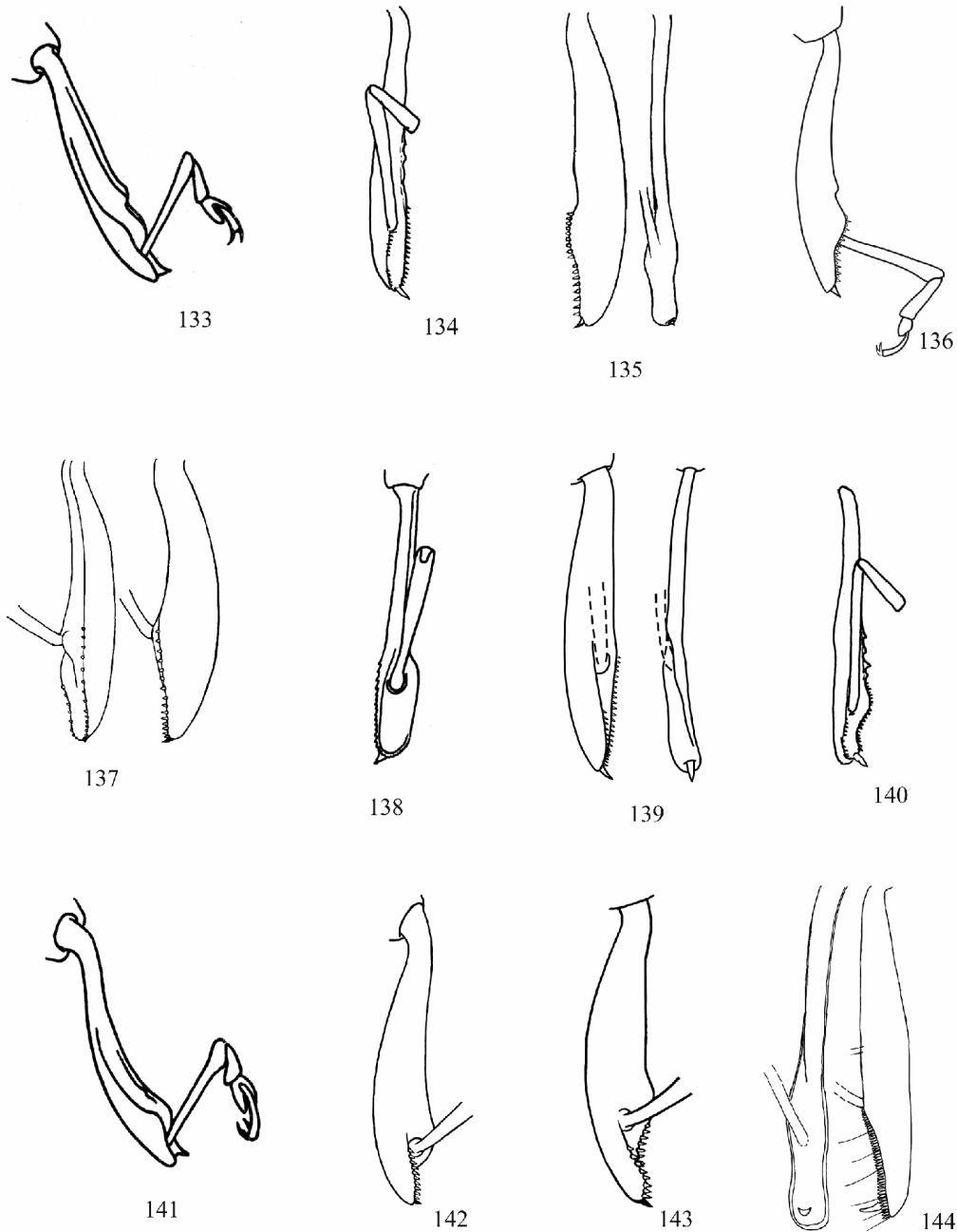
—Punctuation of dorsal side finer, less distinct, especially on head; frequently shagreenity present; elytral intervals with very fine sparse secondary punctuation; hind tarsus attached closely to apex of tibia or at some distance from it 2.

2. Hind tarsus attached at some distance from apex of tibia (Fig. 153) 3.

—Hind tarsus attached closely to apex of tibia 4.

3. Body black, with not very strong blue metallic shine; antennae, except for 3 basal segments, brownish; bases of fore and middle femora more strongly darkened; hind femur entirely blackish brown; frontal ridge wider and less convex; head shorter; vertex convex; pronotum more transverse, with sharper anterior angles more strongly projecting beyond contour; hind tibia longer, straight; shagreenity as whole slightly more strongly developed. Body length 2.5–3.4 mm. Contour of body as in Fig. 130, fore tarsus of male as in Fig. 200 *P. toelgi* Hktg.

—Body black, with more or less distinct bronze shine; antennae almost entirely rufous; bases of fore and

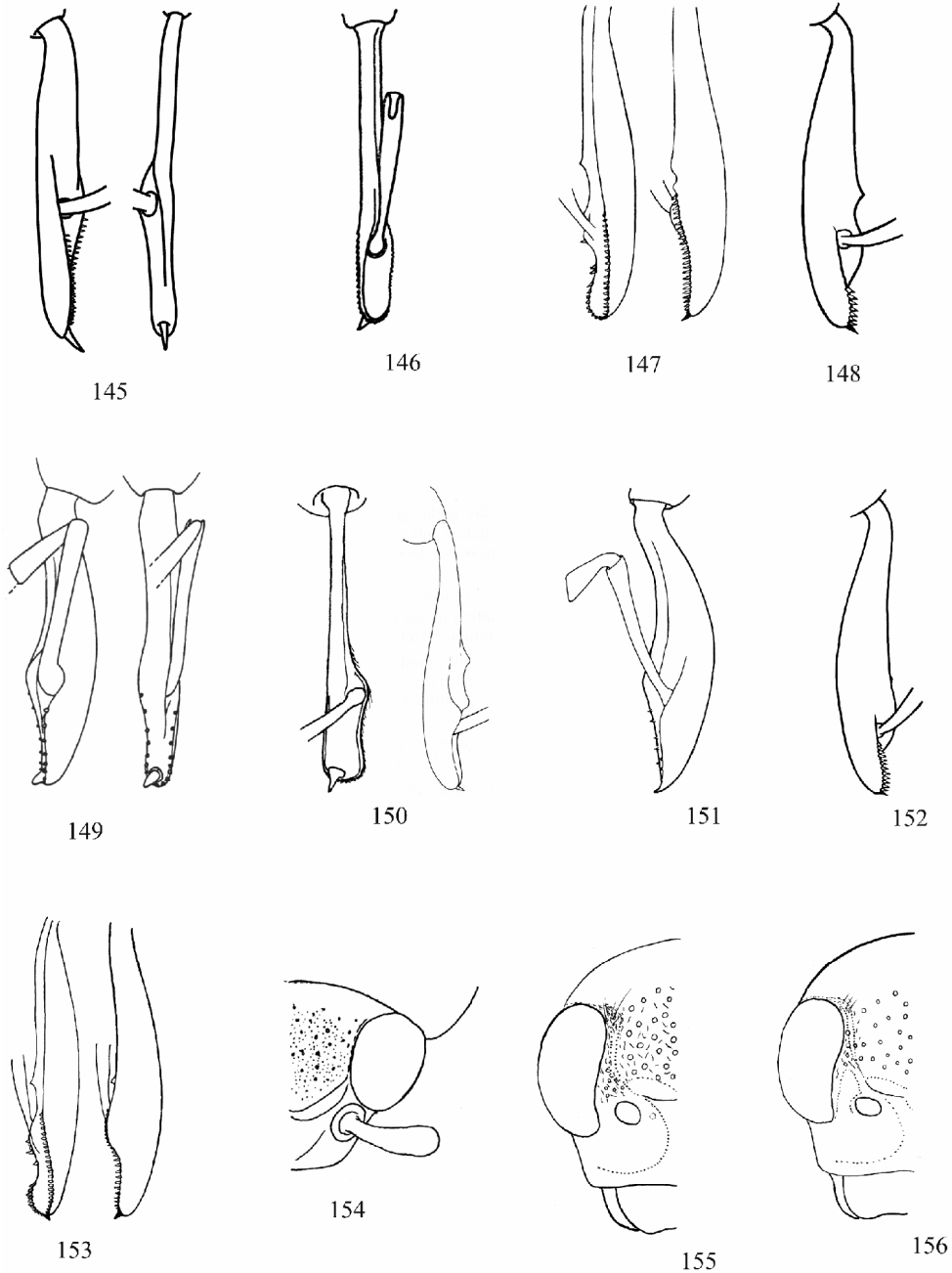


Figs. 133–144. *Psylliodes* Latr., hind tibia: (133) *P. affinis* (after: Warchałowski, 1978), (134) *P. aereus* (after: Doguet, 1994), (135) *P. amurensis*, (136) *P. bretteghami*, (137) *P. concolor*, (138) *P. crambicola* (after: Warchałowski, 1978), (139) *P. cucullatus*, (140) *P. cupreatus* (after: Doguet, 1994), (141) *P. dulcamarae* (after: Warchałowski, 1978), (142) *P. frivaldszkyi*, (143) *P. glaber*, (144) *P. instabilis*.

middle femora weakly darkened or not darkened; hind femur dark brown only on upper side; frontal ridge narrower, more convex; head longer; vertex nearly flat; pronotum more elongate, with anterior angles less strongly projecting beyond contour, more rounded; hind tibia shorter and more strongly curved (Fig. 153); shagreenity less developed. Body length 2.5–2.7 mm. Aedeagus as in Fig. 48, tegmen as in Fig. 229, spermatheca as in Fig. 111,

fore tarsus of male as in Fig. 198
..... *P. submontanus* Nadein.

4. Body larger, wide, moderately convex; pronotum with widely rounded lateral margins and with anterior angles weakly projecting beyond contour and forming no tooth near setiferous pores (Fig. 182); lateral margins wide; humeral calli strongly developed; behind humeral calli, base of outer row of

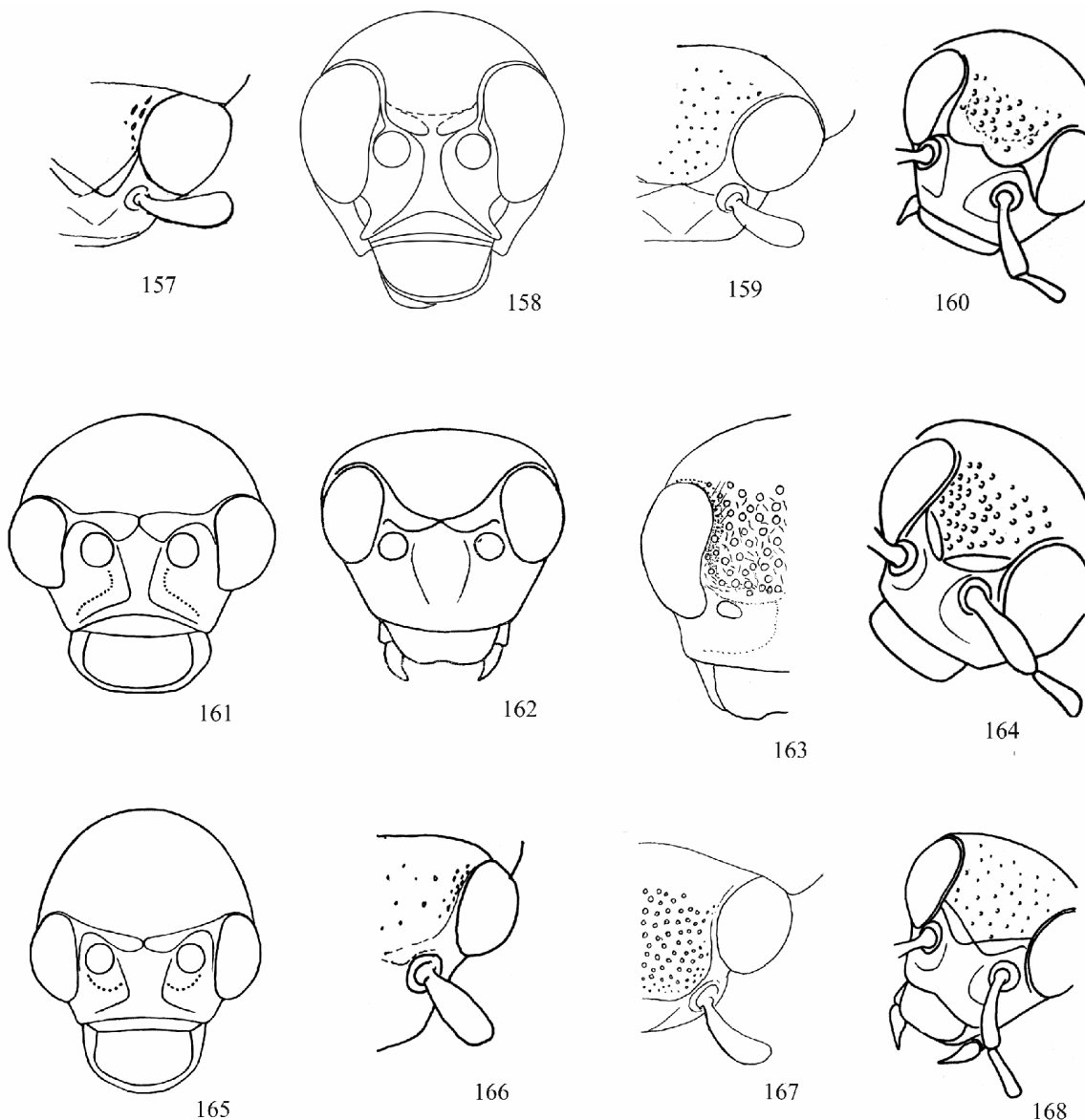


Figs. 145–156. *Psylliodes* Latr., hind tibia (145–153) and head (154–156): (145) *P. agropyri*, (146) *P. isatidis* (after: Warchałowski, 1978), (147) *P. laxis*, (148) *P. longicollis*, (149) *P. luteolus* (after: Leonard, 1972), (150) *P. marcidus* (after: Warchałowski, 2000; Doguet, 1994), (151) *P. picinus* (after: Warchałowski, 2000), (152) *P. rubroaeneus*, (153) *P. submontanus*, (154) *P. aereus* (after: Doguet, 1994), (155) *P. analogicus*, (156) *P. astenicus*.

punctures distinctly depressed; shagreenity rather poorly developed; head rather convex in lateral view; eyes large, convex; frontal ridge short, triangular, not projecting; ocular sulci distinct, deep; frontal calli not separated from above, indistinct; hind tibia distinctly curved in lateral view. Body length 2.8–3.5 mm. Aedeagus as in Fig. 32, tegmen as in Fig. 218, spermatheca as in Fig. 71,

fore tarsus of male as in Fig. 194
 *P. laticollis* Kutsch.

—Body smaller, fusiform, convex; pronotum with nearly straight or rather weakly rounded narrow lateral margins; anterior angles of pronotum distinctly projecting beyond contour, especially near setiferous pores, forming there distinct, more or less sharp tooth; shagreenity more or less devel-



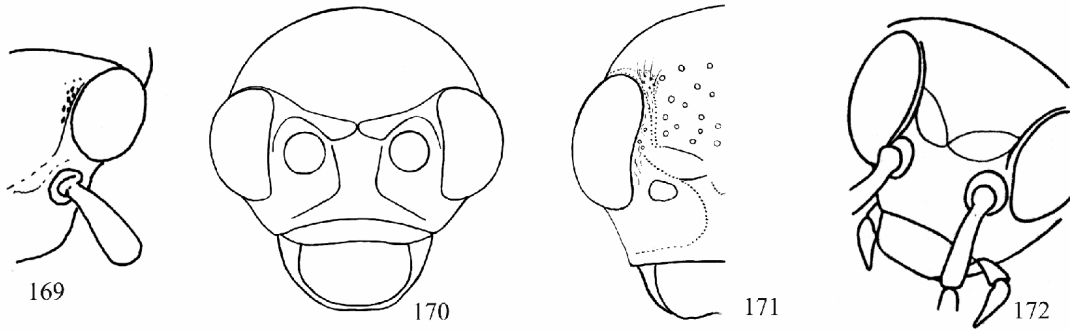
Figs. 157–168. *Psylliodes* Latr. head: (157) *P. attenuatus* (after: Doguet, 1994), (158) *P. bretteinghamsi*, (159) *P. chalcomerus*, (160) *P. cupreatus* (after: Warchałowski, 1978), (161) *P. glaber*, (162) *P. hyoscyami* (after: Warchałowski, 1978), (163) *P. infandus*, (164) *P. instabilis* (after: Warchałowski, 1978), (165) *P. longicollis*, (166) *P. luteolus* (after: Doguet, 1994), (167) *P. marcidus* (after: Doguet, 1994), (168) *P. napi* (after: Warchałowski, 1978).

oped; humeral calli small; base of outer row of punctures rather weakly depressed behind humeral calli; hind tibia nearly straight or weakly curved in lateral view 5.

5. Eyes small and not very convex; head weakly convex in lateral view; punctation of vertex very fine and very superficial; shagreenity of pronotum and elytra strongly developed; punctation of pronotum rather dense; punctures indistinct, of slightly irregular shape; intervals between them convex; punctures in elytral rows situated very densely, distance between them half their diameters or less;

rows forming moderately depressed striae; intervals convex; hind tibia nearly straight in lateral view, apex in dorsal view only slightly narrowed and more distinctly constricted. Body length 2.0–2.4 mm. Aedeagus as in Fig. 55, spermatheca as in Fig. 82 *P. vindobonensis* Hktg.

—Eyes large, convex; head in lateral view distinctly convex, bent near antennal sockets; punctation darker, more or less distinct, coarser and deeper, shagreenity of pronotum and elytra poorly developed; punctation of pronotum sparse, punctures of regular shape, intervals between them flat; punc-



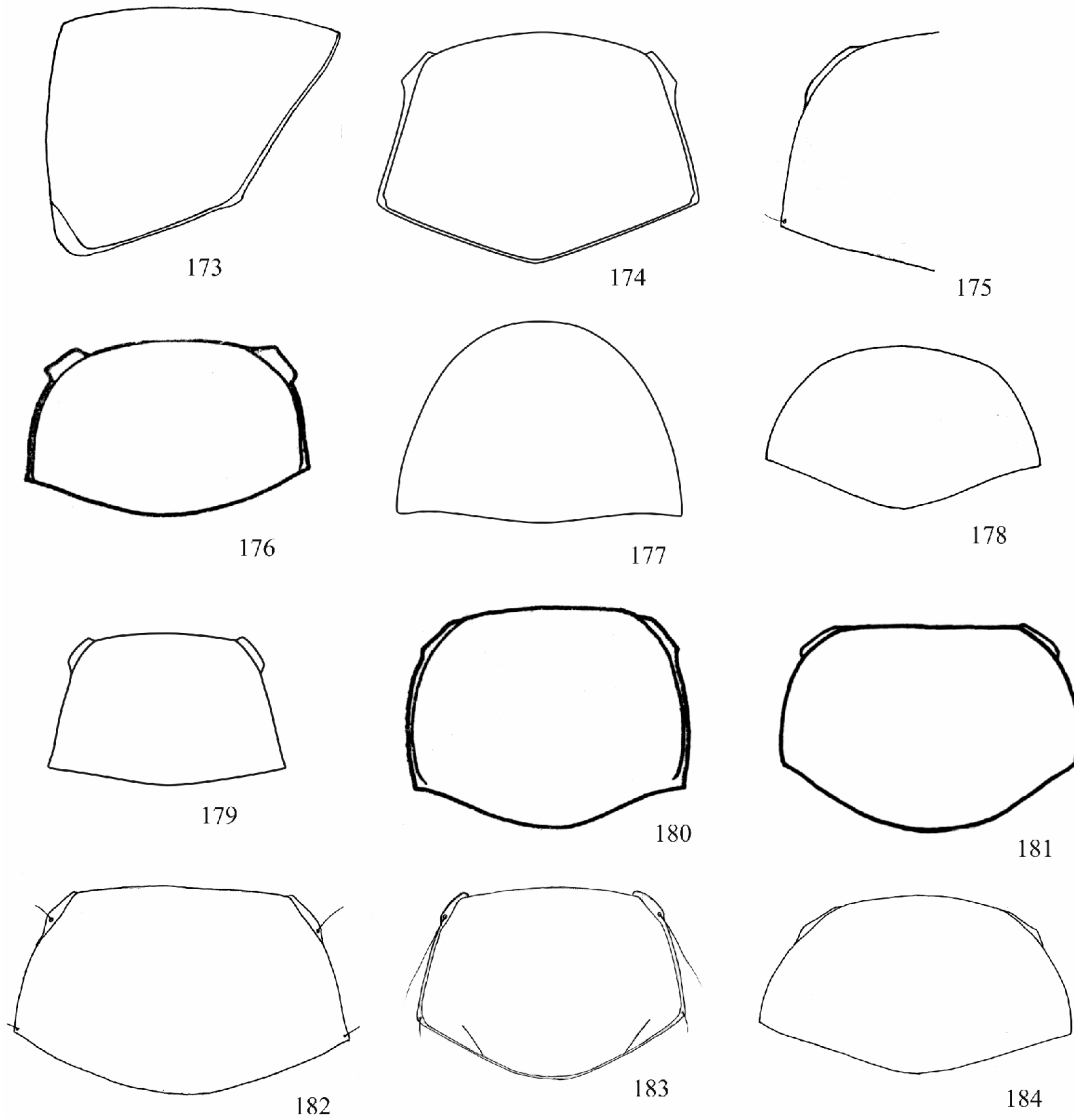
Figs. 169–172. *Psylliodes* Latr., head: (169) *P. picinus* (after: Doguet, 1994), (170) *P. rubroaeneus*, (171) *P. saulcyi*, (172) *P. tricolor* (after: Warchalowski, 1978).

tures in elytral rows not very dense, average distance between them subequal to their diameter; rows usually forming no depressed striae, and intervals between them flat (rows occasionally slightly depressed only in small individuals, especially in males); hind tibia curved more distinctly in lateral view, its apex in dorsal view more strongly narrowed and less strongly constricted. Body length 2.3–3.5 mm. Aedeagus as in Fig. 38, tegmen as in Fig. 222, spermatheca as in Fig. 74, head as in Fig. 168, pronotum as in Fig. 185, contour of body as in Fig. 124, fore tarsus of male as in Fig. 196 *P. napi* F.

A KEY TO SPECIES OF THE CUPREUS GROUP

- 1. Body more convex, oval; dorsal side black (with weak blue shine more distinguishable in humid specimens); dorsal side with poorly developed shagreenity, more shining. Body length 2.8–3.7 mm. Aedeagus as in Fig. 39, spermatheca as in Fig. 75 *P. ozisiki* Leon. et Arn.
- Body more flattened and elongate; dorsal side green, blue, bronze, with silk shine; shagreenity very strongly developed 2.
- 2. Punctuation of vertex fine, superficial, sparse, badly distinguishable against shagreenity; ocular sulci above upper margins of eyes deep; their margin at side of vertex flattened, forming large, rather superficial depression with setiferous pores; pronotum wide, its anterior angles strongly developed; punctuation fine, superficial, dense; punctuation of elytral rows large, deep, rows not depressed; dorsal side black, with weak greenish or bluish shine; legs, except for hind femur, yellow; latter brownish. Body length 2.6–3.0 mm. Spermatheca as in Fig. 76, contour of body as in Fig. 125 *P. pallidicornis* Hktg.

- Punctuation of vertex coarse or moderately coarse, more or less dense, moderately deep; ocular sulci above upper margin of eyes superficial, narrow; their margin at side of vertex forming small superficial depression or without depression 3.
- 3. Prothorax large, wide, much wider than long; body large, wide 4.
- Prothorax smaller, more elongate; body usually narrower 5.
- 4. Aedeagus shorter and wider; its apex shortly rounded, with small tooth; ventral side in apical 1/2 sharply and deeply concave; vertex wide, convex, with rather medium-sized and sparse punctuation; punctuation of pronotum fine, dense; anterior angles distinctly projecting beyond contour; punctures in elytral rows small or moderately large; rows not depressed, intervals flat; dorsal side black, with bluish or greenish bronze shine; antennae and legs dark rufous to brownish; hind femur darker. Body length 3.0–3.6 mm. Aedeagus as in Fig. 52, tegmen as in Fig. 230, spermatheca as in Fig. 80, contour of body as in Fig. 129, fore tarsus of male as in Fig. 199 *P. thlaspis* Foudr.
- Aedeagus longer and narrower; its apex longer, triangular, with longer tooth; ventral side with rather superficial depression beginning gradually from basal opening. Body length 3.3–3.5 mm. Aedeagus as in Fig. 56, spermatheca as in Fig. 83 *P. wrasei* Leon. et Arn.
- 5. Apical third of hind tibia strongly widened (Fig. 138); vertex weakly convex; punctuation rather coarse, dense; prothorax large, convex; punctuation of pronotum moderately coarse, dense; anterior angles weakly projecting beyond contour; punctures in elytral rows medium-sized, dense; rows not de-

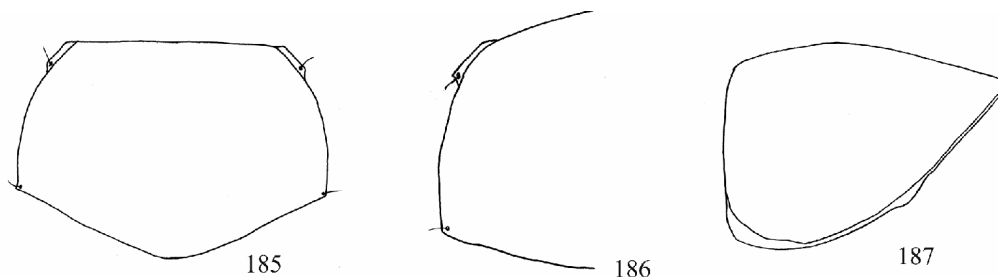


Figs. 173–184. *Psylliodes* Latr., pronotum, lateral (173) and dorsal (174–184) view: (173) *P. astenicus*, (174) *P. bretteinghami*, (175) *P. chrysocephalus* (after: Doguet, 1994), (176) *P. crambicola* (after: Warchałowski, 1978), (177) *P. cucullatus*, (178) *P. dulcamarae* (after: Doguet, 1994), (179) *P. instabilis*, (180) *P. isatidis* (after: Warchałowski, 1978), (181) *P. picipes* (after: Leonardi, 1975), (182) *P. laticollis* (after: Doguet, 1994), (183) *P. luteolus*, (184) *P. marcidus* (after: Doguet, 1994).

pressed; intervals between rows flat or weakly convex; body with green or blue metallic shine; antennae and legs, except for brown hind femur, rufous or yellow. Body length 3.3–3.9 mm. Aedeagus as in Fig. 15, tegmen as in Fig. 210, spermatheca as in Fig. 97, pronotum as in Fig. 176
 *P. crambicola* Lohse.
 —Apical third of hind tibia narrow (Fig. 146) 6.
 6. Pronotum larger and more convex; its base only slightly shorter than elytral base (Fig. 180); aedeagus narrow, narrowed in middle, elongate; its apex oblong-triangular, gradually narrowing, more strongly curved; vertex weakly convex; punctuation

coarse and dense; anterior angles of pronotum distinctly projecting beyond contour; punctuation same as that on vertex; punctures in elytral rows rather small, dense; intervals between rows flat; rows not depressed; dorsal side usually green; antennae and legs rufescent; hind femur brown. Body length 2.8–3.2 mm. Aedeagus as in Fig. 30, tegmen as in Fig. 217, spermatheca as in Fig. 69, hind tibia as in Fig. 146
 *P. isatidis* Hktg.

—Pronotum smaller and less convex; its base distinctly narrower than elytral base; aedeagus wider, not narrowed or weakly narrowed in middle, not extended; its apex shortly-triangular, more sharply



Figs. 185–187. *Psylliodes* Latr., pronotum, dorsal (185, 186) and lateral (187) view: (185) *P. napi* (after: Doguet, 1994), (186) *P. tricolor* (after: Doguet, 1994), (187) *P. saulcyi*.

narrowed, less strongly curved in lateral view; vertex nearly flat, with dense punctation; frontal calli weakly convex; anterior angles of pronotum large; punctation dense, deep; punctures in elytral rows slightly larger than those on pronotum, deep; intervals between rows not convex; rows not depressed; dorsal side usually bronze; legs pale brown. Body length 2.7–3.1 mm. Aedeagus as in Fig. 18, tegmen as in Fig. 213, spermatheca as in Fig. 63, fore tarsus of male as in Fig. 192 *P. cupreus* Koch.

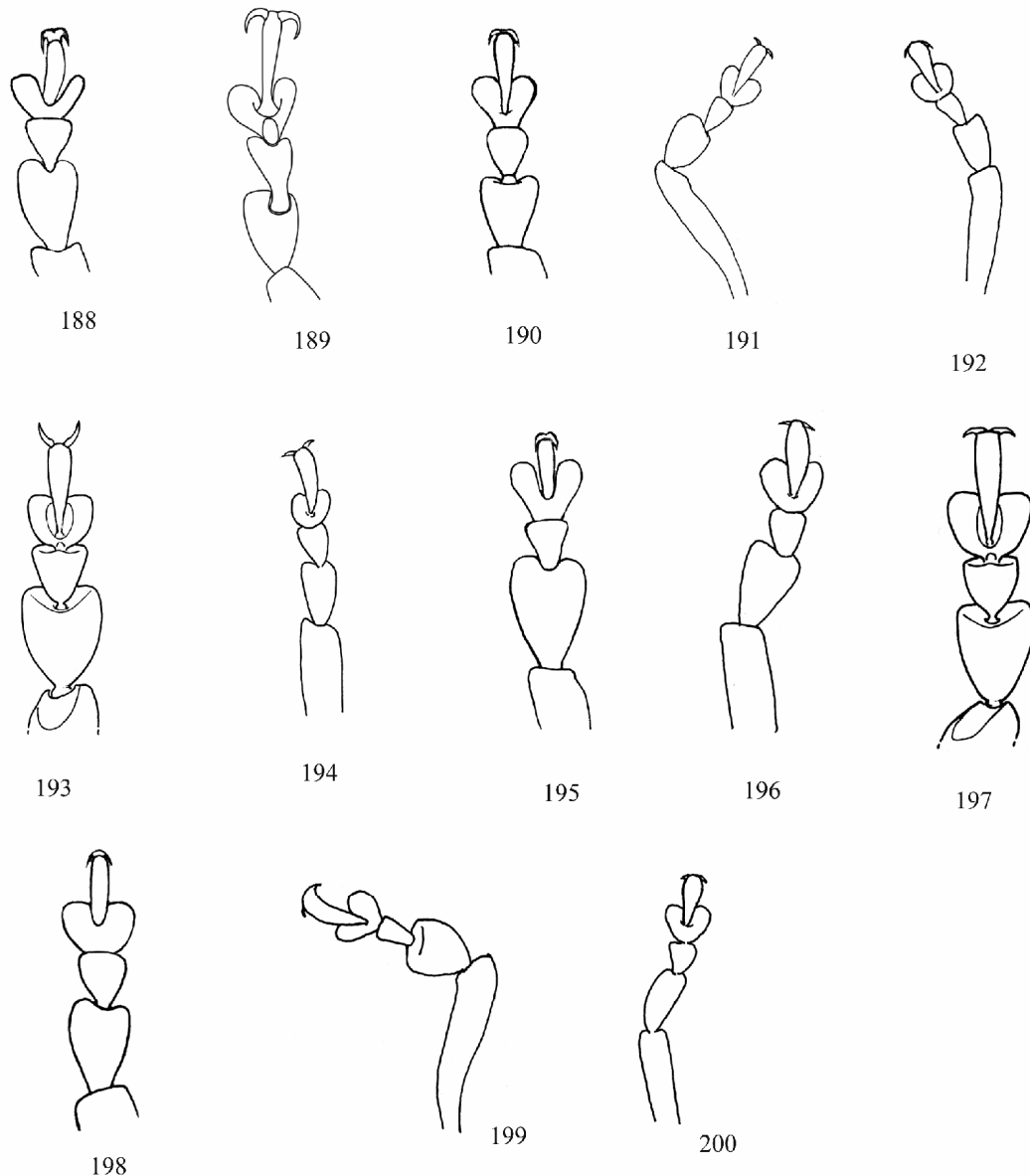
A KEY TO SPECIES OF THE *CHRYSOCEPHALUS* GROUP

- 1. Body entirely yellow or red 2.
- Body two- or three-color: head usually red to dark red; pronotum red, black, blue, or green, with metallic shine; elytra almost always metallic-blue or green. When elytra and pronotum yellow or rufous, then ventral side and hind femur always black, or elytra yellow and pronotum black (color forms of *P. chrysocephalus* not found in the territory under study) 3.
- 2. Vertex convex, punctation fine, intervals nearly smooth, punctures in elytral rows forming no depressed striae, intervals flat, punctures fine, hind tibia moderately wide at apex; prothorax medium-sized, considerably narrower than elytral base; anterior angles strongly projecting beyond lateral contour; punctation varying from fine and sparse to coarse and dense; intervals flat and nearly smooth to convex and shagreened; elytra very wide; punctures in rows on disc large, sparse; rows weakly or moderately depressed; intervals between rows flat or weakly convex, nearly smooth or finely shagreened. Body length 3.5–4.9 mm. Aedeagus as in Fig. 44, spermatheca as in Fig. 109 *P. rhaicus* Jcbs.
- Vertex flat, coarsely punctate; intervals convex, distinctly shagreened (Fig. 167); punctures in ely-

tral rows large, forming depressed striae; intervals convex; hind tibia strongly widened at apex in dorsal view; pronotum much wider than long; anterior angles large, distinctly projecting (Fig. 184); punctation coarse, dense; intervals convex, coarsely shagreened; punctures in elytral striae dense, deep; striae moderately depressed. Body length 2.6–3.8 mm. Aedeagus as in Fig. 37, spermatheca as in Fig. 73, hind tibia as in Fig. 150 *P. marcidus* Ill.

- 3. Anterior angles of pronotum not projecting beyond contour, rounded; pronotum strongly narrowed forwards (Fig. 175); body wide, 3rd segment of fore tarsus of male as wide as 1st one; coloration varying (see couplet 1); vertex convex, with small dense punctures; frontal calli weakly convex; punctures of pronotum small, dense; punctures in elytral rows medium-sized, superficial, sparse; rows not depressed; secondary punctation dense; intervals between rows flat. Body length 3.4–4.5 mm. Aedeagus as in Fig. 12, tegmen as in Fig. 208, spermatheca as in Fig. 60 *P. chrysocephalus* (L.).
- Anterior angles of pronotum distinctly projecting beyond contour, their angles near setiferous pore occasionally extended into sharp tooth; pronotum less strongly narrowed forwards (Fig. 186); 3rd segment of fore tarsus of male narrower than 1st one; body two-color. Aedeagus as in Fig. 53, spermatheca as in Fig. 81, head as in Fig. 172 *P. tricolor* Wse.

Note. Warchałowski (2000) made valid the name *P. cyanoptera* var. *tricolor* Weise, 1888 as the name of a species (*P. tricolor* Weise); he also established that it was the senior synonym of the name *P. sophia* Heikertinger, 1914. Examination of the material has shown that *P. tricolor* Wse. is actually presented by two closely related, but clearly differing species. The presence of a complex of several names of the species-group (*P. cyanoptera* Redtenbacher, 1849; *P. cyanop-*



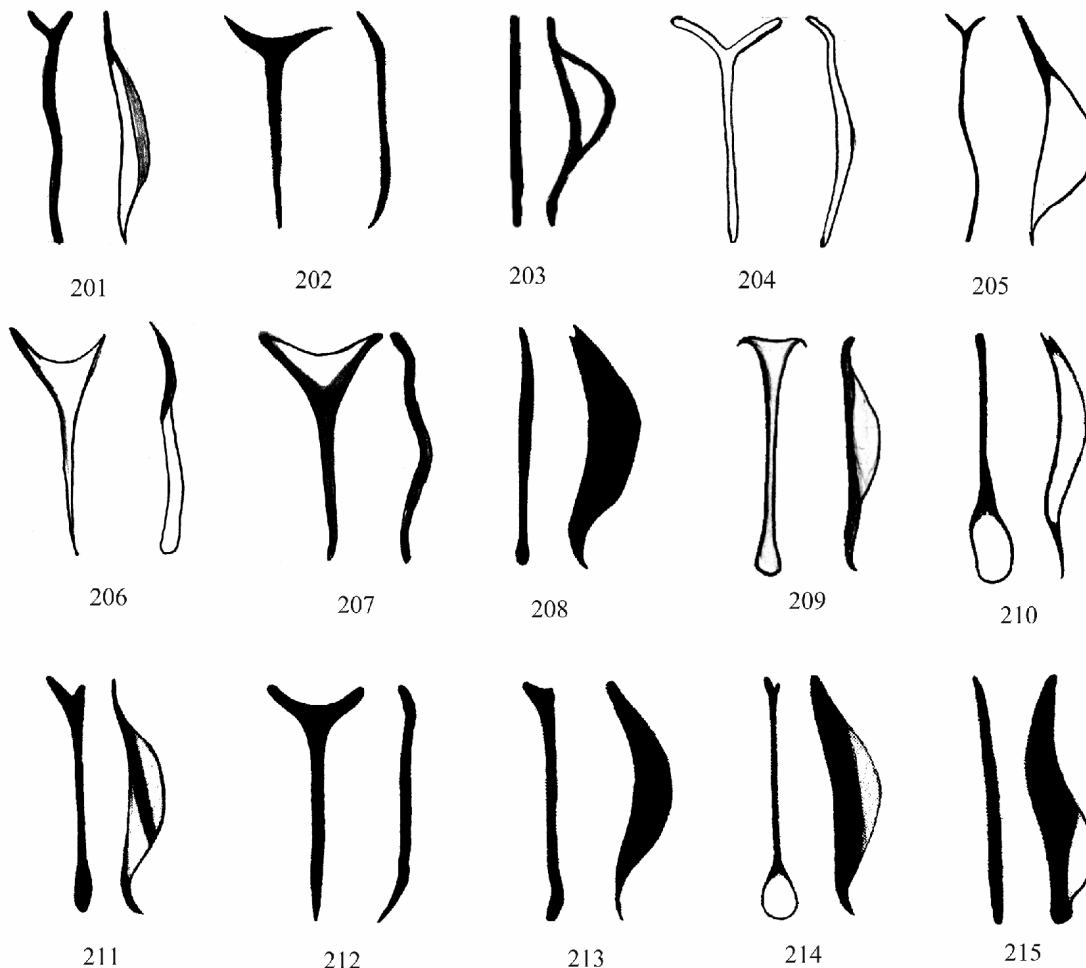
Figs. 188–200. *Psylliodes* Latr., fore tarsus of male: (188) *P. amurensis*, (189) *P. bretteinghami*, (190) *P. concolor*, (191) *P. cucullatus* (after: Doguet, 1994), (192) *P. cupreus* (after: Doguet, 1994), (193) *P. illyricus* (after: Leonardi and Gruev, 1993), (194) *P. laticollis* (after: Doguet, 1994), (195) *P. laxus*, (196) *P. napi* (after: Doguet, 1994), (197) *P. picinus* (after: Leonardi and Gruev, 1993), (198) *P. submontanus*, (199) *P. thlaspis* (after: Doguet, 1994), (200) *P. toelgi* (after: Doguet, 1994).

tera ab. *nigrivertex* Jacobson, 1902; *P. cyanoptera* ab. *nigrifrons* Heikertinger, 1914; *P. sophiae* fa. *nigricapila* Kral, 1945; *P. sophiae* ab. *lichtneckerti* Kaszab, 1962; *P. sophiae* ab. *autumnalis* Kaszab, 1962), involves difficulties in definition of the status of these names. The resolution of the issue requires examination of the type material of each of the listed aberrations and forms. Species of this complex can be distinguished using the key below.

1. Body larger, wider; eyes less convex; apical antennal segments short, very wide; pronotum much

wider than long; anterior angles of pronotum with not sharp tooth at base; sides of pronotum moderately rounded; base nearly as wide as elytral base; humeral calli projecting less strongly; hind tibia with usually straight or nearly straight ventral side in lateral view, wide at base; 1st segment of fore tarsus of male narrower, 2nd one wide
..... *Psylliodes* sp. 1.

—Body more slender, narrower; eyes more strongly convex; apical antennal segments not very wide, long; pronotum moderately transverse; anterior an-



Figs. 201–215. *Psylliodes* Latr., tegmen, dorsal and lateral view: (201) *P. aereus*, (202) *P. aeneolus*, (203) *P. agropyri*, (204) *P. affinis*, (205) *P. attenuatus*, (206) *P. brettinghami*, (207) *P. chalcomerus*, (208) *P. chrysocephalus*, (209) *P. concolor*, (210) *P. crambicola*, (211) *P. cucullatus*, (212) *P. cupreatus*, (213) *P. cupreus*, (214) *P. frivaldszkyi*, (215) *P. glaber*.

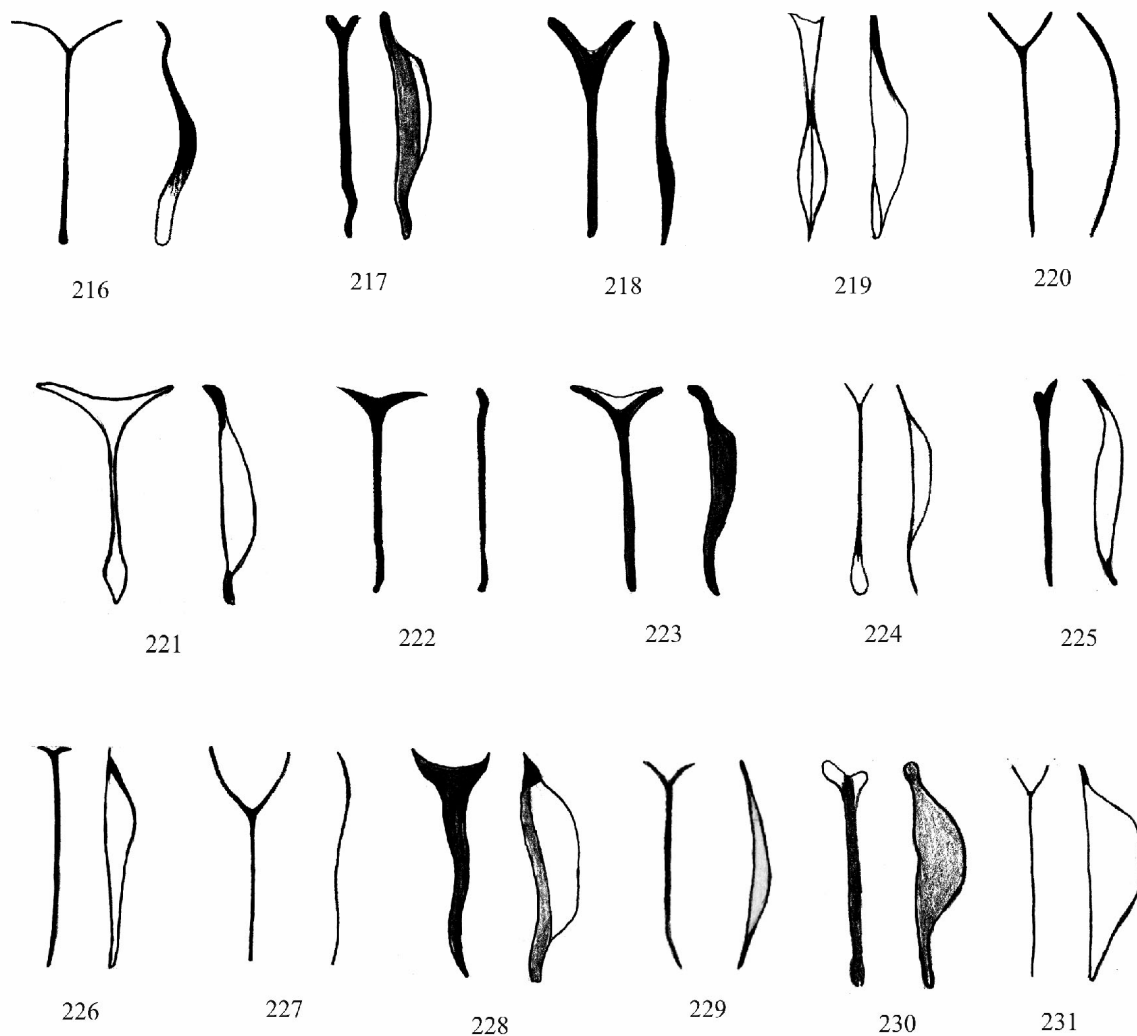
gles of pronotum strongly projecting beyond contour; their apices near setiferous pore extended into sharp tooth; lateral margins of pronotum less strongly converging forwards, nearly straight; base narrower than elytral base; humeral calli projecting more strongly; hind tibia distinctly curved on ventral side in lateral view, with narrow base; 1st segment of fore tarsus of male wide, 2nd one narrow *Psylliodes* sp. 2.

A KEY TO SPECIES OF THE *BRETTINGHAMI* GROUP

1. Vertex impunctate, shagreened; ocular sulci narrow; head elongate; eyes large, convex; vertex rather convex, slightly narrower; frontal calli not convex; frontal ridge narrow; pronotum less convex; sides straight, nearly parallel; punctures in elytral rows separated by distance equal to half, occa-

sionally one diameter of punctures; secondary punctation rather fine and sparse; outer row of punctures near humeral callus sparse and not depressed; hind femur entirely black; fore and middle femora dark brown; tibiae and tarsi brown; dorsal side black, with metallic shine. Body length 2.0–2.5 mm. Aedeagus as in Fig. 7, spermatheca as in Fig. 92 *P. angusticollis* Baly.

—Vertex rather convex, very finely but distinctly covered with sparse, rather fine, superficial punctures; ocular sulci very wide, especially near setiferous pores, being strongly angularly widened there and extending onto vertex; sizes usually larger ... 2.
2. Hind femur rufescent to pale brown, with darker apex; fore and middle femora darkened; tibiae and tarsi rufous; elytra with rather large punctures, rows forming rather depressed striae separated by



Figs. 216–231. *Psylliodes* Latr., tegmen, dorsal and lateral view: (216) *P. instabilis*, (217) *P. isatidis*, (218) *P. laticollis*, (219) *P. longicollis*, (220) *P. luteolus*, (221) *P. macellus*, (222) *P. napi*, (223) *P. persicus*, (224) *P. picinus*, (225) *P. punctifrons*, (226) *P. rubroaeneus*, (227) *P. saulcyi*, (228) *P. subaeneus*, (229) *P. submontanus*, (230) *P. thlaspis*, (231) *P. validus*.

convex intervals; secondary punctuation fine, but distinct, sparse; pronotum with large distinct punctures; intervals weakly convex, smooth; hind tibia very long, curved; vertex rather convex; intervals between punctures smooth, shining; frontal calli distinctly not separated from vertex, weakly convex, more or less distinct, especially along anterior margin; frontal ridge narrow; dorsal side blue, violet, or green, with metallic shine. Body length 3.3–3.8 mm. Aedeagus as in Fig. 10, tegmen as in Fig. 206, spermatheca as in Fig. 94, head as in Fig. 158, pronotum as in Fig. 174, fore tarsus of male as in Fig. 189, hind tibia as in Fig. 136
 *P. brettinghami* Baly.

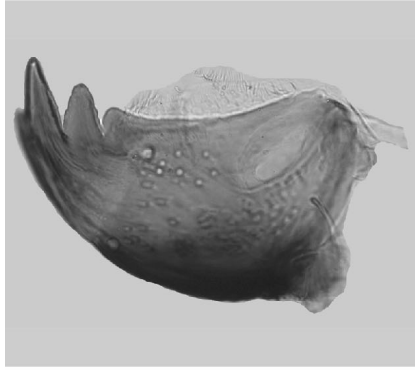
—Hind femur dark brown, nearly black; legs entirely brown; punctures in elytral rows smaller, rows not

depressed in striae; intervals between them flat, with large dense secondary punctuation; punctures of pronotum sparser and less deep; hind tibia shorter and slightly less curved; body blue, with metallic shine. Body length 3.3 mm
 *P. nitidus* L. Medv.

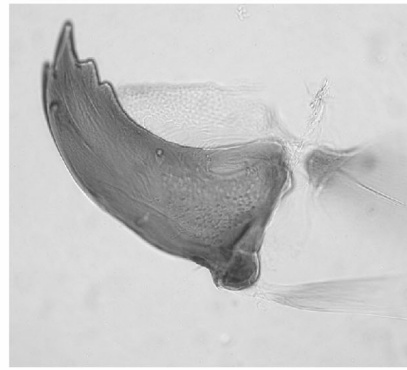
A KEY TO SPECIES OF THE *PUNCTIFRONS* GROUP

1. Dorsal side not shagreened, strongly shining (occasionally pronotum weakly shagreened, but then aedeagus with obtuse apex) 2.
- Dorsal side moderately or strongly shagreened, with silk shine 3.
2. Punctuation of vertex irregular; punctures varying in size from large to very fine, of irregular shape; in-

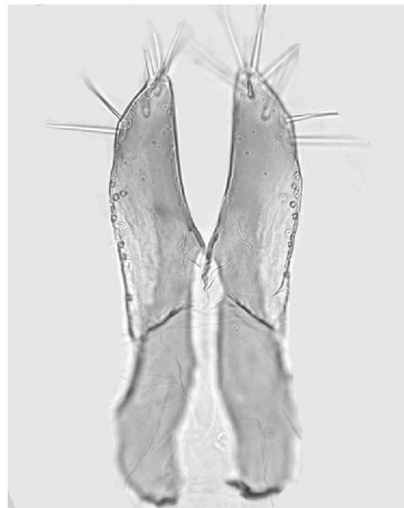
- tervals uneven; pronotum with sparse and medium-sized punctation, with uneven intervals; anterior angles strongly developed, forming no sharp tooth near setiferous pore; base of pronotum very finely depressed along lateral margin, with row of punctures; 1st segment of fore tarsus of male not very strongly widened (Fig. 188); punctures in elytral rows large, separated by distance not exceeding half of their diameters, almost not forming striae; intervals with moderately coarse secondary punctation, uneven and striate; dorsal side with bronze shine; antennae and legs rufous; femora slightly darker; hind tibia rather short. Body length 2.5 mm. Aedeagus as in Fig. 5, hind tibia as in Fig. 135
 *P. amurensis* Nadein.
- Punctation of vertex fine, regular; intervals flat; punctures of equal size, fine, regularly shaped; punctation of pronotum fine, punctures moderately deep, intervals occasionally not coarsely and not very distinctly shagreened; punctures in elytral rows large, separated by distances at least half diameter of punctures, almost not forming depressed striae; secondary punctation very fine, superficial; 1st segment of fore tarsus of male strongly widened; anterior angles of pronotum developed, projecting beyond contour, not forming sharp tooth near setiferous pore; dorsal side blue or green, with metallic shine; ventral side black, legs and antennae brown, femur dark brown, hind femur black, hind tibia rather long. Body length 2.5–2.8 mm. Aedeagus as in Fig. 49, spermatheca as in Fig. 112
 *P. subrugosus* Jac.
3. Legs and antennae after 3rd segment brown, femur dark brown; hind femur entirely black, strongly widened, covered with sparse pubescence; shagreenity of dorsal side moderately developed; punctation of vertex sparse, fine or moderately coarse, superficial; punctation of pronotum coarse, deep, sparse; punctures in elytral rows very large, deep, separated by distance about half diameter of puncture, forming depressed striae; secondary punctation very fine or (rarely) moderately coarse, intervals between rows of punctures weakly convex or flat; pronotum weakly convex; its anterior angles strongly developed, forming not very sharp angles near setiferous pore; vertex flat; head in lateral view distinctly bent near antennal sockets; 1st segment of fore tarsus of male strongly widened; hind tibia quite frequently with fine or large several teeth on outer carina; pronotum darker than elytra, nearly black; elytra blue, greenish, or violet, with metallic shine. Body length 2.5–2.8 mm. Aedeagus as in Fig. 19, spermatheca as in Fig. 99
 *P. cyanescens* Wse.
- Legs and antennae rufous yellow or partly brownish; apical antennal segments only slightly darker than basal ones; femora darker; hind femur less strongly widened and more densely pubescent; punctation of vertex dense, coarse; pronotum and elytra of one color. Other characters not occurring together or not occurring at all 4.
4. Body moderately shagreened; vertex slightly convex, with medium-sized, dense, distinct punctures; 1st segment of fore tarsus of male shorter and less strongly widened; punctation of pronotum medium-sized, dense; punctures in elytral rows medium-sized, dense; rows of punctures not forming depressed striae, intervals between them flat; secondary punctation fine, but distinct; anterior angles of pronotum strongly developed, forming not sharp prominence near setiferous pore; sides of pronotum straight or weakly rounded; coloration varying: silvery, bronze, blue or green, with metallic shine; hind femur entirely black, with metallic shine. Body length 2.8–3.3 mm. Aedeagus as in Fig. 42, tegmen as in Fig. 225, spermatheca as in Fig. 107 ..
 *P. punctifrons* Baly.
- Body very strongly and coarsely shagreened; vertex with coarse granulate shagreenity and dense, moderately large punctures not very distinct against background of shagreenity; vertex in lateral view flat; pronotum with coarse granulate shagreenity; punctures medium-sized, dense; 1st segment of fore tarsus of male long, strongly widened; punctures in elytral rows smaller, elongate, less deep, dense; intervals between rows narrower; secondary punctation fine, superficial, badly distinguishable against background of very coarse reticulate shagreenity; anterior angles of pronotum strongly developed; sides of pronotum rounded; legs and antennae rufous; apical antennal segments darker; hind femur not entirely dark, without metallic shine; dorsal side green or blue, with metallic shine 5.
5. Aedeagus regularly narrowed from base to apex, regularly curved in lateral view, longitudinally concave in second basal 1/4, also regularly concave in apical half; anterior angles of pronotum sharper. Body length 3 mm. Aedeagus as in Fig. 50
 *P. takizawai* Gruev.



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Figs. 232–237. *Psylliodes* Latr.: (232, (233) mandible; (234, 235) vaginal palpi; (236, 237) spiculum ventrale; (232) *P. attenuatus*, (233) *P. macellus*, (234) *P. saulcyi*, (235) *P. isatidis*, (236) *P. frivaldszkyi*, (237) *P. saulcyi*.

—Aedeagus regularly weakly widened from base nearly to apex, then sharply narrowed, with triangular apex, less strongly and irregularly curved in

lateral view, less curved in basal 2/3, flat and not concave in second basal 1/4, sharply concave immediately behind it; anterior angles of pronotum

more strongly rounded. Body length 2.9–3.2 mm. Aedeagus as in Fig. 33, spermatheca as in Fig. 103, fore tarsus of male as in Fig. 195, hind tibia as in Fig. 147 *P. latus* Nadein.

A KEY TO SPECIES OF THE SAULCYI GROUP

1. Head and pronotum with metallic or greenish-metallic shine. Dorsal side two-color, darker as whole (head and pronotum rufescent brown or brown, elytra yellow or rufescent yellow) 2.
—Head and pronotum without metallic or greenish metallic shine. Dorsal side two-color, pale as whole (head and pronotum rufescent yellow, elytra yellow) or one-color (yellow) 5.
2. Intervals between rows of punctures on elytra and between punctures on pronotum convex 3.
—Intervals between rows of punctures on elytra and punctures on pronotum flat. Body length 2.3–2.6 mm. Aedeagus as in Fig. 21, spermatheca as in Fig. 86 *P. dilutellus* Hktg.
3. Vertex with very coarse, large punctures; intervals strongly convex, with distinct wrinkles; frontal calli punctate on upper side, badly distinguishable, as also ocular sulci, among sculpture of vertex (Fig. 163). Head and pronotum very wide; female pygidium triangular, with nearly sharp apex. Body length 2.4–2.7 mm. Aedeagus as in Fig. 28, spermatheca as in Fig. 88 *P. infandus* Nadein.
—Punctures on vertex moderately large to nearly fine; intervals between punctures not wrinkled, nearly flat or flat; frontal calli impunctate and not wrinkled on upper side, distinct among sculpture, as well as ocular sulci 4.
4. Aedeagus with short rounded teeth; ocular sulci adjoining inner margins of eyes only in basal 1/3 (Fig. 171). Female pygidium triangular, with narrowly rounded apex; base and apex of median sulcus widened. Apical lobe of spiculum ventrale wide, nearly diamond-shaped, with large, widely spaced processes at sides of apical lobe; line at basis of lobe indistinct, short, strongly curved. Body length 1.8–2.4 mm. Aedeagus as in Fig. 46, tegmen as in Fig. 227, spermatheca as in Fig. 89, pronotum as in Fig. 187 *P. saulcyi* All.
—Aedeagus with long sharp teeth, ocular sulci adjoining inner margins of eyes in basal 2/3 (Fig. 155). Female pygidium widely triangular, with widely

rounded apex; base and apex of median sulcus narrowed. Apical lobe of spiculum ventrale widely transverse, narrow; its lateral processes small, short, situated very closely to lobe; line at basis of lobe distinct, long, weakly curved. Body length 2.2–2.5 mm. Aedeagus as in Fig. 4, spermatheca as in Fig. 84 *P. analogicus* Nadein.

5. Dorsal side yellow, intervals between elytral rows of punctures very wide and weakly convex, intervals between rows on disc 4–6 times diameter of punctures; inner angle of elytral apices extended into narrow process; elytral apex distinctly emarginate. Female pygidium trapeziform, with very widely rounded apex. Body length 2.7 mm. Spermatheca as in Fig. 87 *P. grigorievi* Jcbs.
—Dorsal side two-color; intervals between rows of punctures on elytra very narrow, strongly convex; those on disc not exceeding 3 diameters of punctures; inner angle of elytral apices without process; elytral apex even. Female pygidium triangular, with narrowly rounded apex. Body length 2–2.1 mm. Spermatheca as in Fig. 85, head as in Fig. 156, pronotum as in Fig. 173 *P. astenicus* Nadein.

A KEY TO SPECIES OF THE HYOSCYAMI GROUP

1. Body large, wider; frontal ridge wide and flattened; pronotum wide, with widely rounded sides (Fig. 178); lateral margin in lateral view weakly arcuately curved behind anterior angles; anterior angles of pronotum well developed, distinctly projecting beyond contour near setiferous pore; punctuation of elytra sparser, intervals between punctures smoother; hind tibia in lateral view narrow, as well as at base, less curved; outer carina without large teeth, smooth or with very small sparse notches; antennae, beginning with 4th segment, and legs brown; hind femur black, with weak blue metallic shine. Body length 3–4.2 mm. Aedeagus as in Fig. 22, spermatheca as in Fig. 64, hind tibia as in Fig. 141 *P. dulcamarae* (Koch).
—Body smaller, narrower; frontal ridge narrower, especially at apex, more distinct, convex; pronotum narrower, less convex; its sides straight or weakly rounded; lateral margin straight behind setiferous pore in lateral view; anterior angles of pronotum poorly developed, not projecting or rather weakly projecting beyond contour; elytral punctuation denser as whole; intervals not very smooth; hind

tibia in lateral view wider, as well as at base, more strongly curved; outer carina occasionally with large teeth or notches; legs and antennae rufous or brownish 2.

2. Lateral margins of pronotum straight, anterior angles not projecting beyond contour; hind tibia narrow in dorsal view, usually without large teeth or notches, or with small notches; aedeagus with quite rounded apex, regularly curved in lateral view; legs usually darker, brownish. Body length 2.8–3.8 mm. Aedeagus as in Fig. 11, tegmen as in Fig. 207, spermatheca as in Fig. 95, head as in Fig. 159
..... *P. chalcomerus* (Ill.).

—Sides of pronotum weakly rounded, anterior angles occasionally weakly projecting beyond contour; hind tibia wider in lateral view, usually with large teeth or notches on outer carina; aedeagus with small conical prominence at apex, or apex more conical; apical half more straight in lateral view; legs usually rufous, except for hind femur, rarely slightly darkened. Body length 2.8–3.8 mm. Aedeagus as in Fig. 26, spermatheca as in Fig. 66, head as in Fig. 162 *P. hyoscyami* (L.).

A KEY TO SPECIES OF THE *PICINUS* GROUP

1. Sides of pronotum widely rounded, lateral edging usually wide, pronotum strongly convex, ventral and dorsal sides of aedeagus with transverse wrinkles. Body length 1.9–2.8 mm. Aedeagus as in Fig. 27, spermatheca as in Fig. 67, fore tarsus of male as in Fig. 193 *P. illyricus* Leon. et Gruev.

—Sides of pronotum weakly rounded or straight, lateral edging narrow, pronotum less convex, aedeagus without transverse wrinkles on ventral and dorsal sides; vertex smooth, shining; frontal calli distinct, weakly convex or nearly flat; prothorax large and wide, slightly narrower than elytral base; anterior angles rather large, usually strongly projecting beyond contour; punctation of pronotal disc sparse, fine, superficial; elytra wide; rows of punctures forming superficial striae; punctures in rows large, deep; body pale to dark brown; antennae and legs, except for darker hind femur, yellow or rufescent yellow. Body length 2.2–2.8 mm. Aedeagus as in Fig. 41, tegmen as in Fig. 224, spermatheca as in Fig. 77, head as in Fig. 169, contour of body as in Fig. 132, fore tarsus of male as in

Fig. 197, hind tibia as in Fig. 151
..... *P. picinus* Marsh.

A KEY TO SPECIES OF THE *LUTEOLUS* GROUP

1. Body less convex; vertex more convex, smooth, sparsely punctate; eyes moderately large; frontal calli distinct; prothorax distinctly narrower than bases of elytra; anterior angles weakly projecting beyond contour; punctures on pronotum and in rows on elytra sparser; punctures in rows large; rows occasionally weakly depressed; intervals between rows flat or weakly convex; spines in apical 1/3 of hind tibia larger; aedeagus in lateral view strongly curved, narrowed before apex, with widened apex; dorsal side yellow or rufous to brownish. Body length 2.2–2.8 mm. Aedeagus as in Fig. 35, tegmen as in Fig. 220, spermatheca as in Fig. 72, head as in Fig. 166, contour of body as in Fig. 123, pronotum as in Fig. 183, hind tibia as in Fig. 149 *P. luteolus* Müll.
- Body more convex; vertex less convex; eyes smaller; punctures on pronotum and in rows on elytra denser as whole; elytral rows more depressed; spines in apical third of hind tibia smaller; aedeagus nearly straight and wide in lateral view; ventral side strongly concave; apical 1/4 wide, not straight, slightly curved backwards; body entirely rufous. Body length 2.2–2.9 mm. Aedeagus as in Fig. 14, tegmen as in Fig. 209, spermatheca as in Fig. 96, fore tarsus of male as in Fig. 190, hind tibia as in Fig. 137 *P. concolor* Nadein.

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