

Review of the *Psylliodes gibbosus* species group, with descriptions of two new species (Coleoptera: Chrysomelidae: Galerucinae)

K.S. NADEIN

Abstract

The *gibbosus* species group of the genus *Psylliodes* L. (Coleoptera: Chrysomelidae: Galerucinae) is reviewed. The species group includes eight species, two of which, *P. tenuidentatus* from Israel and *P. ridendus* from Turkey, are described as new. The remaining six species are redescribed. Notes on distributions, and a key to all eight species are given. The morphological variability of *P. inflatus* REICHE & SAULCY and *P. kiesenwetteri* KUTSCHERA, and the specific status of *P. ruffoi* LEONARDI are discussed. The status of *P. fagei* BECHYNÉ is elevated from subspecies to species level based on the study of type material.

Key words: Coleoptera, Chrysomelidae, Galerucinae, *Psylliodes gibbosus* species group, review, new species, new status.

Introduction

The species of the *Psylliodes gibbosus* species group were partly reviewed for the first time by HEIKERTINGER (1921) in his treatment of the wingless species of the genus *Psylliodes* L., 1825 from the Palearctic Region. He recognized two species: *P. gibbosus* ALLARD and *P. inflatus* REICHE & SAULCY, while *P. kiesenwetteri* KUTSCHERA and *P. gougeleti* ALLARD were treated as forms of *P. gibbosus*. LEONARDI (1970, 1975) established the *P. gibbosus* species group, which includes *P. gibbosus*, *P. inflatus*, *P. kiesenwetteri* and *P. ruffoi* LEONARDI. Studies of the species of this group, including description of a new species, distributional notes, taxonomic changes, and biology were also published by HEIKERTINGER & CSIKI (1940), BECHYNÉ (1957), FURTH (1983), DOGUET (1994a, b), and GRUEV & DÖBERL (1997).

A detailed examination of this group was initiated because of the unclear composition of the group and unclear status of the species. Two new species belonging to this group were discovered in the course of this study. This present paper focusses on a reconsideration of the group's composition, taxonomic changes, distributional notes, a key to species, and redescription of the species.

Methods

All observations, preparations and figures were made using an MBS-9 dissecting microscope. The photographs of the female genitalia were made from glycerin preparations using a Motic BA450 light microscope and a Canon 350D digital camera. The figures of the male genitalia were made from glycerin-gelatin preparations. Measurements were made using an ocular-micrometer.

Abbreviations for measurements are as follow: PI – pronotal index (maximum length/maximum width of pronotum); EI – elytral index (maximum length/maximum width of elytra); MI – metatibial index (maximum length/maximum width of metatibia); LI – pronotal-elytral length index

(maximum length of elytron/maximum length of pronotum); BI – body length-width index (length/width of body). The terminology for spermathecal structure follows DÖBERL (1986), and species' distribution follows GRUEV & DÖBERL (1997).

The specimens examined for this revision are deposited in the following collections:

BMSU	State University, Entomology Department, Biology Faculty, Moscow, Russia
BPBM	Bishop Museum, Honolulu, Hawaii, USA
DEI	Deutsches Entomologisches Institut, Müncheberg, Germany
IRSNB	Institut Royal des Sciences Naturelles, Brussels, Belgium
MD	Manfred Döberl collection, Abensberg, Germany
MNCN	Museo Nacional de Ciencias Naturales, Madrid, Spain
MNHB	Természettudományi Múzeum, Budapest, Hungary
MSNM	Museo Civico di Storia Naturale di Milano, Italy
MZUF	Università di Firenze, Museo Zoologico de "La Specola", Italy
NHMB	Naturhistorisches Museum Basel, Switzerland
NHML	Natural History Museum, London, United Kingdom
NHMP	Národní Muzeum, Prague, Czech Republic
SMTD	Staatliches Museum für Tierkunde, Dresden, Germany
TAU	Zoological Department, Tel-Aviv University, Israel
ZIN	Zoological Institute, St. Petersburg, Russia
ZMHB	Zoologisches Museum, Humboldt Universität, Berlin, Germany
ZMUA	Zoologisch Museum Universiteit van Amsterdam, Netherlands
ZMUH	Zoological Museum, University of Helsinki, Finland
ZM	Z. Malinka collection, Czech Republic

Psylliodes gibbosus species group

DESCRIPTION: Body: 1.8–3.4 mm long, more or less convex, broadly oval to more or less elongate. Punctures of dorsal surface usually rather large, dense, well developed, especially on head and labrum.

Head (Fig. 90): Comparatively large relative to prothorax, with vertex large and wide. Eyes moderately large and more or less convex. Frontal ridge more or less wide, shape triangular to trapezoidal, sides often limited by row of punctures. Frontal calli narrow, their apices elongate and usually reaching eye margins. Ocular sulci usually well developed and deep, more rarely narrower and shallow. Anterofrontal ridge almost straight, often slightly arched medially. Labrum large (comparative to most of the species of the nominotypical subgenus), nearly pentagonal with rounded anterior angle, dorsally with transverse medial elevation; medially with large, deep, setiferous pores. Mandibles large, usually projected beyond the margins of labrum.

Prothorax: large, convex, moderately transverse (PI: 1.47–1.66); anterolateral callosity moderately developed, weakly protruding beyond pronotal margin, not forming acute denticle at setiferous pore; punctures variable, usually medium in size, interspaces flat to convex, smooth to shagreened.

Wings: Punctures in elytral striae medium to large; interstices with secondary punctures variable, sometimes not very small. Hind wings usually completely reduced, but only partially reduced in *P. tenuidentatus* sp.n., and well developed in some individuals of *P. kiesenwetteri* and *P. inflatus* that also have well developed humeral calli.

Legs: Metatibia usually moderately curved in lateral view (but not as much as in the *P. luteolus* and *P. picinus* species groups).

Genitalia: Aedeagus with typical shape for the genus *Psylliodes*. Tegmen modified, with apical branches reduced. Spermatheca large, nodulus and collo long, duct very long and coiled.

Sexual dimorphism: Males smaller and more slender than females, with pronotum less transverse; shape of first protarsomere similar in males and females.

DIFFERENTIAL DIAGNOSIS: The *P. gibbosus* species group belongs to a complex within the genus *Psylliodes* which includes the following species groups: *P. cucullatus*, *P. glaber*, *P. gibbosus*, *P. vehemens*, and the subgenera *Eupus* WOLLASTON, *Minicnema* NADEIN, and *Semicnema* WEISE. This complex is characterized by the short, convex body (with exception of the subgenus *Semicnema*), comparatively large head and pronotum (LI –2.60–3.02 (2.81) in contrast to 3.14–3.73 (3.43) in most species of the nominotypical subgenus), nearly pentagonal labrum with a transverse medial elevation (Fig. 90), modified tegmen, and absent or partly reduced hind wings. The *P. gibbosus* species group is close to the *P. cucullatus* species group from which it differs in the structure of the spermatheca (duct, collo and nodulus long, duct coiled) and the structure of the metatibia and metatarsi (not curved inward, internal ridge sometimes with more or less developed denticle, first metatarsomere not widened basally). From the *P. glaber* species group, it differs in the body outlines (more elongate), the legs (less thickened), and in the structure of the spermatheca (duct very long and coiled, collo long and not sharpened apically, nodulus long and narrow; in contrast to duct short and thick, not coiled, collo short and sharpened apically, nodulus short, thick and drop-shaped).

DISCUSSION: Two subgroups within the *P. gibbosus* species group can be distinguished: 1) the species related to *P. gibbosus* (*P. kiesenwetteri*, *P. gougeleti*, and *P. ruffoi*) and 2) the species related to *P. inflatus* (*P. fageli* BECHYNÉ, *P. tenuidentatus* sp.n. and *P. ridendus* sp.n.). These subgroups differ in the shape and outline of the body (more elongate and narrow in the *P. gibbosus* subgroup and wider and more convex in the *P. inflatus* subgroup), structure of metatibia (in the species of the *P. gibbosus* subgroup the apex of the metatibia is not widened and rounded, and the internal ridge lacks an angled projection; in the species of the *P. inflatus* subgroup the apex of the metatibia is more or less widened to strongly wide and straight, and the internal ridge bears a distinct angled projection or at least a poorly developed one).

No preimaginal stages of any species of the *P. gibbosus* species group have as yet been described.

BIOLOGY: The host plants known for the species of the *gibbosus* group belong to the Poaceae and Brassicaceae. For *P. gibbosus* the following host plants are reported: *Lolium perenne*, *Scleropoa rigida*, and *Sinapis pubescens* (FURTH 1983, DOGUET 1994b). For *P. kiesenwetteri* a single host plant, *Biscutella laevigata*, is recorded (DOGUET 1994b). For *P. inflatus* the following host plants are recorded: *Ormenis mixta*, *Anacyclus clavatus*, *Hirschfeldia incana*, *Brassica nigra*, *Barbarea minor*, *Erysimum verrucosum* and probably Poaceae (FURTH 1983). Feeding on Poaceae is unusual for the species of the genus *Psylliodes*, their host plants usually being Brassicaceae. Nonetheless, this association is an additional confirmation for the relationship between the species groups and subgenera belonging to the complex mentioned above. For most species of the complex for which the host plants are known, feeding on monocots is prevalent. For example, the host plants of *P. (Semicnema) reitteri* WEISE are *Phragmites communis* and *Miscantus* sp.; *P. (Semicnema) macellus* WEISE feeds on *Achantherum splendens*; Poaceae are recorded as host plants for *P. (Eupus) aemulans* LINDBERG and *P. (P.) ellipticus*; the host plant of *P. (P.) cerenae* GÖK, DOGUET & GILBIROĞLU is *Bromus* sp.; some genera of Poaceae and Liliaceae (*Spergula*, *Poa*, *Agropyron*, *Festuca*, *Eremopyron*) are recorded as host plants for *P. (P.) cucullatus* (ILLIGER).

DISTRIBUTION: The *P. gibbosus* group occurs from the Mediterranean Region in Portugal and Morocco to Iran and Iraq. The species of the *P. gibbosus* subgroup are distributed predominantly in the northern part of the range – Portugal, Spain, France (incl. Corsica), Italy (incl. Sicily and Sardinia), Slovakia, the Balkans (former Yugoslavia, Albania, Bulgaria, Greece)

and Turkey. *Psylliodes gibbosus* occurs in Morocco, Algeria, Sicily, Sardinia and Turkey. *Psylliodes kiesenwetteri* is also recorded from Turkey. The *P. inflatus* subgroup is distributed in the southern part of the range – Morocco, Algeria, Tunisia, Libya, Turkey, Israel, Syria, Jordan, Lebanon, Iran, and Iraq. *Psylliodes inflatus* has the largest range among the species of this subgroup, having been recorded from Sicily, Sardinia and Turkey. Owing to the fact that the distributions of *P. gibbosus*, *P. inflatus* and *P. kiesenwetteri* are overlapping, the areas of subgroups are overlapping too.

***Psylliodes (s.str.) gibbosus* ALLARD**
(Figs. 1–4, 25, 26, 41, 51, 53, 61, 68, 76, 83, 90)

Psylliodes gibbosa ALLARD 1860: 820. (Lectotype ♀, des. DOGUET 1994a, deposited in Muséum National d'Histoire Naturelle, Paris; paralectotypes deposited in MNHB, IRSNB, NHMB).

Psylliodes rufilabris FOUDRAS 1859 (1860): 150. (Type material deposited in Muséum National d'Histoire Naturelle, Paris).

Psylliodes sicula STIERLIN 1867: 228. (Lectotype ♂, des. by LEONARDI 1975 and paralectotypes deposited in DEI).

Psylliodes barrosi in litt. (after HEIKERTINGER 1921).

TYPE LOCALITY: Algeria (Bône) [Annaba].

TYPE MATERIAL EXAMINED:

Psylliodes gibbosus: **Paralectotypes**: “*P. gibbosa* m. Allard type” (1 ♀ MNHB); “*P. gibbosa* m. Allard type” (1 ♀ IRSNB); “Type”, “*P. gibbosa* Allard” (1 ♀ NHMB).

Psylliodes sicula: **Lectotype** ♂: “Sicilia”, “C. Leonardi des. 1973” (DEI). **Paralectotypes**: “Sicilia” (1 ♀ DEI); “Sicilia” (1 ♀ NHMB).

ADDITIONAL MATERIAL EXAMINED:

SPAIN: “Algeciras 25.5.34 Hi. m. C. Koch” (1 ex. NHMB); “Zignago (SP) 3.8.966, 27.8.982, 9.9.980, 21.8.982, 14.9.976 S. Failla” (5 exs. MZUF).

FRANCE: “Hyerès Gallia” (1 ex. ZIN); “Gall.” (1 ex. ZIN); “Frejus” (1 ex. ZIN); “Gallia col. Lichtn.” (1 ex. MNHB); “France A. Chobaut” (1 ex. MNHB); “Provence S. Raphael” (4 exs. NHMB); “Montpellier H. Lavagne” (2 ex. NHMB); “gibbosa All. Nice” (1 exs. NHMB); “Cannes” (1 ex. NHMB); “Gall. mer.” (1 ex. DEI); “Gallia m.” (2 exs. DEI); “Gallia Camargue L. Puel” (4 exs. DEI); “Le Beausset Septembre” (1 ex. DEI); “Royaumont Mol. de Boissy” (1 ex. DEI); “Collioure 5.04. de Boissy” (1 ex. DEI); “Agay - Var. Fr. Coll. Obenberger” (2 exs. NHMP); “Gallia Heyres vd Hoop '93” (1 ex. ZMUA); “Gallia Grasse vd Hoop '93” (1 ex. ZMUA); “Gallia” 1 ex. ZMUA; “coll. Leeb. D. Gallia” (1 ex. ZMUA); “coll. Uyttenboogaart. Var” (2 exs. ZMUA); “France Corse” (10 exs. IRSNB); “France Toulon” (3 exs. IRSNB); “France Le Luc: Var” (2 exs. IRSNB); “Gallia Camarague L. Puel” (1 ex. IRSNB); “France Camarague Bouches du Rhone L. Puel” (1 ex. IRSNB). CORSICA: “Ajaccio Vodoz Cors.” (2 exs. NHMB); “Corse” (2 exs. DEI); “Corsica” (7 exs. DEI); “Corsica Ajaccio. 1900” (1 ex. ZMUA).

ITALY: “*Psylliodes obscura* Dft. Ital.” (1 ex. ZIN); “Genova, Italia” (1 ex. ZIN); “Genova” (1 ex. ZIN); “Milano Trenno 8.69 Leonardi” (3 exs. ZIN); “Italia Lazio 6 km n. Priverno 200 m 27.V.83 Schiller” (1 ex. MD); “Italia” (1 ex. MNHB); “Italien Leder.Reitter” (1 ex. MNHB); “Genova A. Doderò” (1 ex. NHMB); “Spezia V.93. Flach.” (4 exs. NHMB); “Collesalveti Paganetti” (3 exs. NHMB); “Emilia 24.VII.902 A. Fiori” (1 ex. NHMB); “Emilia, It. o. Casinalbo” (3 exs. NHMB); “Flach. 92. Pisa. Arno” (4 exs. NHMB); “Mte. Arazzecca Paganetti” (1 ex. NHMB); “VI.1899 Prov. di Ravenna Porto Corsini Dr. A. Andreini” (1 ex. NHMB); “Fiume” (4 exs. NHMB); “Riva Natterer” (1 ex. NHMB); “Capri. Flach VI.92.” (1 ex. NHMB); “Italia Rom” (1 ex. NHMB); “Grottaglie Murgien leg. Paganetti” (1 ex. NHMB); “Mte. Conero Prov. di Ancena leg. Paganetti” (1 ex. NHMB); “Italia Lago di Fucine 1899 Paganetti” (1 ex. NHMB); “Acilia (Roma) 17.XII.1914 C. Castellani” (1 ex. NHMB); “Ins. Elba Holdhaus” (3 exs. NHMB); “Genua V.91 Flach” (1 ex. NHMB); “Toscana Viareggio Marchi 1921” (1 ex. NHMB); “Toscana” (1 ex. NHMB); “Toscana ? Staudinger” (7 exs. NHMB); “Gerase, Cal. Paganetti” (1 ex. NHMB); “Mt Conero 90 Flach” (1 ex. NHMB); “Borzonasca V.93 Flach” (1 ex. NHMB); “Vallombrosa Apennin” (1 ex. NHMB); “Italia Varano” (2 exs. NHMB); “Aquila Italien” (2 exs. NHMB); “Toscana Guazzino Marchi 1914, 1922” (29 exs. MZUF); “alluvioni F. Tevere Prov. Arezzo XII. 1923 Dr. A. Anderini” (2 exs. MZUF); “Alluv. Tevere Alta Valle Tosco Umbra 18.XI.1935 Dr. A. Anderini” (4 exs. MZUF); “Toscana Viareggio Marchi 1922” (12 exs. MZUF); “Toscana Firenze Righatti 6.1924” (1 ex. MZUF); “Alluv. T. Sovara Anghiari (Arezzo) 20.II.1931, XII.1927, 18.XI.1935, III.1922 Dr. A. Anderini” (7 exs. MZUF); “Anghiari (Arezzo) All. T. Sovara 25.III.1922 Dr. A. Anderini” (2 exs. MZUF); “Anguarsi Prov. di Arezzo T. Sovara IX.1917 Dr. A. Anderini” (3 exs. MZUF); “Rocchetta Vara 6.9.982 S. Failla” (1 ex. MZUF); “Firenze Olmo

24.6.967 S. Failla" (1 ex. MZUF); "Firenze L'Olmo 19.11.977 S. Failla" (1 ex. MZUF); "Firenze Cuve di Maiano 7.6.963 S. Failla" (1 ex. MZUF); "Poggio Carallo dint di Grosseto V-1890" (1 ex. MZUF); "Prov di Pisa B. di Casciana VIII.1910 Dr. A. Anderini" (1 ex. MZUF); "Chieti Abruzzo V.912 Dr. A. Anderini" (1 ex. MZUF); "Monterchi Alluv. T. Carfone IX.1922 Dr. A. Anderini" (7 exs. MZUF); "Dint. di Livorno VI.908 Dr. A. Anderini" (3 exs. MZUF); "Premariacco prov. di Udine XI.1916 Dr. A. Anderini" (3 exs. MZUF); "Sanremo m. Bignana VIII.1953" (1 ex. MZUF); "Lippiano Prov. Arezzo 2.IV.1918, IX.1919 Dr. A. Anderini" (2 exs. MZUF); "Prov di Ravenna Porto Corsini VI.1899" (10 exs. MZUF); "Miemo Azienda Fauno Forestale VI.69 G. Martelli lg." (1 ex. MZUF); "Alpe della Luna App. Tosc. merid.VI.1920 Dr. A. Anderini" (1 ex. MZUF); "Alpe della Luna Prov. Arezzo VI.1920 Dr. A. Anderini" (1 ex. MZUF); "Parco N. le Abruzzo Sotto colle S. Sanni 8.VII.1963 A. Martelli leg." (1 ex. MZUF); "Castiglioncello Bandini Grosotto VII.1919 Dr. A. Anderini" (1 ex. MZUF); "Consuma VIII.1959" (1 ex. MZUF); "Firenze Tavarnuzze 24.9.1959" (1 ex. MZUF); "San Basilio Murgien leg. Paganetti" (2 exs. DEI); "Toscana" (4 exs. DEI); "Caffarella Roma 5.9.09" (6 exs. DEI); "Dint. di Roma mend. Aniene Luig. 26.12.14" (5 exs. DEI); "Monte Pagano Coll. O. Leonhard" (1 ex. DEI); "Mte. Pagano Paganetti" (1 ex. DEI); "Italia" (2 exs. DEI); "Gerace Cal. Paganetti" (1 ex. DEI); "Tivoli Itali 18.IV.05" (1 ex. DEI); "Porte di Corfozza 14.VII.14" (1 ex. DEI); "Imola" (1 ex. DEI); "Bussoleno Cot. Alpen 4.VII.11" (3 exs. DEI); "Italia m. Pioppi (Salerno) 1.11.64 leg. Liebmann" (2 exs. DEI); "I: Emilia, Pomposa 7.7.1995 leg. Menzel" (1 ex. DEI); "Lombardia Venegono X.66. Gentili" (1 ex. NHMP); "Treviso Maserada Burlini X.35" (1 ex. NHMP); "La Lavandou Gallia mer. Dept. Var 1930 Expeditio Doc. Dr. J. Obenberger" (1 ex. NHMP); "Italia" (1 ex. NHMP); "Vedano Olona Varese VI.64 Italia A. Olexa" (1 ex. NHMP); "Süd. Italien Neapel" (1 ex. NHMP); "Miccione Italia 1936 6. Hajek" (1 ex. NHMP); "Evert. Rapallo" (4 exs. ZMUA); "coll. Leesb. Pisa" (1 ex. ZMUA); "Italie Pise" (1 ex. IRSNB); "Italia Pavie de Bertolini" (1 ex. IRSNB); "Toscana V. Brnok" (1 ex. IRSNB); "Italia Varano" (1 ex. SMTD); "Toscana" (1 ex. SMTD); "Toscana Italia" (1 ex. SMTD); "Lucca V.91. Flach" (2 exs. SMTD); "Spezia V. 93. Flach" (10 exs. SMTD); "Pisa. Arno. V.91. Flach" (3 exs. SMTD); "Bocca d'Arno V. 93. Flach" (2 exs. SMTD); "Collesaveti Paganetti" (1 ex. SMTD); "Umbria Todi 28/30.V.1976 leg. C. Leonardi" (4 exs. MSNM); "Lombardia Milano-Trenna VIII.1959 leg. C. Leonardi" (6 exs. MSNM); "Toscana Torre Lago 6.39 A. Gagliardi" (5 exs. MSNM); "Staz. Carnia 19.6.60" (1 ex. MSNM); "Montehibretti (Roma) loc. coll. del Forno 15.X.74 W. Rossi" (1 ex. MSNM); "Castel di Sangro leg. Paganetti" (18 exs. NHMB, 16 exs. DEI, 2 exs. ZMUA, 9 exs. SMTD); "Calabria Sta. Eufemia d'Aspromonte 1905 Paganetti" (2 exs. NHMB, 4 exs. SMTD); "Varano K. Zonfal" (2 exs. MNHB); "Mte Pagano Paganetti" (3 exs. MNHB). SICILY: "Palermo Matsamura" (1 ex. MNHB); "Sicilia, Coccamo Tannita 1979.VI.27 leg. Zombori L." (1 ex. MNHB); "Messina Holdhaus" (1 ex. NHMB); "Palermo Rottenberg" (1 ex. DEI). SARDINIA: "Sardinia Tempio Krausse" (3 exs. MNHB); "Sardinia Oristano" (2 exs. NHMB); "Sardinia 1912 Sorgono leg. Dr. Krausse Coll. O. Leonhard" (1 ex. DEI); "Sard. ? Staudinger" (2 exs. NHMB). SLOVENIA: "Krain" (1 ex. NHMB); "Wippach" (1 ex. NHMB). TURKEY: "Turcia" (2 exs. NHMB). MOROCCO: "N-Afr. Marokko Umg. Azrou; 800m El Hajeb; 30 April leg. Döberl 1998" (1 ex. MD); "Tanger Rolph" (4 exs. DEI). ALGERIA: "Constantine (Meron) coll. de Vauloger" (2 exs. ZIN); "Psylliodes gibbosa Alger" (1 ex. ZIN); "Algerie" (1 ex. NHMB). UNKNOWN PROVENANCE: "Montona" (1 ex. NHMP).

DESCRIPTION: Body: Ovoid, moderately wide, rather convex; head scarcely visible from above (Figs. 1–4). Pronotum piceous, shiny; elytra brown, darker dorsally; fore edge of frons, labrum, mandibles, and legs (excepting metafemur) yellowish-brown to pale brown; metafemur brownish to dark brown; five basal antennomeres yellow, five apical antennomeres brownish.

Head: Rather large; eyes large, convex, not strongly oblong, with interior margins straight (Fig. 90). Vertex large, wide, slightly convex; punctures rather small and sparse (much smaller than pronotal punctures) and separated by a distance equal to 2–3 diameters of a puncture, varying to rather large (like those of fore edge of pronotum), dense, and separated by a distance equal to a single diameter of a puncture; interspaces nearly smooth, usually poorly and finely shagreened. Ocular sulci deep, well developed, rather wide, their margins more or less even and smooth, with bottom finely sculptured; that part of ocular sulcus situated close to large setiferous pore wider and with margin nearest vertex sloping; that part of sulcus situated close to frontal callus with converging and straight margins. Frontal calli moderately elevated, narrow, weakly convex, weakly or not separated from vertex by fine lines, medially and below clearly defined, with more or less defined narrow impression between each callus; each callus narrowing apically toward

eye margin, reaching or nearly reaching the latter; narrow apex of calli near eye margin slightly impressed; surface almost smooth. Frontal ridge well developed, oblong-trapezoidal, moderately convex, with flattened middle part; margins more or less distinct, usually limited by several setiferous pores. Antennal sockets moderately large, widely separated, situated nearly at eye margins, being separated from them by thin, impressed space. Antennal grooves not very deep, with bottom coarsely punctured and shagreened. Anterofrontal ridge moderately convex, with line of setiferous pores above clypeus. Labrum long and wide; setiferous pores, particularly medial pores, large and deep.

Prothorax: Large, convex, and widely transverse, in female wider than in male (Figs. 25, 26). Anterior margin weakly convex when viewed from above; posterior margin strongly convex medially and distinctly rounded; lateral margins moderately rounded near middle, narrow and smooth. Posterior border narrow and flattened, smooth; anterior border very fine and scarcely visible. Anterolateral callosity weakly swollen, narrow, slightly projected beyond lateral margin, not forming acute denticle at setiferous pore. Posterolateral callosity small, rounded, not projecting when seen from above. Punctures of pronotum deep, dense, usually slightly elongate; disc of pronotum sometimes with narrow, longitudinal impunctate stripe situated medially; discal punctures usually not separated by more than diameter of puncture, more often by only about half diameter; punctures at sides larger and denser. Interstices at sides always convex, at anterior edge and on disc often moderately convex with tendency to form short wrinkles; surface shagreened to almost smooth.

Elytra: Convex, widest at basal third, evenly rounded apically. Punctures in striae large, deep, separated by about half diameter of puncture; striae separated on disc by usually two, sometimes three times diameter of puncture; striae often shallowly impressed. Interstices between striae covered with small, smooth, shallow punctures arranged in 1–2 confused lines. Humeral calli not developed. Epipleura narrow, with coarse sculpture.

Legs: Metatibia clearly sabre-shaped, moderately long; without sharp denticle at inner ridge, at most with very small, thin, elongate notch (Fig. 41). First metatarsomere usually straight (Fig. 51), sometimes weakly curved.

Genitalia: Aedeagus triangular at apex, constricted at apical third, slightly wider and then parallel-sided beyond constriction; ventral medial groove rather shallow and narrow (Fig. 53). Female abdominal tergite VII (pygidium) as in Fig. 61; spermatheca with collo long and curved, nodulus long and wide, duct very long and coiled (Fig. 68); vaginal palpi as in Fig. 76; tignum as in Fig. 83.

MEASUREMENTS: Male (n = 11), body length – 1.82–3.40 mm, width – 1.36–1.80 mm; PI – 1.37–1.58 (1.49); EI – 1.18–1.65 (1.51); LI – 2.82–3.19 (2.99); MI – 4.46–6.11 (5.33); BI – 1.57–2.19 (2.01).

Female (n = 10), body length – 3.01–3.67 mm, width – 1.53–1.84 mm; PI – 1.18–1.65 (1.46); EI – 1.37–1.62 (1.51); LI – 2.27–3.24 (2.84); MI – 4.73–5.36 (5.03); BI – 1.83–2.30 (2.05).

DIFFERENTIAL DIAGNOSIS: *Psylliodes gibbosus* appears to be closely related to *P. kiesenwetteri* and *P. gougeleti*. From *P. kiesenwetteri* it can be easily distinguished by the aedeagus which has a longer apex, a well developed constriction before the apex, and a shallow, narrow median groove; also, the coloration is darker; the size is large and the body wider, with the maximum width at the basal third; the pronotum is wide and clearly transverse; the metatibia is clearly curved, without a sharp denticle on the inner ridge, at most with very small, shallow, elongate notch; the first metatarsomere is usually straight. From *P. gougeleti* it differs in the aedeagal structure: apex longer and narrower, apical part after constriction narrower than basal portion, constriction before apex well developed, ventral median groove shallow and narrow; also, the vertex is wider, the body shape and the punctuation are different.

DISCUSSION: A lectotype of this species was designated by DOGUET (1994a) and deposited in the MHNP. Among the specimens of *P. gibbosus* deposited in IRSNB, NHMB and MNHB I have discovered three specimens belonging to the type series. Two specimens with Allard's labels "P. gibbosa m. Allard type" (IRSNB, MNHB) undoubtedly indicate that they belong to the type series. The specimen deposited in the NHMB has the following labels: "Type" (printed), "P. gibbosa Allard". These specimens are to be regarded as paralectotypes.

The presence of *P. gibbosus* in Tunisia suggested by GRUEV & DÖBERL (1997) was not confirmed by material here studied. Probably, this species was confused with *P. inflatus*.

DISTRIBUTION: Spain, France (incl. Corsica), Italy (including Sicily, Sardinia and Elba), Slovenia, Morocco, Algeria, Turkey.

***Psylliodes* (s.str.) *kiesenwetteri* KUTSCHERA**
(Figs. 5–9, 27, 28, 42, 52, 54, 62, 69, 77, 84)

Psylliodes kiesenwetteri KUTSCHERA 1864: 424. (Type material of Kutschera lost according to DOGUET 1994b).

Psylliodes latifrons WEISE 1888: 787. (Lectotype ♂, des. by LEONARDI 1975, and six paralectotypes deposited in ZMHB, one paralectotype deposited in ZIN).

TYPE LOCALITY: Austria (Carinthia).

TYPE MATERIAL EXAMINED:

Psylliodes latifrons: **Lectotype** ♂: "Rom", "Leonardi des. 1973" (ZMHB). **Paralectotype** ♂: "Rom" (ZIN).

ADDITIONAL MATERIAL EXAMINED:

ITALY: "San Basilio Murgien leg. Paganetti" (1 ex. ZIN, 1 ex. MNHB, 7 exs. NHMB, 1 ex. DEI); "Ins. Elba Holdhaus" (1 ex. ZIN, 34 exs. NHMB, 1 ex. SMTD); "Italia Rocchetta al Volt 1965.V.7 Dr. Erdos" (1 ex. MNHB); "Castel di Sangro Prov. di Aguouila leg. Paganetti" (7 exs. NHMB); "Monte Gargano 5-7.6.1907 legit. M. Hilf Coll. O. Leonhard" (9 exs. NHMB, 2 exs. SMTD); "Monte Gargano legit. M. Hilf Coll. O. Leonhard 1.6.1907, 3.6.1907, 7.6.1907, 14.6.1907, 16.6.1907, 25.5.1907" (11 exs. DEI); "L. S. Giovanni Gargano, Hldh." (1 ex. NHMB); "Mte. S. Angelo Gargano, Holdh." (1 ex. NHMB); "Grottaglie Murgien leg. Paganetti" (1 ex. NHMB); "Italia Varano 1899 Paganetti" (4 exs. NHMB); "Toscana M. Corma Marchi" (1 ex. NHMB); "Toscana" (1 ex. NHMB); "Ponferrada Paganetti" (1 ex. NHMB); "Triest Natterer" (1 ex. NHMB); "Mte. Pagano Paganetti" (1 ex. NHMB); "Castelnuovo Hummler" (1 ex. NHMB); "Calabria Aspromonte 1905 Paganetti" (1 ex. NHMB, 5 exs. DEI); "Calabria Sta. Eufemia Paganetti" (2 exs. NHMB, 1 ex. DEI); "Panzano (Firenze) Montaglieri Capella VIII.33 Guido Pons leg." (1 ex. MZUF); "Dint. Livorno VI.908 Andreini" (2 exs. MZUF); "Prov. di Pisa Cecina V.1900 Dr. Andreini" (1 ex. MZUF); "Pergine Prov. di Arezzo V.1917 Dr. Andreini" (1 ex. MZUF); "Lippiano Prov. di Arezzo XI.1920 Dr. Andreini" (1 ex. MZUF); "Prov. di Bari Altamura VI.1909 Dr. Andreini" (2 exs. MZUF); "Calabria Sta. Christina lg. Paganetti" (1 ex. DEI); "Gerace Cal. Paganetti" (1 ex. DEI); "Bossoleno Cott. Alpen 4.VII.11" (2 exs. DEI); "Lazio Sasso Cerveteri Luig. 4.X.19" (1 ex. DEI); "Abruzzo Maillella 8.VII.906" (1 ex. DEI); "Fiume Heyden" (1 ex. DEI); "M. Parioli" (1 ex. DEI); "Toscana" (1 ex. NHMP); "Gerace, Cal. Paganetti" (1 ex. NHMP, 1 ex. ZMUA); "Italie Abruzzes: Rocca di Cambio 1400 m; 16.V.1952 G. Fagel" (2 exs. IRSNB); "Italie Abruzzes: L'Aquila versant N Mte Luco 700 m; 19.VI.1952 G. Fagel" (3 exs. IRSNB); "Agerola Flach. 92" (2 exs. SMTD); "Bagnoli Irp. / Campania VI-56" (4 exs. MSNM); "M. Pecoraro VI-1960 / La Serre Calabria" (1 ex. MSNM); "Firenze Caldine VI.32 A. Martelli" (2 exs. MSNM); "Exilles (To) m 1600 17.7.1968 leg. Spezia" (1 ex. MSNM); "Toscana Alberese 15/30.V.1977 leg. Caldara & Fogato" (2 exs. MSNM); "Puglia - Taranto Circ. Mar Piccolo 19.V.79 leg. Montemurro" (2 exs. MSNM). SICILY: "Sicilia 1906 Messina O. Leonhard 11.4" (1 ex. DEI).

FRANCE (CORSIKA): "Corsica Folelli Coll. O. Leonhard" (1 ex. DEI).

SLOVAKIA: "Hensch Domanvc" (1 ex. MNHB).

CROATIA: "Croatia" (2 exs. ZIN); "Pola" (1 ex. MNHB); "Dalmatia" (4 exs. MNHB); "kiesenwetteri Pola – Weber" (1 ex. MNHB); "Scardona Horv. 914" (1 ex. MNHB); "Spalato Horv. 914" (1 ex. MNHB); "I. Arbe Horvath" (1 ex. MNHB); "Dalmat. mer. Lissa 10.5.13" (22 exs. NHMB); "Zengg. Spaeth" (5 exs. NHMB); "Zengg. Cro., Winkler" (1 ex. NHMB); "Pola, Istria" (8 exs. NHMB); "Dalm. Spaeth Obrovazzo" (1 ex. NHMB); "Dalmatien Knin 2.IX.13 Stöcklein" (5 exs. NHMB); "Haberditz Zara" (1 ex. NHMB); "Zara Dalmat. A. Otto" (1 ex. NHMB); "Lussin 221.5.14" (1 ex. NHMB); "Senjako Bilo Cro., Winkler" (1 ex. NHMB); "N. Dalmatien Arbe Coll. Gylek" (1 ex. NHMB); "Sutorina Dalm., Natterer" (1 ex. NHMB); "Mrs... Dalm." (1 ex. NHMB); "Obrovazzo Dalmatien" (1 ex. NHMB); "Meleda Dalmatia" (1 ex. NHMB); "Ragusa Dalm.,

- Natterer" (1 ex. NHMB); "Croatia" (1 ex. DEI); "Zengg Croatien" (6 exs. DEI); "kiesenwetteri Istria Desbroch." (1 ex. DEI); "Istria" (1 ex. DEI); "Dalmatien Budua." (1 ex. NHMP); "Dalmatia Mte Vipera 2.7.30 W. Liebmann" (10 exs. DEI); "Dalmatia Mte Vipera 2.8.30 W. Liebmann" (1 ex. SMTD); "Ganglb. Zengg." (2 exs. NHMP, 2 exs. SMTD, 2 exs. DEI, 21 exs. NHMB).
- BOSNIA-HERZEGOVINA: "Sarajevo Passin Brdo 1932 Apfelbeck" (1 ex. DEI); "Apfelbeck Milj.-Sch." (1 ex. MNHB); "Trebinje Herc., Natterer" (1 ex. NHMB); "Hercegovina Prenj-Alpe Dr. Grabowski." (1 ex. MNHB); "Hercegovina Zavala R. Hicker" (1 ex. BPBM).
- MONTENEGRO: "Boc. di Cattaro Ritt. Matcha" (1 ex. NHMB); "Zelenika Paganetti" (1 ex. NHMB).
- MACEDONIA: "Jugosl./Gradsko (bei Negotino) 14.6.1988 leg. A. Szallies" (1 ex. MD); "Apfelb. 1906 Uskub" (1 ex. NHMB).
- ALBANIA: "Kruja, Alban., Mader" (8 exs. NHMB); "Elbasan Alb. Mader" (1 ex. NHMB); "Sarisaltik, 1180 m Alb., leg. Mader" (7 exs. NHMB); "Lubinje Hercegov." (1 ex. NHMB); "Albanien - Exp. DEI Polican westl. Tomor, 500 m lux 2.-12.VI.1961" (1 ex. DEI); "Kruja, Alban., Mader" (1 ex. DEI).
- BULGARIA: "Rumelia: Balk. Sliven 13.VI.08 Rambousek" (1 ex. NHMB); "Bulgaria sept. Obzor. dietr. Burgas. 24 Juli 1971 A. Warchalowski leg." (3 exs. DEI); "Bulgarien Rhodope-Gebirge 14.-20.VI.1959 Warchalowski" (1 ex. DEI); "Bulgaria mer. Sandanski VI.74, R.Wesely" (1 ex. DEI); "BG: Petric Belasica / 1000m, 17.6.1990 Taeger & Menzel" (1 ex. DEI); "Bulg. 6.71 Sozopol Olexa" (6 exs. NHMP).
- GREECE: "GR-Epire, Aristi Valee du Voidomatis 11.VI.1998 B. et M. Bergeal" (6 exs. ZIN); "GR-Epire, Lac Ioanina 12.VI.1997 B. et M. Bergeal" (1 ex. MD); "Greece, Makedonia, Prov. Thessaloniki, Rendina, 26.V.1995, leg. A. Orosz" (2 exs. MNHB); "Greece Placa 20.X.1980 leg. Peregovits" (1 ex. MNHB); "Morea Hagys Vlassis Brenske" (1 ex. MNHB); "Morea Taygetus Brenske" (1 ex. MNHB); "Volo Thessalien" (1 ex. NHMB); "Pelion Thessalien" (2 exs. NHMB); "GR -Makedonia Stavros 1.-6.VI.1980 K. u. S. Wellschmied" (1 ex. DEI); "Ellas Epirus 22 km NW v Joannina 12.X.1962 Ent. Exc. Zool. Mus." (1 ex. ZMUA).
- TURKEY: "Belgrad Wld VI.94 Flach" (1 ex. NHMB); "TR - prov. Simak Haberli, Midyat env. 13.5.2005 Z. Malinka lgt." (3 exs. ZM); "Amanusgeb Jaribaschi" (1 ex. NHMB).
- UNKNOWN PROVENANCE: "Travnik" (2 exs. MNHB); "Hensch Bilek" (1 ex. MNHB).

DESCRIPTION: Compared to related species, coloration of the body lighter (especially in males); distal antennal segments darker from fourth segment; size smaller, more oblong. Vertex usually narrower and more convex; punctation almost always dense, with punctures large, usually separated by a distance equal to their diameter; anterofrontal ridge straighter; clypeus usually longer. Prothorax less transverse (Figs. 27, 28). Elytra weakly rounded medially, widest at about the middle (Figs. 5–9); punctation less dense, with stria punctures spaced by their diameter (especially in males); inner angles of elytra straight, not forming short denticle. Metatibia more straight, weakly curved at lateral view, with short, small but distinct denticle on inner ridge of metatibia (Fig. 42). First metatarsomere curved (Fig. 52), its basal third slightly wider. Aedeagus with apex short, with very weak constriction before apex, with sides before apex slightly wider and then narrower, with ventral median groove moderately shallow and wide (Fig. 54). Female abdominal tergite VII (pygidium) as in Fig. 62; spermatheca with collo long, curved, with nodulus long and moderately wide, with duct very long and coiled (Fig. 69); vaginal palpi as in Fig. 77; tignum as in Fig. 84.

DIFFERENTIAL DIAGNOSIS: *Psylliodes kiesenwetteri* is similar to *P. gibbosus* but differs mostly in the aedeagus having the apex shorter with a very weak constriction before apex, and having the ventral median groove deeper and wider. It also has a narrower body, the pronotum is less transverse, the metatibia is straighter, and the first metatarsomere is curved. The females of both species are rather similar to each other. There is also a major difference in the proportions of the body. Winged individuals possess a narrower body, which is slightly less convex; the elytra are medially almost parallel-sided; the humeral calli are well developed; and the elytra are usually distinctly wider basally than the pronotal base (Fig. 9).

MEASUREMENTS: Wingless: male (n = 8), body length – 1.90–3.06 mm, width – 1.19–1.50 mm; PI – 1.45–1.71 (1.58); EI – 1.48–1.69 (1.58); LI – 3.07–3.43 (3.24); MI – 5.50–6.25 (5.80); BI – 1.93–2.20 (2.06). Female (n = 8), body length – 2.86–3.13 mm, width – 1.43–1.53 mm; PI – 1.53–1.70 (1.63); EI – 1.50–1.67 (1.60); LI – 3.16–3.50 (3.39); MI – 5.30–6.22 (5.61); BI – 1.95–2.14 (2.07).

Winged: male (n = 2), body length – 2.84–2.86, width – 1.19–1.29; PI – 1.40–1.65 (1.53); EI – 1.72–1.79 (1.75); LI – 2.98–3.54 (3.26); MI – 5.56–5.63 (5.59); BI – 2.21–2.39 (2.30); Female (n = 2), body length – 2.55–2.75 mm, width – 1.22–1.29 mm; PI – 1.57–1.59 (1.58); EI – 1.60–1.64 (1.62); LI – 3.29–3.38 (3.33); MI – 5.11–5.50 (5.31); BI – 2.08–2.13 (2.11).

DISCUSSION: Winged individuals, similar to those of *Psylliodes inflatus* REICHE & SAULCY are recorded from southern Italy (Calabria, San Basilio, Castel di Sangro, Gargano), Elba Island, and Turkey. Most of the winged specimens examined originate from Elba Island. Those from the Apennine Peninsula and Turkey are recorded in smaller numbers. Winged forms were not recorded from the Balkans.

The type material of *P. kiesenwetteri* was not located and according to DOGUET (1994b) it is lost. A single specimen deposited in the ZIN, labelled: “Rom”, “*Psylliodes latifrons* Wse.” (same labels as in lectotype of *P. latifrons*), is marked as a paralectotype of *P. latifrons*.

DISTRIBUTION: Italy (incl. Sicily and Corsica), Austria, Slovakia, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Bulgaria, Albania, Macedonia, Greece, Turkey.

***Psylliodes* (s.str.) *gougeleti* ALLARD**
(Figs. 10–12, 29, 30, 43, 55, 63, 70, 78, 85)

Psylliodes gougeleti ALLARD 1859: CCLX. (Lectotype ♀ and paralectotype ♀, des. by LEONARDI 1975, deposited in Muséum National d’Histoire Naturelle, Paris).

TYPE LOCALITY: Spain (Galicia).

MATERIAL EXAMINED:

PORTUGAL: “San Martinho” (15 exs. NHMB, 3 exs. ZIN, 1 ex. DEI); “Oporto Portug.” (1 ex. NHMB, 1 ex. SMTD); “Portugal Monchique” (1 ex. NHMB); “Oliveira Portugallo” (2 exs. ZMUA); “coll. Leech. Portugallo” (2 exs. ZMUA).

SPAIN: “Manzanal Paganetti” (2 exs. NHMB); “Palencia Paganetti ” (1 exs. NHMB); “Astorga Paganetti” (1 ex. NHMB); “Gibraltar” (1 ex. NHMB); “Braunelas” (1 ex. NHMB); “Algeciras Andal. Breit” (1 ex. NHMB); “Cancas Ast. Paganetti” (1 ex. NHMB); “Escorial” (1 ex. MNCN, 1 ex. DEI).

ALGERIA: “1895 Oran” (2 exs. ZMUA).

DESCRIPTION: Compared to related species, body slightly smaller, more convex, evenly narrowed to head and to elytral apices; maximum width at about basal third to middle (Figs. 10–12).

Head: Smaller, with vertex narrower and smaller, with eyes larger, more convex; vertex with punctuation rather small, significantly smaller than that of pronotum, with discal punctures separated by a distance equal to 1–2 their diameter; interstices on vertex not shagreened, usually covered with small, sparse, indistinct, irregular wrinkled sculpture; area above frontal calli often with some irregular-shaped, large, deep punctures forming short, wide, shallow impression. Frontal calli convex, not distinctly delimited above, separated from each other and from frontal ridge by large, deep impression; calli slightly wider and less elongate than in *P. gibbosus*. Frontal ridge more or less narrow and convex, more developed than in *P. gibbosus*.

Prothorax: Less transverse, with sides more parallel (Figs. 29, 30), with border of basal margin narrower and more convex, with lateral margins wider; anterolateral callosity usually more strongly protruding beyond lateral margin and basally usually more sharp. Punctuation of pronotum sparser, with punctures slightly less distinct and shiny, separated by a distance equal to 2–3 times (sometimes up to 3.5 times) their diameters; sides with punctures larger and denser, with interstices more convex than on disc, clearly shagreened, sometimes with interstices almost flat and smooth.

Elytra: Punctures in elytral striae large, separated by a distance equal to their diameter; distance between striae 2.0–2.5 times diameter of puncture; punctures in striae deeply impressed, with interstices convex. Sutural interstices distinctly convex, more strongly so than that of *P. gibbosus* and *P. kiesenwetteri*.

Legs: Metatibia narrower and less curved than in *P. gibbosus*, similar to *P. kiesenwetteri* (Fig. 43); first metatarsomere slightly curved.

Genitalia: Aedeagus with apex triangular, with sides parallel, with basal two thirds wider than apical third, with ventral median groove moderately narrow and shallow (Fig. 55). Female abdominal tergite VII (pygidium) as in Fig. 63; spermatheca with collo long, thick, curved, with nodulus long and thick, with duct very long and coiled (Fig. 70); vaginal palpi as in Fig. 78; tignum as in Fig. 85.

MEASUREMENTS: Male (n = 9), body length – 2.53–2.94 mm, width – 1.26–1.56 mm; PI – 1.46–1.81 (1.66); EI – 1.36–1.62 (1.52); LI – 3.03–3.53 (3.26); MI – 5.00–5.78 (5.40); BI – 1.77–2.14 (1.98).

Female (n = 10), body length – 2.64–3.43 mm, width – 1.29–1.70 mm; PI – 1.43–1.89 (1.67); EI – 1.47–1.60 (1.53); LI – 3.07–3.76 (3.38); MI – 5.00–6.25 (5.53); BI – 1.89–2.09 (1.98).

DIFFERENTIAL DIAGNOSIS: This species is closely related to *P. gibbosus* from which it differs in male genitalia (aedeagus with apex shorter and wider, without distinct constriction before apex, in lateral view evenly curved, having middle ventral groove wider and deeper). It also differs in body shape and outline, with the maximum width at the middle; it is more convex and smaller; the pronotum is less transverse; the punctures of the vertex are smaller; the punctures of the elytra are larger and sparser; the metatibia is less curved; and the first metatarsomere slightly curved.

DISTRIBUTION: Portugal, Spain, Morocco, Algeria.

***Psylliodes* (s.str.) *ruffoi* LEONARDI**
(Figs. 13, 14, 31, 32, 44, 56, 71)

Psylliodes ruffoi LEONARDI 1975: 75. (Holotype ♂, deposited in Museo di Storia Naturale di Verona; paratypes deposited in Museo di Storia Naturale di Verona, NHMB, MSNM, NHMP).

TYPE LOCALITY: Italy (Liguria).

TYPE MATERIAL EXAMINED: **Paratypes:** “Calabria Italia Gützelmann” (1 ♂, 1 ♀ MSNM).

ADDITIONAL MATERIAL EXAMINED:

ITALY: “Sicilia, m 900-1100 M.ti Peloritani 26.VI.2001 L’Antennammare leg. C. Leonardi” (1 ♂, 1 ♀ ZIN); “Lippiano Prov. Arezzo X.1904 Dr. A. Andreini” (1 ♂ NHMB); “Tinne di Sicilia 4.V.06 A. Doderò” (1 ♀ NHMB); “Gerace Ca. Paganetti” (1 ♂ ZMUA); “Calabria Sta. Eufemia Paganetti” (1 ♀ NHMP, 3 ♂♂, 3 ♀♀ DEI); “Calabria Sta Christina Paganetti” (1 ♂ DEI); “Garfagnana Paganetti” (1 ex. NHMB).

DESCRIPTION AND DIFFERENTIAL DIAGNOSIS: This species has an intermediate position in morphological characters between *P. gibbosus* and *P. kiesenwetteri*. Most of features are similar in these species. The shape of body and pronotum is intermediate between wide and short in *P. gibbosus* and narrower in *P. kiesenwetteri* (Figs. 13, 14, 31, 32); the metatibia is distinctly curved and shaped much like that of *P. gibbosus*, although narrower (Fig. 44); the aedeagus is apically shaped like that of *P. kiesenwetteri* and is slightly constricted before the apex as in *P. gibbosus*, but it has almost straight sides as in *P. kiesenwetteri* (Fig. 56). Other characters are common in all three species. The spermatheca has the collo long with the apex thin and curved, the nodulus is long and moderately narrow, and the duct is very long and coiled (Fig. 71).

MEASUREMENTS: Male (n = 2), body length – 1.72–3.13 mm, width – 1.53–1.60 mm; PI – 1.51–1.59 (1.55); EI – 1.47–1.56 (1.51); LI – 3.07–3.18 (3.12); MI – 5.00; BI – 1.95–2.04 (2.00).

Female (n = 2), body length – 1.77–3.47 mm, width – 1.70–1.77 mm; PI – 1.45–1.55 (1.50); EI – 1.43–1.53 (1.48); LI – 3.00–3.17 (3.09); MI – 4.75–5.36 (5.06); BI – 1.88–2.04 (1.96).

DISCUSSION: The original description of this species is very short. The closest relatives of *P. ruffoi* are *P. gibbosus* and *P. kiesenwetteri*. Morphological characters of *P. ruffoi* mentioned above are somewhat intermediate between *P. kiesenwetteri* and *P. gibbosus*. The distribution of this species is intermediate too. Sympatry with *P. gibbosus* and *P. kiesenwetteri* is recorded from the Apennine Peninsula. The allopatric part of the range of *P. gibbosus* is situated mostly westward (France, Iberian Peninsula) and that of *P. kiesenwetteri* eastward (mostly Balkans). *Psylliodes ruffoi* is known only from the Apennine Peninsula and Sicily. Taking into account these circumstances, one might suggest that *P. ruffoi* is a hybrid between *P. gibbosus* and *P. kiesenwetteri*. It is well known that hybrids can appear in a zone of secondary intergradation. On the one hand, presence of a hybrid form corroborates the view of HEIKERTINGER (1921) of *P. gibbosus* and *P. kiesenwetteri* being geographical forms and probably subspecies. On the other hand, in my opinion, the degree of morphological differences between *P. gibbosus* and *P. kiesenwetteri*, together with their sympatric distribution in the Apennine Peninsula, and their occurrence in the same localities can be taken as an evidence of their specific status. Because of absence of detailed genetic, ethological, bionomical and trophic data, I consider all three morphotypes to be valid species.

DISTRIBUTION: Italy (incl. Sicily).

***Psylliodes* (s.str.) *inflatus* REICHE & SAULCY**
(Figs. 15–18, 33, 34, 45–47, 57, 64, 72, 79, 86)

Psylliodes inflata REICHE & SAULCY 1858: 50. (Type material deposited in Muséum National d'Histoire Naturelle, Paris).

Psylliodes ventricosa ROTTENBERG 1871: 246. (Lectotype ♀, des. by LEONARDI 1973, and paralectotypes deposited in DEI).

Psylliodes inflatus var. *completa* NORMAND 1937: 137. (Syntype ♂, deposited in NHMP).

TYPE LOCALITY: Lebanon.

TYPE MATERIAL EXAMINED:

Psylliodes ventricosa: **Lectotype** ♀: “Catania Rottenberg”, “Leonardi des. 1973” (DEI). **Paralectotypes**: same labels as lectotype (1 ♂ DEI); “Syrakus Rottenberg” (1 ♀ DEI).

Psylliodes inflata var. *completa*: **Syntype**: “T. Kairouan Dr. Normand” (♂ NHMP).

ADDITIONAL MATERIAL EXAMINED:

FRANCE: “Gallia” (3 exs. ZIN); “Gallia” (2 exs. DEI).

PORTUGAL: “Lusitania Martinho” (1 ex. MNHB).

SPAIN: “Gibraltar” (1 ex. DEI).

MOROCCO: “Maroc (Rharb) Sidi-Slimane 9.V.1965 leg. A. Warchalowski” (12 exs. ZIN); “Marocco Casablanca Reitter” (4 exs. MNHB); “Marmorawald Marokko, Breit” (2 exs. NHMB); “Sidi-bel Abess” (1 ex. NHMB); “Marocco Reitter.” (1 ex. NHMB); “Clairfontaine” (1 ex. NHMB); “Larache Maroc” (4 exs. NHMB); “Alhucemas Mar. s. 11.5.33” (1 ex. NHMB); “Mamora Maroc Coll. Thery” (3 exs. NHMB); “Dradek Maroc Coll. Thery” (3 exs. NHMB); “Bou Knadel Maroc Coll. Thery” (4 exs. NHMB); “Sidi bel Abes d. Staudinger” (1 ex. DEI); “Marocco Rabat Quedenfeldt S.” (1 ex. DEI); “Marocco Rolph” (1 ex. DEI); “Casablanca Maroc Kocher” (1 ex. NHMP).

ALGERIA: “Bone” (1 ex. ZIN); “Blidah Algerie” (3 exs. ZIN); “Hussein-Dey Desbroches 1889” (1 ex. ZIN); “Algeria (Setif) Salah-Bey 28.V.1987 leg. A. Warchalowski” (25 exs. ZIN); “Philippeville” (1 ex. MNHB); “Algerie, env. d’Alger Sidi Ferruch 15.IV.1988 leg. S. Kasantsev” (1 ex. BMSU); “Oran R. J. IV.19” (1 ex. NHMB); “Oran” (2 exs. NHMB); “Oran A. Otto” (2 exs. NHMB); “Algir Allard” (1 ex. DEI); “Algier” (4 exs. DEI); “Matth. Oran / H. J. Veth. Algeria” (2 exs. ZMUA); “Algeria coll. Uyttenb.” (1 ex. ZMUA); “Algerie Medea Lethierry” (5 exs. IRSNB).

- TUNISIA: "T. Le Kef Dr. Normand" (1 ex. ZIN); "Tunisia, 2 km W of Le Hencha 9.IV.1977 leg. S. Mahunka" (1 ex. MNHB); "Tunisia, Boughrara 4.IV.1977 leg. S. Mahunka" (5 exs. MNHB); "Tunisia, Mensel Chaker 5.IV.1977 leg. S. Mahunka" (1 ex. MNHB); "Tunis coll. Lichtn." (1 ex. MNHB); "Ain Draham Tunesien" (2 exs. NHMB); "T. Le Kef Dr. Normand" (1 ex. NHMB, 1 ex. NHMP); "Tunis Le Kef" (1 ex. NHMB); "Tunisia Hammamet 13.-25.4.1972 leg. Schlepfer" (1 ex. DEI); "Tunis 4.5.1907 Hammam Lif." (1 ex. NHMP); "Tunis 1.5.1907 Lac. Sedjoumi" (1 ex. NHMP).
- LIBYA: "Tripoli (Lyb.) IV.38 G. Frey" (3 exs. NHMB); "Gargaresc, Trip. 20.3.1936 R.e C. Koch" (1 ex. MSNM); "Tagiura, Trip. 18.3.1936 R.e C. Koch" (1 ex. MSNM); "Tagiura, Trip. 18.3.26 Schatzmayr" (1 ex. MSNM); "Tripoli 31.3.26 Afr. Schatzmayr" (1 ex. MSNM).
- ITALY (SICILY): "Sicilia Mistretta 7.V.1970" (1 ex. ZIN); "Palermo Sicilia 28.IV.-5.V.1925 El. Miram" (3 exs. ZIN); "Pachino Sicilia 13/17.V.1906 A. Dodero" (2 exs. NHMB); "Palermo Holdhaus" (1 ex. NHMB); "Sicilia E. Ragusa" (1 ex. NHMB); "Caltagirone Siz. Bosco S. Pietro 29.4.42 leg. Frey" (1 ex. NHMB); "Nicolosi V.95 Flach" (1 ex. NHMB); "Sicilien." (1 ex. NHMP); "Sicilia Reitter" (2 exs. ZMUA); "Sicile" (2 exs. ZMUA); "coll. Leesb. Sicilia" (1 ex. ZMUA); "Leesberg Sicilia" (1 ex. ZMUA); "Sicilia Mistretta 7.V.1970" (5 exs. MSNM).
- TURKEY: "Kilik. Taurus Asia minor A. Kricheldorf" (1 ex. ZIN); "SO-Turkey Erdemli Aslanli 27.V.1998 leg. Snizek" (1 ex. ZIN); "Turkey Osmaniye/Gaziantep Prov. Nurdagi Pass, 13.8 km SW of Nurdagi, 1148 m 37°06'39.2" N 36°38'29.7" e 28.VI.2005 B. Korotyaev" (1 ex. ZIN).
- ISRAEL: "Place of Sacrifice Carmel" (1 ex. NHMB); "Israel: Golan Mts. Merom HaGolan 27 April 1978 leg. D.G. Furth" (1 ex. NHMB); "Galilea" (1 ex. NHMB); "Palestina Gebatha 5.II.27" (1 ex. MSNM); "Chaifa Syria Simon" (1 ex. DEI).
- JORDAN: "Jordanien 27.V.57 leg. Klapperich" (4 exs. DEI); "Jordanien Djebel Amman 13.4.1958 leg. Klapperich" (1 ex. DEI).
- LEBANON: "Appl. Beirut 1878." (1 ex. NHMB); "Beyrut Syr. 20.IV.36 leg. G. Frey" (1 ex. NHMB); "M. Hermon" (1 ex. DEI); "Libanon Tabarja, 20 km NO von Beirut Warchalowski leg." (2 exs. DEI); "Libanon Coll. O. Leonhard" (2 exs. DEI).
- SYRIA: "Aleppo Syrien" (1 ex. NHMB); "Syr b.oc. Khan-al-Assal 10 km S Aleppo, 25.IV.96 leg. Behne" (1 ex. DEI); "Syr b.oc. Samaan Qalaaat (Simeons-kloster), 28.IV.96 leg. Behne" (1 ex. DEI).
- MALTA: "Marsaxlokk Malta. 25.V.56 G. v. P. Sawell" (1 ex. NHML); "Malta" (2 exs. NHML).
- UNKNOWN PROVENANCE: "Blu" (1 ex. ZIN); "Psylliodes inflata Mideali" (1 ex. DEI).

DESCRIPTION: Body: Rather wide and short, very convex, moderately rounded, slightly elongate, maximum width near middle (Figs. 15–17). Color light to dark brown dorsally, shining; pronotum always darker than pronotum and head, sometimes piceous; anterior half of head lighter than posterior half; legs yellow-reddish, metafemur darker, sometimes brown; venter brown; basal 4–5 antennomeres yellow or reddish, apical antennomers darker.

Head: Rather small; eyes small and flat; vertex more or less wide, usually almost flat, very rarely distinctly convex; punctures as those of pronotum, not very deep, with uneven edges, separated by their diameter, sometimes more; interstices weakly convex, with sparse and very fine wrinkles. Ocular sulci large, distinct, deep, their bottom with longitudinal wrinkles, rather wide above upper margins of eyes where they form an impression together with large setiferous pore; near frontal calli, ocular sulci narrowed, their margin adjacent to vertex smooth and even, then joined with thin supracallinal sulci which separate frontal calli from the vertex. Frontal calli narrow, not very convex and smooth, distinctly separated from vertex to almost not separated, always separated distinctly from the frons; apices of calli elongate and narrow, joined with eye margins by narrow space which is sometimes impressed. Frontal ridge widely triangular, more or less well delineated, flat, especially basally; surface almost smooth to covered with punctures and finest wrinkles. Antennal grooves shallow; anterofrontal ridge weakly convex and slightly arched above clypeus. Antennal sockets separated from eye margins by about half diameter of socket, with space more or less smooth and flat. Labrum long and large, not very wide, convex, with distinct shagreen; setiferous pores large, deep; space between median pores very convex.

Prothorax: Rather large, very convex, not very transverse (Figs. 33, 34), with sides very steep; anterior margin slightly convex; posterior margin strongly convex; lateral margins not very rounded and converging; anterior border narrow and convex; posterior border wider and convex; lateral border narrow and smooth. Anterolateral callosity well developed, with more or less sharp

denticle basally, protruding beyond lateral margin. Punctures at disc not large, more or less deep, usually like those of elytra, sometimes smaller, usually separated by 1.0–1.5 diameter; sometimes punctures rather small and shallow, separated by 2.0–2.5 diameters. Interstices at disc usually flat, weakly shagreened, at sides more or less convex, more distinctly shagreened; sometimes interstices entirely flat and almost smooth.

Elytra: Wide and convex in wingless individuals, flatter and less convex in winged ones. Humeral calli in wingless individuals reduced; those of winged individuals well developed (Fig. 18). Punctures in striae not large, moderately deep, distance between them about their diameter (in large females usually 1.5 times diameter of puncture, in smaller males about half), distance between striae equal to 2.5–3.0 time diameter of puncture (up to 3.5 in large female and as little as 2.0 in smaller male); striae moderately impressed, rarely shallowly impressed; interstices usually flat, sometimes weakly convex, with rather small, superficial punctures arranged in 1–2 confused rows. Epipleura with wrinkled, tuberculate sculpture. Elytral apices weakly rounded.

Legs: Metatibia not strongly curved; apex straight, when seen from above, usually strongly widened (Fig. 45), more rarely less widened and more or less rounded; inner ridge near tarsal attachment usually with angular, well developed projection with more or less acute margin, rarely this projection less developed and with more rounded margin; before projection inner ridge with small and sharp denticle (Figs. 46, 47).

Genitalia: Aedeagus with apex triangular with slightly elongate tip; constriction before apex moderate, then sides almost parallel before basal third; ventral median groove narrow and shallow, deepest before basal opening (Fig. 57). Female abdominal tergite VII (pygidium) as in Fig. 64; spermatheca with collo long with apical half almost straight, with nodulus long and thin, with duct very long and coiled (Fig. 72); vaginal palpi as in Fig. 79; tignum as in Fig. 86.

MEASUREMENTS: Wingless: male (n = 10), body length – 2.53–2.91 mm, width – 1.43–1.67 mm; PI – 1.43–1.60 (1.47); EI – 1.30–1.44 (1.37); LI – 2.67–3.02 (2.82); MI – 4.55–5.22 (4.78); BI – 1.72–1.94 (1.79). Female (n = 10), body length – 2.67–3.08 mm, width – 1.53–1.73 mm; PI – 1.38–1.48 (1.44); EI – 1.30–1.42 (1.36); LI – 2.61–2.86 (2.77); MI – 4.67–5.10 (4.88); BI – 1.71–1.89 (1.77).

Winged: male (n = 2), body length – 2.47–2.72 mm, width – 1.36–1.53 mm; PI – 1.49; EI – 1.44–1.47 (1.45); LI – 2.93–3.11 (3.02); MI – 5.00–5.63 (5.31); BI – 1.78–1.81 (1.80). Female (n = 5), body length – 2.50–2.99 mm, width – 1.36–1.53 mm; PI – 1.41–1.48 (1.44); EI – 1.36–1.59 (1.45); LI – 2.74–2.98 (2.90); MI – 5.44–5.50 (5.46); BI – 1.77–2.05 (1.88).

DIFFERENTIAL DIAGNOSIS: This species is similar to *P. tenuidentatus* sp.n. from which it differs in the aedeagal structure: sides parallel with weak constriction before apex, apical part wider, middle ventral groove narrower and shallower. Also, the body is more convex and rounded, the shape of the pronotum and the punctuation of head and elytra are different, and the wings are either reduced or well developed. This species is also similar to *P. ridendus* sp.n. from which it differs in the aedeagus: apex as wide as middle part of aedeagus, middle ventral groove narrower and shallower. Also, the body is larger, the body outline is different, and the metatibia is longer with a usually strongly widened apex.

DISCUSSION: NORMAND (1937) described the winged form under the name “var. *completa*”. From the typical wingless form it differs by the completely developed hind wings, more elongate body, well developed humeral calli, and the elytra that are basally wider than pronotal base (Fig. 18). Among the studied specimens of *P. inflata* the winged specimens are relatively rare. They have been recorded from Tunisia, Libya and Israel.

The shape of the metatibia is variable as well. Examination of vast material demonstrates the predominance of the form with the widened distal third of metatibia, straight apex and a well

developed angular projection. This form occurs from Algeria to Libya and Lebanon. The form with a less widened distal third and less developed projection occurs in Israel, Jordan, Lebanon, Libya, and Turkey. Some beetles are transitional between the extreme forms in metatibial structure (Figs. 45–47).

Apparently, the populations from the western part of the distribution (Morocco, Algeria, Libya, Tunisia, Sicily) are wingless and primarily possess a wide metatibia, while more eastern populations (Libya, Israel, Lebanon, Turkey) are often winged and primarily possess a narrow metatibia. This fact may be an evidence of a clinal variability. Nonetheless, there are winged individuals with a wide distal third of the metatibia and well developed projection, and vice versa, there are wingless individuals with the less widened distal third and less developed projection. These facts do not allow separation into two species or subspecies.

The specimens from Portugal and France might be mislabelled.

DISTRIBUTION: ?France, ?Portugal, Spain, Italy (Sicily, Sardinia), Malta, Morocco, Algeria, Tunisia, Libya, Israel, Turkey, Lebanon, Jordan, Syria, Iran, Iraq.

***Psylliodes (s.str.) fageli* BECHYNÉ, stat.n.**
(Figs. 19, 20, 35, 36, 48, 58, 65, 73, 80, 87)

Psylliodes gibbosus fageli BECHYNÉ 1957: 4. (Holotype ♂, and paratypes deposited in IRSNB).

TYPE LOCALITY: Algeria (Grande Kabylie).

TYPE MATERIAL EXAMINED: **Holotype** ♂: “Gde Kabylie: Azazga oued Sebaou 130 m, 12.V.1953 G. Fagel” (IRSNB). **Paratypes**: Labels as in holotype, 2 ♂♂, 3 ♀♀; “Algerie: Ouarsenis Teniet el Haad 30-V/ 5-VI-1954 G. Fagel” (1 ♂ IRSNB).

ADDITIONAL MATERIAL EXAMINED:

ALGERIA: “Misserghin Iavi. 1.V.19” (1 ♂ NHMB).

DESCRIPTION: In comparison with related species, body very convex and wide (Figs. 19, 20); vertex, frontal calli, frontal ridge and anterofrontal ridge covered with coarsely wrinkled punctures; pronotum large, long, distinctly convex, rather parallel-sided (Figs. 35, 36); antero-lateral callosity weakly protruding beyond lateral margin, not visible from above; lateral margins curved when seen laterally (in contrast to *P. inflatus*); punctures of pronotum usually large and dense; interstices (including those in discal area) rather convex, clearly shagreened with meshes well developed and large; metatibia very poorly widened apically when seen from above, not strongly curved at lateral view, angular projection at inner ridge poorly developed, not sharp (Fig. 48). Aedeagus with triangular apex; sides before apex gradually narrowing; ventral median groove wide and shallow, deepest at basal third (Fig. 58). Female abdominal tergite VII (pygidium) as in Fig. 65; spermatheca with collo long and curved, nodulus long and moderately thin, duct very long and coiled (Fig. 73); vaginal palpi as in Fig. 80; tignum as in Fig. 87.

DIFFERENTIAL DIAGNOSIS: This species is very similar to *P. inflatus*, from which it can be distinguished mainly by the aedeagus: apex not slightly widened but gradually narrowing, constriction before apex absent, and middle ventral groove very wide. This species also differs in the nature of the body surface, the wider body, and the shape and structure of metatibia.

MEASUREMENTS: Male (n = 3), body length – 2.72–3.16 mm, width – 1.43–1.63 mm; PI – 1.40–1.52 (1.47); EI – 1.36–1.46 (1.42); LI – 2.62–3.04 (2.89); MI – 5.00; BI – 1.89–1.94 (1.91).

Female (n = 3), body length – 3.15–3.25 mm, width – 1.70–1.73 mm; PI – 1.37–1.47 (1.43); EI – 1.32–1.40 (1.37); LI – 2.70–2.75 (2.73); MI – 4.91; BI – 1.81–1.91 (1.88).

DISCUSSION: BECHYNÉ (1957) described this form as a subspecies of *P. gibbosus* from Algeria. WARCHAŁOWSKI (2000) suggested that this form belongs to *P. gibbosus* and mentioned

that he had collected *P. fageli* in significantly less number than *P. gibbosus* in the type locality and other areas. LEONARDI (1975) had considered this form not as a subspecies of *P. gibbosus* but rather as a variant form of *P. inflatus*. Examination of the type material on *P. fageli* and vast material of *P. gibbosus* and *P. inflatus* confirmed Leonardi's view. After studying the variability of *P. inflatus* (see comments under *P. inflatus*), my opinion is that the characters and their stability in *P. fageli* exceed the limits of variability of *P. inflatus*. In addition, their sympatric distribution in Algeria does not allow me to recognize *P. fageli* as a subspecies of *P. inflatus*.

One paratype ♂ of the type series of *P. fageli* ("Algerie: Ouarsenis Teniet el Haad") belongs to *P. inflatus*.

DISTRIBUTION: Algeria.

***Psylliodes (s.str.) tenuidentatus* sp.n.**
(Figs. 21, 22, 37, 38, 49, 59, 66, 74, 81, 88)

TYPE LOCALITY: Israel (Haifa).

TYPE MATERIAL: **Holotype** (♂): ISRAEL: "Syrien Kaifa Reitter", "P. inflata Reiche coll. Reitter" (MNHB). **Paratypes**. Labels as in holotype (1 ♀ MNHB); "Israel: Golan Mts. Merom HaGolan 27 April 1978 leg. D.G. Furth" (1 ♀ NHMB); "ISRAEL: U. Galilee Mt. Meron, 1200 m 30 April 1978 leg. D.G. Furth" (1 ♂ TAU); "Israel Mt. Meron 9.VI.94" (1 ♂ TAU).

DESCRIPTION: Body: Elongate-oval, not strongly convex, maximum width at the middle; elytra slightly and evenly rounded medially (Figs. 21, 22). Color brownish to dark brown dorsally, shining; elytra lighter; pronotum and basal half of head dark brown; legs brown with metafemur, protibia, and mesotibia medially darkened; antennae brown.

Head: Size large; vertex wide, large, nearly flat. Punctuation dense, even, with impunctate, narrow, smooth, longitudinal strip medially; punctures deep, shining, rounded, equal in size to those of pronotum, separated by a distance less than their diameter; interstices with very fine sparse wrinkles, more or less convex. Ocular sulci deep, not very wide, above the upper margin of eyes slightly wider and sloping, covered with wrinkles; bottom weakly wrinkled; sulci before frontal calli narrowing and joined with short and fine supracallinal sulci, separating frontal calli from vertex. Frontal calli narrow, moderately convex, smooth, poorly separated from vertex medially; their apices elongate, narrow, smooth, reaching eye margin. Frontal ridge more or less narrow, triangular, weakly convex, almost smooth, limited by line of punctures at sides. Anterofrontal ridge weakly convex, almost smooth. Antennal grooves shallow, scarcely punctured and wrinkled. Antennal sockets separated from eyes by narrow and concave space. Labrum not long, wide, weakly convex, almost smooth, setiferous pores moderately large, separated by space which is not strongly convex.

Prothorax: Pronotum weakly transverse, convex (Figs. 37, 38); anterior margin weakly and evenly rounded; posteriorly strongly rounded; sides weakly rounded and convergent; anterior margin with narrow and convex border; border of posterior margin wider and more flat; lateral margins narrow. Anterolateral callosity well developed, straight or slightly concave, entirely or almost entirely visible from above, distinctly protruding beyond lateral margin. Punctuation moderately dense and deep, distinct, with punctures separated by 1.0–1.5 their diameter; interstices at disc flat, almost smooth or smoothly shagreened; punctures at sides slightly larger than on disc, with interstices more convex and distinctly shagreened.

Elytra: Narrow; humeral calli weakly convex. Hind wings partly reduced, their maximum length half as long as elytron. Punctuation of elytra rather coarse; punctures in striae larger than those on pronotum, separated by not more than half their diameter; striae shallowly impressed; distance between striae 1.5 diameter of punctures. Interstices moderately convex, more or less smooth,

covered with large, more or less dense, shallow secondary punctation that is arranged in a single confused row. Elytral apices rounded.

Legs: Metatibia short, clearly saber-shaped, curved, moderately wide, inner ridge at tarsal attachment with moderately developed projection, its margin not very sharp; metatibial apex moderately widened and slightly rounded when seen from above (Fig. 49).

Genitalia. Aedeagus with apex triangular, then gradually widening to basal opening; ventral groove wide and deep, deepest before basal opening, in lateral view almost straight (Fig. 59). Female abdominal tergite VII (pygidium) as in Fig. 66; spermatheca with collo long and curved, nodulus long and moderately thick, duct very long and coiled (Fig. 74); vaginal palpi as in Fig. 81; tignum as in Fig. 88.

MEASUREMENTS: Male (n = 2), body length – 2.55–2.72 mm, width – 1.26–1.36 mm; PI – 1.49–1.50 (1.49); EI – 1.50–1.53 (1.51); LI – 3.00–3.05 (3.03); MI – 4.70; BI – 2.00–2.03 (2.01).

Female (n = 2), body length – 2.81–3.13 mm, width – 1.46–1.70 mm; PI – 1.46–1.50 (1.48); EI – 1.36–1.45 (1.41); LI – 2.83–3.13 (2.98); MI – 4.58; BI – 1.84–1.92 (1.88).

DIFFERENTIAL DIAGNOSIS: This new species is closely related to *P. inflatus* from which it differs in the genitalia: aedeagus with sides gradually narrowed toward apex, apical part short and narrow, weak constriction before apical part absent, middle ventral groove wider and deeper. It also differs in the narrower and less convex body, the denser dorsal punctation of the head, and in the pronotum that has a rounded basal margin and straight lateral margins in contrast to the more angular and rounded margins in *P. inflatus*; the metatibia is more curved, the projection at the inner ridge of the metatibia is poorly developed, and the metatibial apices are weakly widened. From *P. ridendus* sp.n. it differs by the larger size, the body shape, the dorsal punctation and the genitalia (aedeagus gradually narrowing toward apex in both lateral and dorsal views, middle ventral groove narrower and shallower).

DISTRIBUTION: Israel.

ETYMOLOGY: The specific epithet refers to the moderately developed projection at the inner ridge of the metatibia.

***Psylliodes* (s.str.) *ridendus* sp.n.**
(Figs. 23, 24, 39, 40, 50, 60, 67, 75, 82, 89)

TYPE LOCALITY: Turkey (Antalya).

TYPE MATERIAL: **Holotype** ♂: TURKEY: “TR-(Antalya) Manavgat 26.IV.2002 B. & M. Bergeal leg.” (ZIN). **Paratypes**: Label as in holotype (3 ♂♂, 6 ♀♀ ZIN); “SO-Turkey Adiyaman Kuyucak 8.VI.1998 leg. Snizek” (1 ♂, 1 ♀ ZIN); “Cilic. Taurus Belededik Ende Juni Coll. Dr. Tölg” (2 ♂♂, 1 ♀ NHMB); “TR - prov. Simak Haberli, Midyat env. 13.5.2005 Z. Malinka lgt.”, “Collection Zdeněk Malinka (via J. Bezděk) Czech Republic” (13 exs. ZM); “TR - prov. Hatay Nur Dagtari mts. Tülek Ulucinar env. 5-6.5.2005 Z. Malinka lgt.”, “Collection Zdeněk Malinka (via J. Bezděk) Czech Republic” (1 ex. ZM).

DESCRIPTION: Body: Wide oval, convex (Figs. 23, 24); light to dark brown dorsally, shining; ventrally lighter; pronotum with bronzy lustre, darker than elytra; tibiae yellowish-brown; metafemur brown to dark brown, apices paler; pro- and mesofemur darkened basally; antennal segments dark from fourth segment; posterior half of head darker than anterior half, almost as pronotum.

Head: Vertex large, wide; punctures dense, deep, shining, separated by about half to fully their diameter; interspaces usually convex, with very fine and sparse wrinkles, rarely almost smooth; above frontal calli usually with several irregular-shaped, large and deep punctures forming short, wide and shallow impression. Ocular sulci usually narrow and shallow, with even margin; some-

times near upper margin of eye sulci wider and with margin covered with wrinkles and coarse punctures and setiferous pores; ocular sulci reaching apices of frontal calli and there joined with thin and short supracallinal sulci which separate frontal calli from vertex. Frontal calli narrow, moderately convex, sometimes flattened, usually not distinctly separated from vertex, often with indistinct, slightly coarse sculpture; wrinkles, punctures and prominences very fine. Frontal ridge moderately narrow, triangular, not strongly convex, usually with slightly coarse sculpture as on vertex; margins limited by row of punctures. Anterofrontal ridge weakly convex, surface as on vertex and frontal ridge; frons above clypeus slightly arched. Antennal grooves shallow, coarsely sculptured. Antennal sockets separated from eye margin by poorly convex space.

Prothorax: Shape of pronotum similar to *P. inflatus* but with sides more parallel and less steep (Figs. 39, 40). Lateral margins almost straight, weakly rounded medially, narrow, smooth; anterolateral callosity developed, not strongly protruding beyond lateral margin, its angles rounded and not forming sharp denticles; anterior margin with border narrow and convex, posterior margin with border slightly wider and more convex. Punctuation dense, size of punctures as on head, slightly smaller than elytral punctuation; punctures at disc separated by 1.0–1.5 their diameter; interstices more or less shagreened, almost flat at disc to moderately convex at sides.

Elytra: Wide, convex, rounded. Punctures in striae rather large, not or shallowly impressed; punctures in striae separated by about half their diameters; striae separated by 1.5–2.0 (rarely up to 2.5 in large females) times diameter of punctures; interstices almost smooth; secondary punctuation large, punctures not very deep, usually arranged in two confused rows. Humeral calli poorly developed; hind wings reduced. Elytral apices moderately rounded.

Legs: Metatibiae short, more or less curved, their apices weakly widened and rounded when seen from above; internal ridge at tarsal attachment with projection developed (Fig. 50). First metatarsomere widened before middle and slightly curved.

Genitalia: Aedeagus with apex triangular, short, then slightly wider and with distinct widening medially, with basal third narrower than median third, in lateral view almost straight; ventral median groove rather wide and deep, deepest before basal opening (Fig. 60). Female abdominal tergite VII (pygidium) as in Fig. 67; spermatheca with collo long and curved, nodulus long and thin, duct very long and coiled (Fig. 75); vaginal palpi as in Fig. 82; tignum as in Fig. 89.

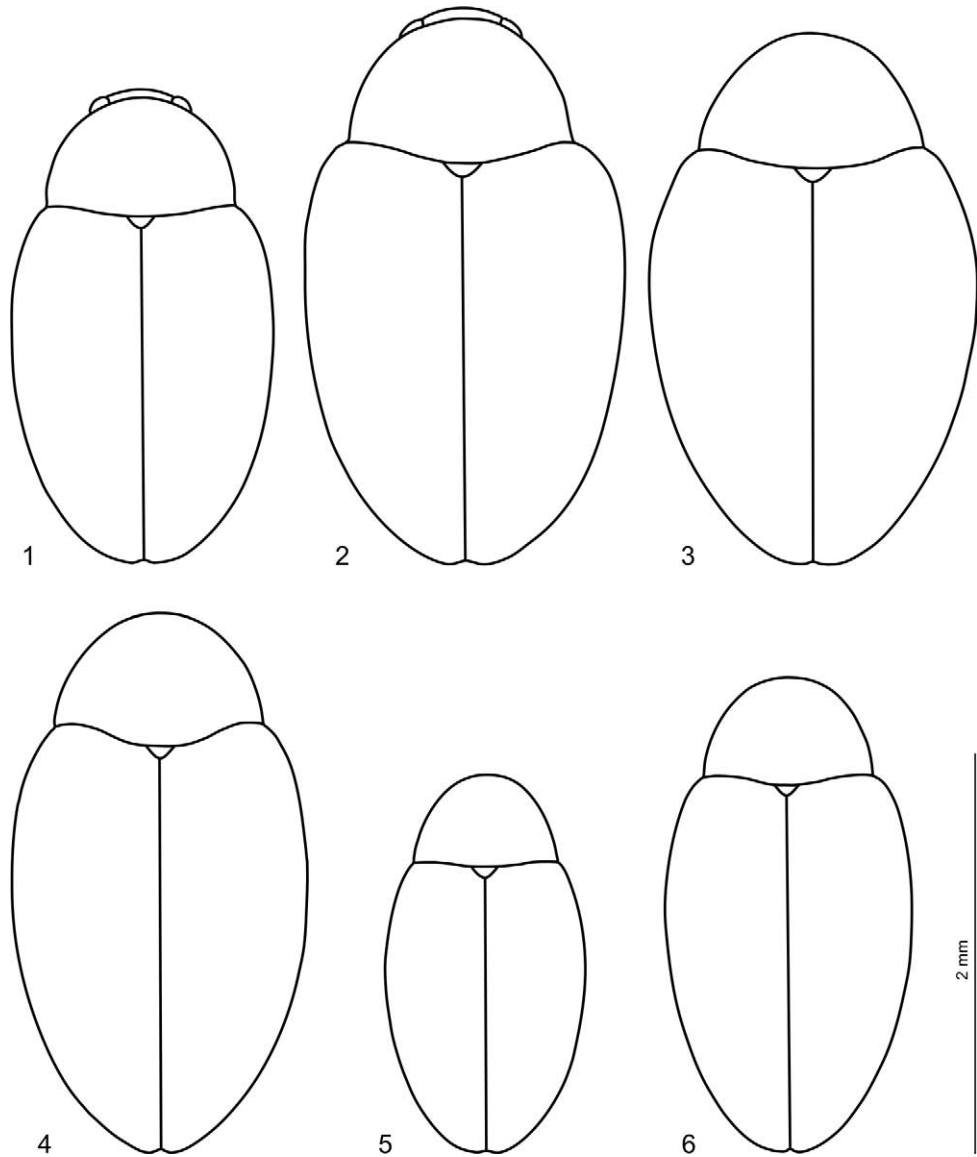
MEASUREMENTS: Male (n = 5), body length – 2.31–2.58 mm, width – 1.22–1.39 mm; PI – 1.50–1.54 (1.52); EI – 1.38–1.56 (1.46); LI – 2.90–3.03 (2.98); MI – 4.50–5.25 (4.88); BI – 1.79–2.04 (1.90).

Female (n = 8), body length – 2.13–2.87 mm, width – 1.19–1.56 mm; PI – 1.49–1.63 (1.54); EI – 1.36–1.64 (1.44); LI – 2.84–3.14 (3.04); MI – 4.27–5.29 (4.74); BI – 1.70–2.10 (1.85).

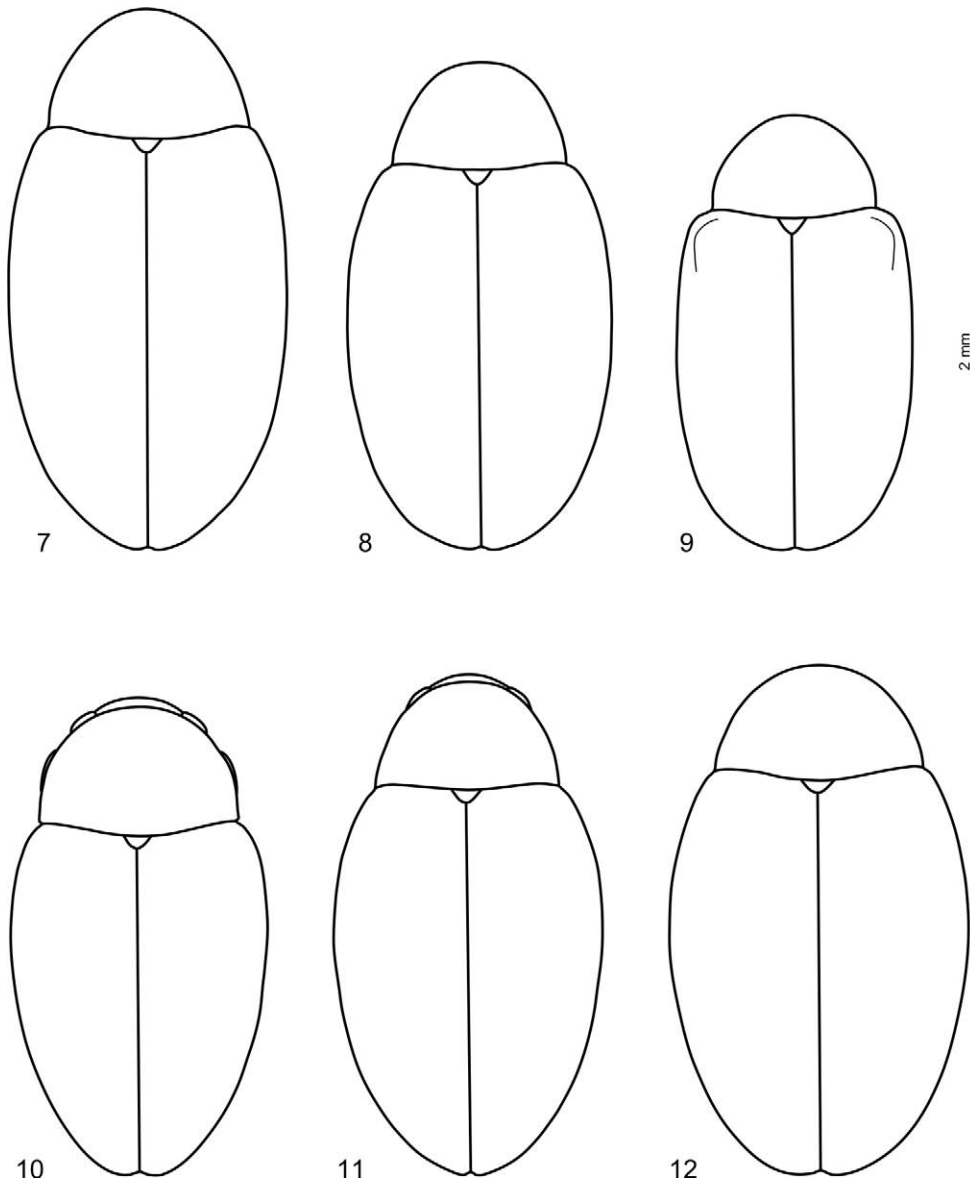
DIFFERENTIAL DIAGNOSIS: This new species closely resembles *P. inflatus* in body shape, structure of the head, and shape of metatibia. However, it differs in aedeagal structure: basal 3/4 wider than apex, constriction before apical part absent, apex not widened, middle ventral groove wider and deeper. It also differs in the smaller size, structure of metatibia (with projection at inner ridge moderately developed), and punctuation of head. *Psylliodes ridendus* sp.n. is also similar to *P. tenuidentatus* sp.n. in the body sculpture and structure of metatibia but differs in the genitalia: aedeagus weakly widened toward apex, with distinctly narrowed apical part, slightly widened before middle in lateral view, middle ventral groove wider and deeper. It also differs in the shape of the body, smaller size, and reduced hind wings.

DISTRIBUTION: Turkey.

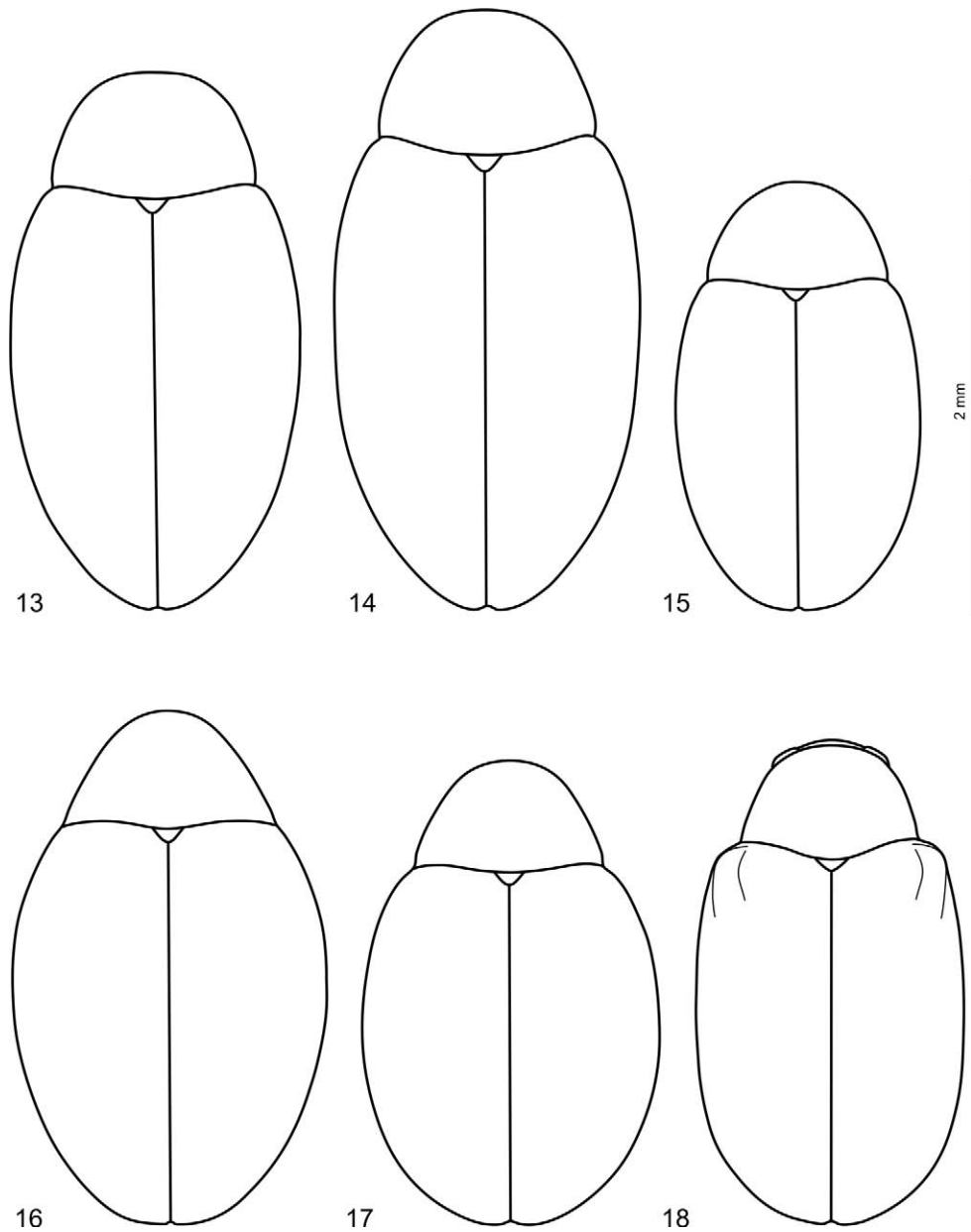
ETYMOLOGY: *Ridendus* (Latin): funny. This species looks like a miniature copy of *P. inflatus*.



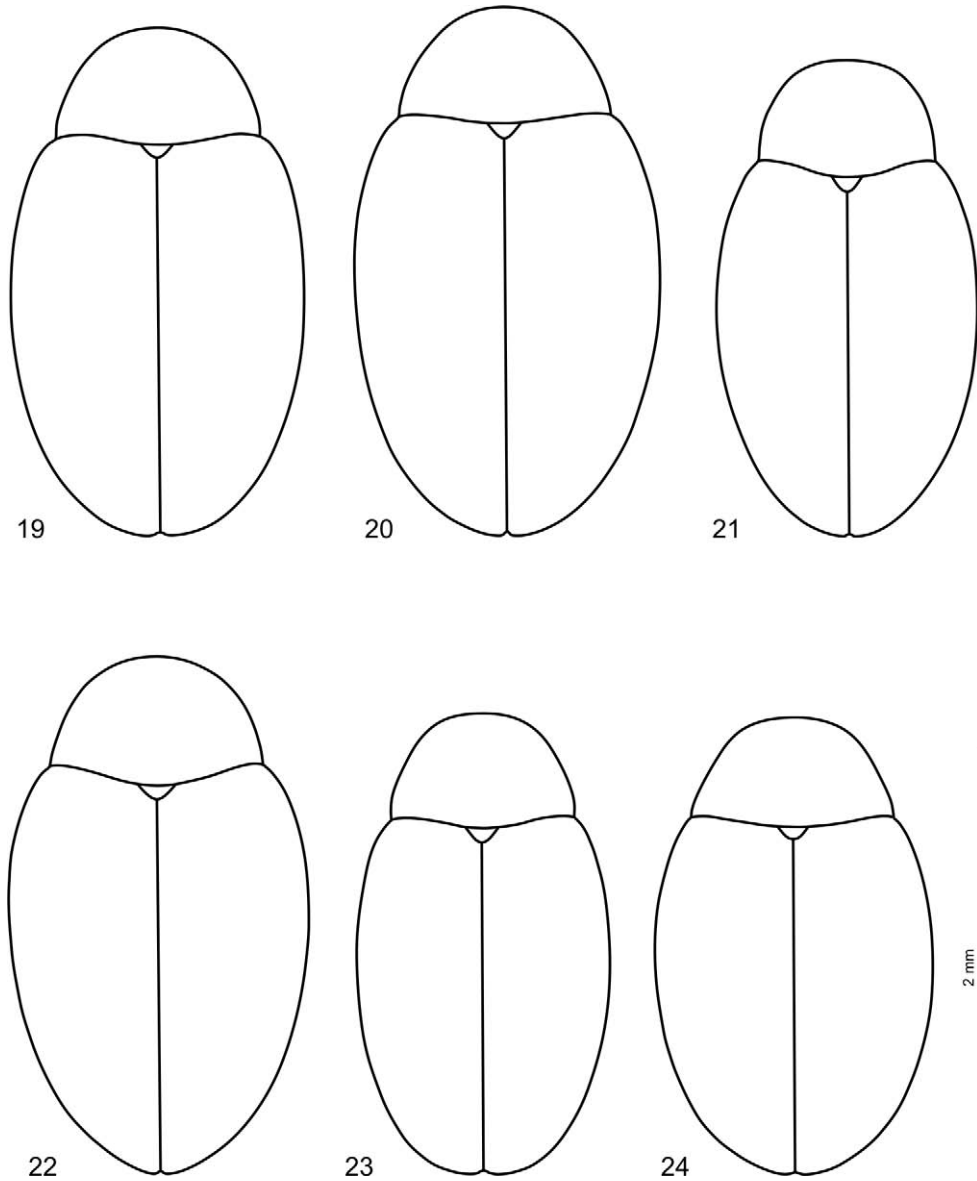
Figs. 1–6: Body outline of 1–4) *Psylliodes gibbosus*: 1) male (Italy); 2–4) female (Italy); 5–6) *P. kiesewetteri*: 5) male (Monte Gargano); 6) male (Istria, Pola).



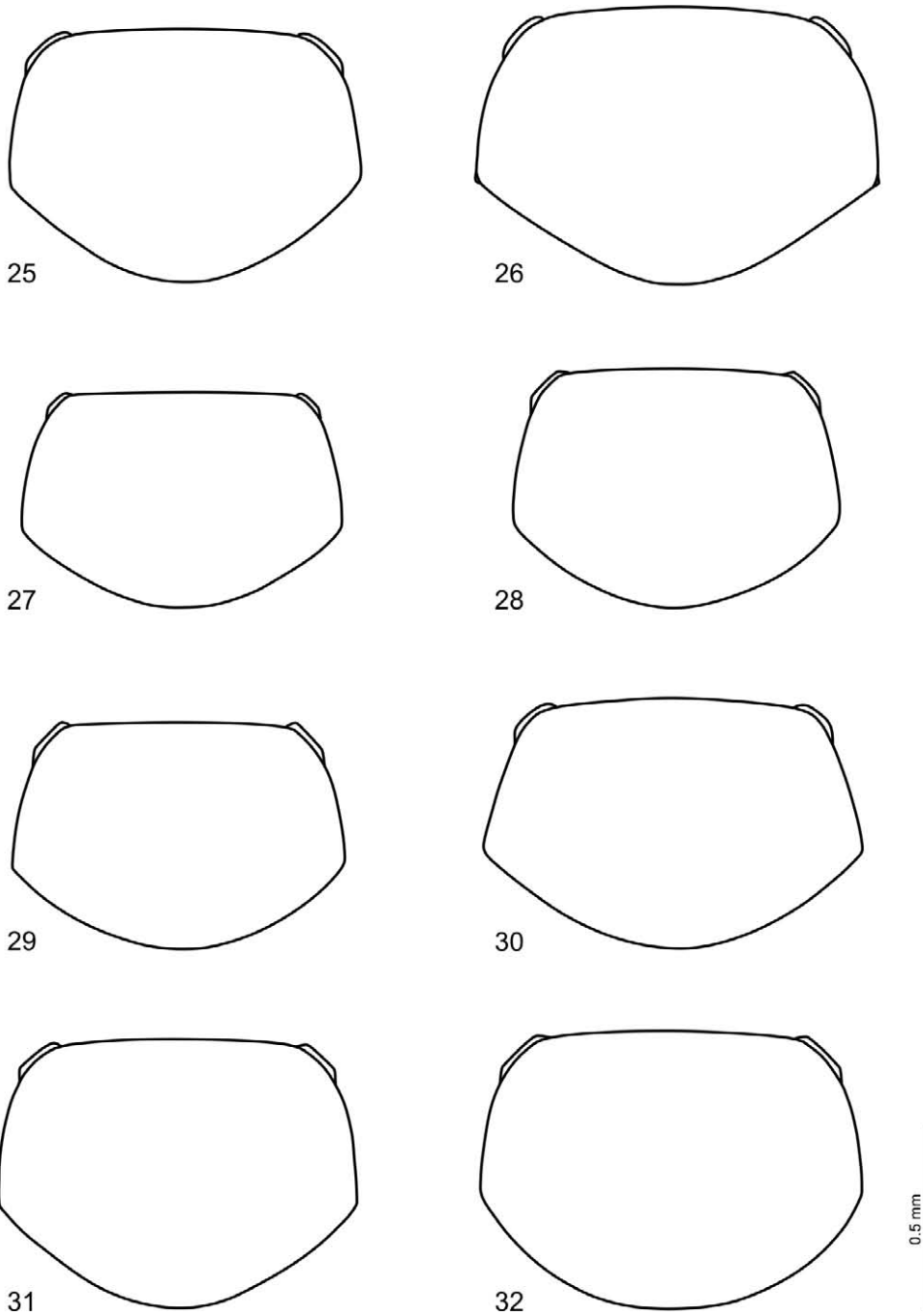
Figs. 7–12: Body outline of 7–9) *Psylliodes kiesenwetteri*: 7) female (Greece); 8) female (Dalmatia); 9) female, winged (Elba); 10–12) *P. gougeleti*: 10) male (Astorga); 11) female (Sicily); 12) female (Manzanal).



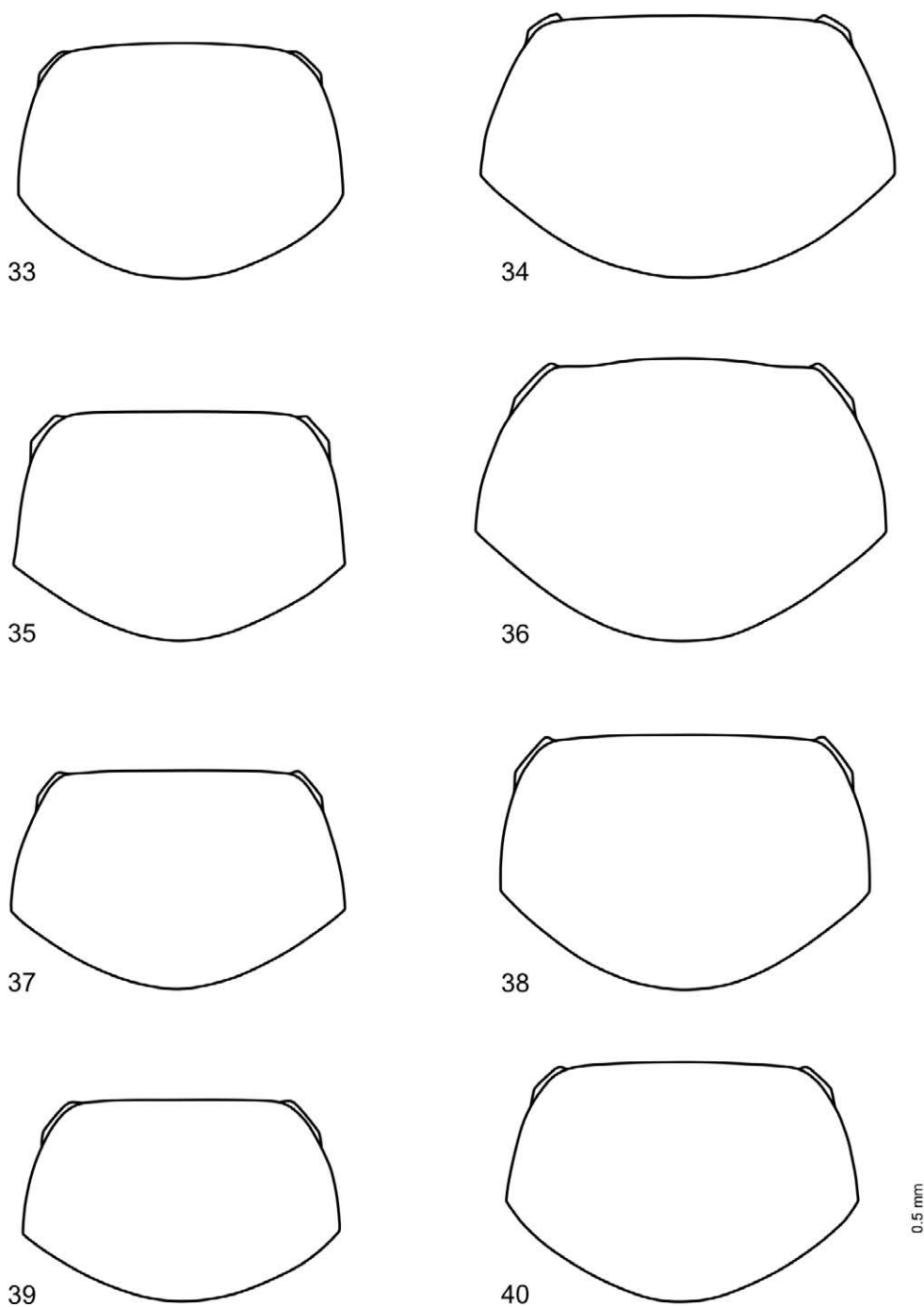
Figs. 13–18: Body outline of 13–14) *Psylliodes ruffoi*: 13) male (Sicily); 14) female (Sicily); 15–18) *P. inflatus*: 15) male (Oran); 16) female (Morocco); 17) female (Alhucemas); 18) female, winged (“Galilea”).



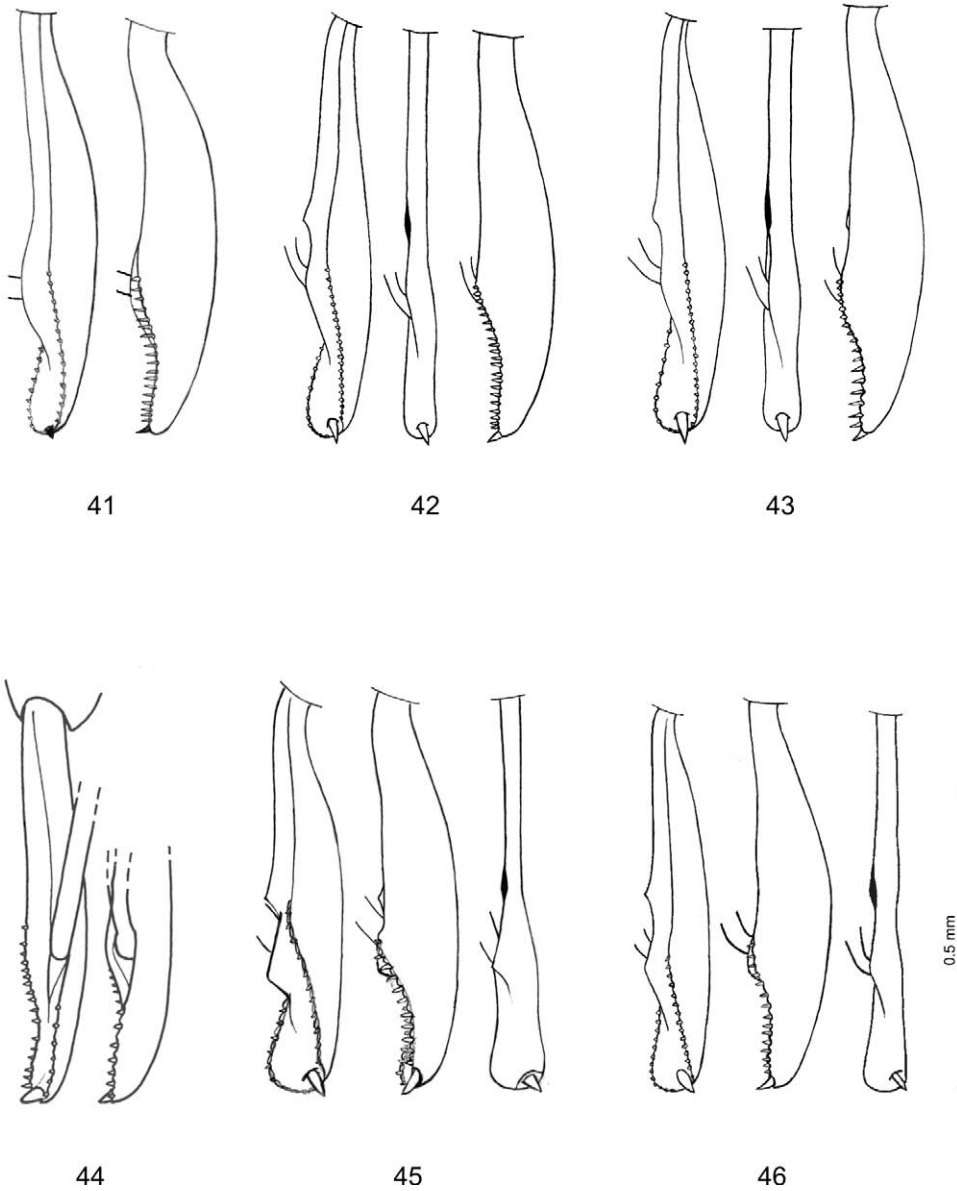
Figs. 19–24: Body outline of 19–20) *Psylliodes fageli*: 19) male (holotype); 20) female (paratype); 21–22) *P. tenuidentatus* sp.n.: 21) male (holotype); 22) female (paratype); 23–24) *P. ridendus* sp.n.: 23) male (paratype); 24) female (paratype).



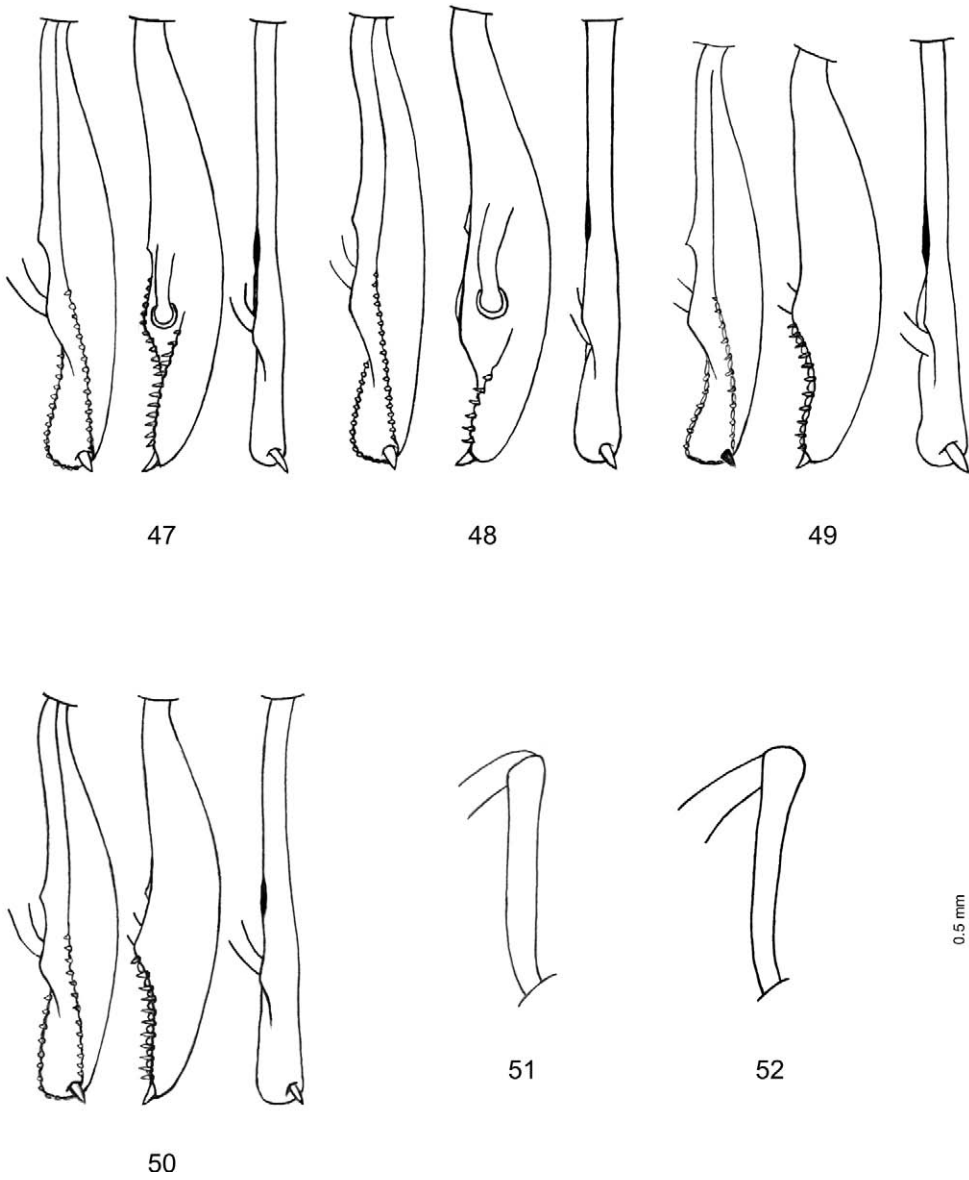
Figs. 25–32: Pronotal outlines of 25–26) *Psylliodes gibbosus*: 25) male; 26) female; 27–28) *P. kiesenwetteri*: 27) male; 28) female; 29–30) *P. gougeleti*: 29) male; 30) female; 31–32) *P. ruffoi*: 31) male; 32) female.



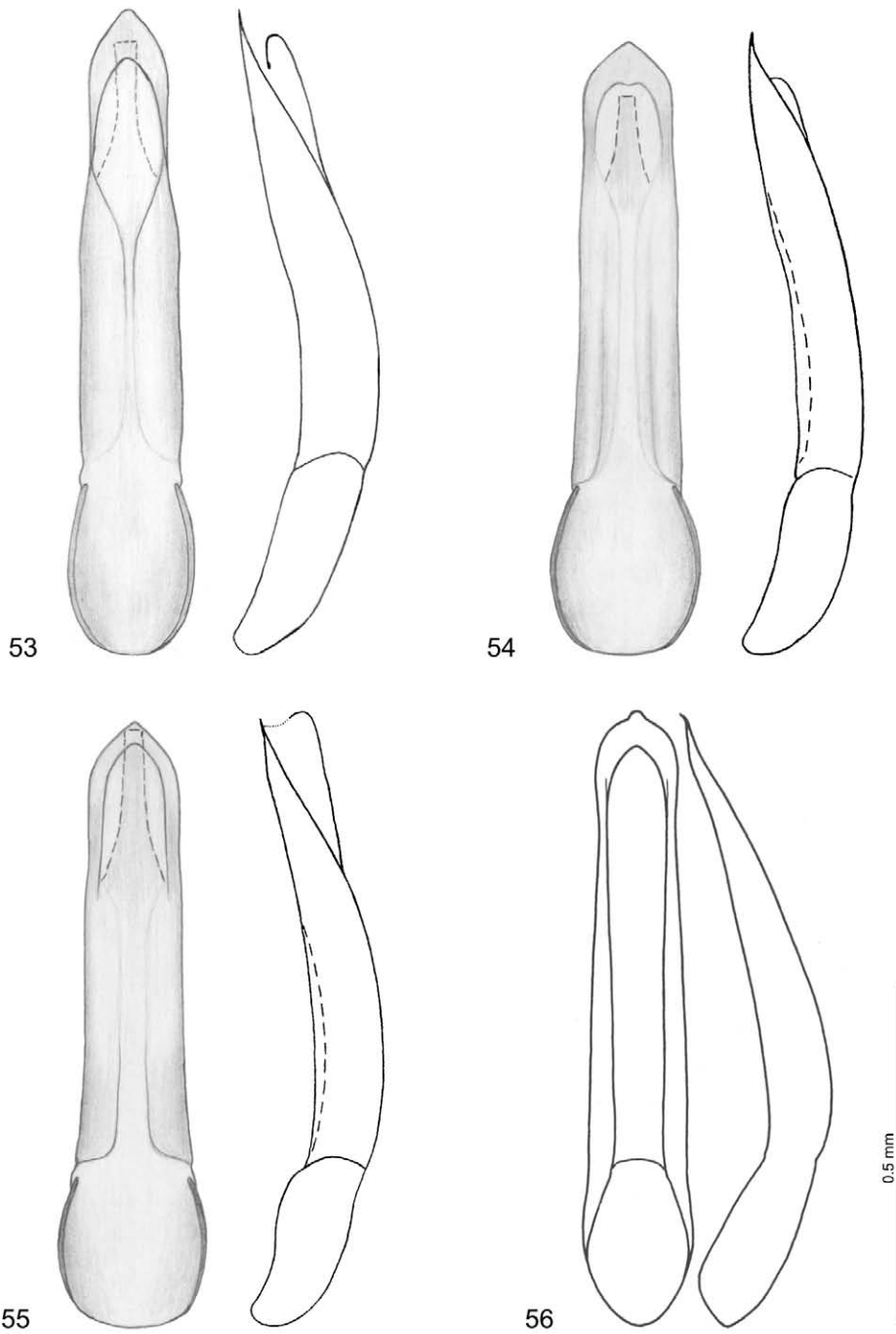
Figs. 33–40: Pronotal outlines of 33–34) *Psylliodes inflatus*: 33) male; 34) female; 35–36) *P. fageli*: 35) male (paratype); 36) female (paratype); 37–38) *P. tenuidentatus* sp.n.: 37) male (holotype); 38) female (paratype); 39–40) *P. ridendus* sp.n.: 39) male (paratype); 40) female (paratype).



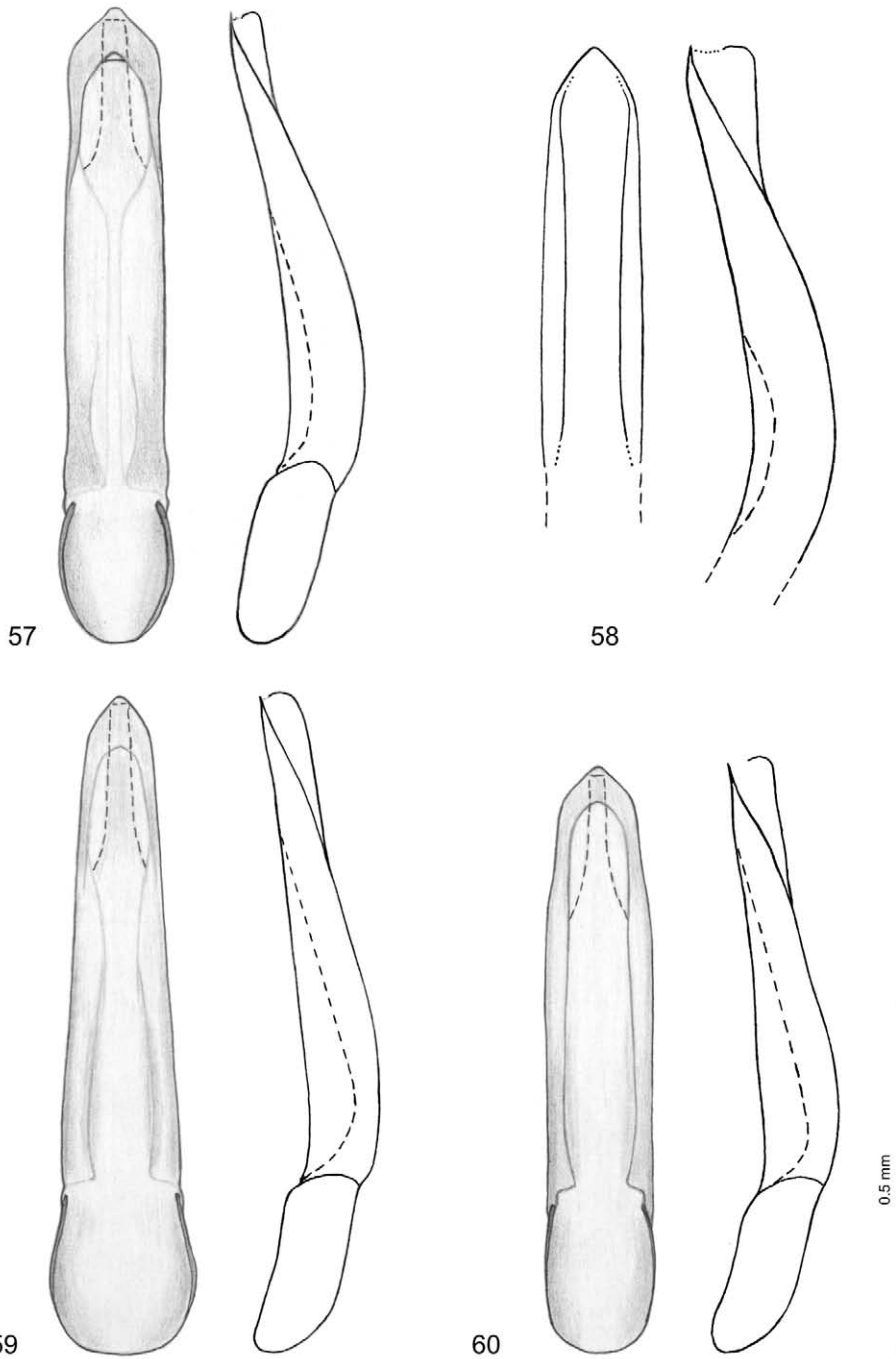
Figs. 41–46: Metatibia, lateral and dorsal views; 41) *Psylliodes gibbosus*; 42) *P. kiesenwetteri*; 43) *P. gougeleti*; 44) *P. ruffoi* (after LEONARDI 1975); 45–46) *P. inflatus*: 45) Tunisia; 46) “Syrien”.



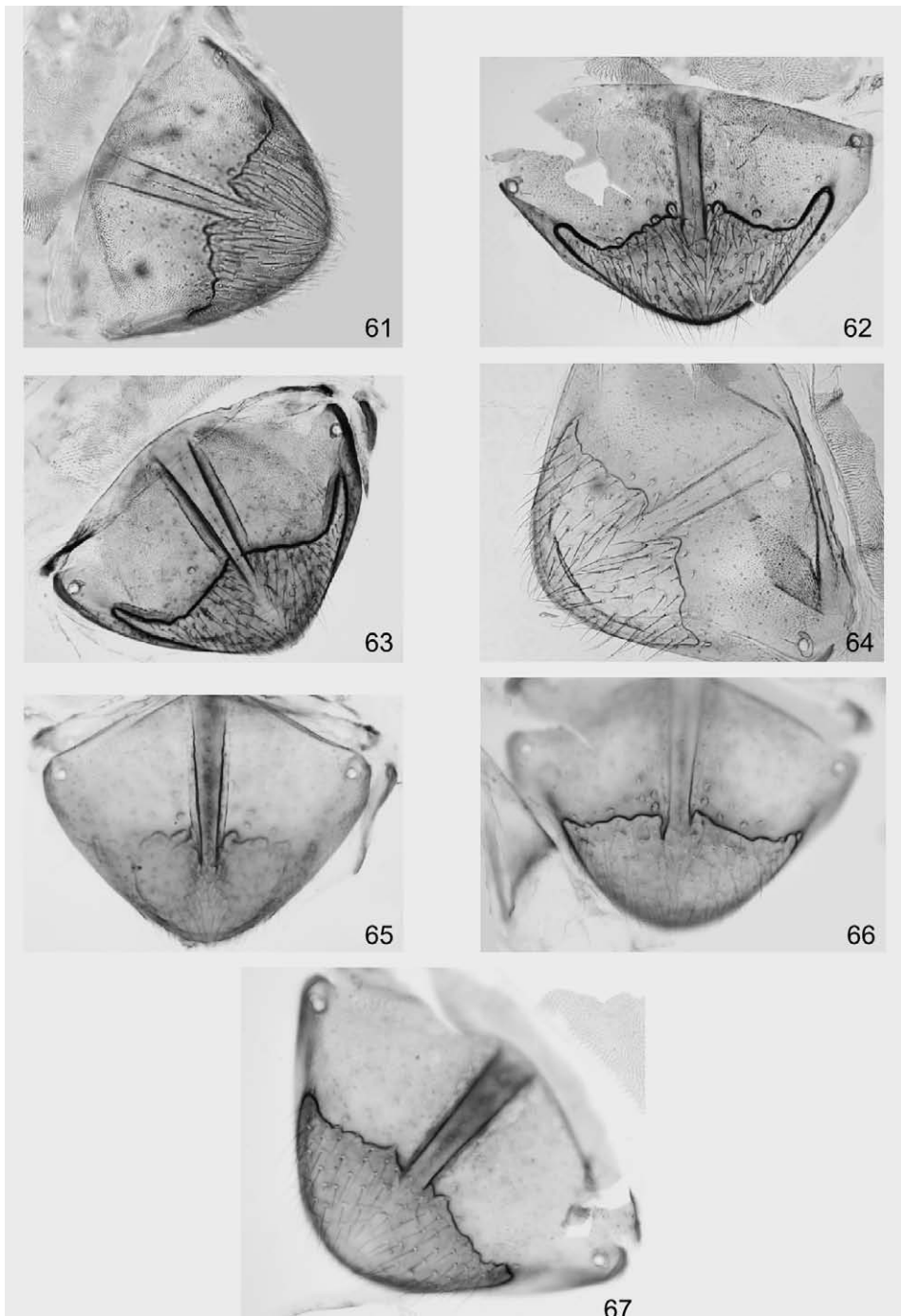
Figs. 47–52: 47–50) Metatibia, lateral and dorsal views; 51–52) metatarsomere 1, lateral view; 47) *Psylliodes inflatus* (“Galilea”); 48) *P. fageli*; 49) *P. tenuidentatus* sp.n.; 50) *P. ridendus* sp.n.; 51) *P. gibbosus*; 52) *P. kiesenwetteri*.



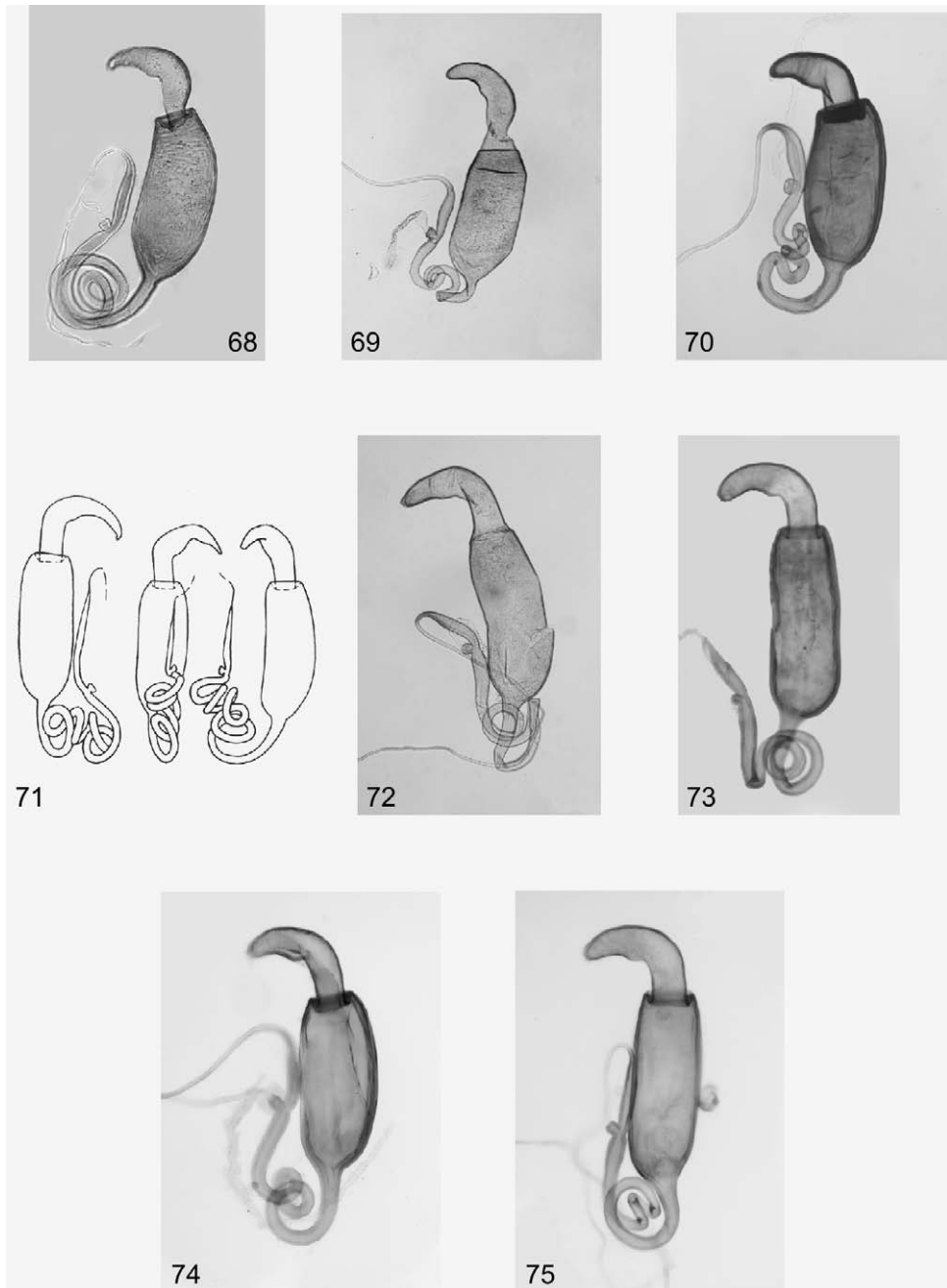
Figs. 53–56: Aedeagus, ventral and lateral views; 53) *Psylliodes gibbosus*; 54) *P. kiesenwetteri*; 55) *P. gougeleti*; 56) *P. ruffoi* (after LEONARDI 1975).



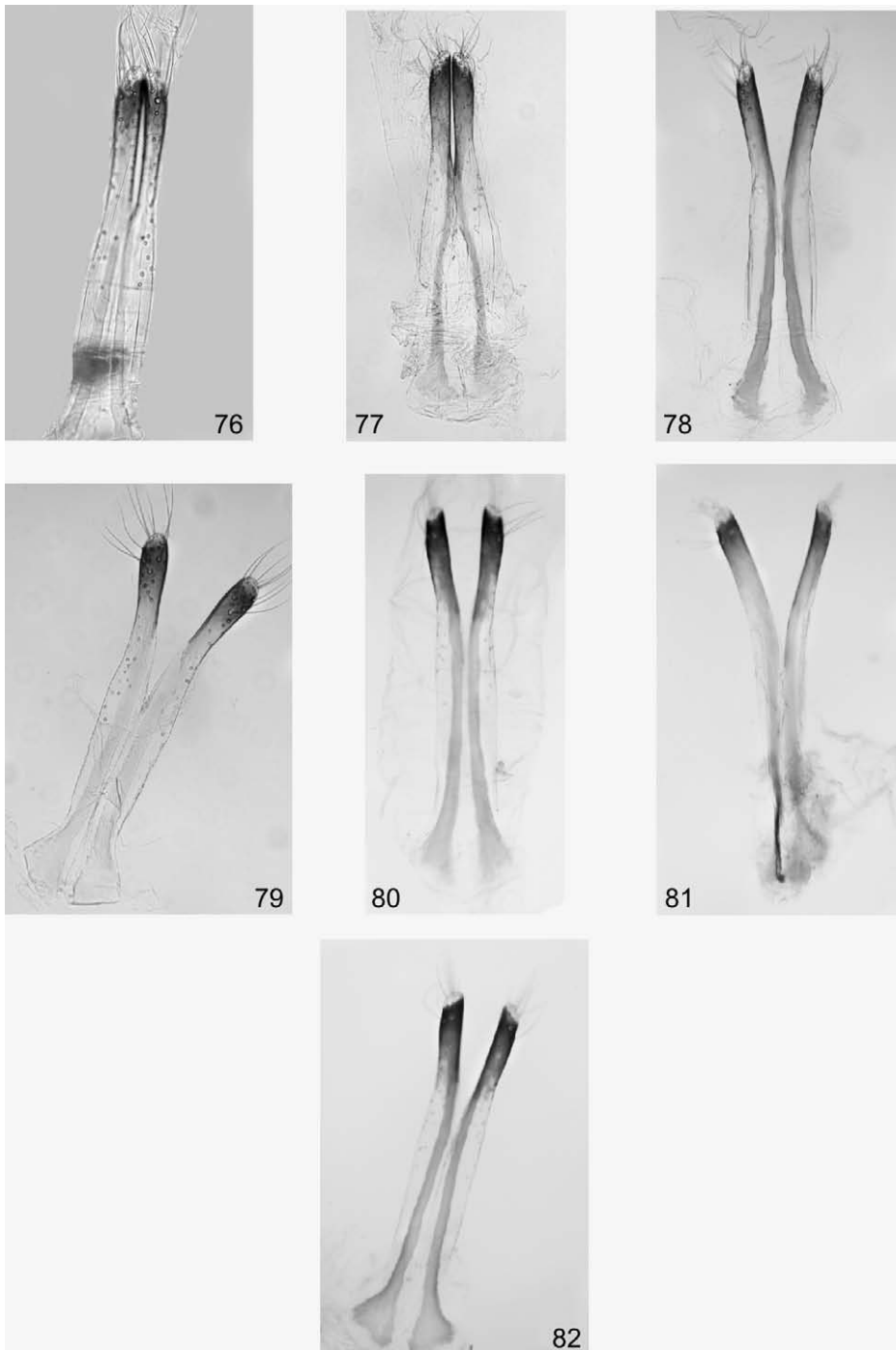
Figs. 57–60: Aedeagus, ventral and lateral view; 57) *Psylliodes inflatus*; 58) *P. fageli*; 59) *P. tenuidentatus* sp.n. (holotype); 60) *P. ridendus* sp.n. (holotype).



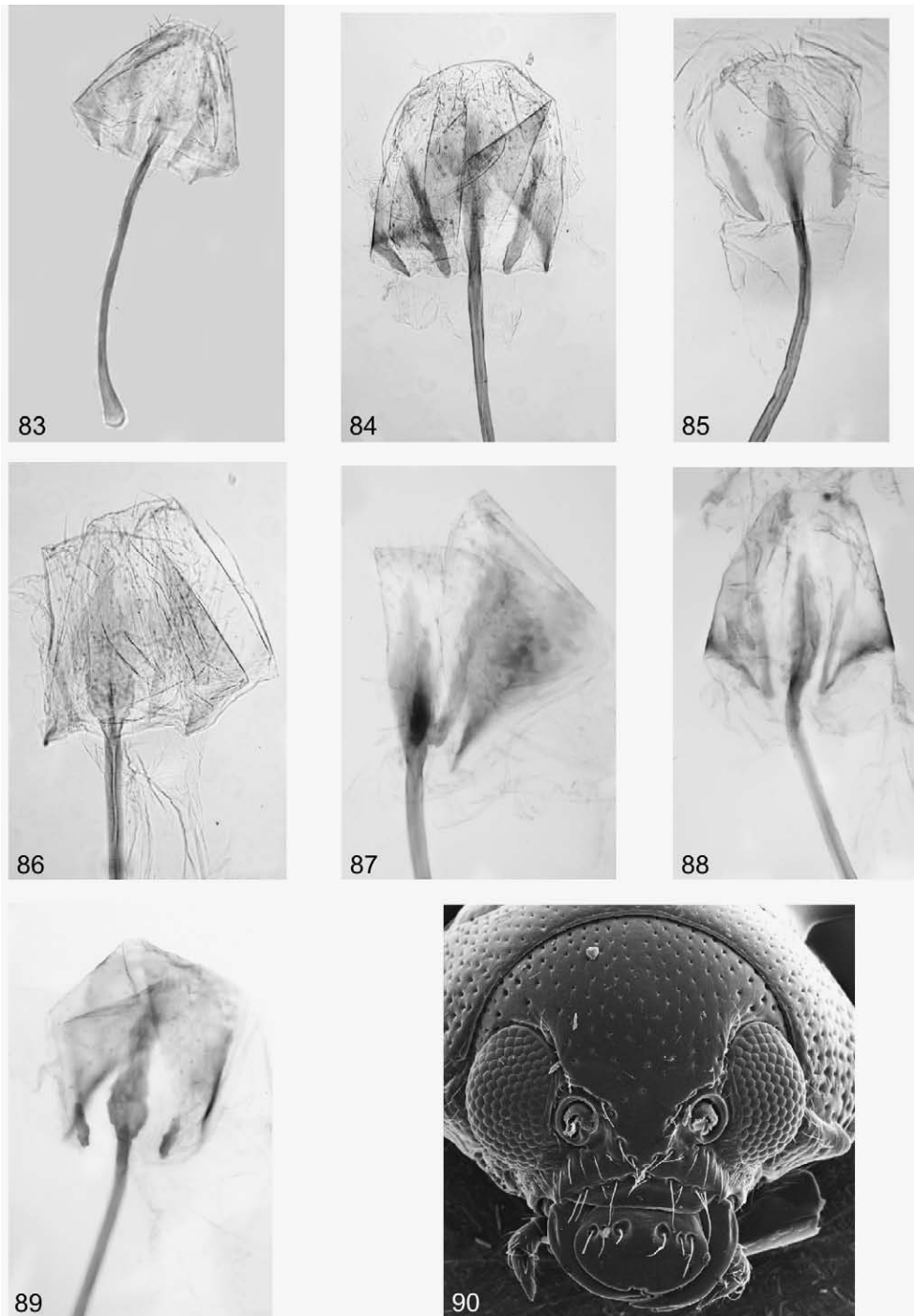
Figs. 61–67: Abdominal tergite VII, dorsal view; 61) *Psylliodes gibbosus*; 62) *P. kiesenwetteri*; 63) *P. gougeleti*; 64) *P. inflatus*; 65) *P. fageli*; 66) *P. tenuidentatus* sp.n.; 67) *P. ridendus* sp.n.



Figs. 68–75: Spermatheca; 68) *Psylliodes gibbosus*; 69) *P. kiesenwetteri*; 70) *P. gougeleti*; 71) *P. ruffoi* (after LEONARDI 1975); 72) *P. inflatus*; 73) *P. fageli*; 74) *P. tenuidentatus* sp.n.; 75) *P. ridendus* sp.n.



Figs. 76–82: Vaginal palpi; 76) *Psylliodes gibbosus*; 77) *P. kiesenwetteri*; 78) *P. gougeleti*; 79) *P. inflatus*; 80) *P. fageli*; 81) *P. tenuidentatus* sp.n.; 82) *P. ridendus* sp.n.



Figs. 83–89: Tignum; 83) *Psylliodes gibbosus*; 84) *P. kiesenwetteri*; 85) *P. gougeleti*; 86) *P. inflatus*; 87) *P. fageli*; 88) *P. tenuidentatus* sp.n.; 89) *P. ridendus* sp.n.; 90) SEM photograph of head of *P. gibbosus*.

Key to the species of the *Psylliodes gibbosus* species group

- 1 Inner ridge of metatibia at tarsal attachment always without angular projection, distinctly rounded (Figs. 41–44); metatibia at distal third not widened, its apex in dorsal view narrow and rounded. Body usually more elongate and less convex 2
- Inner ridge of metatibia at tarsal attachment always with angular projection, moderately rounded to sharp (Figs. 45–50); metatibia at distal third widened, its apex in dorsal view more or less wide, rounded or straight. Body usually wider and more convex 5
- 2 Longer, 2.9–3.4 mm; body wide (Figs. 1–4, 10–14; BI: 2.0); maximal width of body usually at basal third; pronotum wide and more transverse (Figs. 25, 26, 29, 30–32; PI: 1.46–1.67 [1.55]); punctuation of vertex variable, dense and large to sparse and small; elytral apices clearly rounded to suture; sutural angle of elytra with small denticle; metatibia usually distinctly curved (Figs. 41, 43, 44) 3
- Shorter, 2.5–3.1 mm; body narrower (Figs. 5–9; BI: 2.13), maximal width of body at middle; pronotum narrower and less transverse (Figs. 27, 28; PI: 1.53–1.63 [1.58]); punctuation of vertex usually rather dense; elytral apices not rounded to suture, nearly straight, sutural angle without small denticle, straight; metatibia narrow, weakly curved (Fig. 42); metatarsomere 1 curved (Fig. 52) *kiesenwetteri*
- 3 Aedeagal apex not elongate and triangular, not constricted before apex; body more slender 4
- Aedeagal apex elongate and triangular, distinctly constricted before apex (Fig. 53); body wide, maximum width at basal third (Figs. 1–4); punctuation of vertex variable, usually dense; interstices more or less smooth; frontal ridge usually flat and short; punctuation of pronotum dense (including punctuation in discal area), interstices somewhat convex and shagreened; punctures of elytra relatively small, striae with short distance between punctures (about half diameter of puncture); metatibia distinctly curved, wide (Fig. 41); metatarsomere 1 straight (Fig. 51) *gibbosus*
- 4 Lateral margins of pronotum in dorsal view wider and more rounded, in lateral view margin straight; punctuation of vertex small, fine, interstices covered with indistinct, very fine, sparse wrinkles, not shagreened; frontal ridge narrower and convex; punctuation of pronotum sparser, interstices flat, usually poorly shagreened to almost smooth; punctuation of elytra larger; metatibia less curved (Fig. 43) *gougeleti*
- Lateral margins of pronotum in dorsal view narrower and more straight, in lateral view margin arched; vertex with punctures larger and denser, interstices convex, covered with coarse sculpture; frontal ridge wider, triangular and flat; punctures of pronotal disc smaller and denser, interstices distinctly shagreened; punctures in elytral striae smaller; metatibia distinctly curved (Fig. 44) *ruffoi*
- 5 Length 2.1–2.8 mm; body shape as in *P. inflatus*, but pronotum with sides more parallel and less steep (Figs. 39, 40); metatibia distinctly curved, weakly widened apically, with poorly developed projection at inner ridge (Figs. 50); elytra less rounded (Figs. 23, 24) *ridendus*
- Length 2.7–3.2 mm; body shape widely oval to elongate (Figs. 15–17, 19, 20); metatibia not very curved, its apex weakly widened to very wide; projection on inner ridge of metatibia well developed, angular and nearly sharp, varying to weakly developed and moderately rounded (Figs. 45–49) 6
- 6 Body broadly oval, short (Figs. 15–18); metatibia usually much widened apically when seen from above, its apex usually straight, the projection on inner ridge usually well developed, angular and almost sharp; more rarely metatibia less wide and projection weakly developed (Figs. 45–47); vertex with smoothed interstices; pronotum with sides converging, lateral margins in dorsal view straight; anterolateral callosity moderately protruding from contour, visible from above; punctuation of pronotum less dense; punctures in elytral striae small, interstices wide, striae separated by 2.5–3.0 their diameter, flat, secondary punctuation rather small and sparse *inflatus*
- Characters different or not found in the same combination 7

- 7 Metatibia without wide, straight apex and well developed projection (Fig. 48); body very convex and wide (Figs. 19, 20); vertex flatter, interstices between punctures covered with coarse wrinkle-puncture sculpture, punctuation of pronotum in general larger and denser, distance between punctures subequal to their diameter, interstices convex (including interstices in discal area), distinctly shagreened; pronotum with sides more parallel, anterolateral callosity weakly protruding, not visible from above, lateral margins in side view distinctly arched; punctuation of elytra smaller, punctures in striae separated by about their diameter, striae separated by 3–4 times diameter of punctures, interstices flat, covered with fine shagreen, secondary punctuation small and sparse; metatibia distinctly curved..... *fageli*
- Metatibia with apex less wide, projection more weakly developed (Fig. 49); body clearly narrower and less convex (Figs. 21, 22); vertex more convex, interstices between punctures nearly smooth, covered with very fine and smoothed wrinkles; punctuation of pronotum in general small and dense at disc, interstices flat, covered with very fine and smooth shagreen; pronotum with sides rounded; anterolateral callosity distinctly protruding from contour, visible from above; lateral pronotal margin straight in lateral view; punctuation of elytra larger and deeper, punctures in striae separated by a distance equal to about half their diameter; striae separated by about two times diameter of punctures, interstices smooth and more convex, secondary punctuation comparatively large and denser; metatibia moderately curved....
..... *tenuidentatus*

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Dr. Konstantin S. NADEIN

Department of general and applied entomology, Schmalhauzen Institute of Zoology, National Academy of Sciences of Ukraine, Bogdana Khmel'nitskogo st. 15, 01601 Kiev, Ukraine (luperus@mail.ru)