

Review of the *glaber* species-group of the genus *Psylliodes* LATR.
(Coleoptera: Chrysomelidae: Galerucinae: Alticini)

KONSTANTIN S. NADEIN

Laboratory of Insect Systematics, Zoological Institute, Universitetskaya nab. 1, 199034
St. Petersburg, Russia; E-mail: luperus@mail.ru

ABSTRACT. A review of the *glaber* species-group is provided. Descriptions of the group and redescrptions of species, a key to species, and notes on distribution are given. Lectotypes of *P. longicollis* WSE., *P. sturanyi* APF. and *P. danieli* WSE. are designated. *P. nivalis* IABL.-KHNZOR. is placed in synonymy with *P. longicollis* WSE. and *P. rambouseki* HKTG. is placed in synonymy with *P. danieli* WSE; the status of *P. rambouseki forojulensis* HKTG. as a subspecies is not confirmed.

Key words: entomology, taxonomy, Coleoptera, Chrysomelidae, Alticinae, *Psylliodes glaber* group, species-group, key, new synonyms, lectotypes, descriptions.

INTRODUCTION

The *glaber* species-group was proposed by NADEIN (2006) and its composition was given. Firstly, some species of the *glaber* species-group were partly reviewed for the first time by HEIKERTINGER (1921) in his review of the wingless species of the genus *Psylliodes* LATR. from the Palearctic Region. Although, HEIKERTINGER did not divide genus into species-groups, he noted the affinity of some wingless species. LEONARDI (1970) included some of the species of the *glaber* species-group in the *napi* species-group sensu LEONARDI. Also several works dealt with species of the *glaber* species-group, including the description of a new species, distribution, taxonomical changes as well as regional faunas and keys (DOGUET 1994, 1994a; GRUEV & DÖBERL 1997; LEONARDI 1975; LOPATIN & KONSTANTINOV 1995; WARCHAŁOWSKI 2000, 2003).

The present paper is the result of particular study of the composition, taxonomy and distribution of the *glaber* species-group.

METHODS

All observations, preparations and figures were made using a dissecting microscope MBS-9. Photos of the female genitalia were made from the glycerin preparations using a Motic BA450 light microscope and a Canon 350D digital camera. Figures of the male genitalia were made from the glycerin-gelatin preparations. Measurements were made using ocular-micrometer. Abbreviations for measurements: PI – pronotal index (maximum length/maximum width of pronotum); EI – elytral index (maximum length/maximum width of elytra); LI – pronotal-elytral length index (maximum length of pronotum/maximum length of elytra); BI – body length-width index (length/width of body). The terminology of the structure of the spermatheca follows DÖBERL (1986). The species' distribution follows GRUEV & DÖBERL (1997).

ABBREVIATIONS

- NHMB – Naturhistorisches Museum in Basel, Switzerland;
 NHMP – Narodni Muzeum, Entomologicke Oddeleni, Prague, Czech Republic;
 IRSNB – Institute Royal des Sciences Naturelles, Bruxelles, Belgium;
 MSNM – Museo Civico di Storia Naturale di Milano, Italy;
 MNHB – Természettudományi Múzeum, Budapest, Hungary;
 SMTD – Staatliches Museum für Tierkunde, Dresden, Germany;
 ZMUH – Zoological Museum, University of Helsinki, Finland;
 ZMUA – Zoologisch Museum Universiteit van Amsterdam, Netherlands;
 ZMHB – Zoologisches Museum, Humboldt Universität, Berlin, Germany;
 SMF – Forschungsinstitut und Natur-Museum Senckenberg, Frankfurt-am-Main, Germany;
 DEI – Deutsches Entomologisches Institute, Müncheberg, Germany;
 ZMUC – Zoologisk Museum, Universitets København, Denmark;
 USNM – Smithsonian Institution, National Museum of Natural History, Washington, USA;
 ZMMU – Zoological Museum of Moscow State University, Russia;
 ZIN – Zoological Institute, St. Petersburg, Russia;
 MD – M. DÖBERL collection, Abensberg, Germany.

DESCRIPTION OF THE *GLABER* SPECIES-GROUP

The species of the *glaber* species-group belong to the “minotoid” morpho-ecological group of Alticini and are montane (NADEIN 2005). This morpho-ecological group is characterised by the following characters: size small or very small, 1-3 mm; colour dark, usually black, sometimes with metallic lustre; body compact, rounded, subspherical or elliptic-cylindrical, very convex; the head drawn in prothorax, strongly tucked, almost invisible from above; antennae and legs short, often swollen, the beetles are able to place the legs in the depressions on the ventral side of body, and the antennae, in the deep grooves laterally from the frontal ridge. The winglessness is typical for the “minotoid” form as for the most of beetles inhabit at mountains. Species of the

“minotoid” form occur in the forests (*Minota* KUTSCH., *Apteropeda* CHEVR., *Mniophila* STEPH., *Orestia* GERM.) and subalpine and alpine meadows (*Psylliodes*) being mainly mesophilic or meso-hygrophilic. Field observations have shown that some species (*Minota carpathica* HKTG., *Psylliodes frivadszkyi* WSE.) are active at night and collected in greatest numbers before midnight.

Body small, short, usually very or moderately convex, oval-rounded or cylindrical; body shagreen weak and smooth to well developed, especially at head and pronotum. Head large, vertex wide (figs. 73–80), punctures large and dense to impunctate; eyes large and convex (figs. 73, 75, 76) to small and flattened (figs. 77, 78, 80); frontal ridge triangular-trapezoidal, not very convex; labrum roof-shaped, with transverse medial elevation, setiferous pores well developed, from 4 to 6; frontal calli narrow, joined with convex inner margin of eyes; ocular sulci usually poorly developed, shallow to rather shallow, with margins uneven; antennal grooves moderately concave. Prothorax usually very large and convex (figs. 4, 10, 16); not strongly punctured, punctures often small, sparse and shallow, spaces between them flat. Elytra with striae regular or slightly confused; punctures in striae usually moderate or large; elytral apices with sutural angles sometimes forming an acute denticle. Metatibia mostly distinctly curved (with the exception of *P. solarii*), but not as much as in *pycinus* and *luteolus* species-groups; metatarsus usually attached close to apices, rarely at a maximum distance of 1/3 of tibia length. Tegmen modified, with apical branches reduced. Spermatheca with duct short, not coiled to loops; nodulus short, globose or cylindrical or with base swollen as in the spermathecae of the *cucullatus* species-group, but collo longer and not sharpened apically. Hind wings absent, with no winged forms.

This group is close to the *cucullatus* species-group in body shape (cylindrical in some species), the structure of the spermatheca, and the well developed microsculpture of the body surface of some species, but it differs in the structure of the metatibia, which is not curved when viewed from above, and more curved in lateral view, the shape of metatarsomere 1 and its attachment usually rather close to apex. It is also close to the *gibbosus* species-group in habitus, and similarity of the structure of the head, proportions of the body, but it differs in the structure of the spermatheca (large and long, duct coiled or overlapping), legs thicker.

The *glaber* species-group belongs to a complex including the species-groups *cucullatus*, *gibbosus*, *vehemens* species-groups, the species *P. ellipticus* ALL. and *P. belarbitii* DÖBERL and subgenera *Eupus* WOLL. and *Semicnema* WSE. The complex is characterized by body short and convex, head and pronotum large, labrum roof-shaped with transverse medial elevation, tegmen modified, beetles usually wingless.

The species of the *glaber* species group are distributed in the mountains of Europe and the Caucasus. *P. dogueti* WARCH. from Turkey, according to the description and illustrations, belongs to the *glaber* species-group (WARCHALOWSKI 1993). Unfortunately I have not been able to examine any material of this species, so it is omitted from the paper.

KEY TO THE SPECIES OF THE *GLABER* SPECIES-GROUP

1. Species from Caucasus 2.
- Species from Europe 3.
2. Eyes small and less convex (fig. 74), colour of body usually black, punctures of vertex and pronotum smaller and more sparse, frontal calli often splitted, pronotum longer and less transverse, sutural angle forms sharpened denticle, anterolateral callosity poorly developed, posterolateral less elongated downwards, inner ridge of metatibia with large denticle, outer with several notches (fig. 29) *P. longicollis* WSE.
- Eyes large (fig. 73), body brown with bronzy lustre, punctuation of vertex and pronotum dense, frontal calli not splitted, pronotum more transverse, sutural angle not forming acute denticle, anterolateral callosity more protruding and posterolateral elongated downwards, inner ridge of metatibia without large denticle, outer ridge without denticles or notches (fig. 28) *P. rubroaeneus* HKTG.
3. Apex of aedeagus straight with short denticle (Fig. 24) *P. danieli* WSE.
- Apex of aedeagus sharpened, triangular or rounded, without denticle (Figs. 19–23, 25–27) 4.
4. Vertex impunctate, surface covered with distinct granular shagreen 5.
- Vertex punctured, surface shagreened to almost smooth 6.
5. Body more convex, head larger (fig. 78), vertex flat, eyes small, labrum wider and larger, with 4 widely spaced setiferous pores; pronotum more convex, long, less transverse, punctures in striae regular, interstices flat and distance between striae larger; elytral apices less rounded, metatarsomere 1 curved *P. petasatus* FOU DR.
- Body flatter, head smaller (fig. 79), vertex more convex, eyes larger, labrum longer and narrower with 6 setiferous pores situated close to each other, pronotum shorter and less convex, distance between striae of elytra less and with interstices more convex, secondary punctuation more strongly developed, elytral apices more rounded; metatarsomere 1 straight *P. solarii* LEON.
6. Metatarsi articulated to metatibia rather close to apex (Figs. 31, 32) 7.
- Metatarsi articulated to metatibia at some distance from apex (Figs. 30, 34) 8.
7. Body less shining (silky and dull); frontal ridge wider and flatter, trapezoidal; vertex and pronotum with punctuation smaller, sparser, shallower; elytral punctuation smaller, denser, distance between striae larger, interstices flat; dorsal shagreen more distinct; lateral margin of pronotum in lateral view distinctly arched (fig. 37) *P. sturanyi* APF.
- Body shining dorsally; dorsal shagreen less developed; vertex and pronotum more strongly and densely punctured; frontal ridge triangular; lateral margin of pronotum in lateral view straight; punctures of elytra larger, sparser, distance between striae smaller, interstices more convex *P. frivaldszkyi* WSE.
8. Body more oblong, less convex, slightly less shining; vertex very wide, strongly shagreened with shagreen large and granular, punctures sparser; eyes small (fig. 77), frontal ridge short and shagreened, labrum short and wide; pronotum less convex and strongly shagreened, punctures of elytra smaller *P. schwarzi* WSE.

- . Body very convex and clearly rounded, shining; vertex narrower, shagreen more poorly developed, smooth, punctures denser; eyes large (fig. 75), frontal ridge long, almost smooth, labrum long and narrower, pronotum convex and less shagreened, punctuation of elytra larger *P. glaber* DUFT.

***Psylliodes petasatus* FOUDRAS**

(Figs. 15, 16, 26, 35, 45, 54, 63, 71, 78)

Psylliodes petasata FOUDRAS, 1860: 150.

Psylliodes minima ALLARD, 1859: 260 (HEIKERTINGER, 1926; synonymised).

DESCRIPTION

Body cylindrical, convex (figs. 15, 16). Dorsally black with bronzy or metallic lustre; fore, middle legs, metatibia reddish-brown, femora darker, metafemora dark brown, shining, basal 3 antennal segments reddish-brown, apical darker to brown; ventrally black. Head large, eyes small, moderately convex (fig. 78). Vertex rather large and wide (fig. 78), almost flat; surface with granular, clear, moderately large shagreen, impunctate; several setiferous pores form small and shallow impression at apices of ocular sulci. Ocular sulci poorly developed, narrow and rather shallow; its bottom uneven, wrinkled, margins poorly visible, indistinct; close to apices of frontal calli deeper and with more distinct margins. Frontal calli narrow, not strongly convex, shagreen as well as vertex, but more fine; separated from vertex by almost smooth, thin stripe, not clearly separated from frons; apices elongated and narrow, joined with convex and shagreened inner margins of eyes, joining usually impressed. Frontal ridge wide, triangular-trapezoidal, weakly convex or almost flat from above; surface with granular, clear shagreen, slightly smaller than at vertex, sides with some punctures. Anterofrontal ridge weakly convex, with a row of punctures at inner side near antennal groove and with a row of punctures at anterior margin of frons, which is slightly concave. Antennal grooves not very deep, shagreened. Antennal sockets widely separated, distance between sockets and eye about diameter of socket or slightly less. Labrum large, wide; 4 median setiferous pores well developed, widely spaced, the 2 median clearly larger than the others.

Pronotum moderately transverse, convex, anterior angles not visible from above. Anterior and posterior margins not very convex, evenly rounded, lateral margins weakly converging and almost straight. Anterior border more or less thin, flat, posterior slightly wider or the same, more convex; lateral borders narrow, more or less smooth. Anterolateral callosity poorly developed, not swollen, slightly protruding from contour, mostly at setiferous pore, margins of callosity rounded and smooth. Pronotal disc with not large and shallow punctuation, distance between punctures 1.5–2 times punctures diameter; interstices flat, with granular, clear shagreen like that at vertex or slightly larger; sides with punctures slightly larger, shagreen more distinct and larger.

Elytra elongated, moderately convex. Punctures in striae not very large, moderately deep, distance between punctures half puncture diameter, distance between striae 1.5–2

puncture diameters; striae sometimes form rather shallow furrows with weakly convex or almost flat interstices; secondary punctuation minute and almost invisible to not very large, superficial, sparse, forming confused striae; interstices with weak shagreen, uneven, slightly smooth, weaker than that of pronotum. Elytral apices weakly rounded to suture; sutural angle forms obtuse short denticle. Pygidium of female – fig. 71

Metatibia weakly curved (only lower side), weakly widened at tarsal attachment and less to apex viewed from above; articulation of tarsus at some distance from the apex, inner ridge with 1 large denticle, outer with some small denticles-notches (fig. 35). Metatarsomere 1 slightly curved, slightly widened basally before middle.

Genitalia. Male: aedeagus (fig. 26) small, slightly narrowed to apex, ventral groove moderately deep, apex rounded with small, wide denticle, at lateral view curved, apex curved more distinctly. Female: spermatheca (fig. 45) with collo moderately long, curved at almost 90°, nodulus globose, duct very short and thick with large ramus; vaginal palpi – fig. 54; tignum – fig. 63.

Measurements. Body length – 2.07–2.49 mm, width – 1.01–1.26 mm. Male (n=2), female (n=3): PI – 1.38–1.55 (1.45); EI – 1.43–1.53 (1.47); BI – 1.96–2.06 (2.00); LI – 2.41–3.45 (2.77).

DIFFERENTIAL DIAGNOSIS

Close to *P. schwarzi* and *P. solarii* in the shape and proportions of the body, structure of the head, developed microsculpture of the body surface and shape of metatibia. Differs from the first in the structure of the genitalia; body more elongated and oblong, cylindrical; vertex impunctate, eyes slightly larger and more convex; shagreen of pronotum and elytra more developed; labrum longer and less wide, 4 setiferous pores smaller and shallower; pronotal punctuation usually larger and denser; elytra less shining with striae more regular, secondary punctuation more weakly developed. Differs from *P. solarii* in the structure of the genitalia; body more convex, vertex flatter, eyes smaller, labrum wider and larger, with 4 setiferous pores placed wider; pronotum longer, punctures in striae more regular, interstices flat and distance between striae larger; metatarsomere 1 curved.

DISTRIBUTION

Type locality: Central Pyrenees. Spain, France, Italy.

MATERIAL EXAMINED

FRANCE: “Pic d’Ayre Pyrenees centrale”, 1 male (NHMP); “Pirenei franc. Lac du Cap de Long, 8.VII.1995 leg. Leonardi”, 1 male, 1 female (MSNM); “Pyreneén”, 1 female (DEI); “Psylliodes petasata”, 1 female (DEI).

Psylliodes schwarzi WEISE (Figs. 13, 14, 25, 34, 44, 53, 62, 70, 77)

Psylliodes schwarzi WEISE, 1900: 293.

DESCRIPTION

Body short-cylindrical, convex (figs. 13, 14). Dorsally and ventrally black, fore and middle legs, metatibia, basal 3 antennal segments reddish-brownish; metafemur dark brown to piceous; antennal segments from 4th gradually darker to apex. Head large, eyes small, very widely spaced, weakly elongate, not very convex (fig. 77). Vertex very large and wide; covered with rather large more or less regular punctures, usually larger than punctures on pronotal disc, not deep and not shiny, distance between punctures about 1 diameter; interspaces with large, distinct shagreen. Ocular sulci poorly developed, weakly visible, wrinkled. Several setiferous pores form an impression above the elongated apices of the frontal calli of the vertex. Frontal calli narrow, weakly convex, separated from each other by shallow rectangular impression, its fore and hind margins almost parallel, more or less well separated from vertex and frons by sulci; surface with fine, distinct shagreen, smaller than that of vertex. Space at inner margin of eye convex and elongated, joined with elongated apices of frontal calli. Frontal ridge triangular, weakly convex, rather short, with the same sculpture as frontal calli. Anterofrontal ridge weakly convex, finely shagreened; fore margin of frons above labrum not strongly arcuate. Antennal grooves rather shallow, with coarse sculpture at base and margins. Antennal sockets rather widely spaced, shallow, distance between socket and eye margin about the diameter of socket, which is separated from eyes by impressed interspace. Labrum widely transverse, moderately short, with six well developed setiferous pores, about equal size and depth.

Pronotum weakly transverse, very convex; anterolateral callosity and anterior half of lateral margins not visible from above. Anterior and posterior margins weakly evenly convex; sides weakly rounded and weakly converging; lateral borders narrow and smooth. Anterolateral callosity weakly swollen, weakly protruding from contour, moderately rounded, angles of callosity not sharpened. Punctuation of disc not very dense, shallow, smaller or the same on vertex, distance between punctures about 1–2.5 punctures diameter, usually 1.5–2, sometimes up to 3; interstices flat with distinct rather fine shagreen.

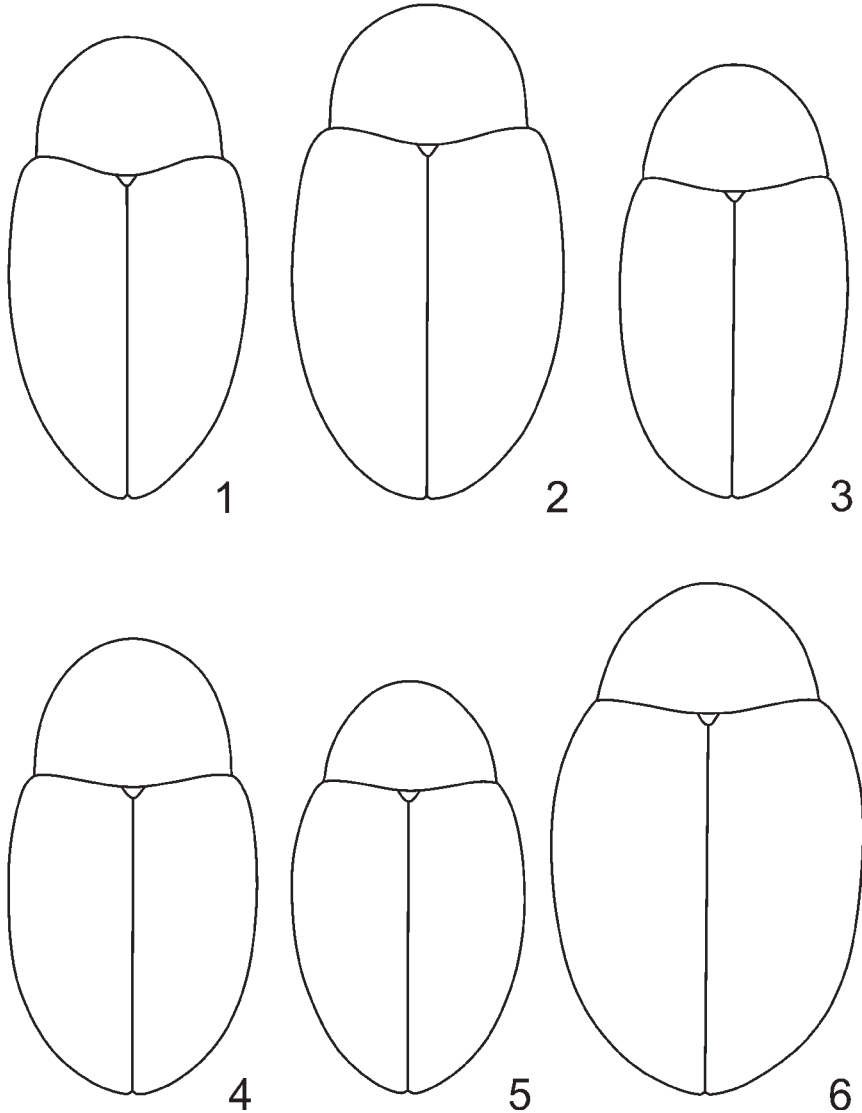
Elytra convex, weakly rounded medially. Punctuation moderately large and deep, distance between punctures in striae about half its diameter, distance between striae about 1.5–2, in small individuals about 1; striae form shallow furrows with convex interstices; in large individuals striae do not form furrows and interstices are flat especially on disc. Secondary punctuation is usually small and shallow; punctures form 1, sometimes 2 rather confused striae; interstices almost smooth, covered with sparse finest wrinkles. Elytral apices almost straight, sutural angle right and sharp, forming no acute denticle. Pygidium, female – fig. 70.

Metatibia short, moderately wide viewed from above; distal third widened at tarsal attachment only, which is situated rather close to apex (fig. 34); inner ridge with 1 denticle, outer with several very short denticles. Metatarsomere 1 weakly evenly curved.

Genitalia. Male: aedeagus (fig. 25) almost parallel-sided, apical third slightly narrower, apex rounded with small and wide denticle, ventral groove shallow, at lateral view slightly curved, apex curved more distinctly. Female: spermatheca (fig. 44) with

collo long, wide, nodulus long, slightly bent, duct moderately long and thick; vaginal palpi – fig. 53; tignum – fig. 62.

Measurements. Body length, male – 2.02–2.42 mm, female – 2.18–2.52 mm; width, male – 1.01–1.32 mm, female – 1.15–1.34 mm. Male (n=10): PI – 1.29–1.58 (1.44); EI – 1.33–1.50 (1.44); BI – 1.84–2.05 (1.97); LI – 2.33–3.00 (2.69). Female (n=10): PI – 1.41–1.61 (1.50); EI – 1.33–1.44 (1.39); BI – 1.82–1.96 (1.90); LI – 2.55–3.00 (2.71).



1–6. Body outline: 1 – *P. rubroaeneus* HKTG., male; 2 – *P. rubroaeneus* HKTG., female; 3 – *P. longicollis* WSE., male; 4 – *P. longicollis* WSE., female; 5 – *P. glaber* DUFT., male; 6 – *P. glaber* DUFT., female

DIFFERENTIAL DIAGNOSIS

Close to *P. petasatus* and *P. solarii* in the shape and proportions of body, developed microsculpture of the body surface, structure of the head and metatibia. Differs from the first in structure of genitalia; body more roundish and more convex; eyes smaller; vertex punctured; labrum shorter and wider, 6 setiferous pores well developed; pronotum with shagreen less developed and punctuation usually smaller and sparser; elytra more shining with secondary punctuation well developed. Differs from the second in the same characters as well as longer and more convex pronotum; labrum rather wider and larger with setiferous pores larger and placed wider; vertex and eyes flatter; elytral apices less rounded; metatarsomere 1 curved.

DISTRIBUTION

Type locality: North-West Italy: Alps (Monte Moro, Monte Rosa). Spain, France, Italy, Switzerland.

MATERIAL EXAMINED

Type material: lectotype (male): "Mt. Moro", *Psylliodes schwarzi* m., S. Doguet design. 1994, (ZMHB); paralectotype: (1 female), same labels as lectotype, 1 female (ZMHB).

Other material. FRANCE: "F-Alpes Maritim. Col. D. La Cayolle 2400 m, VII.1980", 1 ex. (NHMP); "La Blanche (Bass. Alp.) 10.7.08", "Dr. Daniel", 1 ex. (ZMHB); "La Blanche Bass. Alp. 10.7.8 Daniel", 5 ex. (NHMB); "La Grave Haut. Alpes. 16.VII.04", 1 ex. (DEI); "L. Blanche VII.09 coll. Daniel", 2 ex. (DEI); "St. Bernard Raetzer", 2 ex. (NHMB). ITALY: "Italia (Piemonte) Oropa, 11.VII.1987 leg. C. Leonardi", 2 ex. (ZIN); "Piemonte Oropa, 1.VII.2005 Milano", 20 ex. (ZIN); "Mombarone lg. Daniel", 1 ex. (ZIN); "Mombarone Italia", 1 ex. (ZMUA); "Clle Moud, Piemt. Breit", 6 ex. (NHMB); "Italia Judicaria Umgeb. Creto", 1 ex. (NHMB); "M. Mucrone 23.7.06 Daniel", 3 ex. (NHMB); "Mombarone 17,20.7.06 Penin. Alp.", 4 ex. (NHMB); "M. Mucrone 7.06 Daniel", ex. (DEI); "Mt. Rosa", 4 ex. (DEI); "M. Barone 7.06", 3 ex. (DEI); "Mombarone 20.VII.06", 3 ex. (DEI); "Mombarone 17.7.06", 7 ex. (DEI); "Turlopass MonteRosa Dr. K. Singer", 1 ex. (ZMHB); "Macugn.", 1 ex. (NHMB); "Mt. Viso, Pinker 8.VI.06", 1 ex. (NHMB); "Turlopass Monte Rosa Dr. K. Singer", 2 ex. (NHMB); "M. Viso sept. Ganglb. '06.", 2 ex. (NHMB). SPAIN: "H. Spoc Saas", 1 ex. (DEI); ? : "Val. El." 2.7.98", 2 ex. (DEI); "Patria ?", 4 ex. (DEI).

***Psylliodes solarii* LEONARDI**

(Figs. 17, 18, 27, 36, 46, 55, 64, 72, 79)

Psylliodes solarii LEONARDI, 1975: 70.

DESCRIPTION

Body cylindrical, moderately convex (figs. 17, 18). Black dorsally, with bluish or greenish metallic silky lustre; fore and middle legs, metatibia reddish-brownish, darkened medially, metafemora brownish, 3 basal antennal segments yellow-reddish, the

apical darker. Head moderately large, eyes large, convex (fig. 79). Vertex moderately wide and convex; with distinct, granular shagreen; impunctate, above frontal calli along with ocular sulci with several small setiferous pores not forming impression. Ocular sulci poorly developed, represented by several thin, longitudinal wrinkles above the eyes or almost invisible; close to frontal calli apices slightly deeper and with more distinct margins. Frontal calli moderately wide, with fine, granular, shagreen smaller than at vertex and less coarse; not separated distinctly from vertex and frons; apices elongated, wide, joined with convex and shagreened margins of eyes above antennal sockets. Frontal calli more or less wide, triangular-trapezoidal, not very convex, shagreened as strongly as frontal calli. Anterofrontal ridge weakly convex, shagreened, concave about labrum. Antennal grooves not very deep, shagreened. Distance from antennal sockets to eye margins less than one socket diameter, but more than half. Labrum not large, not very long and wide; 2 median and 2 outer setiferous pores well developed, pores between them the smallest, partly joined with others.

Pronotum transverse, not very convex, anterior angles and lateral margins visible from above. Anterior and posterior margins weakly convex, evenly rounded. Anterior border very thin, flat, posterior wider and distinctly convex; lateral margins weakly converging, more or less weakly rounded, its border narrow, smooth, Anterolateral callosity moderately convex, not very swollen, not very protruding from contour, angles of callosity not sharp and more or less evenly rounded, angle at setiferous pore may be distinct. Pronotal disc with not large, not very deep punctures, distance between them 1–2 times their diameter; interspaces with more or less flat, reticulate microsculpture, not convex; sides with larger, deeper punctures, shagreenity larger and more distinct.

Elytra elongated, parallel medially, not rounded, moderately convex. Punctures in striae not very large and deep, distance between punctures in striae not more than half their diameter; distance between striae 1–1.5 puncture diameters; interstices moderately convex, striae may form shallow furrows; interstices between striae sometimes with tendency to form transverse short, wide wrinkles; secondary punctuation small, sparse, superficial, smooth; spaces with uneven, not very smooth sculpture, rough, similar to fine shagreenity, sometimes rugose. Elytral apices clearly rounded, sutural angles not attenuate and forming no acute denticle. Pygidium, female – fig. 72.

Metatibia not curved; viewed from above widened at tarsal attachment and slightly less towards apices; inner ridge with minute, barely visible denticle, outer without denticles (fig. 36); metatarsi attached at some distance from apices; metatarsomere 1 straight.

Genitalia. Male: aedeagus (fig. 27) small, with sides slightly rounded and narrowed toward apex, apical 1/4 rounded with weakly developed constriction, apex rounded with very weak and small denticle; at lateral view moderately curved, ventral groove deepest in medial third, apical 1/4 slightly curved dorsally. Female: spermatheca (fig. 46) with collo long and thick, nodulus large, ovate-globose, duct short, moderately thick with large ramus; vaginal palpi – fig. 55; tignum – fig. 64.

Measurements. Body length – 2.3–2.6 mm; width – 1.2–1.3 mm. Male (n=1): PI – 1.63; EI – 2.87; MI – 5.38; LI – 3.11; BI – 1.89. Female (n=1): PI – 1.55; EI – 2.90; MI – 5.63; LI – 3.05; BI – 1.93.

DIFFERENTIAL DIAGNOSIS.

Close to *P. schwarzi* and *P. petasatus* in the shape and proportions of body, structure of the head, developed microsculpture of the body surface, shape of metatibia. Differs from *P. schwarzi* in the body being flatter, less shining, more oblong, cylindrical; head smaller, eyes larger, labrum longer and narrower with setiferous pores situated close to each other, vertex more convex and impunctate, pronotum shorter and less convex, with its punctuation usually denser; distance between striae of elytra less and interstices more convex, secondary punctuation more strongly developed, elytral apices more rounded; metatarsomere 1 straight. Differs from *P. petasatus* in the flatter body, smaller head, larger eyes, labrum longer and narrower with 6 setiferous pores situated close to each other, vertex more convex, pronotum shorter and less convex, distance between striae of elytra less and with interstices more convex, secondary punctuation more strongly developed, elytral apices more rounded; metatarsomere 1 straight.

DISTRIBUTION

Type locality: Italy (Liguria). Italy, France.

MATERIAL EXAMINED

ITALY: "Liguria M. Penna, m 1700, 20.VI.1979 leg. C. Leonardi" 1 male (ZIN).
FRANCE: "Alpi Francesi P SO Censio (Lago) 29.VI.1983 leg. Leonardi", 1 female (ZIN).

***Psylliodes glaber* (DUFTSCHMID)**

(Figs. 5, 6, 21, 30, 38, 41, 49, 58, 67, 75)

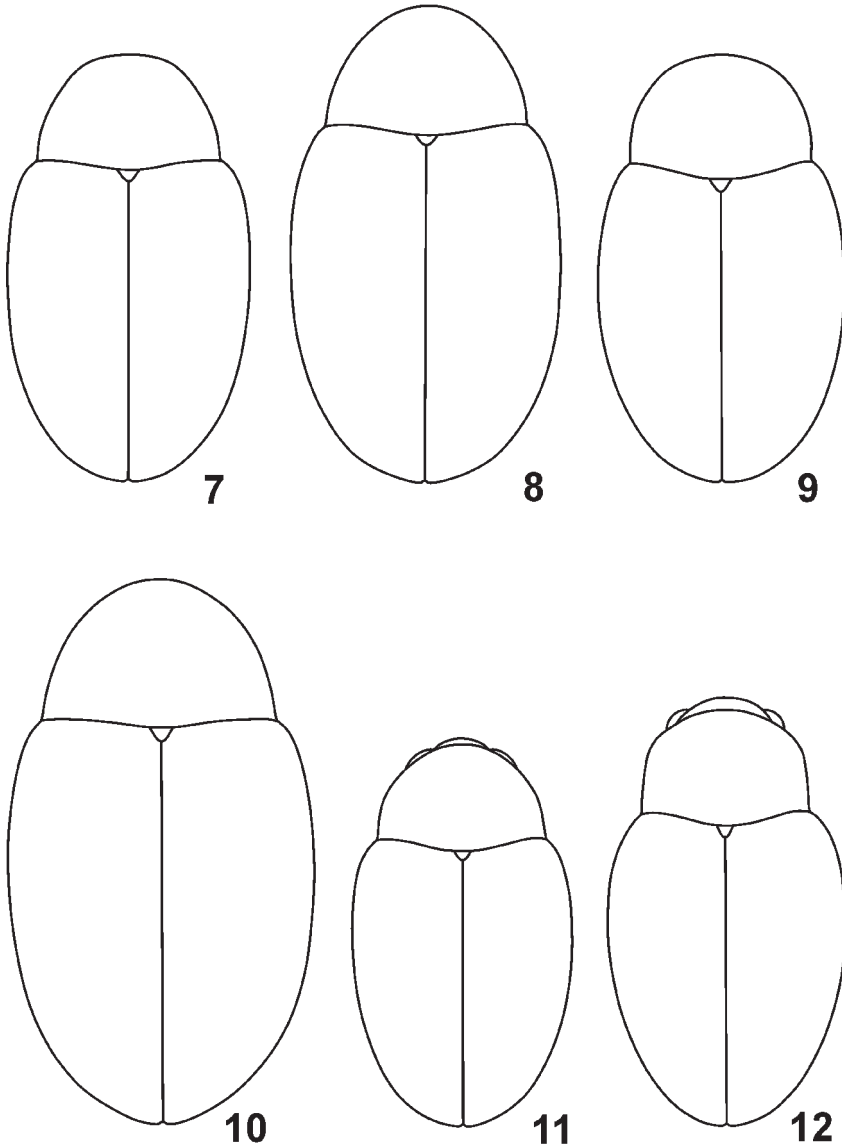
Haltica glabra DUFTSCHMID, 1825: 282.

Psylliodes alpina REDTENBACHER, 1849: 538 (HEIKERTINGER, 1926; synonymised).

DESCRIPTION

Body ovate, strongly convex (figs. 5, 6). Dorsally and ventrally black, shining; fore, mid legs, metatibia, antennae reddish-brownish, metafemora dark brown from above. Head moderately large, eyes large, convex (fig. 75). Vertex moderately large, not very wide; punctuation more or less regular, punctures as pronounced as those on pronotum or often larger, coarse, deep, sometimes irregular-shaped and confluent, interspaces usually more or less convex, uneven, covered with sparse finest wrinkles, shining; distance between punctures about 0.5–1.5 (usually 1) puncture diameter. Ocular sulci wide, moderately deep, bases above upper margin of eyes slightly more sloping and wider than apices; dense, coarse punctured and wrinkled, with setiferous pores; apices of sulci close to frontal calli narrowed, its margins even, smooth and overhanging bottom; ocular sulci fused with supracallinal sulci which separate frontal calli from vertex, short, shallow, not reaching base of calli. Vertex above frontal calli convex as well as calli. Frontal calli moderately convex, narrow, surface almost smooth, usually

with very fine smooth, longitudinal wrinkles; apices elongate and touching convex area of eye margin above antennal socket, this area sometimes impressed. Frontal ridge distinctly triangular, not very convex, more or less well delineated, surface not very smooth, sometimes basally flat or slightly impressed, finely smooth shagreened and with fine wrinkled sculpture. Anterofrontal ridge weakly convex, with coarse, knobby



7–12. Body outline: 7 – *P. frivaldszkyi* WSE., male; 8 – *P. frivaldszkyi* WSE., female; 9 – *P. sturanyi* APF., male; 10 – *P. sturanyi* APF., female; 11 – *P. danieli* WSE., male; 12 – *P. danieli* WSE., female

shagreen as well as antennal grooves; latter moderately deep. Antennal socket not large, distance from margin of eyes half the diameter of sockets. Labrum not large, not very wide and long, all 6 setiferous pores visible, the median 2 largest, the others situated very close to each other.

Pronotum weakly transverse, very convex; anterior angles and anterior part of lateral margins not visible from above. Anterior and posterior margins weakly convex, evenly rounded; lateral margins evenly rounded and rather weakly converging, almost parallel; anterior border very thin and poorly visible, posterior border slightly wider, lateral border more or less thin, almost or not very smooth. Anterolateral callosity poorly developed, weakly protruding from contour, small smooth angle at setiferous pore only slightly protruding, margins of callosity blurred. Disc of pronotum with sparse, shallow, usually small punctures, smaller than on vertex, sometimes irregularly-shaped, interspaces usually with smooth fine shagreen, flat; sides with punctures usually larger and denser, shagreen larger and clearer; distance between punctures on disc about 1–3 times punctures diameter, usually 1.5–2.5.

Elytra very convex with sides evenly rounded. Punctures in striae usually large and deep, distance between punctures in striae about half their diameter, seldom 1; distance between striae about 1–2; interstices usually moderately convex, striae may form shallow furrows; in males, especially smaller examples, punctures larger and deeper, interstices more convex, distance between striae to 1.5; in females especially larger examples, punctures smaller, interstices flat, striae not forming furrows, distance between striae about 2–2.5; secondary punctuation small, usually smooth, seldom punctures larger and more distinct, forming 1–2 more or less confused striae; interstices more or less smooth, with very fine poorly visible sculpture similar to shagreenity. Elytral apices rather weakly rounded to suture; sutural angle forming no denticle. Pygidium of female – fig. 67.

Metatibia viewed from above wide, widened at tarsal attachment and at apex; clearly curved; inner ridge with rather small, short, obtuse denticle (fig. 30). Metatarsus attached at some distance from apex, metatarsomere 1 weakly curved.

Genitalia. Male: aedeagus (fig. 21) moderately long, when seen from below widened beyond middle; apex triangle, elongated, with small denticle; ventral groove narrow, at lateral view moderately deep at basal second 1/4; at lateral view aedeagus slightly curved with almost straight apical third. Female: spermatheca (fig. 41) with collo moderately long and thick, nodulus narrow and long, duct long, thick, ramus small; vaginal palpi – fig. 49; tignum – fig. 58.

Measurements. Body length, male – 2.06–2.48 mm, female – 2.03–2.52 mm; width, male – 1.06–1.39 mm, female – 1.20–1.51 mm. Male (n=10): PI – 1.25–1.41 (1.34); EI – 1.21–1.53 (1.34); BI – 1.64–1.97 (1.77); LI – 2.31–2.61 (2.44). Female (n=10): PI – 1.32–1.46 (1.36); EI – 1.28–1.40 (1.32); BI – 1.65–1.81 (1.72); LI – 2.33–2.65 (2.45).

DIFFERENTIAL DIAGNOSIS

Close to *P. frivaldszkyi* and *P. sturanyi* in the shape and proportions of body, structure of the head, weakly developed microsculpture of the surface of body, thick-

ened and short legs. Differs from the first in structure of genitalia; body more convex and rounded, metatarsi articulated at distance from apex. Differs from the second in structure of genitalia; more shining dorsally; dorsal shagreen more weakly developed; vertex and pronotum stronger and more densely punctured; frontal ridge triangular; lateral margin of pronotum in lateral view straight (fig. 38); punctures of elytra larger, sparser, distance between striae smaller, interstices more convex.

DISTRIBUTION

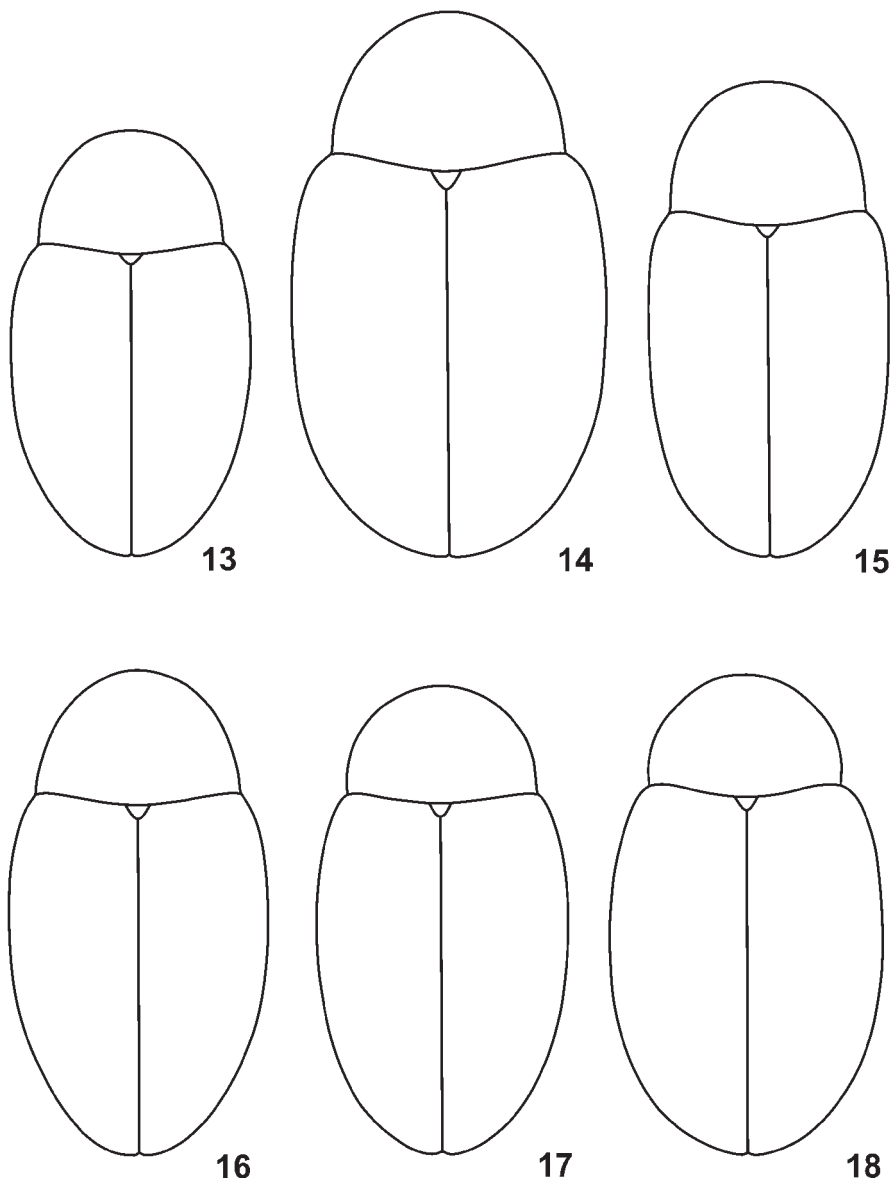
Type locality: Austria (Linz). Austria, Bosnia-Herzegovina, Croatia, Germany, Italy, Slovakia, Slovenia, Poland, Romania, Hungary.

MATERIAL EXAMINED

AUSTRIA: "glabra Duft. Austria", 1 ex. (ZMUC); "Steyr Umgeb. Ansir. sup. Petz", 1 ex. (ZMUC); "Schneeberg", 2 ex. (NHMP); "Holdhaus. Schneeberg", 1 ex. (ZMUH); "Lunz", 1 ex. (ZMUH); "Austria", 1 ex. (ZIN); "3.M. Austria P. glabra", 2 ex. (ZIN); "A. Karawanken Zell – Pfavve 30. 6. 1986 leg. Hirstetter", 1 ex. (ZIN); "Steyr. Ob.", 1 ex. (MNHB); "Nied.Österr. Alpen Reitter", 1 ex. (MNHB); "Wechsel Gb A. Otto", 2 ex. (MNHB); "Schneeberg", 11 ex. (MNHB); "Krain Schneeberg Ing. Meschnigg", 3 ex. (MNHB); "Steiermark Stuhleck", 2 ex. (SMTD); "Schafberg, Ganglb. '02", 1 ex. (SMTD); "Schneeberg Gglb. 89", 1 ex. (SMTD); "Holdhaus, Schneeberg", 2 ex. (SMTD); "Austria.", 2 ex. (ZMUA); "Klaeger Austria", 1 ex. (ZMUA); "H. J. Veth Alp. Austr.", 2 ex. (ZMUA); "L. Miller Austria", 1 ex. (ZMUA); "Lunz W-O", 1 ex. (ZMUA); "Holdhaus Schneeberg", 20 ex. (NHMB); "Steyr Umg. Austr. sup. Petz", 4 ex. (NHMB); "Ganglb. Lunz.", 4 ex. (NHMB); "Lunz Alp. or.", 5 ex. (NHMB); "N. Oest. Schneeberg.", 6 ex. (NHMB); "Schoberstein Austr. sup. Mont. Petz", 1 ex. (NHMB); "Schafberg Ganglbauer", 11 ex. (NHMB); "Jovanberg Kärnten", 1 ex. (NHMB); "Wechselgebiet A. i., Mader", 2 ex. (NHMB); "Wechsel, 1738m A. i. Pazourek", 2 ex. (NHMB); "Obir, Carinthia Pazourek", 2 ex. (NHMB); "Stuhleck St., Mader", 1 ex. (NHMB); "Nied. Rana N. Ö. Rupertsb.", 1 ex. (NHMB); "Stuhleck. St., A. Winkler", 1 ex. (NHMB); "Gesäuse, subalpi H. Franz", 1 ex. (NHMB); "Mayr – ALm A.sup., Lang", 1 ex. (NHMB); "Tamischbachturm Alp. Styria Petz", 1 ex. (NHMB); "Car. Savin. Alpy Goli Vrh, 24.7. 07. Rambousek", 1 ex. (NHMB); "WindischGarsten Oberösterr Skalitzky", 3 ex. (NHMB); "W. Garsten 26.7.02 Skalitzky", 2 ex. (NHMB); "B. Gmain Alp. or. bor.", 1 ex. (NHMB); "Ganglb. 02. Tarnow. W.", 1 ex. (NHMB); "Wechsel Austr. inf.", 1 ex. (NHMB); "Ganglb. 02 Mondsee", 1 ex. (NHMB); "Austr. sup. Kammer Spaeth", 1 ex. (NHMB); "Ischl Oberösterr. Skalitzky", 2 ex. (NHMB); "Schottwien Nied. Öst.", 1 ex. (NHMB); "Schieferstein Austr. sup. Mont. Petz.", 1 ex. (NHMB); "Wendbach Austr. sup. Petz", 2 ex. (NHMB); "Lunz Schuster", 1 ex. (NHMB); "Nied.-Oest. Schneeberg", 1 ex. (NHMB); "Seewiesen", 4 ex. (NHMB); "Lunz", 2 ex. (NHMB); "A. i. Lunz 8.1928", 2 ex. (NHMB); "Oetscher N. Ö. Kaufm.", 1 ex. (NHMB); "St. Ägyd A/N N. Ö. Haberditz", 1 ex. (NHMB); "Stuhleck. St. A. Winkler", 2 ex. (NHMB); "Hochschwab", 1 ex. (NHMB); "Stuhleck Styr. Pazourek", 2 ex. (NHMB); "Styria Ber. Weiz Rodenwaldgeb", "N Anger Reith-Petz, 550 m", "9.7.1981 lg. Mauerkofr", 2 ex. (NHMP); "P. glabra Styria", 1 ex. (ZIN); "Styria Reitter", 1 ex. (MNHB); "Styria",

1 ex. (MNHB); "Feistritz Styria", 1 ex. (MNHB); "Styria", 3 ex. (NHMB); "Austria Inf. Lunz. A. See 22.VI.28 Stöcklein", 5 ex. (NHMB); "Styr", 2 ex. (NHMB); "Styria", 2 ex. (DEI); "Austr. inf. Schneeberg", 1 ex. (DEI); "Psylliodes glabra Styria", 2 ex. (DEI); "Karawanken A. Elbert 16.6.67", 1 ex. (DEI); "Austria Stentz", 1 ex. (DEI); "A: Knt.: Karawanken Jovanberg (b. Obir) 1600 m, 1.VII.1991 leg. L. Behne", 1 ex. (DEI); "O-Stmk. NE Retteneg", "Pfaßervatel 1393 m", "3.6.1979 lg. Mauerkofr", 1 ex. (NHMP); "Bärndf. 6 Rtt. Styria F. Mosbrugger", 2 ex. (ZMUA); "Vallarsa Süd-Tirol", 1 ex. (NHMB); "Lofer", 4 ex. (NHMB); "Golling Slzb. Heikertinger", 5 ex. (NHMB); "Wochein Carn. Winkler", 2 ex. (NHMB); "Tirolis Selztal", 2 ex. (NHMB); "Salzburg Untersberg 24.VII.07 Stöcklein", 1 ex. (NHMB); "Carinthia", 1 ex. (NHMB); "Kärnthen", 1 ex. (DEI); "Gaisberg Salzburg H. Frich", 1 ex. (DEI); "Val Arsa Diener", 1 ex. (MNHB); "Cima Tombea Ganglbauer", 1 ex. (NHMB); "Ganglbauer Cima Posta", 1 ex. (NHMB); "Judenburg Styria 26.VII.13". 3 ex. (DEI); "Carinthia Edgar Klimsch", 4 ex. (DEI); "Valgenova S. Tirol 16.VII.08", 2 ex. (DEI); "S. Tirol 14.07.08", 1 ex. (DEI); "C. Tombea 12.7.1897 coll. Daniel", 1 ex. (DEI); "C. Tombea 17.7.1894 coll. Daniel", 1 ex. (DEI); "Salzach – Au bei Lieferung Salzburg", 1 ex. (DEI); "Semmering dr. gsaf", 1 ex. (NHMP); "Klaugenfut", 1 ex. (ZIN); "Tauern Edgar Klimsch", 2 ex. (ZIN); "Psylliodes glabra Dft. Carinthia", 2 ex. (ZIN); "Tauern Edgar Klimsch", 4 ex. (MNHB); "Kraim. m.", 2 ex. (MNHB); "St. Radegund Dr. Beszédes", 8 ex. (MNHB); "Semmering Diener.", 1 ex. (MNHB); "Tricnr S. Tirol", 1 ex. (MNHB); "Steyr", 1 ex. (SMTD); "Alpen", 1 ex. (SMTD); "Semmering", 2 ex. (SMTD); "Bad Vellach", 2 ex. (SMTD); "Tauters Tir. Luze", 1 ex. (SMTD); "Golling Skalitzky", 4 ex. (NHMB); "Bad Vöslau Nieder Donau", 4 ex. (NHMB); "Pleschberg bei Admont, lg. Franz", 1 ex. (NHMB); "Weith.", 1 ex. (DEI); "Hieflau 21.VI.88", 5 ex. (DEI); "Penecke. St. Bacher-Gb.", 2 ex. (NHMB); "Ganglb. 91 Bachergeb.", 1 ex. (NHMB); "Bacherg. Spaeth 99", 1 ex. (NHMB); "Bacher St. VI.92", 1 ex. (NHMB). POLAND: "Silesia", 1 ex. (DEI). GERMANY: "Oberbayern Stöcklein", 8 ex. (NHMB); "Niederbayern Stöcklein", 2 ex. (NHMB); "Schweiz Heyden", 1 ex. (MNHB); "Schnach A. Otto", 1 ex. (ZMUA); "Kreüt", 2 ex. (DEI). HUNGARIA: "Ungarn" 2 ex. (SMF); "Hungaria" 2 ex. (DEI). ROMANIA: "Ganglb. 96 Rodnaergb", 1 ex. (SMF); "Dobiasca", 1 ex. (NHMB). SLOVAKIA: "C. Trencsén Dr. Brancsik", 3 ex. (NHMB). SLOVENIA: "SLO Snežnik 1200m 29.6.1996 Grda Draga B. Drovenik leg.", 1 ex. (ZIN); "Karavanken Valoasorhütte Slov. 14.7.14", 2 ex. (NHMB); "Tarnovan W. Tredm. 9.7.33 Springer", 1 ex. (MSNM); "Tarnovan W. 6.8.33 Lokve Springer" 1 ex. (MSNM). ITALY: "Italia coll. Lichtn.", 1 ex. (MNHB); "Adamello Mte Mattoni, Breit", 1 ex. (NHMB); "Piz Arera c. 1500 m Juli coll. Nissl", 1 ex. (NHMB); "Gresson.. la Frinche 24.7.01", 1 ex. (DEI); "Mte. Spiro 31.VII.70 1400 Lg. Daccordi", 1 ex. (DEI); "M. Grigna 27.7.99", 1 ex. (DEI). BOSNIA–HERZEGOVINA: "Herzegov.", 1 ex. (NHMB); "Herzegovina Jablanica 1901", 1 ex. (NHMB); "Herzegov. Vrauplan", 1 ex. (DEI); "Bosnia 1902 Maklen Pass O. Leonhard", 3 ex. (NHMB); "Zepce Bosnien", 1 ex. (NHMB); "Bosnia 1904 Korična 1000m O. Leonhard", 1 ex. (NHMB); "Bosnia Raduša Pl. 1902 O. Leonhard", 1 ex. (NHMB); "Bosnia 1902 Maklen Pass O. Leonhard", 18 ex. (DEI); "Maklen Pass coll. Leonhard", 5 ex. (DEI); "Pazarić Krupa-Th", 1 ex. (MNHB); "B. Lasica", 2 ex. (MNHB); "Travnik Vlašič", 1 ex. (MNHB). CROATIA: "Dalmatia", 1 ex.

(NHMP); "Istria Reitter", 1 ex. (ZMUH). CARPATHIANS: "Carpathen Reitter", 1 ex. (SMF); "Europe Carpathe", 1 ex. (IRSNB); "Brancsik", "Carpathen", 1 ex. (NHMB); "Carpathen", 1 ex. (NHMB).



13–18. Body outline: 13 – *P. schwarzi* WSE., male; 14 – *P. schwarzi* WSE., female; 15 – *P. petasatus* FOUDR., male; 16 – *P. petasatus* FOUDR., female; 17 – *P. solarii* LEONARDI, male; 18 – *P. solarii* LEONARDI, female

***Psylliodes frivaldszkyi* WEISE**

(Figs. 7, 8, 22, 31, 42, 50, 59, 68)

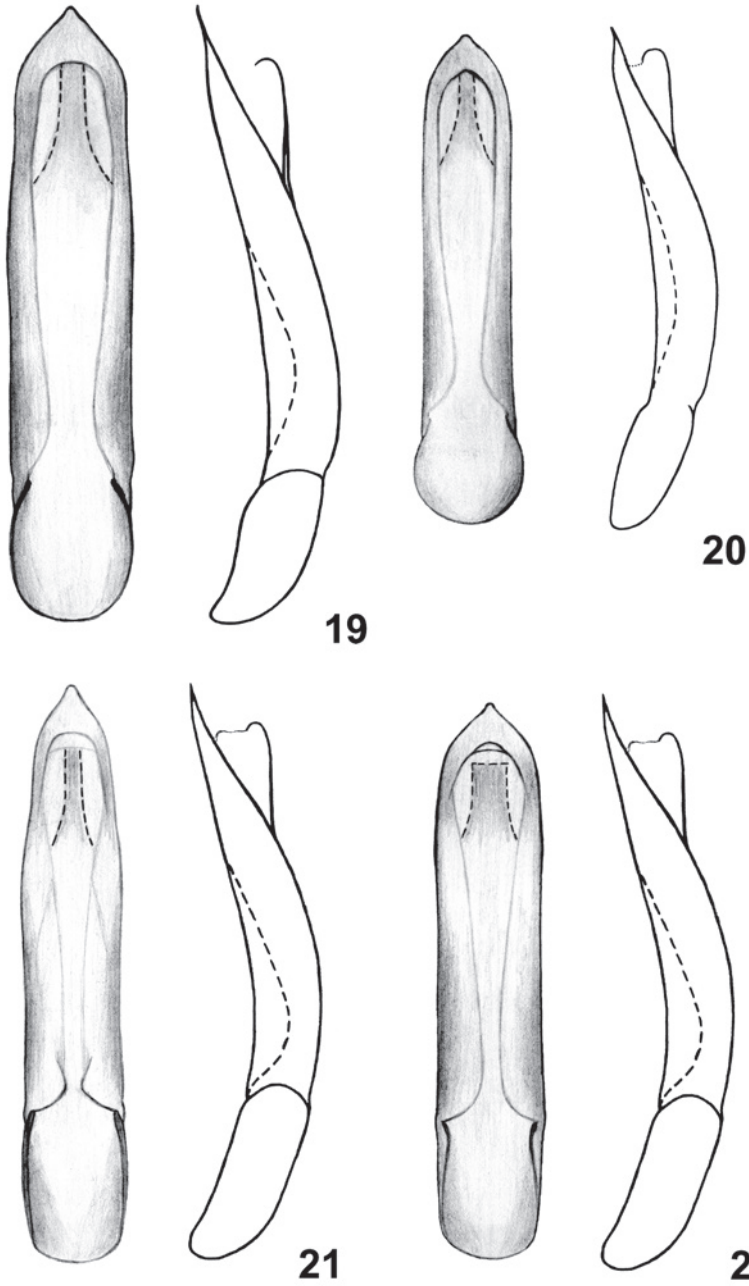
Psylliodes frivaldszkyi WEISE, 1888: 786.

DESCRIPTION

Body short-oval, very convex (figs. 7, 8). Dorsally and ventrally black, shining, fore and mid legs with metatibia reddish-brown, basal 5 antennal segments reddish yellow, apical 5 darker, metafemora piceous. Head moderately large, eyes moderately large. Vertex moderately convex or almost flat; punctuation usually rather dense and irregular, punctures rather large, as large as those on pronotum or larger, often irregularly shaped, coarse, deep, distance between punctures 0.5–1 times punctures diameter, interstices with strong, coarse shagreen, uneven, covered with sparse finest wrinkles, seldom more or less flat and with smooth shagreen. Ocular sulci moderately wide and deep, with margins and bottom wrinkled and punctured, margins uneven and unclear; close to frontal calli narrower, with margins distinct and even. Frontal calli moderately narrow to somewhat wide, separated from each other by an impression that is very variable in shape, size and depth; more or less convex, not distinctly separated from vertex and frons; surface almost smooth to finely shagreened, wrinkled, sparsely punctured; apices elongated towards convex shagreened inner margin of eye above antennal sockets, which are separated by a small impression. Frontal ridge moderately convex, not very wide, triangular, surface smooth to distinctly shagreened, rather finely wrinkled, sides with coarse punctures and shagreen. Anterofrontal ridge rather weakly convex, with surface coarsely shagreened and punctured, rugose; fore margin of frons straight. Antennal grooves moderately concave, coarsely shagreened and punctured. Distance between antennal insertion and eye half the diameter of sockets; 2 median setiferous pores of labrum larger and deeper than others, which are smaller and situated very close to each other, almost fused.

Pronotum rather strongly convex, anterior angles and anterior part of lateral margins usually not visible from above. Anterior and posterior margins not strongly convex, evenly rounded, lateral margins weakly converging and weakly rounded. Anterior border usually rather thin and flat, visible, posterior border wider and more convex, lateral border narrow, smooth. Anterolateral callosity moderately developed, not very or almost not protruding from contour, margin usually protruding at setiferous pore, forming more or less developed angle. Pronotal disc with more or less small shallow punctures, often irregularly punctured; distance between punctures 1–2.5 times their diameter, interspaces on disc with fine smooth to more or less distinct shagreen; sides with punctuation denser and deeper, like that on vertex, shagreen always strong, granular.

Elytra very convex, with evenly rounded sides. Punctures in striae large, deep, distance between punctures about half their diameter, distance between striae about 1.5–2 puncture diameters, striae not forming furrows, interstices flat or seldom weakly convex; secondary punctuation usually minute, superficial, smooth, if more or less visible, forming 1–2 confused striae; spaces covered with sparse finest wrinkles



19–22. Aedeagus, ventral view, side view: 19 – *P. rubroaeneus* HKTG.; 20 – *P. longicollis* WSE.; 21 – *P. glaber* DUFT.; 22 – *P. frivaldszkyi* WSE.

to almost smooth. Elytral apices rounded to suture, sutural angle forming no denticle. Pygidium of female – fig. 68.

Metatibia more or less curved; widest at tarsal attachment at view from above, inner ridge with 1 rather small denticle (fig. 31); metatarsi articulated rather close to apex.

Genitalia. Male: aedeagus (fig. 22) with almost parallel sides, apex triangle with rather small denticle; apical 1/4 slightly widened; ventral groove narrow when seen from below, at lateral view deepest at basal second 1/4; at lateral view aedeagus slightly curved with apical 1/3 almost straight. Female: spermatheca (fig. 42) with collo large and thick, nodulus narrow and straight, duct short, thin; vaginal palpi – fig. 50; tignum – fig. 59.

Measurements. Body length, male – 2.03–2.38 mm, female – 2.17–2.45 mm; width, male – 1.12–1.32 mm, female – 1.23–1.40 mm. Male (n=10): PI – 1.23–1.40 (1.33); EI – 1.32–1.43 (1.37); BI – 1.76–1.92 (1.81); LI – 2.21–2.50 (2.38). Female (n=10): PI – 1.23–1.38 (1.31); EI – 1.28–1.39 (1.34); BI – 1.71–1.81 (1.75); LI – 2.31–2.60 (2.40).

DIFFERENTIAL DIAGNOSIS

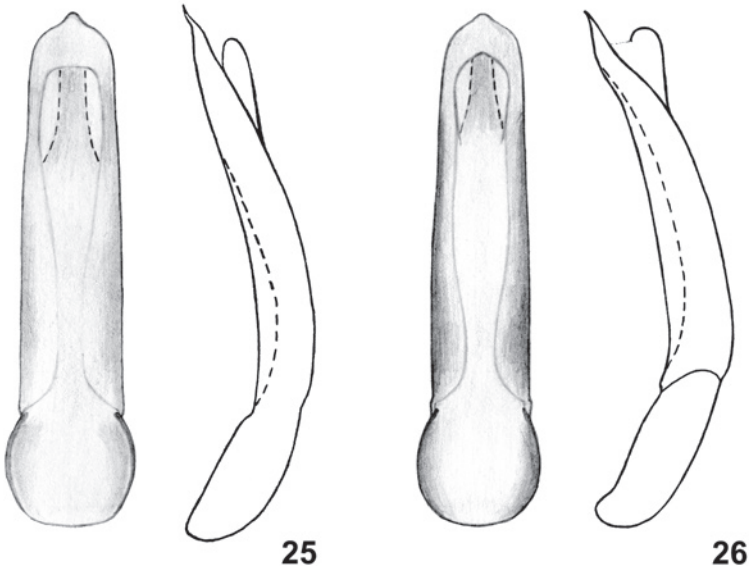
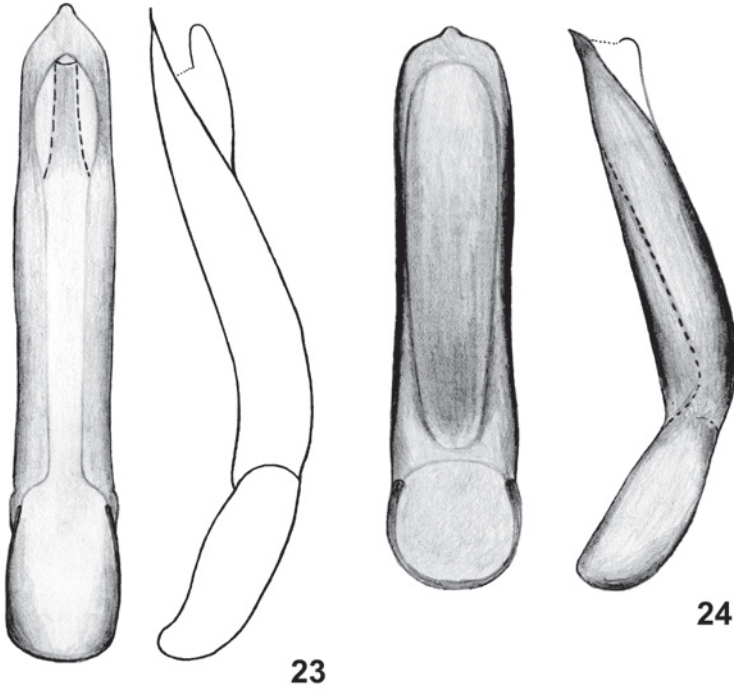
Close to *P. glaber* and *P. sturanyi* in the shape and proportions of the body, structure of the head, weakly developed microsculpture of the body surface; thick and short legs. Differs from the first in the structure of the genitalia; more oblong body; articulation of metatarsomere 1 rather close to apex. Differs from the second in the structure of the genitalia; more shining dorsally; dorsal shagreen weaker developed; vertex and pronotum more strongly and densely punctured; frontal ridge triangular; lateral margin of pronotum in lateral view straight; punctures of elytra larger, sparser, distance between striae smaller, interstices more convex.

DISTRIBUTION

Type locality: Central Europe, Slovakia-Poland (Tatra Mts.). Austria, Poland (Bieszczady Mts.), Romania, Hungary, Slovakia, Ukraine.

MATERIAL EXAMINED

AUSTRIA: “Austria”, 1 ex. (ZIN); “*Psylliodes glabra* Aust.”, 1 ex. (NHMB); “Siebenbg.”, 6 ex. (DEI). SLOVAKIA: “Slov. 26.6.56 Vys. Tatry”, “Štrb. Pleso Král lgt.”, 1 ex. (NHMP); “Slovakia Tatry Roubal leg.”, 1 ex. (ZMUH); “N Tatry 13.VII.1926 Roubal”, 1 ex. (DEI); “Slovakia c. Grobe Fatra Križna, 1500m Wiese, 1.7.1982 Diekmann leg.”, 1 ex. (DEI); “Tatry Mengas. dol. VI.28 Roubal”, 1 ex. (NHMP); “Franzdorf”, 1 ex. (ZMHB). UKRAINE: “Goverla Cp. or. Pfeffer VII. 24”, 2 ex. (NHMP); “*Psyll. Glabra* Galicia Keleczenyi 902”, 1 ex. (ZIN); “Chernogory, Rakhov, Stanisl. r-n, Roshko 19VII.953”, 1 ex. (ZIN); “Zakarp. obl. pol. Krasna, Tyach., r-n, 15.VIII.53”, 1 ex. (ZIN); “Zakarpatskaya Reg. Marmarosh Mts., Holovachiu MtR, Neneska Mt. slope, Potok Shchaul Riv., h=1600 m, 12,14.07.2000 N. Yunakov”, 19 ex. (ZIN); “Ukraine, E Carpathians Marmarosh Mts, Neneska Mt., alpine meadows, 1700m, 13.VI.2002 K. Nadein”, 5 ex. (ZIN); “Ukraine, E Carpathians Marmarosh MtR, NO slope Neneska Mt, night, alpine meadows, 1600m, 14.VII.2002 K. Nadein”, 15 ex. (ZIN); “Ukraine,



23–26. Aedeagus, ventral view, side view: 23 – *P. sturanyi* APF.; 24 – *P. danieli* WSE.; 25 – *P. schwarzi* WSE.;
26 – *P. petasatus* FOU DR.

E Carpathians Chernogora Range, ascent fr Tovstiy Grun' loc. to Polonina Bretskul, 21.22.VII.2001 N. Yunakov", 4 ex. (ZIN); "Zakarpatskaya Reg. Marmarosh Mts., Holovachiu MtR, env. Neneska Mt., Shchaul Riv., h=1600 m, 11.07.2000 K. Nadein", 4 ex. (ZIN); "Zakarpatskaya Reg. Marmarosh Mts., Holovachiu MtR, Neneska Mt. slope, Potok Shchaul Riv., h=1600 m, 14.07.2000 K. Nadein" 15 ex. (ZIN); "Ukraine, Zakarpatskaya Reg., Rakhov Distr., Holovachiu MtR, Shchaul Riv., env. Neneska Mt., Marmarosh Mts., h=1600 m, 11.07.2000 K. Nadein", 16 ex. (ZIN); "Pop Ivan Carp. orient. Dr. Jos. Fleischer", 3 ex. (NHMB); "Podkar. Rus Čorna hora Roubal", 1 ex. (NHMB); "Carp. Užok J. Fleicher", 1 ex. (NHMP); "Carpathia Užok", "RČS", 1 ex. (NHMP). HUNGARIA: "Ungarn", 1 ex. (ZIN); "Hungaria Kleine Kriván", 5 ex. (NHMB); "Hungaria. Com Trencsin Dr. Brancsik", 1 ex. (NHMB); "Csorba-See Tatra 14.VII.10", 2 ex. (DEI); "Hung bor. Reitter", 1 ex. (ZMHB); "glabra Hung. mer. Reitter", 1 ex. (ZMHB); "Hung. Merkl", 1 male (ZMHB). RUMANIA: "Koroněž Transsylv.", 6 ex. (NHMP); "Roumania Brostenn Montandon", 1 ex. (IRSNB); "Rodnaergb. Transsylv.", 3 ex. (NHMB); "Rodnai hav. Transsylvania", 3 ex. (NHMB); "Rodnaer-Gb. Deubel", 6 ex. (NHMB); "Ganglb, 96 Rodnaergb", 1 ex. (NHMB); "Rodna Grb.", 2 ex. (DEI); "Deubel, Rodnaer-Gb.", 1 ex. (NHMP). CARPATHIANS: "Karpath", "Konow" 1 ex. (SMF); "Psylliodes glabra Carpathen", 1 ex. (ZIN); "Branes Carpathen", 4 ex. (ZMUA); "Carpathen", 2 ex. (NHMB); "Karpath", 1 ex. (NHMB); "Psyll. Alpinus Carpath", 8 ex. (DEI); "Karpath Brancsik", 2 ex. (ZMHB). TRANSYLVANIA: "Transsylvania Reitter", 1 ex. (DEI); "Transsylvania", 1 ex. (DEI); "M Koronicz Transs. IX. D. Lekay 1902", 1 ex. (NHMB); "Negoi. Tr. Dr. Krauss", 2 ex. (NHMB); "Korosčž Transsylv", 1 ex. (NHMB); "Parling Tr. Dr. Krauss", 2 ex. (NHMB). ? : "Bredecel 17/7 38", 1 ex. (NHMP); "Korongis Dr. Petrii", 5 ex. (DEI).

Psylliodes danieli WEISE

(Figs. 11, 12, 24, 33, 52, 61, 80)

Psylliodes danieli WEISE, 1900: 292.

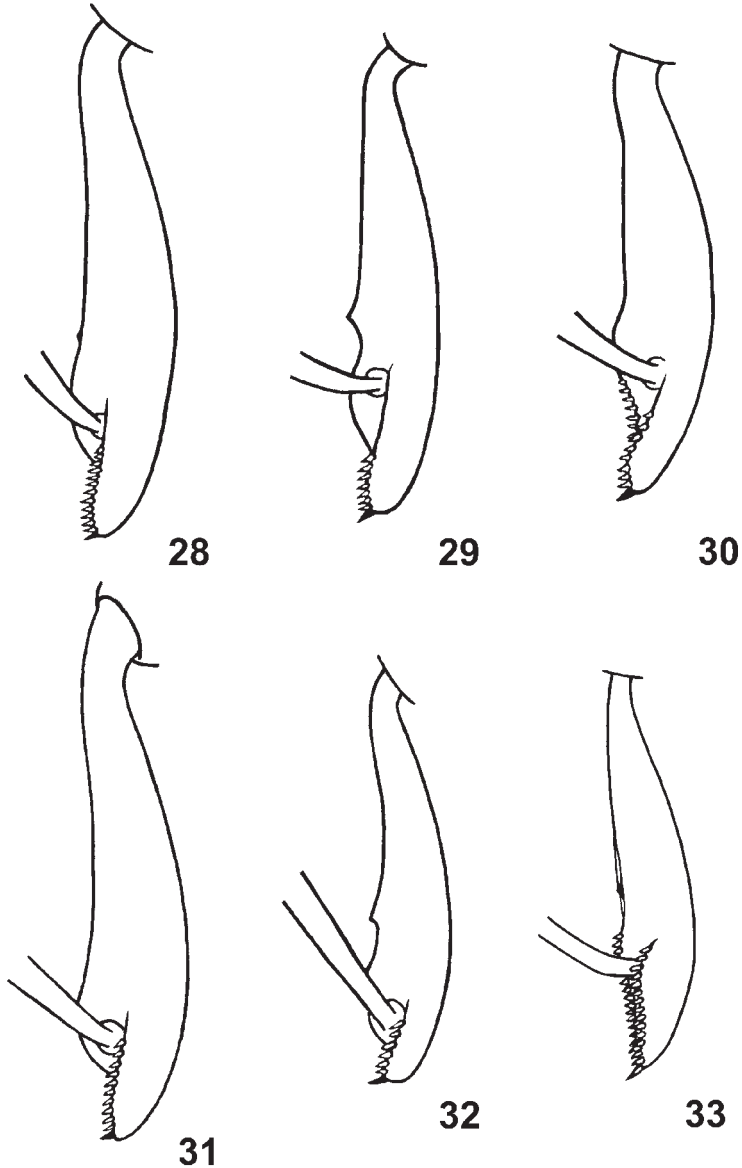
Psylliodes rambouseki HEIKERTINGER, 1909: 363, **syn. n.**

Psylliodes rambouseki forojulensis HEIKERTINGER, 1926: 138, **syn. n.**

DESCRIPTION

Body oval, convex (figs. 11, 12); red-brown to black dorsally, shining; antenna, fore and mid legs, and metatibia yellow-reddish, metafemur red-brown to dark-brown. Head moderately large, eyes small, moderately convex, almost round, widely spaced (fig. 80). Vertex not very large, wide, rather weakly convex; with surface with distinct, fine reticulate shagreen; ocular sulci straight, even, moderately deep, base more or less smooth, margins even and smooth excepting setiferous area; frontal calli limited from above by supracallinal sulci; rugose-punctured setiferous pores area located above upper margins of eye, close to ocular furrows, not forming strong impression. Frontal calli narrow, triangular-elongated, almost smooth with very fine smooth shagreen; its apices elongated and joined with convex, narrow area situated anteriorly to eye margin between ocular furrow and antennal socket. Frontal ridge short, rhomboid, wide, mo-

derately convex, with the same sculpture as frontal calli. Anterofrontal ridge convex, with the same sculpture as frontal ridge; anterior edge rather weakly concave and raised above labrum. Antennal grooves moderately deep, shagreened, without coarse rugose-punctured sculpture. Labrum moderately long and wide, setiferous pores not very large and deep.



28–33. Metatibia, side view: 28 – *P. rubroaeneus* HKTG.; 29 – *P. longicollis* WSE.; 30 – *P. glaber* DUFT.; 31 – *P. frivaldszkyi* WSE.; 32 – *P. sturanyi* APF.; 33 – *P. danieli* WSE.

Pronotum large, short, rather transverse; anterior and posterior margins weakly convex, evenly rounded; anterior border narrow and flat, posterior wider and more convex, lateral borders narrow and smooth. Anterolateral callosity not wide, weakly protruding from contour, straight, with more or less straight angles, without sharp denticles at setiferous pores. Disc covered with minute, superficial punctures, distances between punctures usually not less than 3 times their diameter, interspaces flat, with small, fine shagreen, stronger at sides.

Elytra evenly weakly rounded; apices nearly bent to suture, its inner angle not forming an acute denticle. Punctures in rows large, moderately deep, distances between punctures in rows usually less than half their diameter; striae form rather weakly impressed furrows, distance between striae at disc 1.5–2 times punctures diameter; interstices weakly convex, with minute, superficial, sparse punctuation, punctures sometimes almost invisible; striae towards apical third become gradually smaller and disappear, apical third with traces of striae.

Metatibia weakly curved at lateral view, at view from above widened at tarsal attachment close to apex (fig. 33).

Genitalia. Male: aedeagus (fig. 24) with sides almost parallel, slightly constricted at middle; apex straight with small denticle, ventral groove wide, shallow, at lateral view deeper at basal second 1/4; at lateral view apical 2/3 of aedeagus almost straight, apical 1/4 distinctly narrowed and slightly widened at the tip. Female: vaginal palpi – fig. 52; tignum – fig. 61.

Measurements. Body length – 1.95–2.27 mm, width – 0.95–1.26 mm. Male (n=10), female (n=2): PI – 1.40–1.84 (1.58); EI – 1.33–1.55 (1.44); BI – 1.80–2.07 (1.94); LI – 2.56–3.59 (2.92).

DIFFERENTIAL DIAGNOSIS

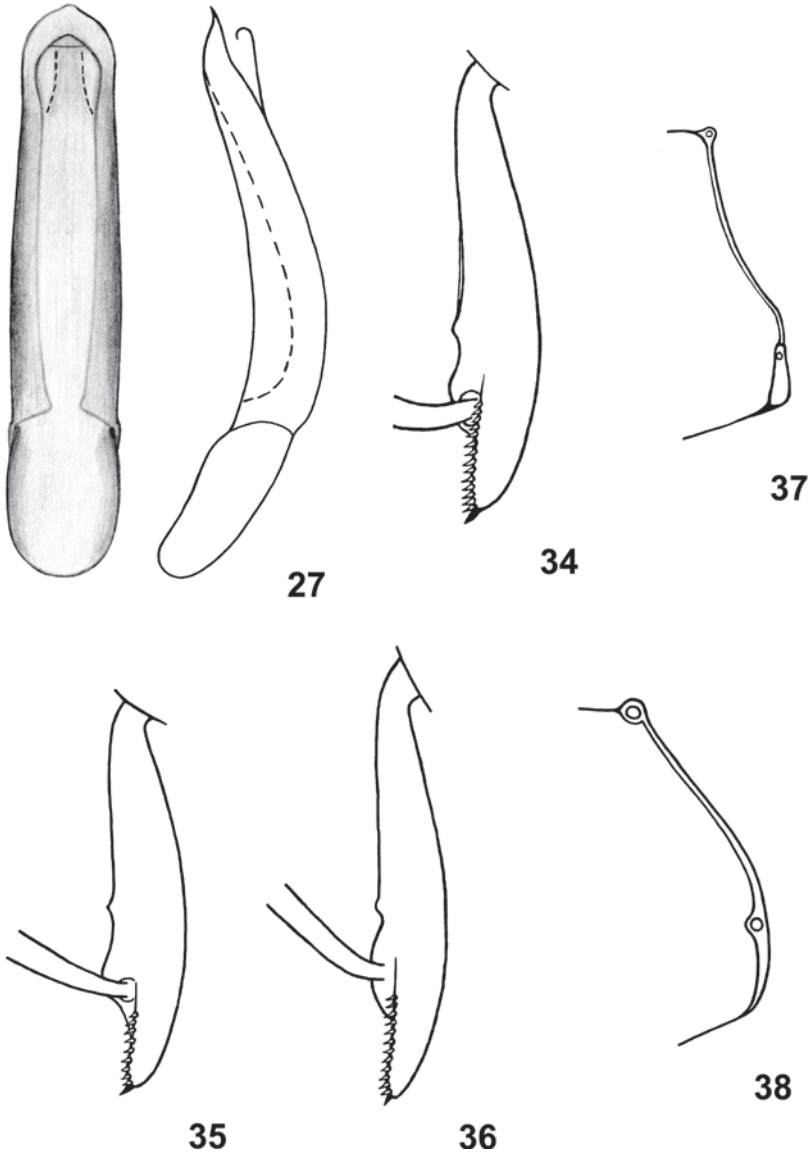
Of all species of the group, *P. danieli* can be compared only with *P. sturanyi*, from which it differs in the structure of the genitalia, the aedeagus with straight apex and short denticle, eyes smaller, ocular sulci well developed and deeper with even margins, vertex impunctate, covered with fine shagreen; antennal grooves deeper; pronotum more transverse; metatibia less curved.

REMARKS

This species is known me from two syntypes. One of them is designated here as lectotype, the other as paralectotype. Lectotype, female, with labels (handwritten): “C. Tombea Daniel”, “*Psylliodes Danieli* m.”, “vidi 10.-3.-1921 Heikertinger”, (red, printed) “Lectotypus *Psylliodes danieli* Weise K. Nadein des. 2007” (ZMHB). The female specimen from NHMB is a paralectotype.

Comparison of the types of *P. danieli* WSE. and *P. rambouseki* HKTG. reveal that they are conspecific. Although I only had two specimens of *P. danieli* available for study, no sufficient differences were discovered between them and *P. rambouseki*. The variability of *P. rambouseki* was studied based on 10 specimens. Both specimens of *P. danieli* fit completely within the limits of variability of *P. rambouseki*.

The subspecies *P. rambouseki forojulensis* HEIKERTINGER is not in my opinion a real geographic race. Comparison of the type material of both subspecies did not reveal any sufficient differences. The larger size of *forojulensis*, mentioned by WARCHALOWSKI (2000, 2003) is based on one specimen only from the type series, and there are no other



27, 34–38. 27 – Aedeagus, ventral view; 34–36 – Metatibia, side view. 37, 38 – Pronotum, lateral margin. 27 – *P. solarii* LEONARDI; 34 – *P. schwarzi* WSE.; 35 – *P. petasatus* FOU DR.; 36 – *P. solarii* LEONARDI; 37 – *P. sturanyi* APFB.; 38 – *P. glaber* DUFT.

differences. The distribution of this form is insufficiently studied due to its rarity, but both forms were recorded from Austria and Slovenia (Alps), which suggests that these are not geographical races. It is well known that when HEIKERTINGER examined on a few specimens collected in a locality distant from a species' centre of distribution, if the degree of difference did not appear great to him, he described them as subspecies. Further studies of these have either resulted in an elevation of the subspecies to distinct species (as in the case of *P. pyrenaicus* HKTG.) or, as in the present case, not. The absence of morphological or distributional differences prevents me from recognizing the validity of this subspecies.

DISTRIBUTION

Type locality: North Italy: "C. Tombea" – East Lombardy (South Tyrol). Italy, Austria, Slovenia, Croatia.

MATERIAL EXAMINED

Type material. *P. danieli*: lectotype (female) (ZMHB); paralectotype, 1 female (NHMB).

P. rambouseki: lectotype (male): "Car. Savin Alp. Goli Vrh. 24.7.07 Rambousek", (NHMB); paralectotypes: same labels as lectotype, 2 males (NHMB); "Savin Alp. 06 Rambousek", 1 female (NHMP); "Savin Alp. Car. 1908 Rambousek", 1 female (NHMP).

P. rambouseki forojulensis: holotype (male): "Goerz-Grad. Ternovan Wald 7.908 Krekich", (NHMB); paratypes: "Bodental Karawanken", 2 males (NHMB).

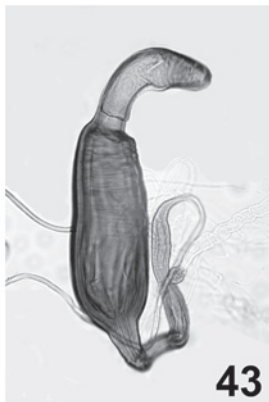
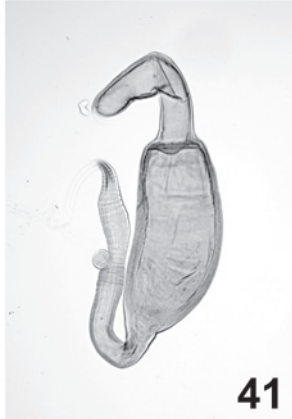
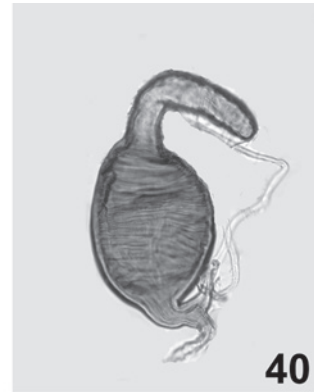
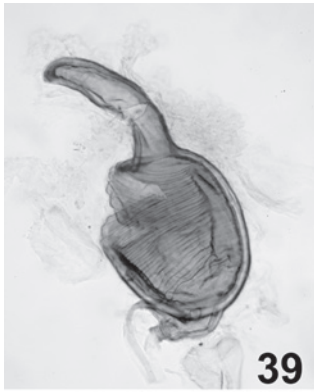
Other material. SLOVENIA: "SLO Julische Alpen Crna Prst, 200 m W Gipfel, 1800 m, 27.VII.1999, legs. Rasen, Polister et Zerche", "46°13'52"N 13°55'43"O", 1 male (DEI); "Tarnowelwald Karnica 31.V.1925", 1 male (ZIN).

Psylliodes sturanyi APFELBECK (Figs. 9, 10, 23, 32, 37, 43, 51, 60, 69, 76)

Psylliodes sturanyi APFELBECK, 1907: 643.

DESCRIPTION

Body short-cylindrical, convex (figs. 9, 10). Head and pronotum piceous to black, with metallic bronzy lustre; elytra red-brown to piceous, shining; fore and mid legs, metatibia, antenna reddish-brown, metafemur darker to red-brown, apical antennal segments from 4th slightly darker; piceous ventrally. Head moderately large, eyes moderately large and convex (fig. 76). Vertex wide, entirely punctured, punctures from moderately large and deep to rather small and shallow, usually larger than on pronotum; situated irregularly, distance between punctures 0.5–3 times punctures diameter; interspaces usually with large, distinct, granular shagreen, the same or larger and more distinct than on pronotum. Ocular sulci not deep and narrow, with uneven, rugose margins and bottom, often rather shallow and poorly developed; only above



39–44. Spermatheca: 39 – *P. rubroaeneus* HKTG.; 40 – *P. longicollis* WSE.; 41 – *P. glaber* DUFT.; 42 – *P. frivaldszkyi* WSE.; 43 – *P. sturanyi* APF.; 44 – *P. schwarzi* Wse.

frontal calli more deep and distinct, with more even margins, wedge-shaped, reaching to space between convex inner margin of eyes above antennal grooves and apex of frontal calli. 1–3 setiferous pores situated close to deep part of ocular sulci, almost not forming impression above sulci. Frontal calli narrow, weakly convex or flat, weakly or not separated from vertex; surface from almost smooth to smooth shagreened, sometimes with one punctures or small impression; separated from each other by puncture-shaped impression; apices elongated and rather narrow, joined with space before eyes above antennal groove, partly impressed at point of joining. Frontal ridge moderately convex, almost rectangular, shagreened as much as vertex; anterofrontal ridge weakly or almost not convex; fore margin of frons very weakly concave above labrum. Antennal grooves somewhat deep, with coarse shagreen and punctures. Labrum not very wide, weakly transverse; setiferous pores moderately large and deep, two median pores the largest. Antennal sockets not large, separated from eyes by narrow impressed space, distance from eye about half diameter of socket.

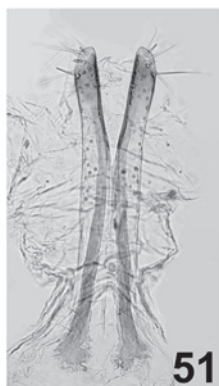
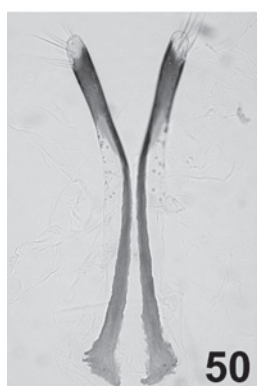
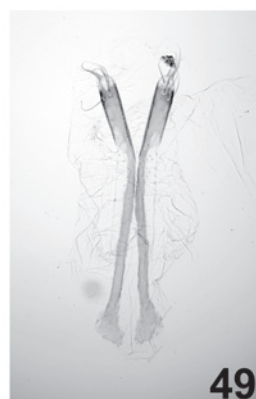
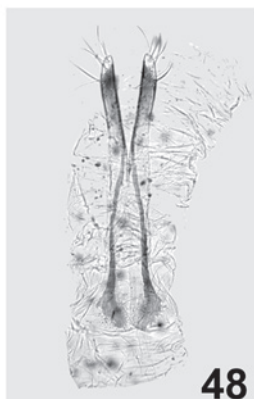
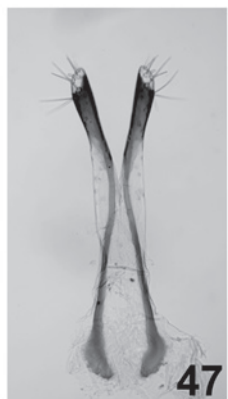
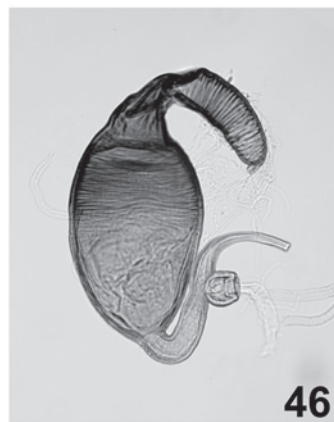
Pronotum large, strongly convex, weakly transverse. Anterior and posterior margins weakly convex, posterior slightly rounded medially, sides weakly converging, not very rounded. Anterior border narrow and flat, posterior slightly wider and more convex; borders of lateral margins narrow and smooth, distinctly arched in lateral view (fig. 37). Anterolateral callosity weakly developed, almost not projecting from contour; its posterior angle at setiferous pore strongly rounded and weakly protruding. Punctuation of disc usually small, superficial, irregular, distance between punctures 1–3.5 times their diameter; interspaces flat, with shagreen almost smooth to more or less distinct as well as at vertex; sides with punctuation larger and deeper, shagreen more distinct.

Elytra very convex and weakly rounded at sides. Punctuation of striae moderately large and deep, distances between punctures 0.5–1 times punctures diameter; distance between striae 1.5–2.5 of a puncture diameter; striae from shallow, superficial to slightly deep, forming shallow furrows; interstices from flat to weakly convex, with minute, almost smooth, superficial secondary punctures; punctures seldom larger, forming rather confused striae; surface with medium sized shagreen, partly smooth, sometimes with sparse finest wrinkles. Elytral apices weakly or almost not bent to suture; sutural angle slightly rounded. Pygidium of female – fig. 69.

Metatibia short, thick, distinctly curved, widened at tarsal attachment, inner ridge close to apex with one small denticle (fig. 32). Metatarsi attached rather close to apex, metatarsomere 1 weakly curved.

Genitalia. Male: aedeagus (fig. 23) long, narrow, sides almost parallel, slightly widened beyond the middle; apex triangle with small denticle; ventral groove narrow when seen from below, shallow; at lateral view moderately S-shaped curved. Female: spermatheca (fig. 43) with collo long and thick before apex, nodulus long, thin, duct moderately long, thin, slightly curved just beyond base; vaginal palpi – fig. 51; tignum – fig. 60.

Measurements. Body length, male – 2.14–2.58 mm, female – 2.28–2.80 mm; width, male – 1.12–1.40 mm, female – 1.23–1.48 mm. Male (n=10): PI – 1.40–1.56 (1.48); EI – 1.30–1.49 (1.37); BI – 1.80–2.05 (1.88); LI – 2.55–2.89 (2.65). Female (n=11): PI – 1.45–1.61 (1.53); EI – 1.30–1.42 (1.36); BI – 1.77–1.92 (1.85); LI – 2.55–2.90 (2.76).



45–50. 45, 46 – Spermatheca; 47–50 – Vaginal palpi. 45 – *P. petasatus* FOUDR.; 46 – *P. solaris* LEONARDI;
 47 – *P. rubroaeneus* HKTG.; 48 – *P. longicollis* WSE.; 49 – *P. glaber* DUFT.; 50 – *P. frivaldszkyi* WSE.; 51 –
P. sturanyi APF.; 52 – *P. danieli* WSE.

DIFFERENTIAL DIAGNOSIS

Close to *P. frivaldszkyi* and to *P. glaber* in the shape and proportions of the body, structure of the head, weakly developed microsculpture of the body surface, short and thick legs. Differs from both species in the structure of genitalia; the body less shining (silky and duller); frontal ridge wider and flatter, trapezoidal; vertex and pronotum with punctuation smaller, sparser, shallower; elytral punctuation smaller, denser, distance between striae larger, interstices flat; dorsal shagreen more distinct; lateral margin of pronotum in lateral view distinctly arched (fig. 37). Differs from *P. glaber* in metatarsi attached rather close to tibial apices.

DISTRIBUTION

Type locality: South-East Bosnia: Mt. Ljubična. Austria, Bosnia-Herzegovina, Serbia, Macedonia, Montenegro, Romania.

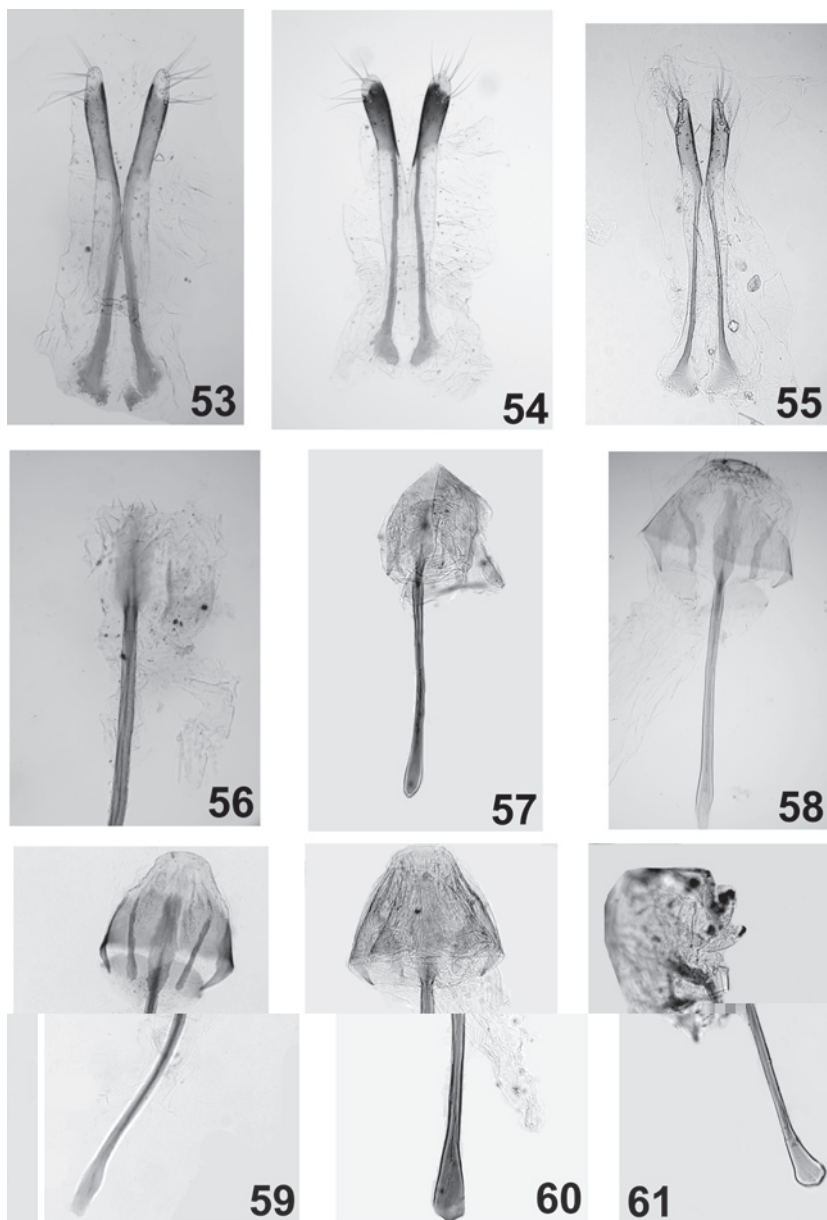
REMARKS

The type series of *P. sturanyi* is deposited in different museums. This species was described without type designation. I designate here two specimens from NHMB and MNHB as lectotype and paralectotype. Lectotype: male, (labels numbered): 1) "Apfelb 02 Ljubična pl.", 2) "hochalpin. Graswurzel", 3) "sturanyi Apf. Cotypus", 4) "Lectotype *Psylliodes sturanyi* Apfelbeck K. Nadein des. 2007" (NHMB); paralectotype, female, label 1 and 2 as in lectotype, 3) "P. sturanyi Apflb.", 4) "Paralectotype *Psylliodes sturanyi* Apfelbeck K. Nadein des. 2007" (MNHB).

MATERIAL EXAMINED

Type material. Lectotype, male, (NHMB); paralectotype, female, (MNHB).

Other material. AUSTRIA: "Franzdorf", "bei Resicza", 1 male (NHMB); "Hatzign Sbg.", 1 female (DEI). BULGARIA: "Bulgaria: Stara Planina, Weschen, 6.06.1997, 2090 and 1780 m, 42°45'40"N 24°23'56"E, leg. Zerche et Behne", 1 male, 1 female (DEI); "Bulgaria: Stara Planina, Weschen, 42°45'45"N 24°23'48"E, 1810, 1970 m, 24.V.2000, leg. Bechne", 2 males, 3 females (DEI); the same locality, 1 male (MD); "Bulgaria: Stara Planina, Triglav-Massif, Goljam Kademilija N Tascha, 1990 m, 10.V.2001, 42°43'34"N 25°03'33"E, leg. Zerche et Behne", 1 male (DEI); "Bulgaria: Stara Planina, Midschw. Massif, S Gorni Lom, 1640 m, 43°24'05"N 22°42'55"E, 21.V.2000 leg. Zerche", 1 female (DEI); "Hateg-Geb. (ort. Hötzing) Walachei Rumänien", 1 male (DEI). SERBIA: "Kozivavnik Serbia", 1 female (NHMB); "Kačanik Juli 1914", 1 male (NHMB). MACEDONIA: "Skopije Juni 1914", 2 males, 2 females (NHMB); "Uesküb Juni 1914", 1 male, 2 females (NHMB); "Macedonia, Sar Planina, Popova Sapka, 26.VII.1935 leg. Fodor", 1 male (MNHB); "Macedonia, Sar Planina, Džinibeg, 1937 leg. Fodor", 1 female (MNHB); "Macedonia, Galicnik Bistra Planina, 7-14.VII.1937 leg. Fodor", 1 male (MNHB). BOSNIA-HERZEGOVINA: "Apfelb 02 Ljubična pl." 2 males (NHMB); "Volyjak Herzegovina", 1 male (MNHB); "Bosnia Pazarič Zovnik 21.V.1937 leg. Fodor", 1 female (MNHB). ROMANIA: "Paring-Gbg Deubel", 1 male (NHMB); "Paring. Tr. Dr. Krauss", 1 female (SMF).



53–61. 53–55 – Vaginal palpi. 56–61 – Tignum. 53 – *P. schwarzi* WSE.; 54 – *P. petasatus* FOU DR.; 55 – *P. solarii* LEONARDI; 56 – *P. rubroaeneus* HKTG.; 57 – *P. longicollis* WSE.; 58 – *P. glaber* DUFT.; 59 – *P. frivaldszkyi* WSE.; 60 – *P. sturanyi* APF.; 61 – *P. danieli* WSE.

***Psylliodes longicollis* WEISE**

(Figs. 3, 4, 20, 29, 40, 48, 57, 66, 74)

Psylliodes longicollis WEISE, 1900: 292.*Psylliodes caucasica* HEIKERTINGER, 1916: 44 (HEIKERTINGER, 1926; synonymised).*Psylliodes oreophila* KHNZORIAN, 1957: 170 (LOPATIN and KONSTANTINOV, 1995; synonymised).*Psylliodes nivalis* KHNZORIAN, 1962: 120, **syn. n.**

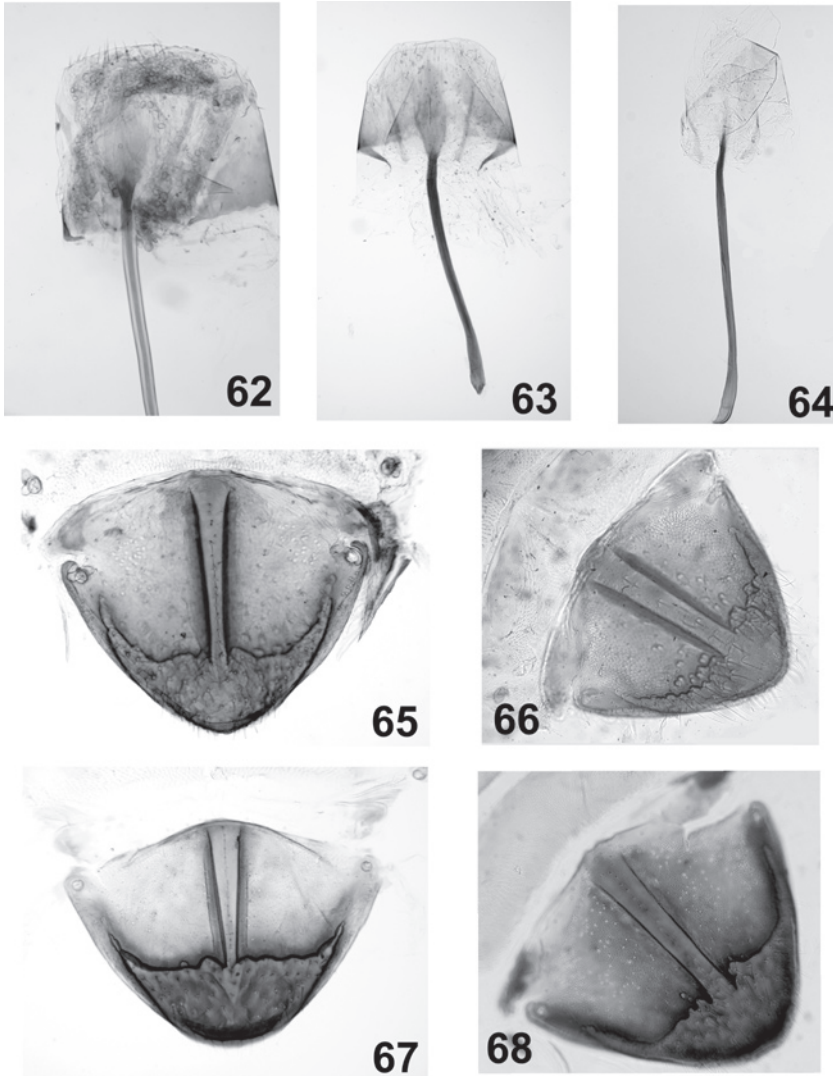
DESCRIPTION

Body cylindrical-oval, convex (figs. 3, 4). Dorsally and ventrally black, shining with metallic lustre, sometimes slightly bronzy, immature individuals dark red, dark brown; fore, middle and hind tibia and tarsi, mandibles, fore half of labrum, antennal segments 1–3 reddish-brownish, succeeding darker; femora dark brown to piceous, immature individuals with legs and antennae reddish-brown, metafemora darker. Head large, eyes small, weakly convex and slightly elongated (fig. 74). Vertex wide, large, weakly convex; covered with irregular punctures, from small, superficial to more or less large, distinct and deep as well as pronotal punctures (sometimes larger); surface with shagreen fine and smooth to rather clear, large, granular; distance between punctures 0.5–2.5 times punctures diameter. Ocular sulci usually shallow, with margins and bottom uneven and wrinkled, situated close to eye margin or at a small distance from eye, seldom more or less deep with even margins; sulci deeper near frontal calli, and split calli medially or close to upper margin, not reaching base of calli; at upper margin of eyes ocular sulci wider due to several setiferous pores forming impression, sometimes punctures on vertex with distinct hairs. Frontal calli not very convex, vertex above calli often convex as well as calli, not distinctly separated from vertex; surface almost smooth to smooth shagreened, narrow with elongated apices joined with convex margins of eyes above antennal socket. Frontal ridge usually weakly convex, seldom more or less clearly convex; surface almost smooth to distinctly finely shagreened; trapezoidal to rectangular. Anterofrontal ridge weakly convex with the same sculpture as frontal ridge; fore margin of frons slightly concave. Antennal grooves weakly convex, usually with coarse, granulate shagreenity and punctuation. Distance of antennal sockets from eye margins is half of the distance between sockets. Labrum wide, not long, four medial setiferous pores well developed, deep, widely placed.

Pronotum very convex, weakly transverse; anterolateral callosities and anterior parts of lateral margins not visible from above; anterior and posterior margins rather weakly convex, posterior almost straight, lateral margins weakly rounded, weakly converging; anterior border very thin and poorly visible, posterior wider and slightly convex, lateral borders thin, smooth or almost smooth; anterolateral callosity weakly developed, slightly swollen, almost not protruding from contour, its angles rounded, not form denticles; punctuation of disc rather small, similar to vertex, punctures superficial, shallow, with distance between punctures 1–3 times punctures diameter, usually 2–2.5 times; interspaces usually with rather smooth shagreen, sides with punctures distinctly larger, shagreen clearer, larger.

Elytra convex, its medial third almost parallel; punctures in striae deep, large, greatly larger than pronotal, seldom slightly larger; distance between punctures abo-

ut half its diameter to 1, not form furrows; distance between striae 1.5–3 diameters of punctures, usually 2, in large females punctures smaller, with distance between punctures 1 its diameter, between striae about 3; spaces between striae flat to weakly convex; secondary punctuation poorly developed, punctures poorly visible or absent, minute and superficial, smooth; surface of elytra with smooth shagreen and sparse finest wrinkles. Elytral apices clearly rounded to suture; sutural angle forms acute, sharp denticle. Pygidium of female – fig. 66.



62–68 . 62–64 – Tignum. 65–68 – Pygidium, dorsal view, female. 62 – *P. schwarzi* WSE.; 63 – *P. petasatus* FOU DR.; 64 – *P. solarii* LEONARDI; 65 – *P. rubroaeneus* HKTG.; 66 – *P. longicollis* WSE.; 67 – *P. glaber* DUFT.; 68 – *P. frivaldszkyi* WSE.

Metatibia short, viewed from above rather wide, distal third widened; in lateral view usually not very curved, inner ridge with 1 large denticle, outer ridge may be with 1–6 rather small denticles, resembling notches, or without one (fig. 29). Metatarsomere I slightly curved.

Genitalia. Male: aedeagus (fig. 20) small, with sides parallel, apex triangle-rounded with weak denticle; ventral groove wide, basally narrower, at lateral view shallow; at lateral view aedeagus slightly curved, with apex slightly bent. Female: spermatheca (fig. 40) with collo moderately thin, long, nodulus ovate-globose, duct very short and thick; vaginal palpi – fig. 48; tignum – fig. 57.

Measurements. Body length, male – 1.95–2.28 mm, female – 2.09–2.60 mm; width, male – 0.98–1.12 mm, female – 1.04–1.32 mm. Male (n=10): PI – 1.40–1.59 (1.46); EI – 1.39–1.50 (1.44); BI – 1.91–2.06 (2.00); LI – 2.40–2.85 (2.59). Female (n=10): PI – 1.41–1.52 (1.47); EI – 1.38–1.48 (1.42); BI – 1.92–2.01 (1.97); LI – 2.45–2.76 (2.59).

DIFFERENTIAL DIAGNOSIS

Close to *P. rubroaeneus* in the shape of body and somewhat in the structure of the head, from which it differs in the darker body colour, structure of genitalia, punctuation of pronotum and vertex smaller and more sparse, eyes smaller and less convex, frontal calli usually splitted, pronotum longer and less transverse, sutural angle forms sharp denticle, posterolateral callosity less elongate downwards, anterolateral callosity more poorly developed, inner ridge of metatibia with large denticle, outer with several notches.

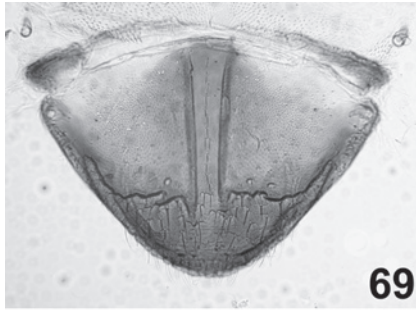
REMARKS

Examination of the type specimens of *P. longicollis* and *P. nivalis* reveals that they are conspecific. There are no differences between the structure of genitalia in both sexes, or in other characters. The morphology of the two type specimens of *P. nivalis* are within the range of variability of the rather variable *P. longicollis*.

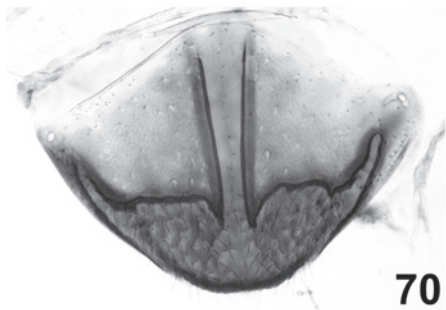
Study of vast material of the *glaber* species-group from the Caucasus confirms the presence of only two species – *P. longicollis* and *P. rubroaeneus*. The little known species *P. callinotus* Faldermann was not discovered. I was not able to study the types of this species but it may be a senior synonym of either *P. longicollis* or *P. rubroaeneus*.

P. longicollis is a variable species, which has resulted in the description of three synonyms. The differences are concern to some characters such as shape of the frontal ridge, frontal calli, development of the puncturation and microsculpture, shape of the metatibia and aedeagus. It is possible that differences are caused by the relatively large area of this species distributed at whole Caucasus at possible somewhat different conditions. The study of the material is revealed that no local variations were discovered.

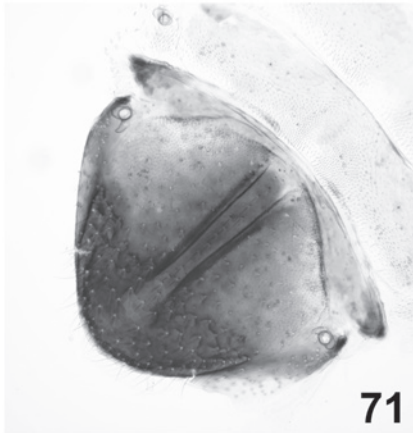
J. Weise described this species without the fixation of a holotype. I designate here a lectotype: male, with labels: “Caucasus Armen. Geb. Leder. Reitter“ (printed), “Zool. Mus. Berlin” (printed), “*Psylliodes longicollis* Ws.” (handwritten); paralectotypes: 1 male and 2 female with labels: “Caucasus Armen. Geb. Leder. Reitter”, 1 male with label the same as first and “Alagoes Reitter” (handwritten). Lectotype and paralectotypes are deposited in ZMHB.



69



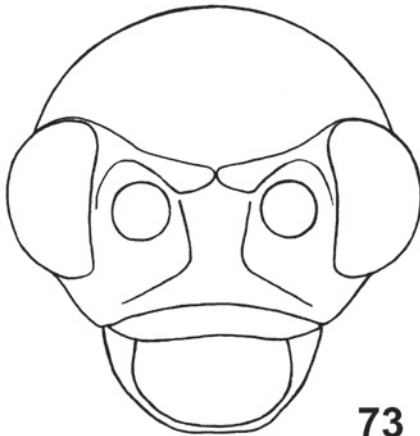
70



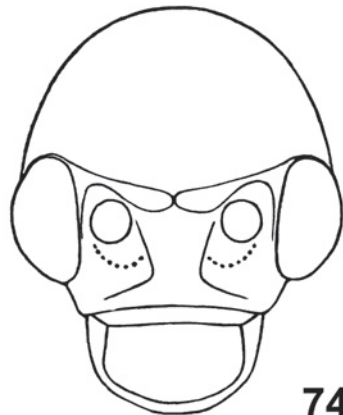
71



72



73



74

69–74. 69–72 – Pygidium, dorsal view, female; 73, 74 – Head. 69 – *P. sturanyi* Apf.; 70 – *P. schwarzi* WSE.;
71 – *P. petasatus* FOUDR.; 72 – *P. solaris* LEONARDI; 73 – *P. rubroaeneus* HKTG.; 74 – *P. longicollis* WSE.

DISTRIBUTION

Type locality: Armenia: Alagoes. Russia (North Caucasus), Georgia, Armenia, Azerbaijan.

MATERIAL EXAMINED

Type material. *P. longicollis*: lectotype (ZMHB), paralectotypes: 4 spec. (ZMHB); the same label as lectotype, 1 male, 1 female (NHMB).

P. nivalis: holotype, male, "Racha. Glola. Dolomisis Georgia 28.VII.1956" (USNM); paratype, female, the same as holotype (USNM).

P. caucasicus: holotype, male, "Caucasus occ. Krasnaya Polyana Roubal VII.1910" (NHMB); paratype: female, "Ca. b. Kluchor VII.912 Roubal" (DEI).

Other material. RUSSIA: "W Caucasus env. Krasnaya Polyana, Azmich loc., 1100-1600, 2000 m, 11.VI.1984, A. Konstantinov", 25 males, 1 female (USNM); "Russia, NW Caucasus, Krasnaya Polyana, Meteorological station, 2300-2500, 7.VI.1984, A. Konstantinov", 16 males, 3 females (USNM); "Russia, Krasnodar Distr., Krasnaya Polyana, Achicho Mt., 2000 m, 5.VI.1984 A. Konstantinov", 19 males (USNM); "Stavropol'e, Adzapsh Pass, 2500 m, 16.VII.1987 N. Okhrimenko", 3 females (USNM); "Teberda, 2700-2800 m, 16.V.1987", 1 male, 1 female (USNM); "Cauc. centr. bor. Teberda im Moss A. Zolotarew", 1 female (ZIN); "W Caucasus Azmich loc, 12.VI.1984, A. Konstantinov", 1 female (ZIN). ARMENIA: "Armenia Tsahkadzor, forest, 22.V.1988 A. Konstantinov", 5 males, 1 female (USNM); "Aragats, Karilets, ArSSR, 29.VIII.1948", 1 male (USNM); "ArmSSR, Dilizhan, 3.V.1981", 1 male (USNM); "Armenia, 22.V.1988 A. Konstantinov", 1 male (USNM); "Sevan Tsahkhkadzor, ASSR, 22.V.1949", 1 male, 2 females (USNM); "Caucasus Armen. Geb. Leder.Reitter", 2 males, 1 female (SMF); the same label, 2 females (MNHB). GEORGIA: "Georgia, Bakuriani, Tabatskuri Lake, 7.VIII.1928, leg. D. Romashov", 1 male (USNM); "Bakuriani, subalpine zone, 14.VII.1983, A. Konstantinov", 4 females (USNM); "Ross. m. VI.57, Bakuriani, 2800 m Dlab.", 1 female (NHMP). CAUCASUS: "Caucasus centr. Musatçeri chreb. 3000 m - 10.VI.1974 leg. Gottwald", 1 female (NHMP); "Cauc. Dorotschi Tschach. 18V1876", 1 male (ZIN); "[1.]", 2 males (DEI); "Caucasus", 1 male, 1 female (DEI).

***Psylliodes rubroaeneus* HEIKERTINGER**

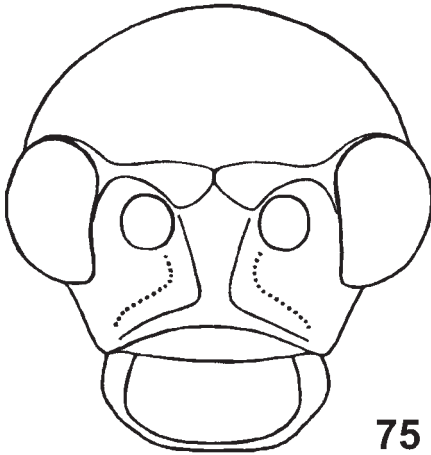
(Figs. 1, 2, 19, 28, 39, 47, 56, 65, 73)

Psylliodes rubroaenea HEIKERTINGER, 1916: 43.

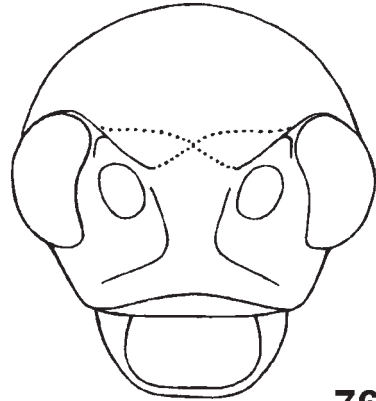
DESCRIPTION

Body cylindrical-oval, convex (figs. 1, 2). Dorsally and ventrally brown-red, shining, vertex, pronotum and elytra with bronzy lustre; antennae, fore and mid legs, metatibia reddish-brownish, metafemora darker. Head large, eyes large, convex (fig. 73). Vertex wide, weakly convex, punctuation dense, punctures large, moderately convex as well as pronotal; distance between punctures about equal to punctures diameter; interstices with distinct, moderately large shagreen. Ocular sulci moderately deep, not very wide, with uneven margins and wrinkled bottom; reaching to apices of frontal calli where

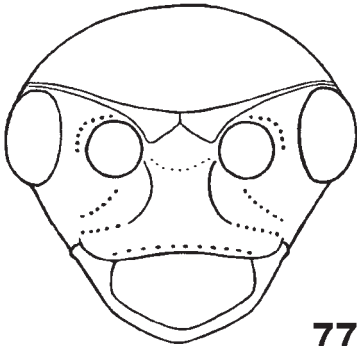
the sulci are deeper and a rather deep impression with setiferous pores is situated, its margin from vertex side more or less even, without rugosity. Frontal calli narrow, convex, almost smooth to very smooth longitudinal wrinkles, separated from each other by a deep, not large impression; not distinctly separated from vertex and frons, apices



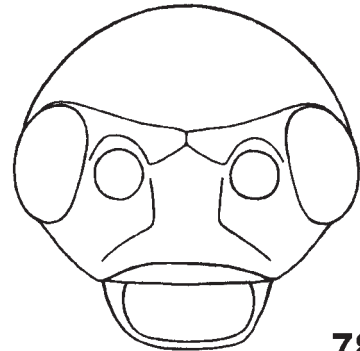
75



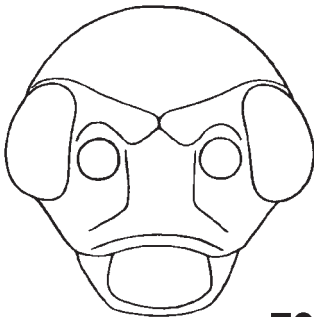
76



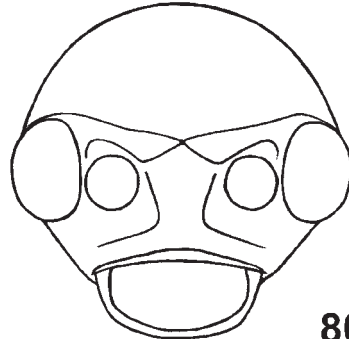
77



78



79



80

75–80. Head: 75 – *P. glaber* DUFT.; 76 – *P. sturanyi* APF.; 77 – *P. schwarzi* WSE.; 78 – *P. petasatus* FOUDR.;
79 – *P. solaris* LEONARDI; 80 – *P. danieli* WSE.

elongated, joined with inner margin of eyes above antennal sockets, impressed at point of joining. Frontal ridge moderately convex, triangular, not very long, more or less distinctly shagreened as much as vertex. Anterofrontal ridge weakly convex, coarse shagreened, sometimes punctured; anterior margin of frons slightly concave. Antennal grooves shallow, coarse shagreened, with knobby-punctured sculpture. Antennal sockets situated in half of sockets diameter from eye margins. Labrum not wide and not very long; 4 median setiferous pores well developed, large and deep.

Pronotum convex, not very long, moderately transverse; anterior angles and anterior part of lateral margins not visible from above; anterior and posterior margins rather weakly convex, lateral margin rather weakly rounded, almost parallel; anterior border narrow, more or less visible, flattened, posterior border wider and more convex, lateral border narrow, smooth. Anterolateral callosity moderately developed, not very wide, moderately protruding from contour, at setiferous pore forms angle, not sharpened; posterolateral callosity long and rather clearly elongated downwards. Punctuation of disc moderately dense, distance between punctures about 1–1.5 times punctures diameter, punctures not very large and deep, interspaces with slightly smooth, more or less large shagreen, sides with punctures larger and shagreen more distinct.

Elytra with more or less large punctures in striae, distance between punctures about half its diameter, striae not form furrows, distance between striae about 2–2.5 times diameter of punctures, interstices more or less flat; secondary punctuation poorly developed, punctures minute and poorly visible, very smooth, spaces between punctures with more or less smooth, covered with sparse finest wrinkles. Elytral apices rounded to suture; sutural angle not forming a denticle. Pygidium, female – fig. 65.

Metatibia at view from above wide, at lateral view moderately curved; inner ridge with poorly developed small denticle, outer ridge even, without denticles and notches (fig. 28). Metatarsomere 1 rather weakly curved.

Genitalia. Male: aedeagus (fig. 19) wide, large, when seen from below slightly widened beyond middle, apex triangle with small denticle; ventral groove wide, basally narrower, depression is developed at basal third, shallow; at lateral view slightly curved, apical third almost straight. Female: spermatheca (fig. 39) with collo moderately long, thick, nodulus large, globose, duct very short, thick, ramus large; vaginal palpi – fig. 47; tignum – fig. 56.

Measurements. Body length – 2.24–2.58 mm, width – 1.09–1.32 mm. Male (n=5), female (n=2): PI – 1.42–1.52 (1.48); EI – 1.39–1.51 (1.45); BI – 1.89–2.05 (1.96); LI – 2.69–2.98 (2.85).

DIFFERENTIAL DIAGNOSIS

Close to *P. longicollis* in the shape of the body and somewhat in the structure of the head, from which it differs in structure of genitalia, eyes larger, denser punctuation of vertex and pronotum, coloration lighter, frontal calli not splitted, pronotum more transverse, sutural angle not forming acute denticle, anterolateral callosity more protruding and more elongated posterolaterally, inner ridge of metatibia without large denticle, outer ridge without denticles or notches.

DISTRIBUTION

Type locality: Russia (North Caucasus: Teberda). Russia (North Caucasus).

MATERIAL EXAMINED

Type material: lectotype (male): "Ca. b. Teberda VI. 912 Roubal", (NHMB); paralectotype: the same label as lectotype, 1 male (DEI).

Other material. RUSSIA: "Teberdinskiy Res., SW out. Teberda, 1300 m, 15-26.VII.1994 A. Gusakov", 1 female (ZMMU); "Caucasus bor. Pjatigorsk", 1 male (SMF); "Ca. b. Teberda Roubal", 1 male (NHMP), "Caucas occid. Atchischho 1/XI.89", 1 female (ZIN), "N-Kaukasus Dombai-Tal, 26.VI.1968, leg. F. Hieke", 1 male (DEI).

ACKNOWLEDGEMENTS

I thank E. SPRECHER (NHMB), A. KONSTANTINOV (USNM), J. FRISCH (ZMHB), L. ZERCHE (DEI), O. JÄGER (SMTD), H. SILFVERBERG (ZMUH), O. MERKL (MNHB), J. HÁJEK (NHMP), P. LIMBOURG (IRSNB), B. BRUGGE (ZMUA), O. MARTIN (ZMUC), D. KOVAC (SMF), C. LEONARDI (MSNM), N. NIKITSKY (ZMMU), A. WARCHALOWSKI (Poland), M. DÖBERL (Germany) for the opportunity to study material in their care. I thank I. GAVRILOV (ZIN) for the opportunity in preparation of light microscopy photos. I also grateful to M. BARCLAY (The Natural History Museum, London) for his help in English translation.

REFERENCES

- ALLARD, E., 1859. Diagnoses de quelques Haltises nouvelles. Bull. Soc. Ent. France, **1859**: 100-261.
- APFELBECK, V. 1907. Neue Koleopteren von der Balkanhalbinsel. Wiss. Mitt. Bosnien, **10**: 635-644.
- DOGUET, S., 1994. Étude de quelques types d'Alticinae de la faune française. Bull. Soc. ent. France, **99**: 437-442.
- , 1994a. Coléoptères Chrysomelidae, Vol. 2, Alticinae. Faune de France. **80**: 694 pp.
- DÖBERL, M., 1986. Die Spermathek als Bestimmungshilfe bei den Alticinae. Entomologische Blätter **82** (1-2): 3-14.
- GRUEV, B., DÖBERL, M., 1997. General distribution of the flea beetles in the Palaearctic Subregion (Coleoptera: Chrysomelidae: Alticinae). Scopolia, **37**: 1-496.
- DUFTSCHMID, K., 1825. Fauna Austriae. Oder Beschreibung der österreichischen Insecten für angehende Freunde der Entomologie, **3**. Linz-Leipzig: 1-282.
- FOUDRAS, A. C. M. E., 1860. Altisides. Ann. Soc. Linn. Lyon, (n. s.) (1859) **6**: 145-530.
- HEIKERTINGER, F., 1909. [Diagnosen neuer Halticinen]. Verh. Zool.-bot. Ges. Wien, **59** (7/8): 9-17.
- , 1916. Zur Kenntnis der Halticinengattung *Psylliodes*. Ent. Blätter, **12**: 29-47.
- , 1921. Bestimmungstabelle der Halticinengattung *Psylliodes* aus dem paläarktischen Gebiete. II. Die hellfarbigen Arten. Kol. Rundschau, **12**: 101-138.
- , 1926. Bestimmungstabelle der Halticinengattung *Psylliodes* aus dem paläarktischen Gebiete mit Ausschluß Japans und der Kanarischen Inseln. I. Die ungeflügelten Arten. Kol. Rundschau, **9**: 39-62.
- KHIZORIAN, S., 1957. Novye vidy zhestkokrylyh iz Armyanskoy SSR i Nakhichevanskoy SSR. Materialy po izucheniyu fauny Armyanskoy SSR. Zool. Sbornik AN ArmSSR, **10**: 59-152. (in Russian).
- , 1962. Novye vidy zhestkokrylyh iz Zakavkazia. Zool. Sbornik AN ArmSSR, **12**: 115-124. (in Russian).

- LEONARDI, C., 1970. Materiali per uno studio filogenetico del genere *Psylliodes* (Coleoptera Chrysomelidae). Atti Soc. ital. Sci. nat. Museo Civ. Stor. nat. Milano, **110**: 201–223.
- , 1975. La *Psylliodes* Appenniniche del Museo Civico di Storia Naturale di Verona. Boll. Mus. Civ. Stor. Nat. Verona, **2**: 51–90.
- LOPATIN, I., KONSTANTINOV, A., 1995. Materials on the systematic and fauna of leaf-beetles of Caucasus (Coleoptera: Chrysomelidae). Proc. Zool. Mus. Byelorussian Univ. Fauna and systematics, **1(1)**: 180–200.
- NADEIN, K., 2005. On morphological adaptation and distribution of mountain flea-beetles (Coleoptera: Chrysomelidae: Alticinae) of Europe and Southwest Asia. In: Proc. Entomol. Conf. “General and applied entomology in Ukraine”, Lwiw, 159–161.
- , 2006. A significance of the tegmen structure for the classification of the genus *Psylliodes* LATREILLE, 1829 (Coleoptera: Chrysomelidae: Psyllioidina). Proc. Russ. Ent. Soc., **77**: 250–254.
- REDTENBACHER, 1849. Die Käfer, nach der analytischen Methode bearbeiten. Wien: 883 pp.
- WARCHALOWSKI, A., 1993. *Psylliodes dogueti* sp. n., eine neue Erdflöheart aus der Turkey (Coleoptera: Chrysomelidae: Halticinae). Genus, Wrocław, **4(4)**: 359–361.
- , 2000. Chrysomelidae Stonkowate (Insecta: Coleoptera). Fauna Polski. T. **22**, Cz. VII, Warszawa: 358 pp.
- , 2003. Chrysomelidae. The leaf-beetles of Europe and the Mediterranean area. Natura Optima Dux Foundation, Warszawa: 599 pp. + LVI.
- WEISE, J., 1888. Chrysomelidae. Naturgeschichte der Insecten Deutschlands. Coleoptera, **VI**. Berlin–Leipzig: 769–960.
- , 1900. Beschreibungen von Chrysomeliden und synonymischen Bemerkungen. Archiv f. Naturgesch., **1**: 267–294.