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Revision of the Palaearctic species of *Pristaulacus* Kieffer, 1900 (Hymenoptera: Aulacidae)

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This paper represents part of the results of the Ph.D. Thesis of the author, debated on February 16, 2005, University of Catania (Turrisi, 2004).

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Abstract

The Palaearctic species of the genus *Pristaulacus* Kieffer, 1900 are revised and illustrated for the first time. Twenty-one valid species are recognized. Two new species are described: *P. edoardoi* Turrisi, **sp. nov.,** from Crete Island and Greece, and *P. paglianoi* Turrisi, **sp. nov.**, from Morocco and Tunisia. Four new synonymies are proposed: *Aulacus* (*Pristaulacus*) *holtzi* Schulz, 1906 = *P. compressus* (Spinola, 1808) (**syn. nov.**); *P. bimaculatus arozarenae* Ortega & Baez, 1985 = *P. galitae* (Gribodo, 1879) (**syn. nov.**); *Aulacus sibiricola* Semenow, 1892 = *P. gibbator* (Thunberg, 1822) (**syn. nov.**); *P. holzschuhi* Madl, 1990 = *P. gloriator* (Fabricius, 1804) (**syn. nov.**). The following synonymies are confirmed on the basis of the study of type material: *P. obscuripennis* Westwood, 1841 = *P. compressus* (Spinola, 1808); *P. bimaculatus* Kieffer, 1900 and *P. immaculatus* Kieffer, 1904 = *P. galitae* (Gribodo, 1879). Three *nomina nuda*: *A. beckeri* Tournier, 1911, *A. plurimaculatus* Tournier, 1911, and *A. transversostriatus* Tournier, 1911, previously assigned to the genus *Aulacus*, are all synonyms of *P. compressus* (Spinola, 1808) (**syn. nov.**). The previously unknown male of *P. boninensis* Konishi, 1990 is described. Lectotypes and paralectotypes of *P. comptipennis* Enderlein, 1912, *P. immaculatus* Kieffer, 1904, and *P. bimaculatus arozarenae* Ortega & Baez, 1985 are designated. A key to species and distributional maps are also provided.

Key words: *Pristaulacus*, Palaearctic Region, systematic revision, new species, distribution, biology

Introduction

The Aulacidae are a small group of parasitoid wasps which includes 182 extant species currently placed in 3 genera: *Aulacus* Jurine, 1807, with 65 species, *Pristaulacus* Kieffer, 1900, with 115 species, and *Panaulix* Benoit, 1984, with 2 species. They are found in all zoogeographic regions except Antarctica (Kieffer 1912; Hedicke 1939; Smith 2001, 2005a, b; He *et al.* 2002; Jennings *et al.* 2004a, b, c; Turrisi 2004, 2005, 2006a, present contribution; Jennings & Austin 2006; Sun & Sheng in press). Aulacidae are also known from fossils, with 36 described species (Nel *et al.* 2004). The oldest record is from the Lower Cretaceous, while the Cenozoic records comprise species from the Upper Eocene of the Isle of Wight, Baltic, and Paris basin ambers, and from the Oligocene of North America (Nel *et al.* 2004). Eighteen of the fossil species of Aulacidae are grouped in the genus *Manlaja* Rasnitsyn, 1980, but they are not well known and their inclusion within Aulacidae still remains somewhat questionable (Basibuyuk *et al.* 2002; Nel *et al.* 2004; Zhang & Rasnitsyn 2004). Three of the other 18 fossil species are included in *Aulacus* and 5 in *Pristaulacus* (Brues 1910, 1923, 1932; Cockerell 1916, 1922; Nel *et al.* 2004); the remaining 10 species are attributed to the same number of monospecific genera.

Most recent contributions (Konishi 1990; Mason 1993; Gauld 1995) recognized Aulacidae as a distinct family among Evanioidea, and not a subfamily of Gasteruptiidae as reported by some authors (Rasnitsyn 1988; Whitfield *et al.* 1989). More recently, Jennings & Austin (2000) and Turrisi (2004) demonstrated the monophyly of the Aulacidae based upon cladistic analysis.

Our knowledge on taxonomy, distribution, and biology of Aulacidae still must be considered unsatisfactory, due to the fact that Aulacidae are not easily observed in their natural habitats and are only rarely collected by most of the usual collecting methods. Consequently, Aulacidae are rare in collections, and many species are known from only one or a few specimens. This scarcity of available material is a serious limitation for studying the faunistics and the taxonomy of these wasps.

Aulacidae are parasitoids of wood-boring Hymenoptera and Coleoptera, employing a koinobiont endophagous strategy (Whitfield 1998; Jennings & Austin 2004). Hosts are not known for many species, but some *Aulacus* and a few *Pristaulacus* are associated with species of *Xiphydria* Latreille (Symphyta: Xiphydriidae). Other species of *Aulacus* and most *Pristaulacus* are associated with wood-boring Coleoptera, especially Buprestidae and Cerambycidae (Barriga 1990; Visitpanich 1994; Turrisi 1999; Jennings & Austin 2004). Other possible hosts belong to the coleopteran families Bostrichidae, Cleridae (Oehlke 1983, 1984; Pagliano 1986), and Scolytidae (Muesebeck 1958). A summary of the data on hosts of all Aulacidae, as well as on host

plants, is provided by Smith (2001). The biology is known in some detail for *Aulacus striatus* Jurine, 1807, which is associated with xylophagous larvae of *Xiphydria camelus* (Linnaeus, 1758) (Skinner & Thompson 1960). The biology of the two described species of *Panaulix* is unknown (Benoit 1984; Madl 1990b). The current knowledge on the biology of the Palaearctic *Pristaulacus* is not quite satisfactory due to the lack of direct investigations. The data on hosts are nearly all obtained in laboratory, rearing wasps directly from wood samples. Since hosts are not isolated, there is no clear knowledge of the host-parasitoid relationship. Upon this consideration, most of the data on hosts are only inferred and are better interpreted as "probable hosts" (see Table 7). With regard to adaptations to the particular endoxylic parasitoid life style of *Pristaulacus*, a discussion on functional morphology is provided by Turrisi (2004), Turrisi & Pilato (2004), and Turrisi *et al.* (submitted).

The world Aulacidae were first catalogued by Hedicke (1939) and more recently by Smith (2001). The latter paper, on which the present contribution is based, is an excellent updated catalogue of species, including data on taxonomy, distribution, hosts, and literature.

The present knowledge on Palaearctic Aulacidae still must be considered poor and very few comprehensive papers have been published. For instance, several species from the Palaearctic Region are known from only a single (type) locality. Currently, only 29 species are known for the Palaearctic Region, 6 *Aulacus* and 23 *Pristaulacus* (Kofler & Madl 1990; Smith 2001; Turrisi 2004, 2005; Sun & Sheng in press). Kriechbaumer (1878a, b) was the first to give a comprehensive treatment of the European Aulacidae, but this is out of date and of little use for the current taxonomy of this group. The current knowledge on Palaearctic species of *Pristaulacus* derives mainly from Kieffer (1912), Oehlke (1983) and Konishi (1990). The monograph by Kieffer (1912) is a very important contribution on Aulacidae, with an attempt to give a comprehensive synopsis of world species, with detailed and complete bibliographic references. However, in most cases it is of little use for the taxonomy of the group, since many of the treated species are synonyms, the generic assessment is not adequate, and several important diagnostic characters were overlooked; moreover, it nearly lacks an iconography of diagnostic features of the treated species. The two contributions by Oehlke (1983) and Konishi (1990) are excellent taxonomic revisions using modern concepts, the first treating the European species, the latter treating the Japanese species. Other papers are descriptions of single or a few species or faunistic reports on restricted, mostly European, areas (Fabricius 1804; Spinola 1808; Thunberg 1822; Audinet-Serville 1833; Westwood 1841, 1844; Gribodo 1879; Semenow 1892a, b; Kieffer 1900a, b, 1904a, b, 1906, 1911, 1924; Uchida 1932; Ferrière 1933; Maneval 1935; Hellén 1950; Watanabe 1952; Györfi 1964; Derwesh 1965; Hedqvist 1973; Oehlke 1984; Ortega & Baez 1985; Alekseyev 1986, 1995; Pagliano 1986; Madl 1988, 1990a; Šedivý & Čapek 1988; Konishi 1989, 1991; Kofler & Madl 1990; Schwarz 1994; Scaramozzino 1995; Turrisi 1999, 2000, 2006b; Hilszczański 2002).

In the present paper the species of the genus *Pristaulacus* from the Palaearctic Region are revised and illustrated for the first time, and their distributions are critically redefined and illustrated. A comprehensive key for identification of all valid species is also provided.

Materials and methods

Material examined

This study was based on examination of about 450 specimens (Table 1). The material examined is preserved in several museums and private collections, listed below. The acronyms of the museums follow the list of Evenhuis & Samuelson (2004).

Museums

AEIC American Entomological Institute, Gainesville, Florida, U.S.A. (through the courtesy of Dr. David R. Smith).

BMNH The Natural History Museum, London, United Kingdom (Dr. Stuart J. Hine).
BPBM Bernice P. Bishop Museum, Honolulu, Hawaii, U.S.A. (through the courtesy of Dr. David R. Smith).
CAS California Academy of Sciences, San Francisco, California, U.S.A. (through the courtesy of Dr. David R. Smith).
CNCI Canadian National Collection of Insects and Arachnids, Ottawa, Ontario, Canada (Dr. John Huber).
DBAC Dipartimento di Biologia Animale "*Marcello La Greca*", Università di Catania, Museo Zoologico, "Turrisi G.F. Collection", Italy (Prof. G. Longo).
DEI Deutsches Entomologisches Institut, Müncheberg, Germany (Prof. Joachim Oehlke, Dr. Andreas Taeger).
HNHM Hungarian Natural History Museum, Budapest, Hungary (Dr. Csosz Sandor).
IBLP Instytut Badawczy Lesnictwa, Warszawa, Poland (Dr. Jacek Hilszczański).
ITLJ National Institute for Agro-Environmental Sciences, Insect Systematic Laboratory, Tsukuba (Ibaraki), Japan (Dr. Koji Yasuda, Dr. Kazuiho Konishi).
LACM Los Angeles County Museum of Natural History, Los Angeles, California, U.S.A. (through courtesy of Dr. David R. Smith).
MCFS Museo Civico di Storia Naturale, Ferrara, Italy (Dr. Fausto Pesarini).
MCNC Museo de Ciencias Naturales, Canaria Islands: Tenerife, Spain (Dr. Gloria Ortega).
MCSN Museo Civico di Storia Naturale "G. Doria", Genova, Italy (Dr. Roberto Poggi).
MFNB Museo Friulano di Storia Naturale, Udine, Italy (Dr. Carlo Morandini).
MHNG Muséum d'Histoire Naturelle de la Ville de Genève, Switzerland (Dr. Bernhard Merz).
MNHN Muséum National d'Histoire Naturelle, Laboratoire d'Entomologie, Paris, France (Dr. Claire Villemant).
MNMS Museo Nacional de Ciencias Naturales, Madrid, Spain (Dr. Carolina Martìn).
MRAC Musée Royal de l'Afrique Centrale, Tervueren, Belgium (Dr. Eliane De Coninck).
MSNP Museo Civico di Storia Naturale di Calci, Pisa, Italy (Dr. Pier Luigi Scaramozzino).
MRSN Museo Regionale di Storia Naturale, Torino, Italy (Guido Pagliano).
MZLU Museum of Zoology, Lund University, Lund, Sweden (Dr. Roy Danielsson).
NMW Naturhistorisches Museum, Wien, Austria (Michael Madl).
OLML Oberösterreichisches Landesmuseum, Linz, Austria (Dr. Fritz Gusenleitner).
SAMC South African Museum, Cape Town, Republic of South Africa (Ms. Margie A. Cochrane).
USNM National Museum of Natural History, Smithsonian Institution, Washington DC, U.S.A. (Dr. David R. Smith).
ZFMK Zoologisches Forschungsinstitut und Museum A. Koenig, Bonn, Germany (Dr. Dirk Rohwedder).
ZIN Zoological Institute of the Russian Academy of Science, St. Petersburg, Russia (Dr. Sergey Belokobylskij).
ZMHB Museum für Naturkunde der Humboldt-Universität, Berlin, Germany (Dr. Frank Koch).
ZMUC Zoological Museum, Copenhagen University, Denmark (Prof. Rudolf Meier; Prof. Dr. Lars B. Vilhelmsen).
ZSMC Zoologische Staatssammlung München, Germany (Prof. Dr. Klaus Schönitzer, Erich Diller, Dr. Stefan Schmidt).

Private collections

CPTO Guido Pagliano collection, Torino, Italy.
GGCP Gianluca Governatori collection, Pordenone, Italy.
GSCC Gianfranco Sama collection, Cesena, Italy.
STCC Salvatore Tomarchio collection, San Gregorio di Catania, Catania, Italy.
PRCU Pierpaolo Rapuzzi collection, Udine, Italy.

TABLE 1. Summary of material examined of Palaearctic *Pristaulacus* Kieffer.

Species	Number of specimens
P. barbeyi (Ferrière, 1933)	9♀, 8♂
P. boninensis Konishi, 1989	11♀, 8♂
P. chlapowskii Kieffer, 1900	13♀, 4♂
P. compressus (Spinola, 1808)	106♀, 58♂
P. comptipennis Enderlein, 1912	26♀, 14♂
P. edoardoi Turrisi, **sp. nov.**	2♀, 2♂
P. galitae (Gribodo, 1879)	55♀, 39♂
P. gibbator (Thunberg, 1822)	8♀, 4♂
P. gloriator (Fabricius, 1804)	25♀, 13♂
P. insularis Konishi, 1990	2♀, 1♂
P. intermedius Uchida, 1932	13♀, 1♂
P. kostylevi (Alekseyev, 1986)	1♀
P. lindae Turrisi, 2000	2♀, 10♂
P. longicornis Kieffer, 1911	1♀
P. morawitzi (Semenow, 1892)	1♀
P. mourguesi Maneval, 1935	3♀
P. paglianoi Turrisi, **sp. nov.**	1♀, 5♂
P. patrati (Audinet-Serville, 1833)	3♀
P. proximus Kieffer, 1906	- -
P. rufipilosus Uchida, 1932	1♀
P. ryukyuensis Konishi, 1990	2♀, 1♂

Data from several collections (AEIC, BPBM, CAS, LACM) were sent to me by Dr. D.R. Smith, as indicated.

Methods of examination

Specimens were studied under a MBS-9 stereo-microscope. Measurements were taken with the aid of an ocular scale. Templates for drawings were made by applying a camera lucida to the stereo-microscope, to provide a rough outline of structures to be illustrated; details were filled in by hand while constantly cross-checking specimens with the stereo-microscope. Thus, the pencil drafts were inked and scanned; the final illustrations were improved using Adobe Photoshop CS©, while the final assemblages were performed using Corel Draw 12©.

SEM photographs were made at the Zoological Institute of Ludwig-Maximilians-Universität, Munich (Germany), using a Philips XL-20. Some pinned and air-dried specimens were fixed with Leit-C-plast on an object table and observed by 1.6 kV using a special low voltage anode (spot size: 4–5); other specimens were previously sputtered with a Polaron SEM coating system and observed by 10 kV using a conventional high voltage anode (spot size: 3–4).

Digital photographs were made using a Nikon Coolpix 4300, 4.0 megapixel digital camera, then retouched using Adobe Photoshop CS® software in order to enhance clarity.

FIGURE 1. *Pristaulacus galitae* (Gribodo) ♀: habitus (Ph. Toni Puma).

Morphological terms

The nomenclature for morphology follows Crosskey (1951) and Gauld & Bolton (1988, 1996); that for the genital capsule follows Snodgrass (1941). As with most recent taxonomic studies on parasitoid Hymenoptera, I use the term “mesosoma” rather than “thorax” and “metasoma” rather than “gaster” or “abdomen” (see Huber & Sharkey 1993). Terminology for surface sculpturing follows Harris (1979). With regard to the number of teeth on the inner margin of the claw, the apex is not included, since, in a strictly morphological sense, it is not a true tooth.

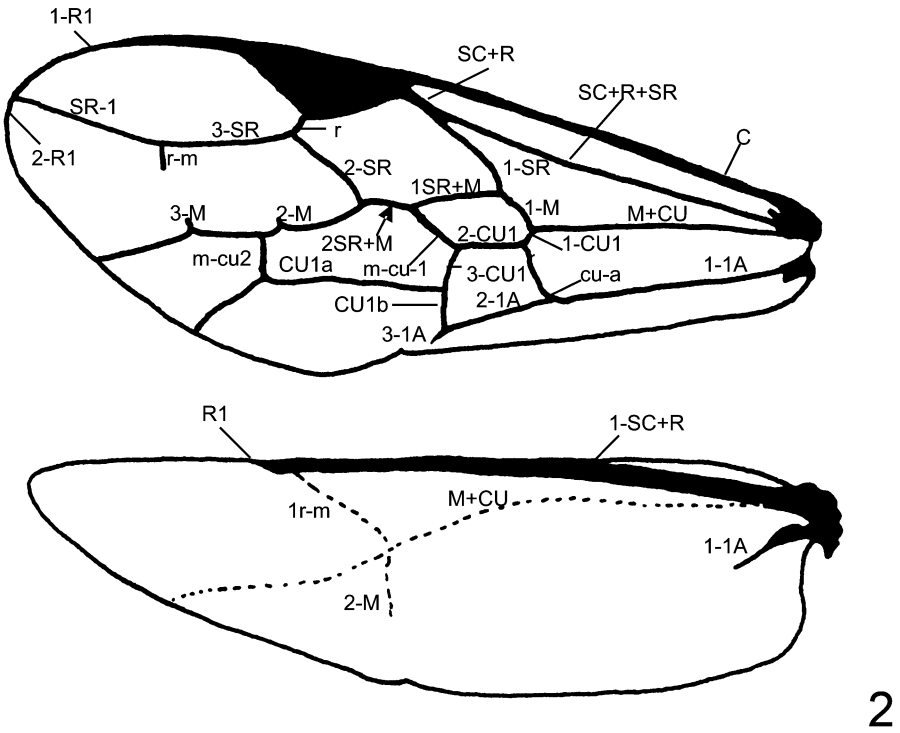


FIGURE 2. Fore and hind wing of *Pristaulacus* Kieffer with indications of veins. Abbreviations. A, anal; C, costal; CU, cubital; M, medial; R, radial; SC, subcostal; SR, radial sector.

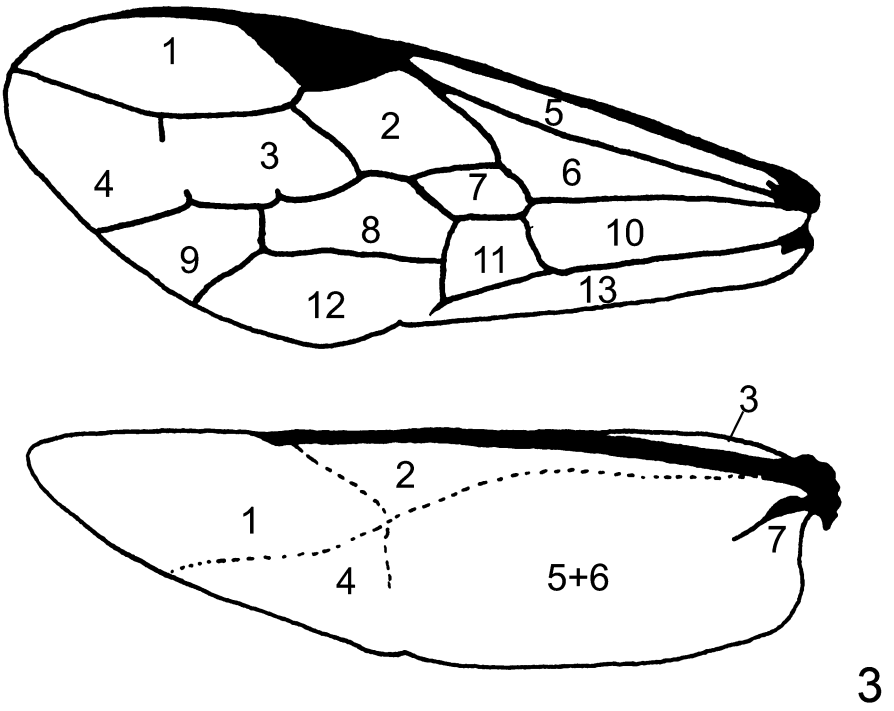


FIGURE 3. Fore and hind wing of *Pristaulacus* Kieffer with indications of cells. Abbreviations. Fore wing: 1, marginal (M); 2–4 submarginals (SM 1–3); 5, costal (C); 6, basal (B); 7–9, discals (D 1–3); 10, subbasal (SB); 11–12, subdiscals (SD 1–2); 13, plical (P). Hind wing: 1, marginal; 2, basal; 3, costal; 4, submarginal; 5+6, discal+subdiscal; 7, plical.

Format of revision

For each species the following data are provided: a) synonymies and citations from the main catalogues and taxonomic revisions; b) material examined; c) records from literature containing original data on distribu-

tion, taxonomy, and biology; d) type locality, as reported in the original description; e) notes on type material (depositories, state of conservation); f) description or redescription, based mainly on the type material, and referred to female, while for the male only the features which are different from those of the female are reported; g) intraspecific variability; h) distribution; i) remarks on taxonomy or faunistic aspects; i) notes on the biology, especially on known hosts. The systematic treatment follows that of Smith (2001) in his world catalogue of Aulacidae.

Abbreviations

In the text the following abbreviations are used for some morphological structures: A, antennomere; OOL, distance between posterior ocellus and eye; POL, distance between the posterior ocelli; T, tergite; S, sternite. An asterisk (*) indicates a new distributional record.

Pristaulacus Kieffer, 1900

Aulacostethus Philippi, 1873: 302. Type species: *A. rubriventer* Philippi, by monotypy (preoccupied by Waterhouse, 1869, in Coleoptera and by Uhler, 1871, in Heteroptera).
Aulacosthethus Schletterer, 1890: 523. Error.
Pristaulacus Kieffer, 1900a: 813. Type species: *P. chlapowskii* Kieffer, designated by Kieffer, 1903: 455.
Deraiodontus Bradley, 190la: 29 (no species included). Type species: *Aulacus montanus* Cresson, by subsequent designation. First species included by Bradley, 1901b: 321.
Oleisoprister Bradley, 1901b: 324. Type species: *Aulacus firmus* Cresson, by original designation.
Aulacostathus Dalla Torre, 1902: 1062. Error.
Anaulacus Semenow, 1903: 173. Type species: *Aulacus sibiricola* Semenow, by subsequent designation of Bradley, 1908: 120. Preoccupied by MacLeay, 1825, in Coleoptera.
Semenowia Kieffer, 1903: 382. Nomen novum pro *Anaulacus* Semenow. Preoccupied by Weise, 1889, in Coleoptera.
Odontaulacus Kieffer, 1903: 382. Type species: *Aulacus rufitarsis* Cresson, designated by Bradley, 1908: 120.
Semenovius Bradley, 1908: 120, 123. Nomen novum pro *Semenowia* Kieffer.
Tropaulacus Bradley, 1908: 120. Type species: *T. torridus* Bradley, by original designation.
Pristaulacus (*Neaulacus*) Bradley, 1908: 121. Type species: *Aulacus occidentalis* Cresson, by original designation.
Interaulacus Bradley, 1908: 120. Type species: *I. kiefferi* Bradley, by original designation.
Tetraulacinus Kieffer, 1910: 350. No species included. Type species: *Pristaulacus rufobalteatus* Cameron, by subsequent monotypy. First species included by Kieffer, 1911: 214.
Psilaulacus Kieffer, 1910: 350. No species included. Type species: *P. annulatus* Kieffer, by subsequent monotypy. First species included by Kieffer, 1911: 215.
Aulacosthetus Kieffer, 1912: 370. Error.
Aulacites Cockerell, 1916: 102. Type species: *Aulacites secundus* Cockerell, by original designation.
Aulacomastus Muesebeck & Walkley, 1956: 333. Unnecessary nomen novum pro *Aulacostethus* Philippi.
Odontacolus Kozlov, 1988: 242. Error.

Remarks. In the description of the genus *Pristaulacus*, Kieffer (1900a) included only three species: *P. morawitzi* (Semenow), *P. patrati* (Audinet-Serville) and *P. bimaculatus* Kieffer (= *P. galitae* Gribodo). Since then, several new genera of Aulacidae allied to the genus *Pristaulacus* have been described, mainly on the basis of details of wing veins and of the number of teeth on inner margin of the claw. These genera (see below, synonymic synopsis) were considered as subgenera (Szépligeti 1903; Bradley 1908, 1926) or as synonyms (Townes 1950) of *Pristaulacus*. According to Townes (1950) the diagnostic characters of these genera are too variable within the same species (wing veins), or otherwise not valid to separate taxa at the generic level (number of teeth on inner margin of claw); thus, he suggested to distinguish subgenera or species groups within *Pristaulacus*, on a worldwide scale (Townes 1950). This opinion is currently the most reasonable, and it is followed here, although a preliminary cladistic analysis suggests a more complex and different generic assessment (Turrisi unpubl.).

The genus *Pristaulacus* shows a wide range of variability in most morphological characters but, as cur-

rently defined (Townes 1950; Smith 1996; Turrisi 2004, 2006a), *Pristaulacus* can be distinguished from *Aulacus* mainly on the basis of two apomorphic features: a) presence of a well-defined occipital carina (the medial part is obsolete in some Australian and Afrotropical species, see Jennings *et al.* 2004a and Turrisi 2006a, but it is completely absent in *Aulacus*); b) claw pectinate, with two to six teeth on its inner margin (not pectinate in *Aulacus*, with only one very small basal tooth). From *Panaulix*, of which I have examined the type species, *P. rex* Benoit, 1984 (holotype in MRAC, Benoit 1984), it can be distinguished by the following characters: a) body length (excluding ovipositor), usually less than 20 mm (more than 25 mm in *Panaulix*); b) clypeus with a median tooth (with a lamelliform process in *Panaulix*); c) A1 globose (elongate in *Panaulix*); d) A1 without a weak longitudinal carina (present in *Panaulix*); e) setae of mesoscutum usually erect, short, and scattered (recumbent, long, and very dense in *Panaulix*); f) hind coxa usually more or less sculptured (polished and smooth in *Panaulix*); g) hind tibia subcylindrical (enlarged and laterally compressed in *Panaulix*) (Turrisi 2004, 2006a).

Systematic treatment of the Palaearctic *Pristaulacus* Kieffer, 1900

Pristaulacus barbeyi (Ferrière, 1933)

(Figs. 4, 24, 44, 64, 97, 109, 114)

Odontaulacus Barbeyi Ferrière, 1933: 141 (♀, ♂).
Odontaulacus barbeyi: Hedicke, 1939: 21.
Pristaulacus barbeyi: Smith, 2001: 279.

Material examined. ALGERIA: **holotype** ♀ labelled "Type/Algeria, Babor, 1931, *A. Barbeyi*/da galerie de Bupreste, *Abies numidica*/*Odontaulacus barbeyi* Ferr. ♀, Ch. Ferrière det., Type/Muséum, Ferrière leg. 1933" (MNHN); **paratype** ♂ labelled "Cotype/Algerie, Babor, 1931, *A. Barbeyi*/sorti de l'ecorce de l'*Abies numidica*/*Odontaulacus barbeyi* Ferr., Ch. Ferrière det., type/Museum Paris, Ferrière leg. 1933" (MNHN). MOROCCO: Medio Atlante, Aim-Lenh, 20.VI.1986, 1♂, D. Gianasso leg. (MRSN). GREECE: Larissa, Anatoli-Spilia, VII–VIII.1990, 1♀, 1♂, Zabransky (NMW); Agios, exp. 616, 4–6.X.69, 1♀, Frank Wilson (NMW); Attika, Parnis Oros, 13.VI.1974, 2♀, Mühle leg. (ZSMC). TURKEY: Içel, Çamliyayla, m 800, 1♀, ex larva, emerged XI.1984, from wood of *Abies cilicica*, collected VI.1984, G. Curletti leg. (DBAC); Içel, 25 km NW Erdemli, Aydinlar env., cedar forest, 9–12.VI.2000, Roman Królik leg., 1♀, 2♂ (IBLP); 12.V.1998, 1♂, ex larva, emerged together with *Phaenops knoteki turcica*, Roman Królik leg. (IBLP); Antalya, Akseki, 15.VI–8.VII, ex larva from *Abies cilicica*, emerged together with *Phaenops knoteki*, Roman Królik leg., 1♀, 2♂ (IBLP); 15.V.1998, 1♀, ex larva from *Abies*, emerged together with *Phaenops knoteki*, Roman Królik leg. (IBLP).

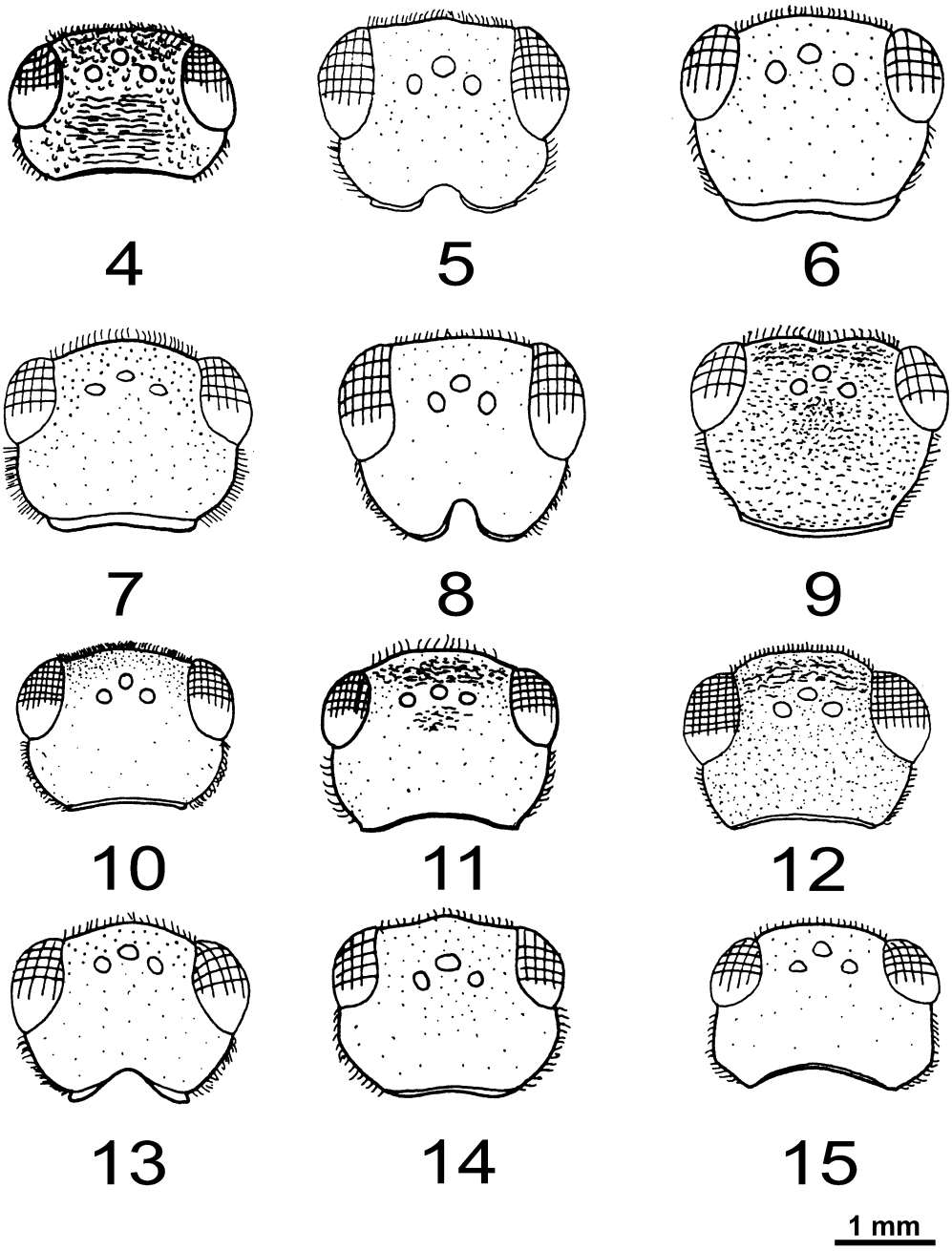
Records from literature. Ferrière (1933).

Type locality. "Algerie, Babor" (Ferrière 1933).

Notes on type material. The type material (MNHN) consists of two specimens, the holotype ♀, and the paratype ♂ (Ferrière 1933), both in good condition.

Redescription. ♀ (holotype). Length (excluding ovipositor): 10.7 mm; fore wing length: 8.1 mm.

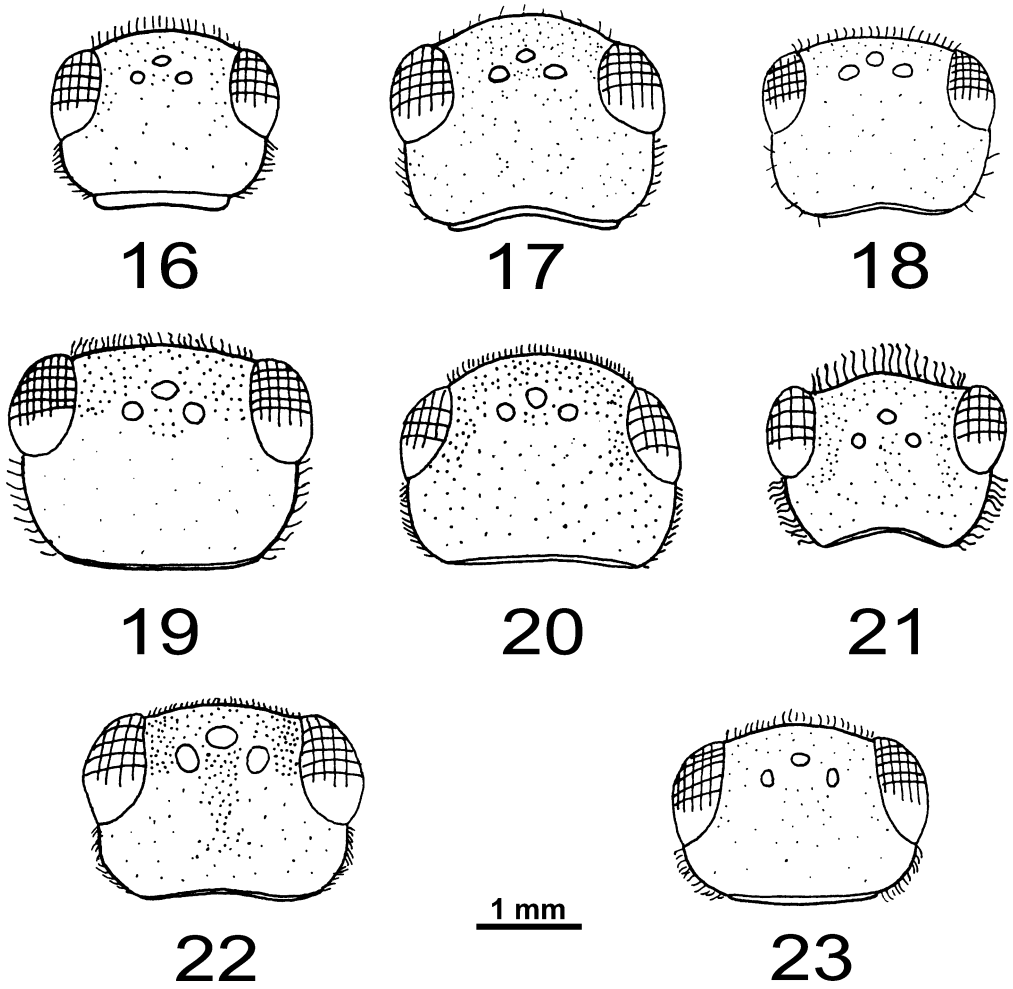
Colour black except: mandible extensively reddish orange with teeth blackish, except outer one, extensively dark red; maxillo-labial complex brown, with palpi lighter; antenna blackish brown dorsally, with A1 and ventral part red orange; hind leg, except tarsus, dark brown; remaining parts of legs reddish orange, with dorsal surface of fore and mid femora darker; wings hyaline, with veins and stigma dark brown, without dark spots; metasoma extensively red orange, with T1 and T2 darker; valvula 3 of ovipositor brown. Setae: whitish, except yellow gold on mandibles.



FIGURES 4–15. Head, dorsal view, of Palaearctic *Pristaulacus* Kieffer. **4.** *P. barbeyi* (Ferrière) ♀. **5.** *P. boninensis* Konishi ♀. **6.** *P. chlapowskii* Kieffer ♀. **7.** *P. compressus* (Spinola) ♀. **8.** *P. comptipennis* Enderlein ♀; **9.** *P. edoardoi* Turrisi, sp. nov., holotype ♀. **10.** *P. galitae* (Gribodo) ♀. **11.** *P. gibbator* (Thunberg) ♀. **12.** *P. gloriator* (Fabricius) ♀. **13.** *P. insularis* Konishi ♀. **14.** *P. intermedius* Uchida ♀. **15.** *P. kostylevi* (Alekseyev) ♀.

Head (Figs. 4, 24), from above, 1.5x wider than long, dull, except on temples, shiny; occipital margin straight; temple, from above, weakly developed, 0.6x as long as eye length, moderately convergent posteriorly and rounded; occipital carina very narrow, cerciniform, less than 0.2x diameter of an ocellus; POL:OOL= 1.7; ocellar area 2.3x wider than long; frons and clypeus coarsely rugulose; vertex and occiput transverse carinulate with some coarse punctures; temple polished with coarse, superficial, and moderately dense punctures (distance between punctures about 1x or more diameter of a puncture), except along outer margin of eye; malar area punctate to punctate rugulose; occipital area transverse striolate; mandible polished and shiny, with a few punctures in middle; antenna as long as fore wing length; A3 4.0x longer than wide; A4 8.0x longer than

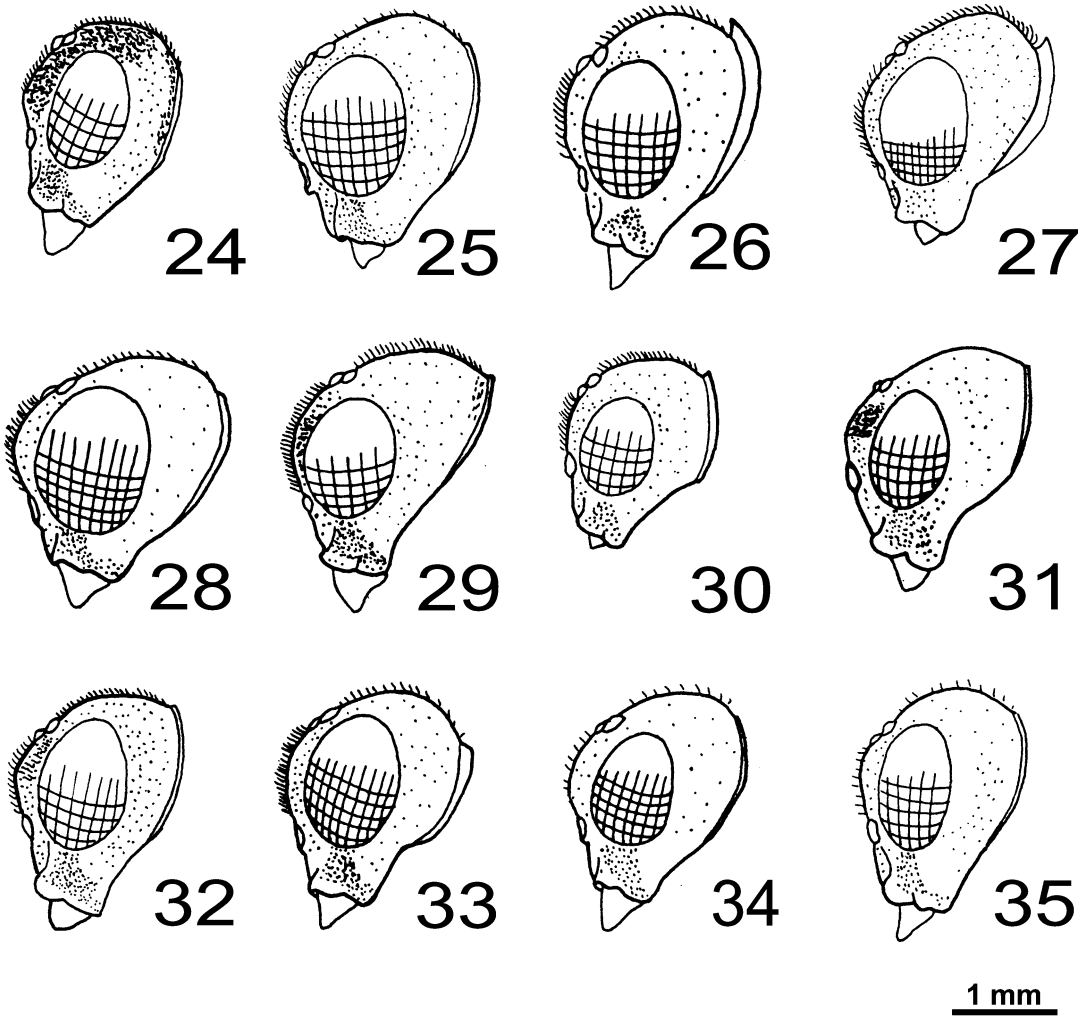
wide, and 1.7x longer than A3; A5 9.2x longer than wide, and 1.6x longer than A3; following antennomeres progressively shorter, last one cylindrical, with apex slightly acute, 2.5x longer than wide. Setae: erect, short, and moderately dense on top of frons, less dense on vertex; erect, long, and dense on temples; recumbent, moderately long, and dense on remaining parts of frons, on clypeus, and on malar area; semierect, moderately long, and dense on A1; setae length of temples 0.7–0.8x diameter of an ocellus.



FIGURES 16–23. Head, dorsal view, of Palaearctic *Pristaulacus* Kieffer. **16.** *P. lindae* Turrisi ♀. **17.** *P. longicornis* Kieffer ♀. **18.** *P. morawitzi* (Semenow) ♀. **19.** *P. mourguesi* Maneval ♀. **20.** *P. paglianoi* Turrisi, **sp. nov.** holotype ♀. **21.** *P. patrati* (Audinet-Serville) ♀. **22.** *P. rufipilosus* (Uchida) ♀. **23.** *P. ryukyuensis* Konishi ♀.

Mesosoma (Fig. 44) moderately sculptured; pronotum areolate rugose to oblique carinulate, with lateroventral margins rounded, without teeth; propleuron dull and irregularly rugulose, especially at base, with punctures moderately coarse, superficial, poorly defined, and moderately dense (distance between punctures 1–2x diameter of a puncture); prescutum subrectangular, weakly concave in middle, transverse rugulose; mesoscutum transverse carinate, with anterior margin, in lateral view, slightly rounded; notaulus moderately deep and narrow; scutellum transverse carinate on median surface, areolate rugose along margins; mesepimeron transverse carinate; mesepisternum areolate rugose, with upper third weakly rugose; metanotum longitudinally carinate; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma polished, except lateral margins rugulose punctate; fore wing with vein 2–rs+m short; fore coxa polished, shiny, with poorly defined and scattered punctures; mid coxa dull, transverse rugulose with moderately dense and deep punctures, especially at base; hind coxa (Fig. 64) transverse rugose on dorsal surface, polished, with superficial and moderately coarse and dense punctures (distance between punctures about 2x diameter of a

puncture) and some short carinae along lateral margins of ventral surface; trochanters polished, shiny, with irregular, moderately coarse, deep, and dense punctures, more superficial and less dense on fore trochanter; femora dull on dorsal surface, shiny on ventral surface; fore and mid femora with coarse, deep, and dense punctures on dorsal surface, coarse, deep, and scattered on ventral surface; hind femur weakly sculptured, with coarse, moderately deep, and dense punctures; spurs of mid and hind tibiae of the same length; hind basitarsus 11.6x longer than wide, and as long as tarsomeres 2–5; claw with two well-separated teeth, far from apex, first smaller than second. Setae: semierect or recumbent, short, and scattered on dorsal surface, longer and denser on sides; erect, long, and scattered on hind surface of propodeum; erect, moderately long, and dense on propleuron, with setae lengths about 0.6x as fore pretarsus length; semierect, short, and scattered on coxae and trochanters, more dense on dorsal surface of hind coxa; recumbent, very short, and moderately dense on dorsal surface of femora, erect, very short, and scattered on ventral surface.

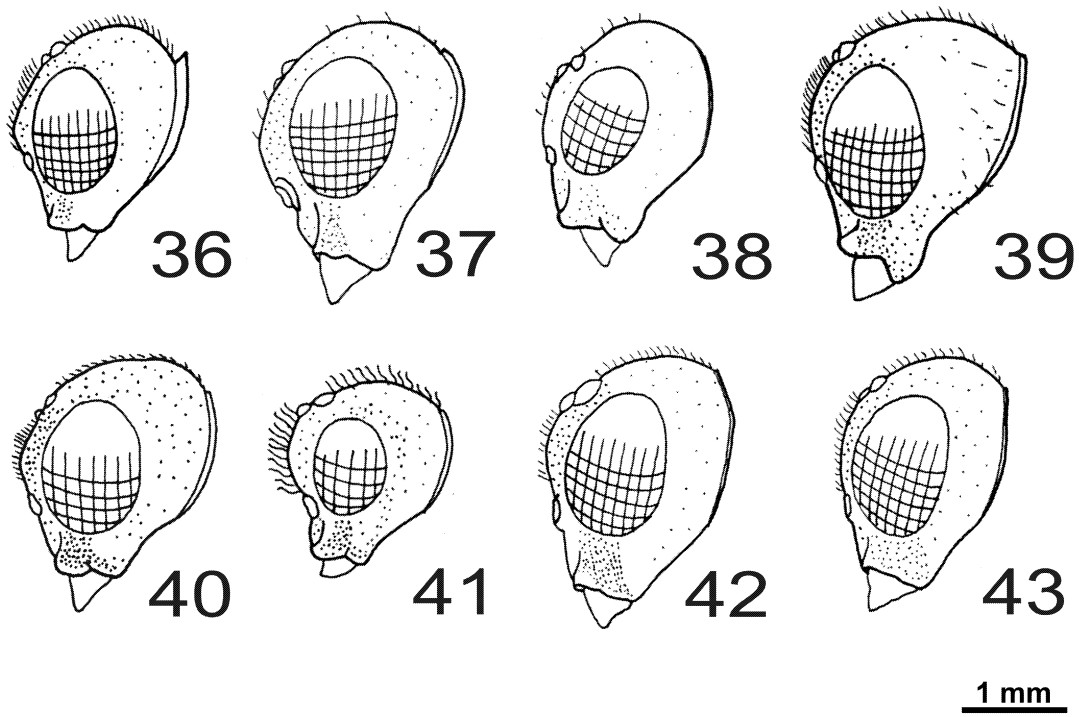


FIGURES 24–35. Head, lateral view, of Palaearctic *Pristaulacus* Kieffer. **24.** *P. barbeyi* (Ferrière) ♀. **25.** *P. boninensis* Konishi ♀. **26.** *P. chlapowskii* Kieffer ♀. **27.** *P. compressus* (Spinola) ♀. **28.** *P. comptipennis* Enderlein ♀. **29.** *P. edoardoi* Turrisi, sp. nov., holotype ♀. **30.** *P. galitae* (Gribodo) ♀; **31.** *P. gibbator* (Thunberg) ♀. **32.** *P. gloriator* (Fabricius) ♀. **33.** *P. insularis* Konishi ♀. **34.** *P. intermedius* Uchida ♀. **35.** *P. kostylevi* (Alekseyev) ♀.

Metasoma weakly compressed laterally, ovoidal in lateral view; petiole short, stocky, about as long as wide; segments 1 and 2 polished and shiny; following segments shiny with very fine sculpture, without punctures, except median part of S3–S5, S7, and T8, with superficial and scattered punctures, denser and deeper on S7; ovipositor 1.3x longer than fore wing length; apex of valvula 3 of ovipositor slightly acute. Setae: nearly

absent, except on S3–S5, S7, and T8, recumbent, short, and scattered.

♂ (paratype). Length: 8.5 mm; fore wing length: 6.1 mm. Colour, structure, and setae like ♀, except: A3 4.0x longer than wide; A4 5.1x longer than wide, and 1.4x longer than A3; A5 4.4x longer than wide, and 1.4x longer than A3; last antennomere cylindrical, 4.5x longer than wide, with apex rounded; metasoma elongate, slender, subcylindrical; metasomal segments polished, shiny and glabrous; sternites (except S1–S2) and last three tergites with a few short setae.



FIGURES 36–43. Head, lateral view, of Palaearctic *Pristaulacus* Kieffer. **36.** *P. lindae* Turrisi ♀. **37.** *P. longicornis* Kieffer ♀. **38.** *P. morawitzi* (Semenow) ♀. **39.** *P. mourguesi* Maneval ♀. **40.** *P. paglianoi* Turrisi, **sp. nov.** holotype ♀. **41.** *P. patrati* (Audinet-Serville) ♀. **42.** *P. rufipilosus* (Uchida) ♀. **43.** *P. ryukyuensis* Konishi ♀.

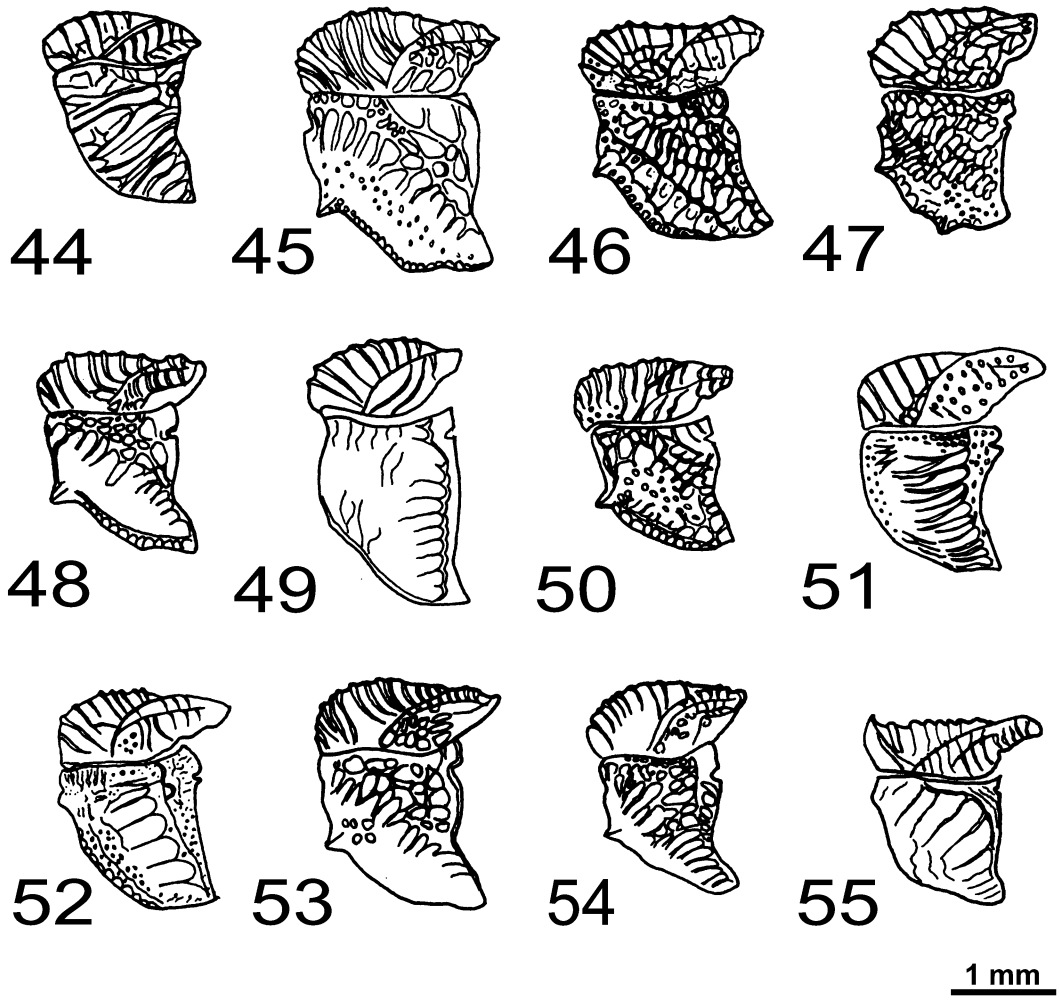
Intraspecific variation. Examined: 9♀; 8♂. Length (excluding ovipositor): 6.7–11.0 mm (♀); 7.0–11.8 mm (♂); fore wing length: 5.1–8.0 mm (♀), 5.1–8.1 mm (♂); ovipositor: 1.2–1.7x length of fore wing. The colour of the body varies from light as in the type specimens, to dark (specimens from Greece) or very dark (specimens from Turkey); antenna and legs dark brown; fore and mid tibiae and tarsi more or less dark reddish; extensively T1, and last three metasomal segments blackish brown; in Turkish males the metasoma is nearly all blackish brown. The Turkish specimens also differ from the others by the sculpture of the head: coarsely and deeply punctate (especially on frons), with only short transverse carinulae near occipital carina, and by a longer ovipositor varying from 1.3 to 1.7x of fore wing length. They are otherwise very similar in the main characters to the other specimens from Greece and northern Africa; therefore, I include them under the same species.

Distribution. Algeria, Morocco (*), Greece (*), Turkey (*).

Remarks. This species was recently transferred to the genus *Pristaulacus* by Smith (2001). It was previously known from only type locality (Algeria), thus it is newly recorded for Morocco, Europe (Greece), and Turkey. It has an isolated position among Palaearctic *Pristaulacus*, since its high number of plesiomorphisms. Some of these characters, such as narrow occipital carina, lateroventral margin of pronotum rounded and without teeth, inner margin of claw with only two teeth, and short and stocky petiole, are also present in *P. kostylevi* (Alekseyev), but it could be distinguished by the shape and sculpture of the head (Figs. 4, 24), by the

rounded anterior margin of the mesoscutum (acute, lamelliform and upwards directed in *P. kostylevi*) (Fig. 44), and by the shape of the hind coxa (Fig. 64).

Notes on biology. Hosts: type specimens were obtained together with unidentified Coleoptera: Buprestidae (Ferrière 1933); the Turkish specimens were obtained together with *Phaenops knoteki* Reitter, 1898 (Coleoptera: Buprestidae).



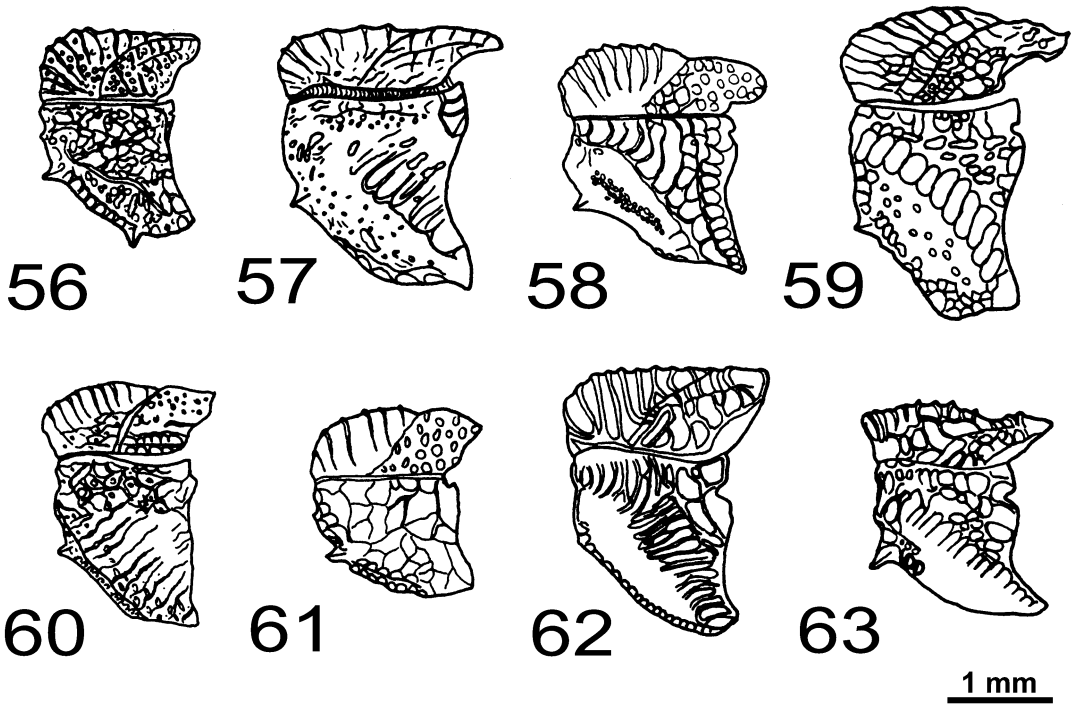
FIGURES 44–55. Anterior part of mesosoma, lateral view, of Palaearctic *Pristaulacus* Kieffer. **44.** *P. barbeyi* (Ferrière) ♀. **45.** *P. boninensis* Konishi ♀. **46.** *P. chlapowskii* Kieffer ♀. **47.** *P. compressus* (Spinola) ♀. **48.** *P. comptipennis* Enderlein ♀. **49.** *P. edoardoi* Turrisi, **sp. nov.**, holotype ♀. **50.** *P. galitae* (Gribodo) ♀. **51.** *P. gibbator* (Thunberg) ♀. **52.** *P. gloriator* (Fabricius) ♀. **53.** *P. insularis* Konishi ♀. **54.** *P. intermedius* Uchida ♀. **55.** *P. kostylevi* (Alekseyev) ♀.

***Pristaulacus boninensis* Konishi, 1989**
(Figs. 5, 25, 45, 65, 115)

Pristaulacus boninensis Konishi, 1989: 337 (♀).
Pristaulacus boninensis: Smith, 2001: 279.

Material examined. JAPAN: **holotype** ♀ labelled "Hahajima Is., Ogasawara, 1–8.VII.1986, H. Makihara/ Holotype, *Pristaulacus boninensis* Konishi, 1989, Jpn. J. Ent., 57" (ITLJ); **paratype** ♀ labelled "Hahajima Is., Ogasawara Isls., 1–8.VII.1986, H. Makihara/Paratype, *Pristaulacus boninensis* Konishi, 1989, Jpn. J. Ent., 57" (USNM); **paratype** ♀ labelled "Hahajima Is., Ogasawara Isls., 9–12.VII.1987, Em. 1.X.1987, H. Maki-

hara/Paratype, *Pristaulacus boninensis* Konishi, 1989, Jpn. J. Ent., 57" (ITLJ); Bonin Is., Chichi Jima Omura, "camp beach", 2–25.IV.1958, 1♀, F.M. Snyder leg. (BPBM); 7♀, 7♂, 5.V–9.VI.1958, F.M. Snyder leg. (BPBM); Bonin Is., Chichi Jima Miyanohama, "Jack Wm's beach", 9.IV–12.V.1958, 1♂, F.M. Snyder leg. (BPBM).



FIGURES 56–63. Anterior part of mesosoma, lateral view, of Palaearctic *Pristaulacus* Kieffer. **56.** *P. lindae* Turrisi ♀. **57.** *P. longicornis* Kieffer ♀. **58.** *P. morawitzi* (Semenow) ♀. **59.** *P. mourguesi* Maneval ♀. **60.** *P. paglianoi* Turrisi, **sp. nov.** holotype ♀. **61.** *P. patrati* (Audinet-Serville) ♀. **62.** *P. rufipilosus* (Uchida) ♀. **63.** *P. ryukyuensis* Konishi ♀.

Records from literature. Konishi (1989, 1990).

Type locality. "Hahajima Is., Ogasawara Isls." (Konishi 1989).

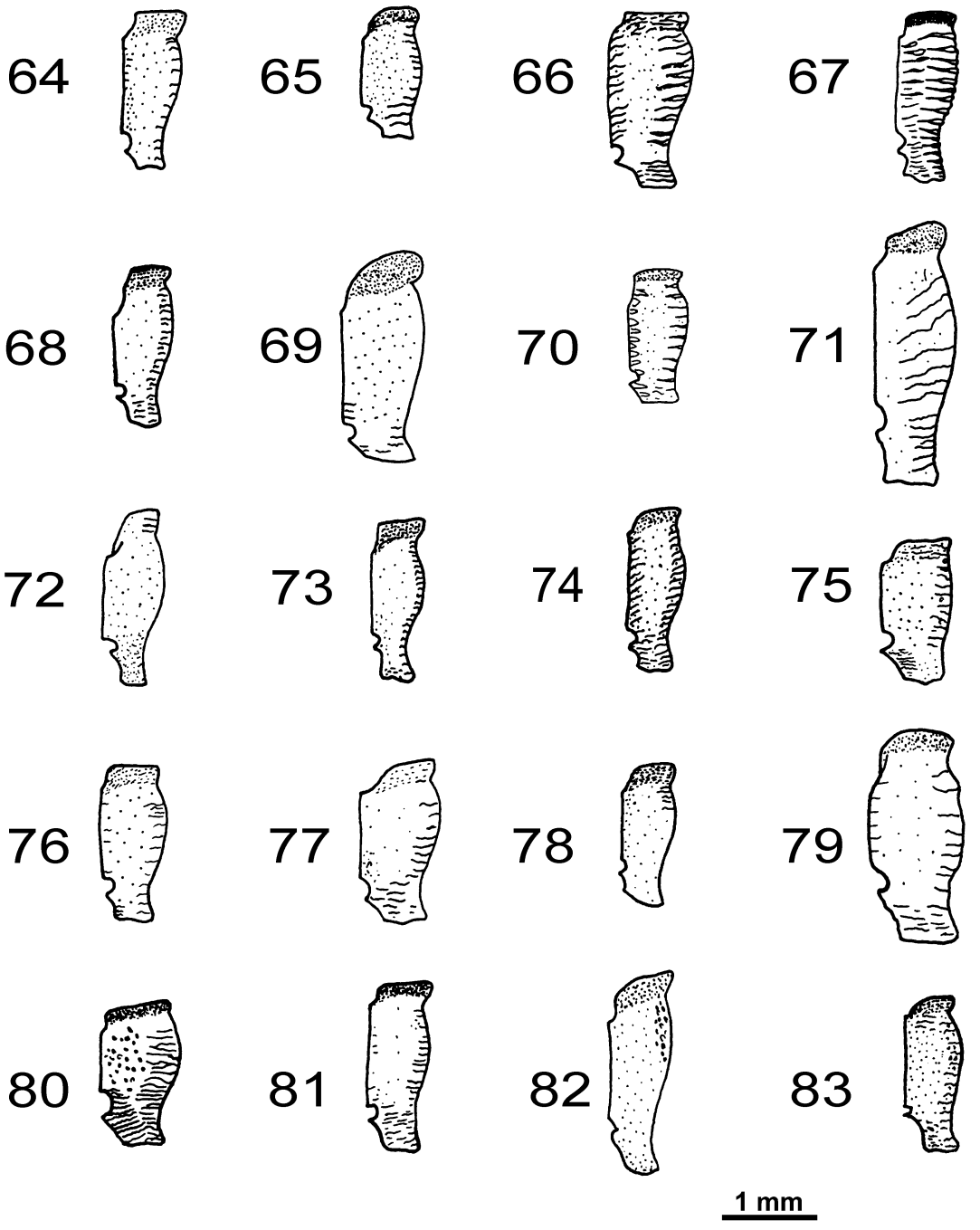
Notes on type material. – The type material consists of seven female (ITLJ), including the holotype (in good condition), and six paratypes (Konishi 1989).

Redescription. ♀ (paratype). Length (excluding ovipositor): 12.1 mm; fore wing length: 8.6 mm.

Colour black except: mandible medially dark reddish; maxillo-labial complex dark brown with articles 4–6 of maxillary palpus lighter; A1 reddish orange ventrally; occipital carina dark brown; fore and mid trochanters, femora, fore and mid tibiae, apex of hind tibia, spurs and tarsi yellow orange with mid trochanters darker; hind femur and tibia blackish brown; wings hyaline, with veins and stigma dark brown, except median part of stigma, lighter; fore wing with a subcircular brown spot below stigma; apex of T1 lighter; valvula 3 of ovipositor brown. Setae: mainly whitish, except brown on part of frons and metasoma and yellow gold on mandibles.

Head (Figs. 5, 25) from above, 1.3x wider than long, polished and shiny; occipital margin grooved medially; temple, from above, moderately developed, 0.6x as long as eye length, moderately convergent and rounded posteriorly; occipital carina moderately wide, lamelliform, medially interrupted, 0.5x diameter of an ocellus; POL:OOL= 1.0; ocellar area 2.1x wider than long; frons with fine, superficial and scattered punctures (distance between punctures 3x diameter of a puncture), less dense on vertex and on temples; clypeus with coarse and dense punctures; malar area with irregular, fine, moderately deep, and dense punctures; occipital area polished; mandible polished and shiny, with coarse and deep punctures on base and in middle; antenna 0.8x as long as fore wing length; A3 5.0x longer than wide; A4 9.2x longer than wide, and 1.5x longer than A3; A5 8.4x longer than wide, and 1.3x longer than A3; following antennomeres progressively shorter, last one dorsoventrally compressed, with apex rounded, 2.2x longer than wide. Setae: erect, and moderately long

and dense on upper half of frons and on temple, scattered on vertex; recumbent and moderately long and dense on lower half of frons and on clypeus; recumbent, short, and moderately dense on malar area; semierect, short, and moderately dense on A1; setae length of temple 0.5–0.6x diameter of an ocellus.



FIGURES 64–83. Hind coxa, ventral view, of Palaearctic *Pristaulacus* Kieffer. **64.** *P. barbeyi* (Ferrière) ♀. **65.** *P. boninensis* Konishi ♀. **66.** *P. chlapowskii* Kieffer ♀. **67.** *P. compressus* (Spinola) ♀. **68.** *P. comptipennis* Enderlein ♀. **69.** *P. edoardoi* Turrisi, **sp. nov.**, holotype ♀. **70.** *P. galitae* (Gribodo) ♀. **71.** *P. gibbator* (Thunberg) ♀. **72.** *P. gloriator* (Fabricius) ♀. **73.** *P. insularis* Konishi ♀. **74.** *P. intermedius* Uchida ♀. **75.** *P. kostylevi* (Alekseyev) ♀. **76.** *P. lindae* Turrisi ♀. **77.** *P. longicornis* Kieffer ♀. **78.** *P. morawitzi* (Semenow) ♀. **79.** *P. mourguesi* Maneval ♀. **80.** *P. paglianoi* Turrisi, **sp. nov.** holotype ♀. **81.** *P. patrati* (Audinet-Serville) ♀. **82.** *P. rufipilosus* (Uchida) ♀. **83.** *P. ryukyuensis* Konishi ♀.

Mesosoma (Fig. 45) coarsely sculptured; pronotum areolate rugose, with each lateroventral margin angulate, bearing a strong tooth; propleuron shiny, with very fine, superficial, and scattered punctures (distance between punctures 2x diameter of a puncture); prescutum weakly concave in middle, triangular, transverse

carinate; mesoscutum transverse carinate, with anterior margin, in lateral view, regularly rounded; notaulus moderately deep and very wide; scutellum transverse carinate, with a few subcircular carinae, sometimes interrupted; mesepimeron transverse carinate, with carinae well developed and widely spaced; mesepisternum areolate rugose, with upper third punctate foveolate; metanotum longitudinally carinate; propodeum areolate rugose, with short, longitudinal carinae on anterior margin; ventral parts of mesosoma shiny, transverse carinulate laterally and medially; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with wide, superficial, and scattered punctures; mid coxa shiny except outer half, transverse carinulate with moderately dense and deep punctures on base; hind coxa (Fig. 65) shiny, coarsely and regularly transverse carinate on dorsal surface, polished, with fine, superficial, and scattered punctures on ventral surface (distance between punctures more than 3x diameter of a puncture) and transverse carinulate on lateral margins; trochanters polished, shiny, with regular, fine, superficial, and scattered punctures, coarser and deeper on hind trochanter; femora dull on dorsal surface, shiny on ventral surface; fore and mid femora with moderately coarse, deep, and dense punctures on dorsal surface, fine, superficial, and very scattered punctures on ventral surface; hind femur with coarser and well-defined punctures on dorsal surface; inner spur of mid and hind tibiae slightly longer than outer spur; hind basitarsus 9.7x longer than wide, and 1.1x as tarsomeres 2–5; claw with four well-developed teeth. Setae: semierect, short, and scattered on dorsal surface, slightly longer and denser on lateral and ventral parts; erect and moderately long and dense on propleuron, with setae length 0.7x length of fore pretarsus; erect, long, and scattered on hind surface of propodeum; semierect and moderately long and dense on coxae and trochanters; recumbent, short, and moderately dense on dorsal surface of femora, erect, longer, and scattered on ventral surface.

Metasoma compressed laterally, pyriform in lateral view; petiole long and slender, 4.0x longer than wide; segments 1 and 2 polished and shiny; T3–T7 shiny, with very fine and moderately dense punctures; S7 with irregular, fine, and moderately dense punctures; T8 with fine, superficial, and scattered punctures; ovipositor 1.2x longer than fore wing length; apex of valvula 3 of ovipositor acute. Setae: segments 1 and 2 glabrous; recumbent, very short, and moderately dense on T3–T7; moderately dense and longer on S7 and on apical part of T8; semierect or recumbent and short on valvula 3.

♂**.** (according to Smith 2006, in litteris) - Length: 11.8 mm; fore wing length: 9.0 mm. Colour, structure, and setae like °,, except: antenna 0.8x as fore wing length; A3 3.5x longer than wide; A4 5.5x longer than wide, and 1.6x longer than A3; A5 long and wide as A4; A13 cylindrical, slightly dorsoventrally compressed, about 5.0x longer than wide, with apex rounded; hind basitarsus 6.7x longer than wide.

Intraspecific variation. Examined: 11♀, 8♂. Length (excluding ovipositor): 9.5–12.1 mm (♀); 9.5-11.8 (♂); fore wing length: 7.6–8.6 mm (♀); 6.1-9.0 (♂).

Distribution. Japan: Hahajima Island (Ogasawara Islands).

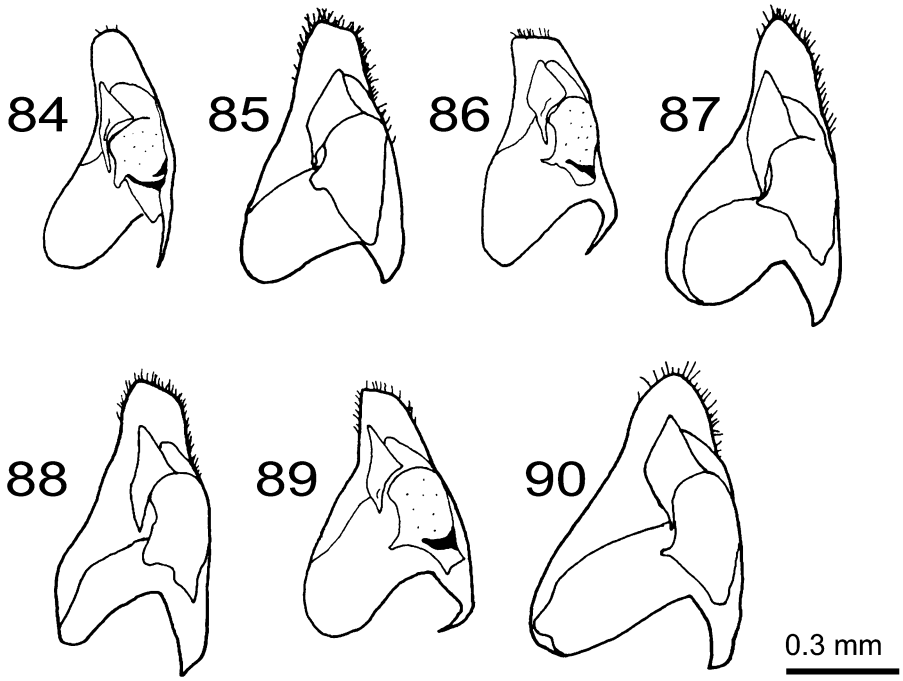
Remarks. *Pristaulacus boninensis* has a median occipital groove as *P. comptipennis* Enderlein; it can be distinguished by the shape of the head, with the temple narrower and less convergent posteriorly, by the presence of only one brown spot on the fore wing (several brown spots in *P. comptipennis*), and by the light yellow-orange fore and mid legs (red brown in *P. comptipennis*). The male, previoulsy unknown, is described for the first time.

Biology. Hosts: type specimens were obtained together with *Ceresium unicolor* (Fabricius, 1787) (Coleoptera, Cerambycidae) (Konishi 1989, 1990).

***Pristaulacus chlapowskii* Kieffer, 1900**
(Figs. 6, 26, 46, 66, 116)

Pristaulacus Chlapowskii Kieffer, 1900a: 814 (♀).
Pristaulacus chlapowskii: Kieffer, 1912: 381.
Pristaulacus chlapowskii: Hedicke, 1939: 6.
Pristaulacus chlapowskii: Smith, 2001: 280.

Material examined. RUSSIA: **holotype** ♀ labelled "Ban/*Aulacus* Erichs./Type/*Pristaulacus chlapowskii* n. sp./Zool. Mus. Berlin" (ZMHB); Ban, 6♀, 1♂, coll. O. Sichel, 1867 (MNHN). BULGARIA: Sozopol, 9.VIII.1966, 1♂, W.J. Pulawski leg. (AEIC). ITALY: Friuli-Venezia Giulia, Trieste, Val Rosandra, 1♂, P. Rapuzzi leg., ex larva, from wood of *Carpinus* sp. containing *Isotomus speciosus*, emerged 6.VI.2000 (PRCU); 1♀, G. Sama leg., ex larva, from wood of *Ostrya carpinifolia*, emerged 26.VI.2000 (GSCC); Emilia Romagna, Forlì, di Sarsina, m 600, VII.1979, 1♀, E. Guterini leg., ex larva, from wood of *Ostrya carpinifolia* (MRSN); Emilia Romagna, Monteriolo di Sarsina (Forlì), m 800, VI.1986, 1♂, G. Sama leg., ex larva, emerged together with *Isotomus barbarae* Sama, 1977 (MSNP); Emilia Romagna, Cesena, V.1974, 2♀, G. Sama leg., ex larva, from wood of *Prunus cerasus* containing *Acanthoderes* (= *Aegomorphus*) *clavipes*; Emilia Romagna, Oriano (Parma), 30.VII.1995, 1♀, C. Pesarini leg. (MCFS); 1♀ (unreadable labels) (MNHN).



FIGURES 84–90. Genital capsule of ♂ (excluded valvae penis), medial view, of Palaearctic *Pristaulacus* Kieffer. **84.** *P. compressus* (Spinola). **85.** *P. comptipennis* Enderlein. **86.** *P. ryukyuensis* Konishi. **87.** *P. insularis* Konishi. **88.** *P. intermedius* Uchida. **89.** *P. lindae* Turrisi. **90.** *P. galitae* (Gribodo).

Records from literature. Kieffer (1900a), Lichtenstein & Picard (1918), Oehlke (1983), Pagliano (1986), Šedivý & Čapek (1988).

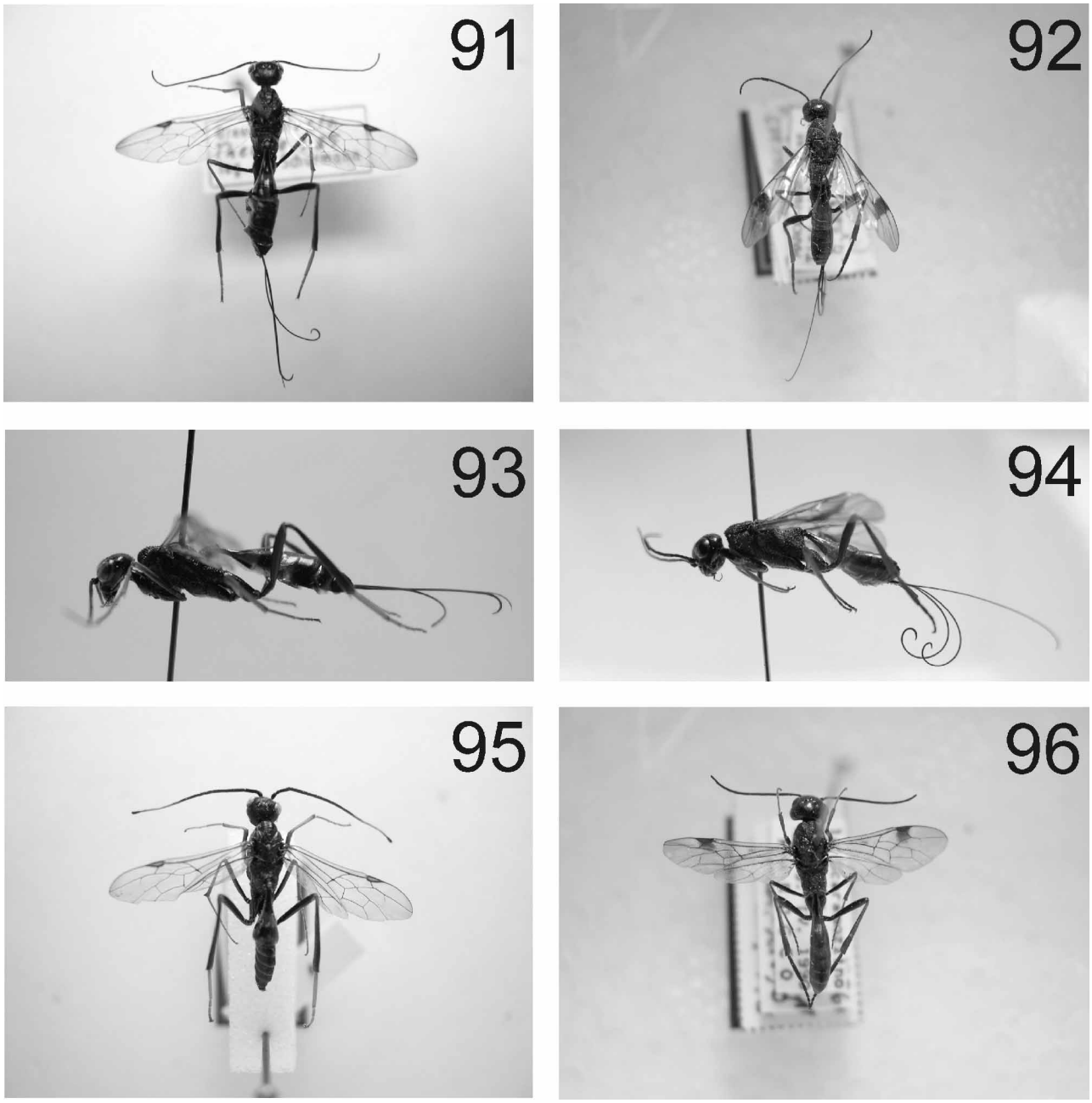
Type locality. "Russia" (Kieffer 1900a).

Notes on type material. The number of type specimens was not stated in the original description (Kieffer 1900a). In ZMHB I have found only one type specimen, here considered as holotype. This specimen is seriously damaged and lacks several parts of the body: antennae (except A1–A4); tarsomeres 2–5 of the left hind leg; valvulae 3 of ovipositor.

Redescription. ♀. Length (excluding ovipositor): 15.0 mm; fore wing length: 11.0 mm.

Colour black, except: mandible medially dark reddish; maxillo-labial complex and occipital carina dark brown; A1 dark reddish; legs blackish brown, except orange brown, more or less dark, on distal third of fore and mid femora, fore and mid tibiae and tarsi; hind femur, tibiae and tarsi dark brown with apex of tibiae lighter; last tarsomere of all legs blackish brown; wings hyaline, with veins brown or dark brown and stigma brown, lighter medially; fore wing with brown spot behind stigma, 1/3 as wide as stigma length, reaching pos-

teriorly SM1; hind wing with some veins brown; metasoma extensively red orange, except blackish brown on most part of T1; valvula 3 of ovipositor blackish brown. Setae: extensively brown on frons; whitish on temple, clypeus, lateral margins of frons, mesosoma, and metasoma; yellow gold on mandible; brownish on tibiae and tarsi.



FIGURES 91–96. Habitus of Palaearctic *Pristaulacus* Kieffer. **91.** *P. edoardoi* Turrisi, **sp. nov.** (holotype ♀), dorsal view. **92.** *P. paglianoi* Turrisi, **sp. nov.** (holotype ♀), dorsal view. **93.** *P. edoardoi* Turrisi, **sp. nov.** (holotype ♀), lateral view. **94.** *P. paglianoi* Turrisi, **sp. nov.** (holotype ♀), lateral view. **95.** *P. edoardoi* Turrisi, **sp. nov.** (paratype ♂), dorsal view. **96.** *P. paglianoi* Turrisi, **sp. nov.** (paratype ♂), dorsal view.

Head (Figs. 6, 26) from above, 1.3x wider than long, shiny; occipital margin straight; temple, from above, well developed, as long as eye length, moderately convergent posteriorly and weakly convex; occipital carina wide, lamelliform, as wide as diameter of an ocellus; POL:OOL= 1.1; ocellar area 2.0x wider than long; frons and clypeus with regular, fine, moderately deep, and scattered punctures (distance between punctures 2–3x diameter of a puncture); vertex and temple with irregular, fine to moderately coarse, superficial to deep, and

scattered punctures; malar area with coarse, deep, and very dense punctures; occipital area polished; mandible polished and shiny, with coarse, deep, and moderately dense punctures on base and in middle; antenna 1.1x longer than fore wing length; A3 5.6x longer than wide; A4 9.3x longer than wide, and 1.5x longer than A3; A5 8.7x longer than wide, and 1.4x longer than A3; following antennomeres progressively shorter, last one dorsoventrally compressed, with apex regularly rounded, 2.0x longer than wide. Setae: erect, moderately long, and scattered on lateral margins of frons, malar area, and clypeus; semierect, moderately dense, and long on A1; setae length of temple as diameter of an ocellus.

Mesosoma (Fig. 46) coarsely sculptured; pronotum areolate rugose, each lateroventral margin angulate with one median well-developed tooth; propleuron polished and shiny with coarse, superficial, and moderately dense punctures (distance between punctures 1–2x diameter of a puncture); prescutum subtriangular**,** deeply concave in middle, areolate rugose; mesoscutum transverse carinate with anterior margin, in lateral view, regularly rounded; notaulus deep and wide; scutellum areolate rugose, transverse carinate medially; mesepimeron transverse carinate (carinae irregular and spaced); mesepisternum areolate rugose, with upper third foveolate punctate; metanotum rugose medially, with a few, irregular, longitudinal carinae; propodeum areolate rugose, with short longitudinal carinae on base; ventral parts of mesosoma polished with irregular carinae on sides, and transverse carinate medially; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with a few coarse and deep punctures on proximal half; mid coxa irregularly transverse carinulate; hind coxa (Fig. 66) shiny, irregularly transverse carinulate, with coarse, deep, and scattered punctures (distance between punctures 2x or more diameter of a puncture), nearly absent on distal third; fore and mid trochanters polished, shiny, with fine, superficial and scattered punctures; hind trochanter polished, shiny, with irregular, coarse, deep, and dense punctures; femora dull on dorsal surface, shiny on ventral surface; fore and mid femora with moderately coarse, deep, and dense punctures on dorsal surface, fine, superficial, and very scattered on ventral surface; hind femur extensively transverse striolate, with coarse, deep, and dense punctures on dorsal surface, scattered on ventral surface; spurs of mid tibia of the same length; inner spur of hind tibia slightly longer than outer spur; hind basitarsus 12.2x longer than wide, and 1.2x longer than tarsomeres 2–5; claw with four well developed teeth. Setae: erect, short, and scattered on dorsal surface, semierect, moderately long, and slightly denser on sides, especially on pronotum and on ventral parts; erect, long, and scattered on hind surface of propodeum; erect and moderately long and dense on propleuron, with setae length less than fore pretarsus length; erect, long, and scattered on coxae and trochanters; recumbent, short, and moderately dense on dorsal surface of femora, erect, short, and scattered on ventral surface.

Metasoma laterally compressed, pyriform in lateral view; petiole elongate, moderately slender, 2.2x longer than wide; segment 1 polished and shiny, except a very few punctures on T1; T2 irregularly and very finely striolate with a few punctures; following segments finely striolate, with fine and very scattered punctures; S7 punctate striolate; T8 finely sculptured, with very fine and scattered punctures; ovipositor 1.8x longer than fore wing length; valvula 3 of ovipositor acute. Setae: segments 1 and 2 glabrous; recumbent, short, and scattered on median part of tergites and sternites; recumbent, short, and moderately dense on S7; recumbent, short, and scattered on T8.

♂**.** Length: 13.5 mm; fore wing length: 8.8 mm. Colour, structure, and setae like ♀, except: antenna equal length of fore wing; A3 3.3x longer than wide; A4 5.3x longer than wide, and 1.6x longer than A3; A5 as long and wide as A4; A13 cylindrical, slightly enlarged, 5.0x longer than wide, with apex rounded; hind basitarsus 12.0x longer than wide; metasoma more slender; petiole 2.6x longer than wide; metasomal segments 1 and 2 polished, shiny, and glabrous; following tergites with regular, very fine, and moderately dense punctures and with recumbent, short, and moderately dense setae; median part of sternites with very fine punctures and recumbent, short, and very scattered setae.

Intraspecific variation. Examined: 13♀, 4♂. Length (excluding ovipositor): 10.6–15.8 mm (♀); 12.5–13.5 mm (♂); fore wing length: 7.6–11.0 mm (♀), 8.6–9.0 mm (♂); ovipositor 1.5–1.8x longer than fore wing length. The mandible varies from dark red to blackish; A1, except apex, is darkened (blackish) in some speci-

mens; the brown spot on fore wing is always present, although it can be more or less wide; the colour of metasoma varies from light red orange to dark red; the punctures on frons is more dense and deep in some specimens (distance between punctures as diameter of a puncture). The setae on frons, temple and vertex (♀ and ♂) varies from light brown to dark brown. The sculpture of hind coxa (♀) is more or less extended and strong.

Distribution. France, Czech Republic, Hungary, Bulgaria (*), Russia, Italy.

Remarks. This species is reported from Bulgaria for the first time. *Pristaulacus chlapowskii*, as *P. galitae* (Gribodo), has one tooth on each lateroventral margin of the pronotum, and four well- developed teeth on the inner margin of claw. It can be distinguished from the latter species, by its large body size, by the wider occipital carina, and by the longer ovipositor (♀). However, small males of *P. chlapowskii* could resemble large males of *P. galitae*; thus, additional diagnostic features are reported in Table 2.

Biology. Hosts: *Chlorophorus pilosus* (Förster, 1771), *Isotomus speciosus* (Schneider, 1787) (Coleoptera, Cerambycidae) (Lichtenstein & Picard 1918; Šedivý & Čapek 1988); I add *Isotomus barbarae* Sama, 1977 and *Aegomorphus clavipes* (Schrank, 1781) (Coleoptera, Cerambycidae).

TABLE 2. Diagnostic characters of *P. chlapowskii* and *P. galitae* ♂.

Pristaulacus chlapowskii ♂	*Pristaulacus galitae* ♂
Occipital carina 0.8x diameter of an ocellus.	Occipital carina 0.5x diameter of an ocellus.
Temple, in dorsal view, weakly convex.	Temple, in dorsal view, rounded.
Antenna as long as fore wing length.	Antenna 0.8x fore wing length.
A3 3.3x longer than wide; A4 and A5 5.3x longer than wide.	A3 3.0x longer than wide; A4 and A5 4.0x longer than wide.
A13 5.0x longer than wide.	A13 3.2x longer than wide.
Setae on head brown, except on temple white silver.	Setae on head uniformly white silver.
A1 red orange, more or less dark.	A1 black.
Length of setae on frons 0.8x diameter of an ocellus.	Length of setae on frons equal to diameter of an ocellus.

***Pristaulacus compressus* (Spinola, 1808)**

(Figs. 7, 27, 47, 67, 84, 100, 101, 104, 106, 108, 110, 113, 118)

Aulacus compressus Spinola, 1808: 48 (♂).
Aulacus obscuripennis Westwood, 1841: 537 (♀).
Aulacus patrati: Magretti, 1882: 300 (*nec* Audinet-Serville, 1833).
Pristaulacus Schlettereri Kieffer, 1903: 457 (♀, ♂).
Aulacus (*Pristaulacus*) *holtzi* Schulz, 1906: 130 (♂) **(syn. nov.)**.
Aulacus Beckeri Tournier, 1911: 41, *nomen nudum* **(syn. nov.)**.
Aulacus plurimaculatus Tournier, 1911: 41, *nomen nudum* **(syn. nov.)**.
Aulacus transversostriatus Tournier, 1911: 41, *nomen nudum* **(syn. nov.)**.
Tetraulacinus holtzi: Kieffer, 1912: 364.
Pristaulacus schlettereri: Kieffer, 1912: 382.
Pristaulacus compressus: Kieffer, 1912: 385.
Pristaulacus compressus: Hedicke, 1939: 6.
Pristaulacus schlettereri: Hedicke, 1939: 15.
Tetraulacinus holtzi: Hedicke, 1939: 17.
Aulacostethus schlettereri: Györfi, 1964: 50.
Pristaulacus compressus: Smith, 2001: 281.

Material examined. ITALY: ♂ labelled: "*Aulacus compressus* gains Spinola, tres rare, attention auf ailes

super. Spinola"/…unreadable…/Syntypus/ex coll. Guérin-Mèneville/coll. Gribodo/Museo civico di Genova" (MCSN); 2♀ (without data), coll. P. Magretti (MCSN). GERMANY: Landskrone, Heppingen (Bad Neunahr), 1♀, 1883 (ZFMK); Neuenahv (? poorly readable), 2♀ (DEI); Saxonia, Hunzel. 1♀ (ZMUC); 1♀ (without data) coll. Konow (DEI); 1♂ (without data) (DEI); Wiesbaden, VIII.1887, 2♀, 1♂ (ZMHB); Hallgarten, 12.VI.1927, 1♀, "Oestrich Winkel, Rheingau, auf *Vitis vinifera* L." (AEIC); German., 1♂, Klug (ZMHB); Deutschland, 2♀ (ZMHB). AUSTRIA: Burgenland, Neusiedrersee dist., 20.VIII.1960, 1♂, G.J. Kerrich leg. (BMNH); Linz, 12.VII.1890, 1♀ (ZMHB). SWITZERLAND: Gimel, Jura, coll. Maerky, 1♀ (MHNG); Onex, 30 Iuin, 1♂ (MHNG); Martigny, 24.VII.(18)78, Coll. Tournier, 1♀ (MHNG). RUSSIA: Samara, VII.29, 1♀, A. Seyrig (MNHN); VIII.29, 1♀ (MNHN); VII.30, 1♀ (MNHN). POLAND: **holotype** ♀ of *Aulacus obscuripennis* Westwood, 1841 labelled "Polonia, Waga/11512, *obscuripennis*/Type/*obscuripennis* Westw./Zool. Mus. Berlin" (ZMHB). UKRAINE: Kharkov province: 3♀, 9♂ (ZIN); Khar'k.(ovskoi) g.(ubernii), Baban, 23.VI.1883, 1♀, 1♂, Shevyrev leg. (ZIN); Salov Kut, bliz'Kharkova, 1.VII.(19)07, 1♀, B.ll'in leg. (ZIN); Kuryazh, 27.VI.1895, 1♂, coll. Yaroshenko (ZIN). CZECH REPUBLIC: central Bohemia, Týřovice, 1–8.VII.1980, 1♂, Régl leg. (OLML). BULGARIA: Ivanski, b. Schumen, 15–30.VII.1969, 1♀, 1♂, Dr. Wallis (DEI); south-west of Pirin, Melnik, m 700, 15.VI.1990, 1♀, Taeger & Menzel leg. (DEI); Arkutino, s. Burgos, 20.VI–2.VII.1970, 1♀, Dr. Wallis leg. (DEI); Sandanski, 12.VII.1972, 1♂, W.J. Pulawski leg. (DEI); Barakii, Orisore, 10.VII.1935, 1♀. ROMANIA: Agigea, 4.VII.1968, 1♀, C. Nagy leg. (AEIC); Limaru, 6.VII.1965, 1♀, C. Nagy leg. (AEIC); Jurrlofea, 17.VII.1964, 1♀, C. Nagy leg. (AEIC). JUGOSLAVIA: Srbija, Kolubara R., Drazevac, VII.1979, 1♀, L. Mihajlovic leg. (BMNH); Srbija, Zajecar, VII.1979, 3♀, L. Mihajlovic leg. (BMNH); VIII.1979, 1♀, L. Mihajlovic leg. (BMNH). FRANCE: Mout, Moutiers (Savoie), coll. O. Sichel, 1867, 1♀ (MNHN); Var, Cavalaire, 1♀ (MNHN); Aragn', bois de suprus, 1♀, coll. J. Pérez, 1915 (MNHN). ITALY: Alto Adige, Meran (= Merano), 1♀ (ZMHB); Veneto, Conegliano (Treviso), VI.1930, 1♀ (CPTO); Piedmont, Torino hills, 1♂, 1♀, Mourglia leg., ex larva, from wood of *Acacia* sp., collected 30.III.1973, emerged 3.VII.1973 (MRSN); Piedmont, Aisone (Cuneo), 22.VIII.1986, 1♀, Scaramozzino leg. (MRSN); Piedmont, Tigliole (AT), 1–31.VIII.1982, 2♀, from Malaise trap (MRSN); 20.VII–7.VIII.1995, 1♀, G. Pagliano leg. (DBAC); Parco (?), 10.VII.1916, 1♀ ("Leccio"= from wood of *Quercus ilex* ?) (MSNP); 21.VII.1916, 1♂, 1♀ (MSNP); Emilia-Romagna, Scardavilla wood (Forlì), V.1984, 1♀, G. Sama leg., ex larva, from wood of *Quercus* sp. containing *Xylotrechus antilope* (MSNP); Emilia-Romagna, Pineta San Vitale (Ravenna), 2♂, Campadelli leg., ex larva, from wood collected 10.III.1996, emerged 22.V.1996 (MRSN); Emilia-Romagna, Pineta S. Vitale (Ravenna), 1♂, G. Campadelli leg., from wood collected 10.III.1996, emerged 3.VI.1996 (MSNP); 1♀, from wood collected 10.III.1996, emerged 10.VI.1996 (MFNB); 1♂, ex larva, from wood collected 30.III.1996, emerged 26.V.1996 (DBAC); 1♀, ex larva, from wood collected 7.IV.1996, emerged 15.VI.1996 (MFNB); 1♀, ex larva, from wood collected 21.IV.1996, emerged 7.VII.1996 (MSNP); 1♂, ex larva, from wood collected 28.IV.1996, emerged 3.VI.1996 (MFNB); 17.IV.1989, 1♀ (MSNP); Emilia-Romagna, Solarolo (Ravenna), V.1987, 1♂, G. Campadelli leg. (MSNP); Emilia-Romagna, Filo (Ferrara), 1♂, R. Fabbri leg., from wood of *Ficus carica* collected 6.III.1992, emerged 29.VII.1992 (MSNP); Emilia-Romagna, Bosco di Panfilia, S. Agostino (Ferrara), 20.VII.1995, 1♀, from Malaise trap (MCFS); Emilia-Romagna, Ferrara, Comacchio, Lido delle Nazioni, 29.VI.1989, 1♂, Pantaleoni leg., on flowers of *Allium porrus* (MCFS); Emilia-Romagna, Pineta Classe (Ravenna), 19.VII.1985, 1♀, 1♂, Campadelli leg. (MRSN, MFNB); 25.VII.1985, 1♂ (MRSN); 27.VII.1985, 1♀ (MRSN); Emilia-Romagna, Mantova, Marmirolo, Riserva Naturale Bosco di Fontana, 14.VI.1998, 5♀, Mason & Tagliapietra leg., Malaise trap (GGCP); 14.VII.1998, 1♀ (GGCP); 20.VII.1998, 3♀ (GGCP); 28.VII.1998, 3♀ (GGCP); 11.VIII.1998, 1♀, 1♂ (GGCP); 18.VIII.1998, 2♀ (GGCP); Tuscany, Firenze, 1♂, coll. E. André, 1914 (MNHN); Tuscany, Follonica, VIII.1978, 1♀, Arveda leg. (MRSN); Latium, parco Marcigliana, loc. Casal Boccone, 14–21.VI.2000, 3♂ ex larva, from wood of *Ulmus* sp. containing *Chlorophorus pilosus glabromaculatus* and *Exocentrus punctipennis*, A.B. Biscaccianti leg. (CTOC); Abruzzo, L'Aquila, 15–31.VII.1993, 1♀, Di Marco leg. (MRSN). SLOVENIA (?): Winden, Bgld., 8.VII.1959, 2♂, H. Priesner (ZMUC, USNM). MOROCCO: Haut

Atlas, Tizi n'Test, m 2000, VII.1986, 1♀, G. Sama leg., ex larva, from *Chlorophorus pilosus* (MSNP); VI.1983, 1♀, ex larva, G. Curletti leg. (MRSN); 1.VII.1988, 1♀, ex larva, emerged together with *Chlorophorus pilosus*, G. Sama leg. (DBAC); VII.1989, 1♀, ex larva, from *Chlorophorus sexguttatus*, G. Sama leg. (DBAC); Tizi-Papil (without other data), 1♀, ex larva, obtained together with *Chlorophorus sexguttatus*, G. Sama leg. (DBAC). TURKEY: **holotype** ♂ of *Aulacus* (*Pristaulacus*) *holtzi* Schulz, 1906 labelled "Type/B.M. Type Hym. *Aulacus* (*Pristaulacus*) *holtzi* Schulz, 1906/Asia minor Gulek Taur. Cilic. 1897 Holtz/Schulz Coll. 1908-157/spec. typ./*Aulacus* (*Pristaulacus*) *holtzi* Schulz ♂, W.A. Schulz det." (BMNH); Mersin Gulek, m 1000, VII.1981, 1♀, G. Sama leg., ex larva, from wood of *Paliurus* sp. containing *Chlorophorus varius*; Camalan, G. Sama leg., 1♂ ex larva, collected 5.VI.1981, emerged 15.VII.1981, from wood of *Paliurus* sp. containing *Chlorophorus varius* (MSNP); "Turcia", 1♀ (ZMUC); 15 km W Refahye, W of Erzincan, m 1600, 7.VII.2000, 1♂, M. Halada leg. (OLML); Erdemli, Aslanli, 31.V.2001, 1♂, L. Sniněk leg. (OLML); vil. Adana, Cicekli env. (25 Km N di Adana), 50 m, 3–5.VII.1998, 1♂, J. Bezděk leg. (OLML). LEBANON: Chouf prov. Barouk, m 1300, 6♀, 5♂, from *Quercus calliprinos*, emerged 10–30.VI.2000 together with *Chlorophorus yachovi*, P. Rapuzzi leg. (DBAC); Chouf prov. Barouk, m 1000, 2♀ from *Quercus calliprinos*, emerged 10–30.VI.2000 together with *Chlorophorus yachovi*, P. Rapuzzi leg. (DBAC); Akkar prov., Fnaideq, m 1400, 1♂, from *Quercus cerris*, emerged 20.V–10.VI.2001 together with *Chlorophorus yachovi*, P. Rapuzzi leg. (DBAC); Jbail prov., Machnaka, m 1300, 2♂, from *Quercus calliprinos*, emerged 10–30.VI.2000 together with *Chlorophorus yachovi*, P. Rapuzzi leg. (DBAC). SYRIA: Dj. Ansariyah, Slunfah, m 1200–1300, 2–6.VI.2000, 1♀, emerged together with *Chlorophorus dinae*, G. Sama leg. (DBAC); 2–6.VI.2000, 1♂, from *Quercus* sp., emerged V.2001 together with *Chlorophorus dinae*, G. Sama leg. (DBAC); 2–6.VI.2000, 2♀, from *Quercus* sp., emerged 4–10.VI.2001 together with *Chlorophorus dinae*, G. Sama leg. (DBAC); same locality, 2–6.VI.2000, 1♀, from *Quercus cerris*, emerged 1.VII.2000 together with *Chlorophorus dinae*, G. Sama leg. (DBAC); 2–6.VI.2000, 1♂, from *Carpinus* sp., emerged 23.VI.2000 together with *Chlorophorus dinae*, G. Sama leg. (DBAC); Saladin, Castel area, 16–18.V.2002, 1♀, emerged together with *Chlorophorus dinae*, Ole Mehl leg. (ZMUC). IRAQ: 12.VI.1969, 1♀, M.E. Knopf, C.I.E. (BMNH); loc. Tarmyya, 4.VI.1956, 1♀, host: apple, coll. Khfiri (BMNH). **Specimens without geographic data:** 1♀, without data, sub *Aulacostethus proximus* ? (Kieffer, 1905), R.W. Crosskey det. (BMNH); 2♀ (unreadable label), 18–19.VII.1903, coll. R. von Stein (BMNH); 3♀, 1♂ without data, coll. O. Sichel, 1867 (MNHN); 1♀ without data, R. Brullé det. (MNHN); 1♂ without data, coll. J. Pérez, 1915 (MNHN); 1♀ without data, coll. J. De Gaulle 1919 (MNHN); 1♀ (unreadable label), 1883 (ZMHB); 1♂ (unreadable label), coll. Wüstnei (ZMUC); 2♀, VI.1876 and VI.1878, coll. Tournier, sub "*transversostriatus* Tourn. i.l." (MHNG).

Records from literature. Spinola (1808), Westwood (1844), Schletterer (1889), Jaroschewsky (1890), Semenow (1892a, b), Schulz (1906), Lichtenstein & Picard (1918), Györfi (1964), Oehlke (1983, 1984), Pagliano (1986), Kozlov (1988), Madl (1988, 1990), Šedivý & Čapek (1988), Campadelli (1998), Turrisi (2000, 2006b), Hilszczański (2002).

Type locality. "Habitat in montibus Orerii" (Spinola 1808).

Notes on type material. *Aulacus compressus* was described on the basis of only the male. The number of type specimens was not stated in the original description (Spinola 1808: 48). In MCSN (Gribodo coll., ex Spinola coll.) I have found only one male with a handwritten label by Spinola, and an additional red label "syntypus". Another type specimen is stored in MRSN, not examined (Pagliano 2005, *in litteris*).

Redescription. ♀. Length (excluding ovipositor): 10.6 mm; fore wing length: 7.8 mm.

Colour black, except: mandible extensively blackish with median part dark red; maxillo-labial complex dark brown; antenna blackish with ventral surface of A1 dark red; legs blackish, with tibiae and tarsi red orange, hind tibia darker; wings hyaline, with veins and stigma brown; fore wing with a wide subrectangular brown spot below stigma, as wide as length of stigma and an irregular brown spot on the apex of D2; metasomal segments 1–4 extensively red orange with petiole and apex of metasoma blackish. Setae: whitish in most part, except brown on vertex and on upper half of frons, and yellow gold on mandible.

Head (Figs. 7, 27), from above, 1.3x wider than long, shiny; occipital margin straight; temple, from above, moderately developed, a little shorter than eye length, moderately convergent posteriorly and regularly rounded; occipital carina wide, lamelliform, as wide as diameter of an ocellus; POL:OOL= 1.1; ocellar area 2.0x wider than long; frons with moderately coarse, deep, and dense punctures (distance between punctures 1–2x diameter of a puncture), less coarse and dense on vertex and on temple; clypeus with coarse, superficial, and dense punctures; malar area with moderately coarse, deep, and dense punctures; occipital area polished; mandible polished and shiny, with coarse and deep punctures on base and in middle; antenna length 0.9x as fore wing length; A3 6.0x longer than wide; A4 10.5x longer than wide, and 1.6x longer than A3; A5 9.5x longer than wide, and 1.4x longer than A3; following antennomeres progressively shorter; A14 dorsoventrally compressed, with rounded apex, 2.2x longer than wide. Setae: erect, moderately long, and dense on most parts of frons, vertex and temple; recumbent, moderately long, and dense on lower and lateral parts of frons and on clypeus; recumbent, short, and moderately dense on malar area; semierect, moderately long, and dense on A1; setae length of temple as long as diameter of an ocellus.

Mesosoma (Fig. 47) coarsely sculptured; pronotum areolate rugose with two well-developed teeth on each lateroventral margin; propleuron polished and shiny, with fine, superficial, and scattered punctures (distance between punctures 3–5x diameter of a puncture); prescutum triangular, shiny, weakly concave in middle, irregularly rugose to transverse carinate; mesoscutum transverse carinate, with anterior margin, in lateral view, regularly rounded (Figs. 47, 106); notaulus moderately deep and wide; scutellum transverse carinate, except the posterolateral parts, areolate rugose; mesopleuron areolate rugose, except the upper third, foveolate; metanotum longitudinally carinate, rugose in middle; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma extensively areolate rugose; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with fine, superficial, and scattered punctures; mid coxa extensively transverse carinulate punctate, with base transverse striolate punctate; hind coxa (Fig. 67) shiny, transverse carinate, with part of ventral surface punctate, and moderately coarse, deep, and scattered punctures (distance between punctures about 3x diameter of a puncture); trochanters polished, shiny, irregularly punctate, with fine, superficial, and scattered punctures on fore trochanter, coarser, deeper, and more dense on mid and hind trochanters; femora dull on dorsal surface, shiny on ventral surface; fore and mid femora with moderately coarse to coarse, moderately deep, and dense punctures on dorsal surface, fine, superficial, and scattered on ventral surface; hind femur very finely transverse striolate, with coarse, deep, and dense punctures on dorsal surface, less dense on ventral surface; inner spur of mid and hind tibiae slightly longer than outer spur; hind basitarsus 9.3x longer than wide, and 1.2x longer than tarsomeres 2–5; claw with four well- developed teeth. Setae: erect, short, and scattered on dorsal surface, semierect to recumbent, moderately long, and dense on anterior, lateral and ventral parts, erect, long, and scattered on hind surface of propodeum; erect, long, and moderately dense on propleuron, with setae length 0.6–0.7x fore pretarsus length; semierect, moderately long, and moderately dense on fore and mid coxae; erect, long, and moderately dense on dorsal surface of hind coxa, semierect, short and more dense on ventral surface; erect, moderately long, and moderately dense on trochanters; recumbent, short, and dense on dorsal surface of femora, erect, longer, and scattered on ventral surface, except on hind femur, with setae of the same length.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, slender, 3.2x longer than wide; segments 1 and 2 polished and shiny; following segments with regular, fine, and moderately dense punctures; S7 with coarse, deep, and dense punctures; T8 with very fine, superficial, and very scattered punctures; ovipositor 1.3x longer than fore wing length; valvula 3 of ovipositor with apex slightly acute. Setae: segments 1 and 2 glabrous; recumbent, short, and moderately dense on following segments.

♂**.** Length: 9.7 mm; fore wing length: 7.6 mm. Colour, structure, and setae like ♀, except: antenna length 0.8x fore wing length; A3 2.9x longer than wide; A4 4.8x longer than wide, and 1.6x longer than A3; A5 as long and wide as A4; A13 subcylindrical, with apex rounded, 5.0x longer than wide; hind basitarsus 7.5x longer than wide; petiole 3.6x longer than wide; metasomal tergites, except 1 and 2, very finely sculptured,

with fine, superficial, and moderately dense punctures, and recumbent, short, and moderately dense setae, except the latero-apical parts; genital capsule (Fig. 84) with apex of paramere rounded, cuspis wide and strongly curved, lower apex of digitus very long and narrow.

Intraspecific variation. Examined: 106♀, 58♂. Length: 8.8–14.2 mm (♀); 8.9–13.4 mm (♂); fore wing length: 6.6–9.5 mm (♀), 6.7–8.8 mm (♂); ovipositor length: 1.1–1.3x longer than fore wing length. Due to the abundant material examined from the entire distribution range, it is possible to describe in some detail the intraspecific variation of morphological characters. *Pristaulacus compressus* is a moderately variable species as regard colour and sculpture of some parts of the body. Oehlke (1983) indicated some geographical differences of some characters of the head between the central European and Mediterranean specimens, with the latter having a wider head, coarser punctures, and darker setae. On the basis of my research this geographic variation is not confirmed. The colour of the setae is light and the punctures are fine, superficial, and scattered also in some of the Mediterranean specimens, while the shape of head does not run into different categories in northern and southern specimens. On the other hand, the specimens from the Oriental part of the range (Turkey, and especially Lebanon and Syria) have the occipital carina wider (1.5x diameter of an ocellus), punctures of head very coarse, very deep, and also very close each other. These specimens are otherwise similar in all other morphological features compared to specimens from the western part of the range; therefore, I include them under the same species. The length of the body does not vary according to distribution, and it does not show a clinal variation. The dark brown spot below stigma on fore wing is often present, but it is absent only in a very few specimens; however, it can vary from large to very small, with intermediates. This variation of colour does not show geographic clinal variation. The other dark spots on the fore wing (on B and between SB and SD1) are frequently absent in about 50% of the specimens examined or strongly reduced in size. One ♀ from Switzerland is remarkable for its light colour, with the labial and maxillary palpi, antennae, most of the legs (coxae darker), valvula 3 of ovipositor, and veins of wings, light yellow orange, metasoma extensively yellow orange, and fore wing with a weakly-evident yellow spot below stigma. The light red orange colour of the hind tarsus does not vary significantly in the material examined; thus, it is a very good diagnostic feature in both sexes.

Distribution. Spain, France, Austria, Germany, Switzerland, Italy, Czech Republic, Slovakia, Poland, Romania, Bulgaria, Hungary, Yugoslavia, Russia, Ukraine, Iraq (*), Morocco, Turkey, Syria (*), Lebanon (*).

Remarks. In the world catalogue of Aulacidae (Smith 2001), the three *nomina nuda* introduced by Tournier in 1911 (see previous synonymic list) are listed as *Aulacus*. I have examined the original material of Tournier's collection (MHNG), identified by Tournier (original handwritten labels), and I can establish that the three taxa, all *nomina nuda*, must be ascribed to *Pristaulacus compressus*, of which they become new synonyms (**syn. nov.**).

Aulacus (*Pristaulacus*) *holtzi* Schulz, 1906 was described from one specimen (♂) (Schulz 1906), from Turkey (type locality: "Gülek, im cilicischen Taurus"), and it was redescribed by Kieffer (1912). This specimen (examined) clearly belongs to *P. compressus*, although it has a wider occipital carina and stronger punctation, as stated in all the specimens from Turkey of *P. compressus*. In my opinion *Aulacus* (*Pristaulacus*) *holtzi* is synonym of *P. compressus* (**syn. nov.**).

Aulacus obscuripennis Westwood, 1841 (type locality: "Polonia, Waga", holotype in ZMHB, examined) was considered by Pagliano (1986) as synonym of *P. compressus* but without any comments, especially with regard to type material. The examination of the type specimen of *A. obscuripennis* allows confirmation of this synonymy on the basis of the congruence of the chromatic pattern and especially characters of the exoskeleton.

Biology. Hosts: *Xylotrechus arvicola* (Olivier, 1795) (Coleoptera, Cerambycidae) and *Xiphydria longicollis* (Geoffroy, 1785) (Hymenoptera, Xiphydriidae) (Šedivý & Čapek 1988; Campadelli 1998). I add: *Xylotrechus antilope* (Schönherr, 1817), *Chlorophorus dinae* Rapuzzi & Sama, 1999, *Chlorophorus glabromaculatus* (Goeze, 1777), *Chlorophorus yachovi* Sama, 1996, *Chlorophorus pilosus* (Förster, 1771), *Chlorophorus*

sexguttatus (Lucas, 1849), *Chlorophorus varius* (Müller, 1766), *Exocentrus punctipennis* Mulsant & Guillebeau, 1856 (Coleoptera, Cerambycidae). Flowers visited: *Allium porrus* L. (Liliaceae).

***Pristaulacus comptipennis* Enderlein, 1912**
(Figs. 8, 28, 48, 68, 85, 102, 115)

Pristaulacus comptipennis Enderlein, 1912: 265 (♀).
Pristaulacus comptipennis: Hedicke, 1939: 7.
Pristaulacus comptipennis: Smith, 2001: 282.

Material examined. TAIWAN: **lectotype** ♀ labelled "Hoozan, Formosa, II.10, H. Sauter/*Pristaulacus comptipennis* Enderl. ♀, Type, Dr. Enderlein det. 1912/Syntypus/Eberswalde coll. DEI/Lectotypus ♀, *Pristaulacus comptipennis* Enderlein, 1912, des. T. Megjaszai 1999/*Pristaulacus comptipennis* Enderlein, 1912 ♀, Lectotypus G. F. Turrisi des. 2006" (DEI); 2♀ **paralectotypes** both labelled "Hoozan, Formosa, V.10, H. Sauter/*Pristaulacus comptipennis* Enderl. ♀, Type, Dr. Enderlein det. 1912/Syntypus/Eberswalde coll. DEI/ Paralectotypus ♀, *Pristaulacus comptipennis* Enderlein, 1912, des. T. Megjaszai 1999/*Pristaulacus comptipennis* Enderlein, 1912 ♀, Paralectotypus G. F. Turrisi des. 2006" (DEI); Hoozan, V.1910, 1♀, H. Sauter (DEI); Anping, 22.VII.1911, 2♀, H. Sauter (DEI); Kankau (Koshun), V.1912, 1♀, H. Sauter (DEI); Kosempo, H. Sauter, 2♀ (DEI, USNM); 1911, 1♀, H. Sauter (DEI); 1912, 2♂, H. Sauter (DEI, USNM); V.1912, 7♂, H. Sauter (DEI); Tainan, 22.VII.1911, 2♀, 2♂, H. Sauter (DEI); Taihorin, V.1910, 2♀, H. Sauter (DEI); Hoozan, IX.1910, 1♀, Sauter (ZMHB); Taihorish, VI.1910, 2♀, H. Sauter S-G. (ZMHB); IX.1910, 1♀, 1♂ (ZMHB); X.1910, 1♂ (ZMHB); Taihorinsho, IX.1909, 1♀, Sauter (HNHM); Kosempo, IX.1909, 3♀, Sauter (HNHM); Puli Village, Nam-tou, Hsien, 15–30.XII.1963, 1♀, coll. K.H. Chen (LACM). JAPAN: Iriomote Isl., Komi, 19.VI.1971, 1♀, Toshiaki Aoki leg., coll. S. Katsuya (n. 4191) (ITLJ); Horsha, T. Fukai, 1♀, 1♂, and one undetermined, metasoma missing (USNM); CHINA: Hong Kong, Pak Sha O, 22.25N, 114.19E, 3.VI.2005, 1♀, Ch. Bartelemy leg. (USNM).

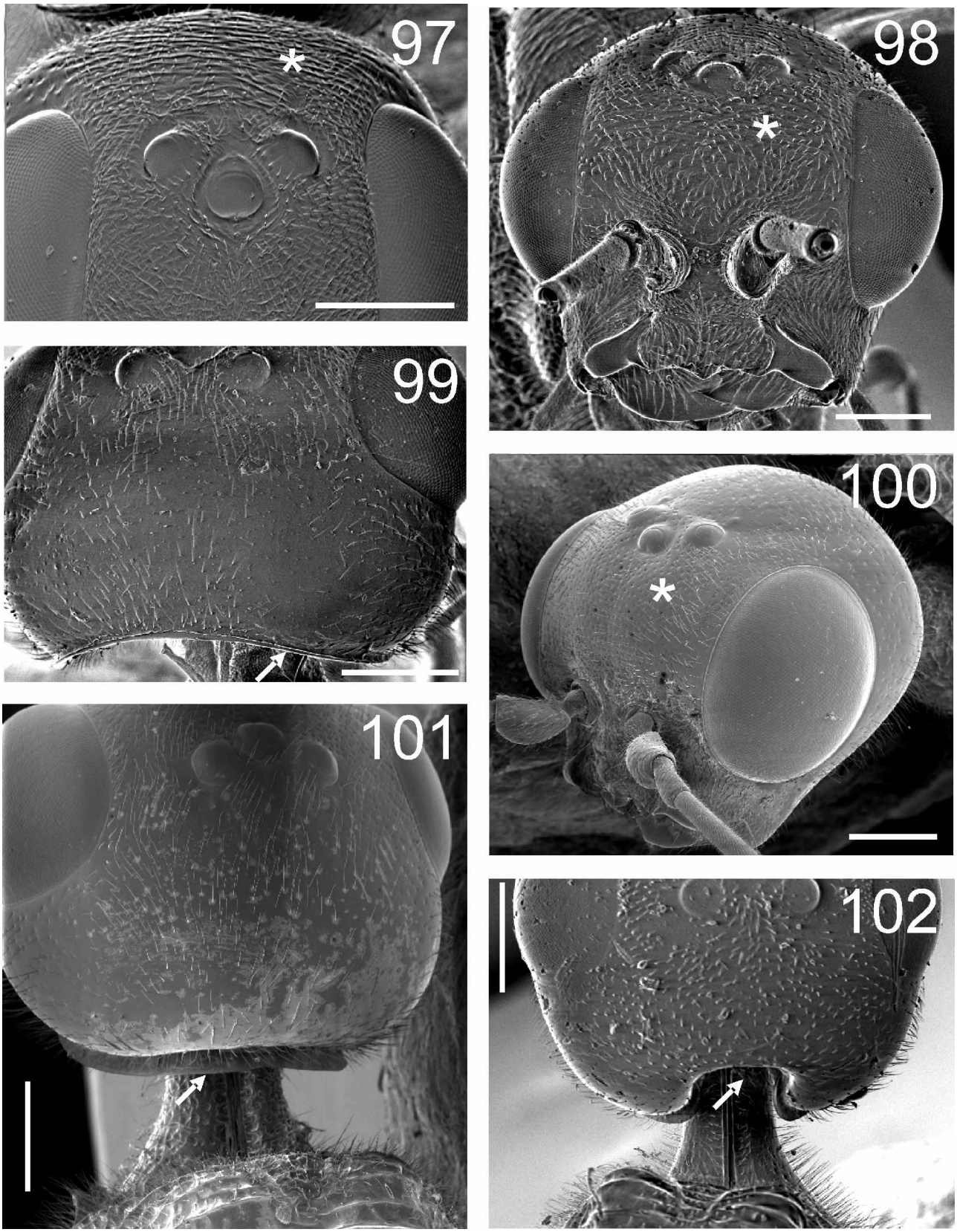
Records from literature. Enderlein (1912, 1913), Konishi (1990, 1991).

Type locality. "Formosa: Hoozan" (Enderlein 1912).

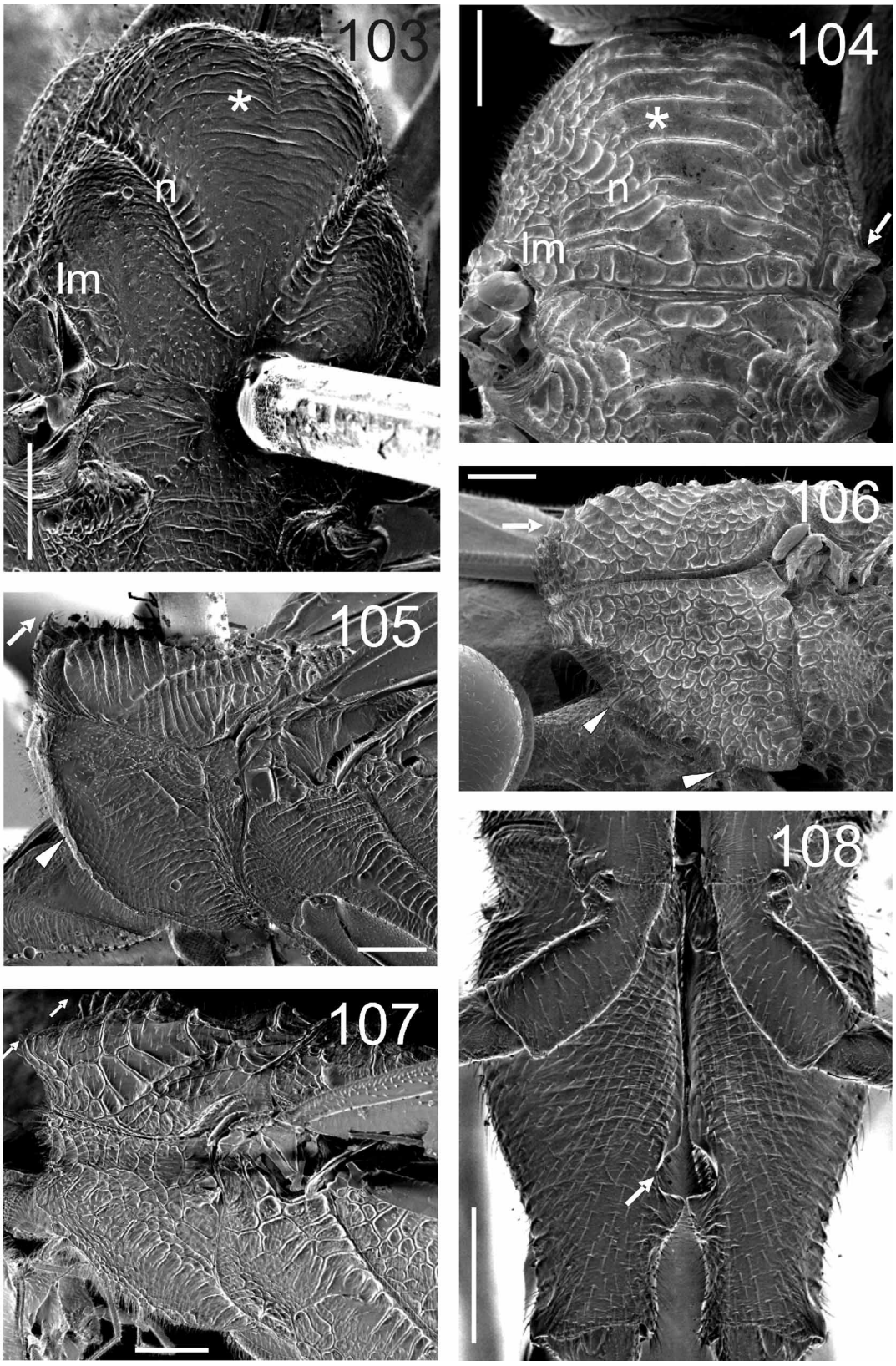
Notes on type material. According to Enderlein (1912: 265) the type material consists of 8 females stored in ZMHB and in DEI. In the latter Museum I found only three specimens surely belonging to the type series, and 20 additional specimens (10 females and 10 males, see material) collected by H. Sauter in Taiwan. No type specimen was found in ZMHB. According to Huflejt (1996), other four type specimens (not examined) are stored in the collection of Museum and Institute of Zoology of the Polish Academy of Sciences in Warsaw. For this taxon Enderlein (1912) did not indicate an holotype, thus, the examined three type specimens are here considered as syntypes. Megjaszai T. in the year 1999 (original handwritten labels) designated, among these syntypes, one lectotype and two paralectotypes (unpublished), which I here formally establish (ICZN 1999: article 74). The lectotype lacks most of the antennae (except A1–A5 of left antenna and A1–A6 of right antenna), tarsi of right mid leg, and of left hind leg, and valvulae 3 of ovipositor. With regard to these lacking parts of the body, a description is provided on the basis of the other examined specimens (in brackets).

Redescription. ♀ (lectotype). Length (excluding ovipositor): 14.2 mm; fore wing length: 10.5 mm.

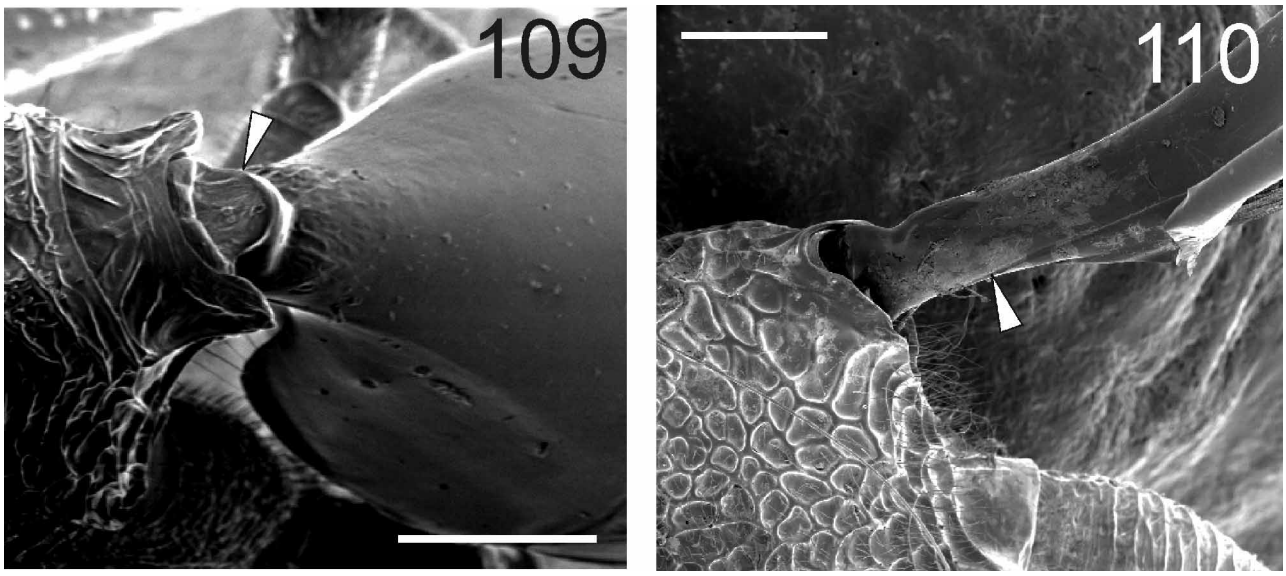
Colour black except: mandible, extensively orange brown, except blackish brown on base and apex; maxillo-labial complex brown; malar area, clypeus and occipital carina brown, more or less dark; antenna, blackish brown with A1 and A2 orange brown; mesosoma and coxae blackish brown, more or less dark; remaining parts of legs red orange, with femora darker; wings hyaline with veins and stigma brown; fore wing with wide and irregular brown spots on basal part, below stigma and on apex; hind wing slightly brown on base and on apex; metasoma blackish brown, with T1 and apex of following tergites lighter; valvula 3 of ovipositor dark brown. Setae: whitish to brown on head; slightly gold along lateral margins of frons and on clypeus; yellow gold on mandible; whitish on mesosoma; light brown on metasoma.



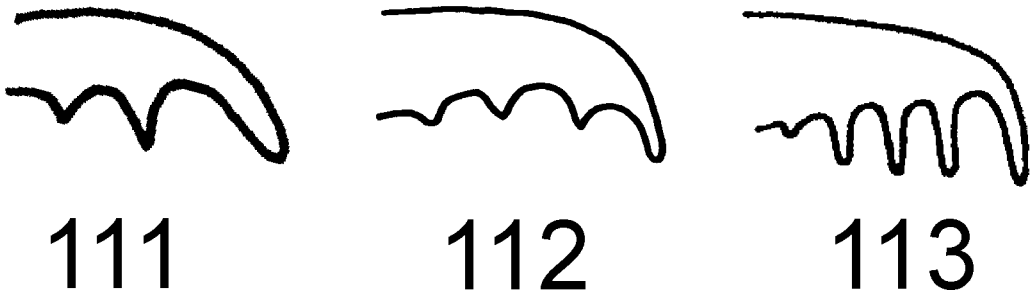
FIGURES 97–102. Head of Palaearctic *Pristaulacus* Kieffer. **97.** *P. barbeyi* (Ferrière), frontal view. **98.** *P. gibbator* (Thunberg), frontal view. **99.** *P. gibbator*, dorsal view. **100.** *P. compressus* (Spinola), fronto-lateral view. **101.** *P. compressus*, dorsal view. **102.** *P. comptipennis* Enderlein, dorsal view. Star in 97, 98, 100 indicates the sculpture of vertex or frons; arrow in 99, 101 indicates the occipital carina; arrow in 102 indicates the medial groove. Scale bars = 500 μm.



FIGURES 103–108. Mesosoma and hind coxae of Palaearctic *Pristaulacus* Kieffer. **103.** *P. gibbator* (Thunberg), dorsal view. **104.** *P. compressus* (Spinola), dorsal view. **105.** *P. kostylevi* (Alekseyev), lateral view. **106.** *P. compressus*, lateral view. **107.** *P. ryukyuensis* Konishi, laterodorsal view. **108.** Hind coxae of *P. compressus*, ventral view. Star in 103, 104 indicates the sculpture of mesosoma; arrow in 105–107 indicates the anterior margin of mesoscutum; arrow in 104 indicates the supra-tegular tooth; triangles in 105–106 indicate the lateroventral margin of pronotum, with or without teeth; lm: lateral lobe of mesoscutum; n: notaulus. Scale bars = 500 μm.



FIGURES 109–110. Propodeum and petiole of Palaearctic *Pristaulacus* Kieffer. **109.** *P. barbeyi* (Ferrière). **110.** *P. compressus* (Spinola). Triangle indicates petiole. Scale bars = 500 μm.



FIGURES 111–113. Claw of Palaearctic *Pristaulacus* Kieffer. **111.** *P. kostylevi* (Alekseyev). **112.** *P. gibbator* (Thunberg). **113.** *P. compressus* (Spinola).

Head (Figs. 8, 28, 102), from above, 0.8x as wide as long, shiny; occipital margin deeply grooved medially; temple, from above, well developed, 0.8x as long as eye length, strongly convergent behind and rounded posteriorly; occipital carina wide, lamelliform, 0.6–0.8x diameter of an ocellus, interrupted medially, in the occipital groove; POL:OOL= 1.0; ocellar area 2.1x wider than long; temple and vertex with fine, superficial, and scattered punctures (distance between punctures 4–5x diameter of a puncture), denser on frons and on clypeus (distance between punctures 2–3x diameter of a puncture); malar area with fine, deep, and very dense punctures; occiput polished; mandible polished and shiny, with coarse, deep, and dense punctures on base and on proximal half; (antenna 0.7x as long as fore wing length); A3 5.3x longer than wide; A4 10.4x longer than wide, and 1.6x longer than A3; A5 9.3x longer than wide, and 1.3x longer than A3; (following antennomeres progressively shorter, the apical one slightly dorsoventrally compressed, 2.2x longer than wide, with apex regularly rounded). Setae: erect, short, and moderately dense on most of frons; recumbent, long, and dense on clypeus and on lateral margins and lower parts of frons; recumbent, moderately long, and dense on malar area; erect or semierect, moderately long, and dense on temple; setae length of temple 0.8–1.0x diameter of an ocellus; semierect, long, and moderately dense on base of mandible; semierect, short, and moderately dense on A1.

Mesosoma (Fig. 48) coarsely sculptured; pronotum, areolate rugose, except median area, shiny and areolate punctate, with one well-developed tooth on each lateroventral margin; propleuron polished and shiny,

with fine, superficial, and scattered punctures (distance between punctures 3–5x diameter of a puncture); prescutum subtriangular, concave in middle, transverse carinulate to areolate rugose; mesoscutum transverse carinate to areolate rugose, with anterior margin, in lateral view, regularly rounded; notaulus deep and very wide; scutellum with strong transverse concentric carinae except anterolateral corners, areolate rugose; mesepimeron transverse carinate; mesepisternum areolate rugose, except a small area on upper third, foveolate; metanotum longitudinally carinate; propodeum areolate rugose, except base, longitudinally carinate; ventral parts of mesosoma shiny, irregularly rugose; fore wing with vein 2-rs+m short; fore coxa transverse striolate on outer surface, polished, shiny, with fine, superficial, and scattered punctures on remaining parts; mid coxa shiny, transverse carinulate, except base, with coarse, deep, and dense punctures; hind coxa (Fig. 68) with dorsal surface transverse carinate, and ventral surface polished to transverse striolate, with coarse, moderately deep, and moderately dense punctures (distance between punctures 2–3x diameter of a puncture), and weak transverse carinae on margins; trochanters shiny, with very fine, superficial, and scattered punctures on fore trochanter, moderately coarse and moderately dense to very dense on mid and hind trochanters; femora dull on dorsal surface, with moderately coarse, deep, and dense to very dense punctures, shiny on ventral surface, with fine to moderately coarse, superficial and scattered punctures; spurs of mid tibia of the same length; inner spur of hind tibia, longer than outer spur; hind basitarsus 10.6x longer than wide, and 1.1x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, short, and moderately dense on dorsal parts; semierect, long, and dense, on pronotum; semierect, short, and dense on mesopleuron and on ventral parts, recumbent on upper third of mesepisternum; erect, long, and scattered on hind surface of propodeum; erect, moderately long, and dense on propleuron, with setae length 0.6–0.7x fore pretarsus length; semierect, long, and dense on fore coxa; semierect, short, and moderately dense on mid coxa and ventral surface of hind coxa, erect, long, and moderately dense on dorsal surface of hind coxa; recumbent, very short, and dense on dorsal surface of fore and mid femora, erect, moderately long, and scattered on ventral surface; recumbent, very short, and dense on dorsal surface of hind femur, erect on ventral surface.

Metasoma strongly compressed laterally, pyriform in lateral view; petiole elongate, slender, 4.5x longer than wide; segments 1 and 2 polished and shiny, except lateral parts of the distal margin of S2, weakly punctate; following segments, with very fine, superficial, and moderately dense punctures; S7 with irregular, coarse, deep, and dense punctures; T8 with very fine, superficial, and scattered punctures; ovipositor 1.1x longer than fore wing length; (valvula 3 of ovipositor with apex acute). Setae: segments 1 and 2 glabrous, except lateral parts of distal margin of S2, with recumbent, very short, and moderately dense setae; semierect, moderately long, and dense on S7; semierect, moderately long, and scattered to moderately dense on T8.

♂**.** Length: 12.2 mm; fore wing length: 8.9 mm. Colour, structure, and setae like ♀, except: antenna 0.8x as long as fore wing length; A3 3.8x longer than wide; A4 6.2x longer than wide, and 1.6x longer than A3; A5 5.5x longer than wide, and 1.4x longer than A3; A13 cylindrical, with rounded apex; hind basitarsus 14.0x longer than wide; petiole 5.0x longer than wide; genital capsule (Fig. 85) with apex of paramere obliquely truncated, cuspis moderately curved and wide, digitus wide with lower apex moderately wide and long.

Intraspecific variation. Examined: 26♀, 14♂. Length (excluding ovipositor): 9.0–14.2 mm (♀); 12.2–13.0 mm (♂); fore wing length: 7.0–10.5 mm (♀); 8.9–9.7 mm (♂); ovipositor 1.1–1.3x longer than fore wing length.

Distribution. China (*), Japan (Iriomote-jima Island, Okinawa-hontô Island), Taiwan.

Remarks. *Pristaulacus comptipennis* is recorded from China for the first time. It is easily identified, together with two other eastern Palaearctic species, by the presence of a deep median occipital groove and the entirely blackish metasoma, without red marks; the differences among those species are given in the key to species.

Biology. Host: *Ceresium elongatum* Matsushita, 1933 (Coleoptera, Cerambycidae) (Konishi 1991).

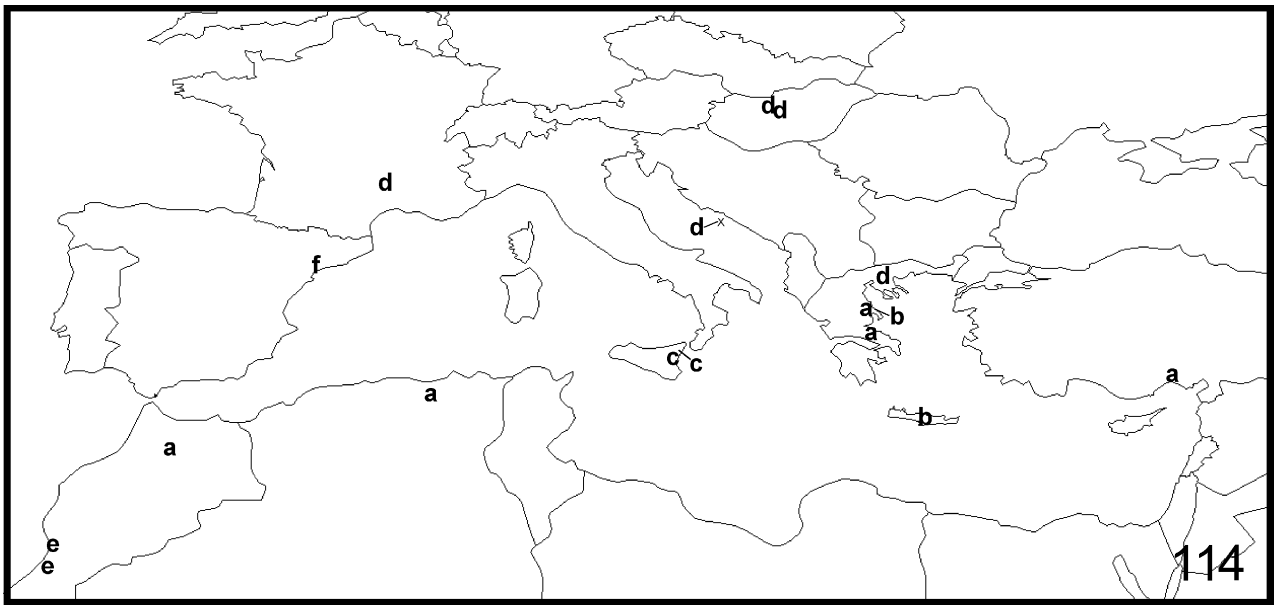


FIGURE 114. Distribution of Palaearctic *Pristaulacus* Kieffer. a= *P. barbeyi* (Ferrière); b= *P. edoardoi* Turrisi, sp. nov.; c = *P. lindae* Turrisi; d = *P. mourguesi* Maneval; e = *P. paglianoi* Turrisi, sp. nov.; f = *P. proximus* Kieffer.

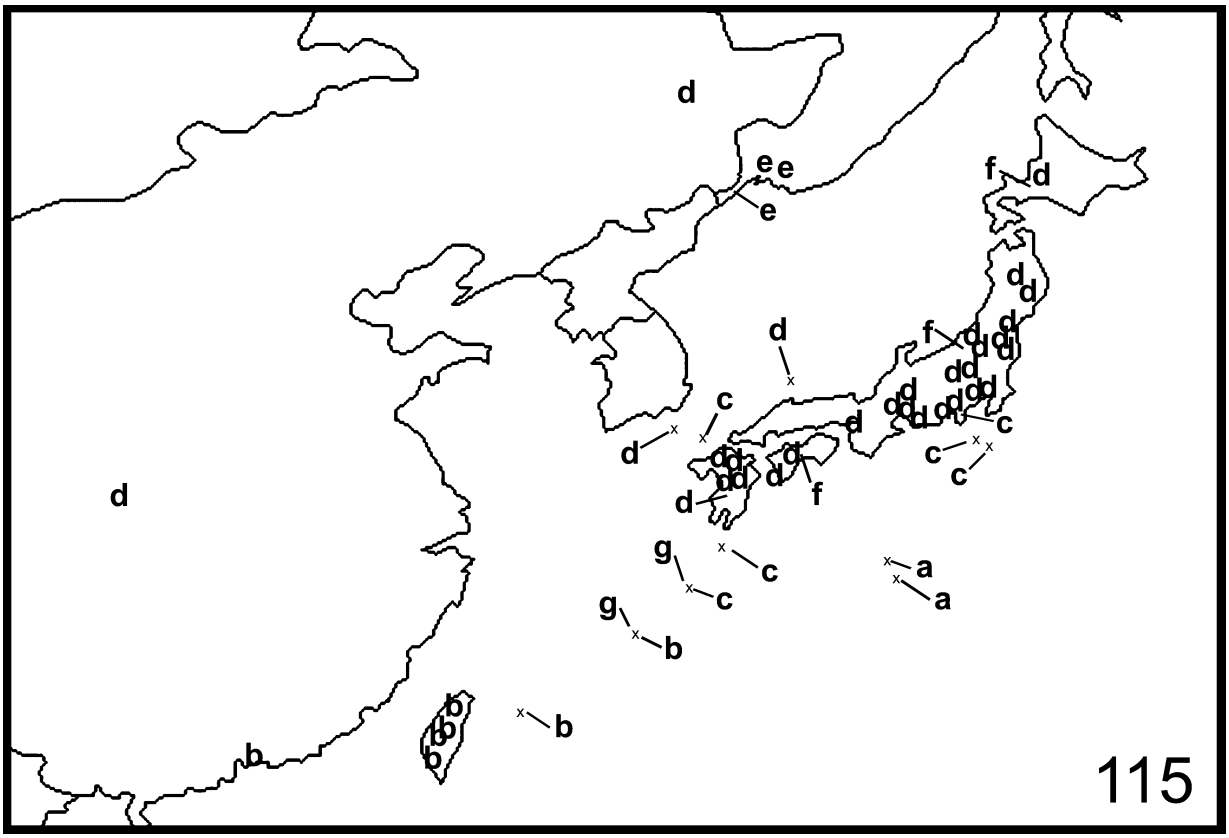


FIGURE 115. Distribution of Palaearctic *Pristaulacus* Kieffer. a= *P. boninensis* Konishi; b= *P. comptipennis* Enderlein; c= *P. insularis* Konishi; d= *P. intermedius* Uchida; e= *P. kostylevi* (Alekseyev); f= *P. rufipilosus* (Uchida); g= *P. ryukyuensis* Konishi.

***Pristaulacus edoardoi* Turrisi, sp. nov.**
(Figs. 9, 29, 49, 69, 91, 93, 95, 114)

Type material. GREECE: **holotype** ♀ labelled: "Greece, Kreta, Theriso, 9.85, leg. Dr. Schurmann/Parasit *Pedostr. ariadne, Platanus* sp./*Pristaulacus edoardoi* Turrisi sp. nov., ♀, 2003, Holotypus" (DBAC); **paratype** ♂ labelled: "Greece, Kreta, Therisso, 6.84, leg. Dr. Schurmann/Parasit v. *Str. ariadne*/*Pristaulacus edoardoi* Turrisi sp. nov., ♂, 2003, Paratypus" (DBAC); **paratype** ♂ labelled: "Graecia, Kreta, Therison, 5.82, l. Dr. Schurmann/*Strangalia ariadne*/*Pristaulacus edoardoi* Turrisi sp. nov., ♂, 2003, Paratypus" (DBAC); **paratype** ♀ labelled: "Platania/Volos GR, 21.6.2004, leg. K. Standfuss/*Pristaulacus edoardoi* Turrisi sp. nov., ♀, 2005, Paratypus" (OLML).

Etymology. Named in honour of my father and friend Edoardo Turrisi.

Type locality. Crete Island, Theriso (Greece).

Notes on type material. The holotype ♀ lacks the right fore leg and has the metasoma weakly damaged. One of the three paratypes (♂ from Therison VI.1984) lacks the distal half of both antennae.

Description. ♀ (holotype). Length (excluding ovipositor): 13.6 mm; fore wing length: 9.6 mm.

Colour black except: lower part of clypeus and median part of mandible red orange; maxillo-labial complex blackish brown, with articles 4–6 of labial palpus red orange; distal half of fore femur, apex of mid femur, fore and mid tibiae and tarsi, and hind tarsus light red orange; hind tibia dark brown; wings hyaline, with veins and stigma brown, except vein SC+R+SR, blackish; fore wing with a small brown spot below stigma and apex infuscate; hind wing with vein 1-SC+R dark brown, other veins light brown; distal half of metasomal segment 1, apical part of segment 2 and most of segment 3 dark red orange; valvula 3 of ovipositor brown. Setae: mainly brown, except: goldish brown on clypeus, subantennal groove, lower part of lateral margins of frons, and malar area; yellow gold on mandible.

Head (Figs. 9, 29), from above, 1.3x wider than long, shiny except frons, dull; occipital margin weakly convex; temple, from above, well developed, 1.2x longer than eye length, strongly convergent posteriorly, and weakly convex; occipital carina narrow, 0.2x diameter of an ocellus; POL:OOL= 0.9; ocellar area 2.0 wider than long; vertex striolate punctate, especially just behind ocellar area; frons striolate rugose, with irregular and weak transverse carinae; clypeus polished, with irregular, coarse, deep, and scattered punctures; temple polished with fine, superficial, and scattered punctures (distance between punctures 3–5x diameter of a puncture); malar area extensively and irregularly punctate, with coarse, deep, and very dense punctures; occipital area polished; mandible polished and shiny with coarse and deep punctures on proximal half, and in middle; antenna length 0.9x fore wing length; A3 5.1x longer than wide; A4 8.5x longer than wide, and 1.5x longer than A3; A5 8.3x longer than wide, and 1.4x longer than A3; following antennomeres progressively shorter, A13 dorsoventrally compressed, with rounded apex, 2.0x longer than wide. Setae: erect or semierect, long, strong, and moderately dense, except on temple and on clypeus, less strong, longer, and scattered; recumbent, moderately long, and dense on malar area, on subantennal groove, and on lower part of lateral margins of frons; semierect, short, and scattered on A1; setae length of temple as long as diameter of an ocellus.

Mesosoma (Fig. 49) moderately sculptured, very shiny; pronotum extensively polished, with a few irregular carinulae, and lateroventral margins angulate, without tooth; propleuron polished and shiny, with very fine, superficial, and very scattered punctures (distance between punctures more than 5x diameter of a puncture); prescutum triangular, not concave, shiny, polished, with a few punctures on apical part; mesoscutum transverse carinate with anterior margin, in lateral view, regularly rounded; notaulus deep and narrow; scutellum with concentric carinae, except on margins; mesopleuron transverse carinate to areolate rugose, except upper part of mesepisternum, polished; metanotum longitudinally carinate; propodeum areolate rugose, with dorsal surface extensively polished, and base longitudinally carinate; ventral parts of mesosoma extensively rugulose; fore wing with vein 2-rs+m long; fore coxa polished, shiny, with very fine, superficial, and scattered punctures; mid coxa shiny, transverse striolate; hind coxa (Fig. 69) shiny, transverse carinulate on dorsal sur-

face, polished on ventral surface, with fine, superficial, and dense punctures (distance between punctures 1.0–1.5x diameter of a puncture) except on margins, transverse carinulate; trochanters polished, shiny, with regular, moderately coarse, deep, and dense punctures, less dense on fore trochanter; hind trochanter finely rugulose on ventral surface; femora dull on dorsal surface, with moderately coarse, deep, and dense punctures, shiny on ventral surface, with fine, superficial, and scattered punctures; hind femur extensively transverse striolate on ventral surface; spurs of mid tibia of the same length; inner spur of hind tibia longer than outer spur; hind basitarsus 9.4x longer than wide, and less than 1.3x longer than tarsomeres 2–5; claw with four well-developed teeth, the basal one very small. Setae: erect or semierect, short, and scattered, longer and denser on pronotum; erect, long, and scattered on hind surface of propodeum; erect, short, and scattered on propleuron, with setae length 0.4–0.5x fore pretarsus length; semierect, moderately long, and dense on fore and mid coxae, and on ventral surface of hind coxa; erect, short, and very scattered on dorsal surface of hind coxa; erect, short, and dense on trochanters; recumbent, very short, and dense on dorsal surface of fore and mid femora, erect, slightly longer, and scattered ventrally; recumbent, short, and dense on dorsal surface of hind femur, semierect, short, and moderately dense on ventral surface.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole long, moderately slender, 3.0x longer than wide; segments 1 and 2 polished and shiny; following segments very finely striolate, with very fine, superficial, and moderately dense punctures, except most of lateral margin of T3–T7; S7 very finely striolate, with moderately coarse, deep, and dense punctures on apical part; T8 with fine, superficial, and scattered punctures, more dense and deeper on apical part; ovipositor 1.1x longer than fore wing length; valvula 3 of ovipositor with acute apex. Setae: segments 1 and 2 glabrous; recumbent, very short, and moderately dense on T3–T6, except on sides; semierect, strong, moderately long, and scattered on S7 and T8, more dense on apex.

TABLE 3. Diagnostic characters of *P. gloriator* and *P. edoardoi* Turrisi, sp. nov. ♀, ♂.

Pristaulacus gloriator ♀, ♂	*Pristaulacus edoardoi* **sp. nov.** ♀, ♂
Head shiny with fine and moderately dense punctures, except on frons, more or less extensively rugulose.	Head coarsely and densely punctate-rugulose, especially on frons.
Temple, from above, subparallel and regularly rounded.	Temple, from above, strongly convergent and weakly convex.
Hind margin of head straight.	Hind margin of head convex.
Setae of head white or light brown, fine, and moderately dense.	Setae of head dark brown, strong, and dense.
Setae of temples 0.8x diameter of an ocellus.	Setae of temples 0.5x diameter of an ocellus.
♂: apical antennomere normal.	♂: apical antennomere strongly enlarged.
Mesosoma dull, extensively sculptured.	Mesosoma very shiny, with scattered sculpture.
Setae of mesosoma long and dense.	Setae of mesosoma short and scattered.
Antenna black brown.	Antenna extensively red orange in middle.
Metasoma extensively red orange.	Metasoma black brown.
Hind tarsus light yellow.	Hind tarsus red orange.
Ovipositor longer than fore wing length.	Ovipositor as long as fore wing length.

♂ (paratype from Therison, V.82). Length: 13.8 mm; fore wing length: 10.7 mm. Colour, structure, and setae like ♀, except: antenna with ventral surface of A1 and uniformly A9–A12 reddish orange; wings hyaline, without dark spots; ocellar area 2.3x wider than long; antenna slightly longer than fore wing; A3 3.5x longer than wide; A4 5.6x longer than wide, and 1.6x longer than A3; A5 5.8x longer than wide, and 1.5x

longer than A3; A13 with distal half strongly enlarged, and apex truncated; hind basitarsus 10.3x longer than wide, and 1.35x longer than tarsomeres 2–5; petiole 3.5x longer than wide; metasomal segments 1 and 2 polished, shiny, with a few sparse semierect setae; following metasomal segments with recumbent, very short, and dense setae.

Intraspecific variation. Examined: 2♀, 2♂. Length: 13.6–13.7 (♀); 12.6–13.8 mm (♂); fore wing length: 9.6–11.1 mm (♀); 9.4–10.7 mm (♂); ovipositor length 1.0–1.1x fore wing length. One of the two male paratypes has the fore leg entirely reddish orange.

Distribution. Crete Island, Greece.

Remarks. This new species is easily identified by several distinctive morphological features: shape and sculpture of the head and sculpture of the mesosoma, which is shiny with a few carinae. As *P. gloriator*, the new species has a narrow occipital carina, pronotum without teeth, and four teeth on the inner margin of the claw; however, it can be distinguished by several characters reported in Table 3.

Biology. Host: *Pedostrangalia ariadne* (K. Daniel, 1904) (Coleoptera, Cerambycidae).

***Pristaulacus galitae* (Gribodo, 1879)**
(Figs. 1, 10, 30, 50, 70, 90, 119)

Aulacus galitae Gribodo, 1879: 339 (♀).
Pristaulacus bimaculatus Kieffer, 1900a: 814 (♀).
Pristaulacus immaculatus Kieffer, 1904a: 13 (♂) (**syn. nov.**).
Pristaulacus bimaculatus: Kieffer, 1912: 382.
Pristaulacus immaculatus: Kieffer, 1912: 382.
Pristaulacus galitae: Kieffer, 1912: 385.
Pristaulacus bimaculatus: Hedicke, 1939: 5.
Pristaulacus galitae: Hedicke, 1939: 10.
Pristaulacus immaculatus: Hedicke, 1939: 11.
Pristaulacus bimaculatus arozarenae Ortega & Baez, 1985: 509 (♀) (**syn. nov.**).
Pristaulacus arozarenae: Smith, 2001: 279.
Pristaulacus galitae: Smith, 2001: 285.
Pristaulacus immaculatus: Smith, 2001: 287.

Material examined. TUNISIA: **holotype** ♀ labelled "Galita, VIII.77, Violante/Typus (red label)/*Galitae* Grib./*Aulacus Galitae* Grib., Tipo ♀/Holotypus, *Pristaulacus galitae* Grib. ♀" (CPTO). GERMANY: südlich von Samsun, auf Brachland, 28.VI.1926, 1♂, Bischoff S.G. (ZMHB); 1♀ without data (ZMHB). FRANCE: Gudmont (Haute-Marne), S.te Claire-Deville, 1♂, coll. J. De Gaulle, 1919 (MNHN); Maisons-Laffitte (Seine-et-oise), 1♂, coll. J. De Gaulle, 1919 (MNHN). SPAIN: Gibilterra, 1914, 1♂, coll. P. Cameron (BMNH); Jaen Siles, 30.VII–5.VIII.1989, 1♀, 1♂ ex larvae, from wood of *Pinus* sp. containing *Pogonocherus perroudi*, G. Sama leg. (DBAC); Castrovido (Burgos), 15.VIII.1989, 1♂, on flowers of *Foeniculum vulgare*, C. Rey leg. (MNMS); Tardajos (Burgos), 10.IX.1995, 2♀, P. Bahillo leg. (MNMS); Madrid, 21.VII.1993, 1♀, ex larva, from wood of conifer, J. & E. Vives leg. (MNMS); **lectotype** ♀ of *Pristaulacus bimaculatus* ssp. *arozarenae* Ortega & Baez labelled "Tenerife, 25.VII.1963, R. Arozarena/Museo Nacional de Ciencias Nat., HY 105/*Pristaulacus bimaculatus* Kieffer ssp. *arozarenae* n. G. Ortega det./Lectotypus ♀, Turrisi des., 2002 (red label)/*Pristaulacus galitae* (Gribodo, 1872), G.F. Turrisi det., 2002" (MCNC); **paralectotypes** ♀, same locality of lectotype, 25.VII.1963, 1♀, R. Arozarena; 1♀, 27.VII.1963; 1♀, 3.VIII.1963; 1♀, 22.IX.1963; 1♀, 13.VII.1964 (MCNC). RUSSIA: **holotype** ♀ of *P. bimaculatus* Kieffer labelled "Daghestan/Type/*Pristaulacus bimaculatus* n. sp./Berl. Zool. Mus." (ZMHB). AZERBAIJAN: Caucasus, Elisavetpol (= Gandzha), 8–11.VII.1912, 1♀, Babauzhanidi leg., coll. Semenow (ZIN). UKRAINE: Kharkov, 1♀ (ZIN); Crimea, Yu.(zhnyi) ber.(eg), Kryma, ot Karakau do Yaily, 1964, 1♀, Vidgal'm leg. (ZIN). CROATIA: Zaostrog, 2003, 1♀, L. Karaus leg. (OLML). ITALY: Liguria, Genova in Museo, 6.VI.1984, 1♂, V. Raineri leg., "all'interno

della vetrina Struzzi" (CPTO); Piedmont (?), coll. Ferrero (MHNG); Friuli-Venezia Giulia, Val Rosandra (Trieste), 14.VIII.2000, 1♀, ex larva, from wood of *Coronilla emerus* containing *Trichoferus spartii*, G. Sama leg. (DBAC); Duino (Trieste), Semt. Rilke, VII.1988, 1♀, ex larva, from wood of *Coronilla* sp. containing *Trichoferus spartii*, P. Rapuzzi leg. (PRCU); Tuscany, Giglio Island, VI.1901, G. Doria (MFNB); Latium, Viterbo, Monte Frascone, tra Fondaccio e Piana delle Grotte, m 370, VI.2005, 6♀, 4♂, ex larva, from stems of *Quercus cerris* containing *Pseudosphegesthes cinereus*, A.B. Biscaccianti leg. (DBAC); same locality, VII–VIII.2005, 2♀, ex larva, from stems of *Quercus cerris* containing *Pseudosphegesthes cinereus*, A.B. Biscaccianti leg. (DBAC); Abruzzo, Pescara, Morrone, Bolognano, loc. Grotta Scura, m 300, 15.VII.2005, 2♀, ex larva, from living stems of *Coronilla valentina*, containing *Trichoferus spartii*, A.B. Biscaccianti leg. (DBAC); Apulia, Castellaneta, VIII.1977, 2♀ ex larva, from wood of *Robinia pseudacacia* containing *Purpuricenus kaehleri* and *Niphona picticornis*, G. Sama leg. (MSNP); Sardinia, Domusnovas, 1♀, 26.VIII.1982 (MRSN); Sardinia, Tortolì (Nuoro), 8.VI.1975, 2♀, R. Mourglia leg. (DBAC, MFNB); Sardinia, Olbia (Sassari), VI.1979, 1♀, Mourglia leg. (MFNB); Sicily, Madonie, Torre Montaspro, m 800 (Palermo), VIII.1998, 1♀, ex larva, from wood of *Quercus* sp. containing *Pseudosphegesthes cinereus*, P. Rapuzzi leg. (PRCU); VII.1996, 1♀ (PRCU); 20.VI.1990, 1♀ (PRCU); 20.VII.1990, 1♀, 1♂ (PRCU); 28.VII.1989, 1♀, ex larva, from wood of *Quercus cerris* containing *Pseudosphegesthes cinereus*, P. Rapuzzi leg. (PRCU); Sicily, Capo Alì, Alì Terme (Messina), m 20, 13.VII.2001, 1♂, on flowers of *Bupleurum fruticosum*, G.F. Turrisi leg. (DBAC); Sicily, Mount Etna, Randazzo, 15.VII.2000, 2♀, 1♂, ex larva, from wood of *Ficus carica*, P. Cogoi leg. (DBAC); Sicily, Mount Etna, Piano Tavola (Belpasso), 11.VIII.1993, 1♂, G.F. Turrisi leg., on leaves of *Ficus carica* covered by Homoptera Coccoidea (DBAC); Sicily, Catania, San Nullo, 1♀, 1♂, VIII.1996 ex larva, from wood of *Ficus carica* containing *Trichoferus fasciculatus* and *Niphona picticornis*, G.F. Turrisi leg. (DBAC); 21.VIII.2001, 2♂, ex larva, from wood of *Pistacia terebinthus* containing several species of Cerambycidae: *Gracilia minuta*, *Niphona picticornis*, *Penichroa fasciata*, *Chlorophorus pilosus glabromaculatus* (DBAC). GREECE: Peloponneso, Artemisia, 15.V.1999, 1♀, 1♂, coll. Ríha (OLML); Crete Island, Chania Omalos, m 1300, 2.VIII.1987, 1♀, 1♂, ex larva, from wood of *Berberis cretica* containing *Trichoferus berberidis*, G. Sama leg. (DBAC); Crete Island, Chania Dhalos, m 1000–1500, 8.VIII.1989, 1♂ ex larva, from wood of *Berberis cretica* containing *Trichoferus berberidis*, G. Sama leg. (DBAC); Rhodos Island, Vlicha NW, Lindos, 15.X.2002, 1♂, Martin Schwarz leg. (OLML). TURKEY N-E: Tokat Almus, m 900, 19.IV.1994, 1♂, D. Gianasso leg. (MSNP). 1♀ without locality data, ex larva emerged 30.VI.1987, from wood of *Quercus ilex* containing *Chlorophorus pilosus glabromaculatus*, G. Sama leg. (MSNP). MOROCCO: **lectotype** ♂ of *P. immaculatus* Kieffer, 1904 labelled "Tanger/Muséum Paris, coll. J. De Gaulle 1919/Type/*P. schlettereri* var. *immaculatus*/lectotypus, Madl 1988/*Pristaulacus immaculatus* Kieffer, 1904 ♂, Lectotypus G. F. Turrisi des. 2004" (MNHN); 2♂ **paralectotypes** of *P. immaculatus* Kieffer, 1904 both labelled "Tanger/Muséum Paris, coll. J. De Gaulle 1919/Type/paralectotypus, Madl 1988/*Pristaulacus immaculatus* Kieffer, 1904 ♂, Paralectotypus G. F. Turrisi des. 2004" (MNHN); Tanger, 1♀ (ZMUC); 2♀, 7♂, coll. Vachal and coll. André (MNHN); Haut Atlas, Tizi n'Test, m 2000, VIII.1985, 1♀, 1♂, ex larva, from wood of *Cistus villosus* containing *Trichoferus fasciculatus*, G. Sama leg. (DBAC); 21.VIII.1985, 1♂, ex larva, from wood of *Cistus* sp. containing *Trichoferus cisti*, G. Sama leg. (DBAC). ALGERIA: Djurdjura Kabylia, m 1660, 1♀, IV.1978, Mourglia leg. (MRSN); Djurdjura Kabylia, m 1500, IV.1978, 1♀, R. Mourglia leg. (MRSN); Batna Arris, 10.VI.1982, 2♀, G. Sama leg. (MSNP); Setif, m 1000, 8.V.1979, 3♂, R. Mourglia leg. (DBAC, MFNB, USNM). TUNISIA: Galita, VIII.1877, 1♀, Violante leg. (MRSN). **Without geographic data**: 1♀, coll. Schmiedeknecht (DEI); 1♂ (DEI).

Records from literature. Gribodo (1879), Schletterer (1889), Kieffer (1900a, 1903, 1904a, 1912), Kokujev (1910), Oehlke (1983, 1984), Ortega & Baez (1985), Pagliano (1986), Kozlov (1988), Madl (1988), Šedivý & Čapek (1988), Hilszczański (2002), Ortega (2005), Turrisi (2006b).

Type locality. "Isola Galita" (Gribodo 1879).

Notes on type material. The type material consists of only the holotype (♀), indicated as being in the col-

lection of MCSN (Gribodo 1879), but it is currently stored in CPTO.

Redescription. ♀ (holotype). Length (excluding ovipositor): 8.0 mm; fore wing length: 4.5 mm.

Colour black, except: median part of mandible extensively reddish; antenna, maxillo-labial complex, and propleuron dark red, with labial and maxillary palpi lighter; legs, except coxae, extensively dark red, with fore and mid tibiae and tarsi lighter; wings hyaline, with veins and stigma brown; fore wing with a wide subrectangular brown spot below stigma, 0.5x as wide as stigma length, reaching DC, two fused brown spots, on median part of B and along vein cu-a (between SB and SDC); metasoma red orange, except dark red on dorsal part of T1, and on lateral parts of following tergites and sternites; valvula 3 of ovipositor reddish brown. Setae: whitish in most part, except white goldish on mandible, light brown on antenna (except A1), brown goldish on metasoma, brown on valvula 3 of ovipositor.

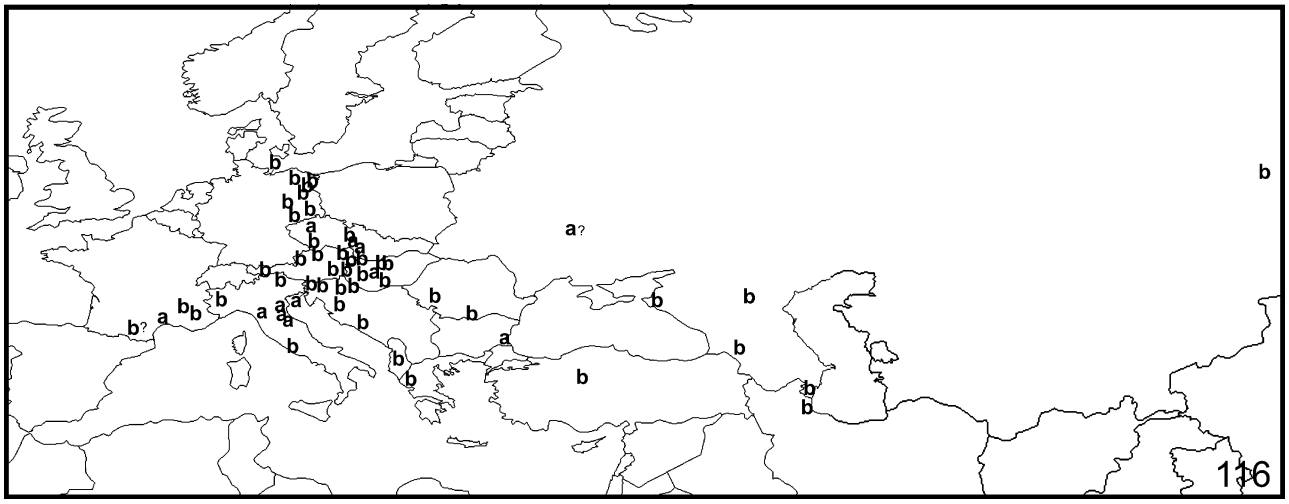


FIGURE 116. Distribution of Palaearctic *Pristaulacus* Kieffer. a= *P. chlapowskii* Kieffer; b= *P. gloriator* (Fabricius).

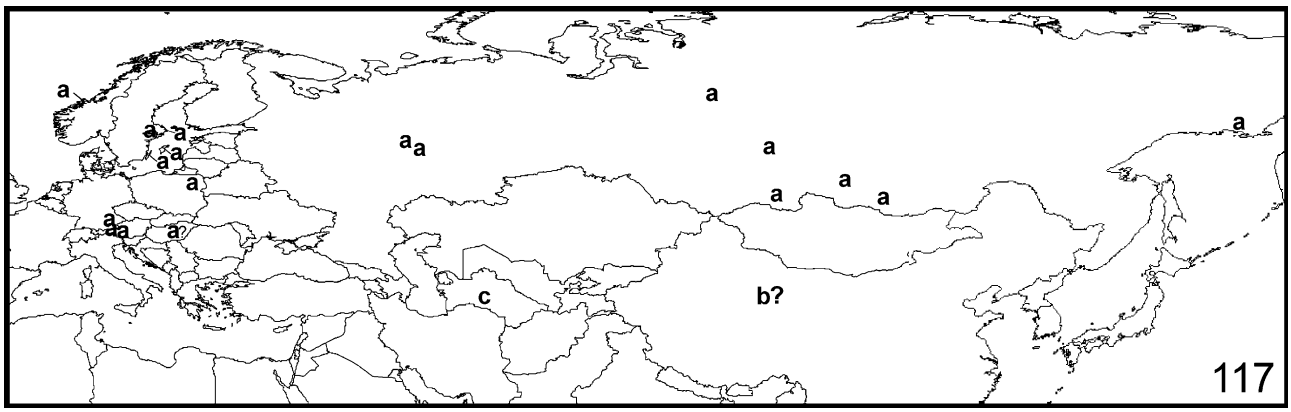


FIGURE 117. Distribution of Palaearctic *Pristaulacus* Kieffer. a= *P. gibbator* (Thunberg); b= *P. longicornis* Kieffer; c= *P. morawitzi* (Semenow).

Head (Figs. 10, 30), from above, 1.3x wider than long, polished and shiny; occipital margin straight; temple, from above, moderately developed, 0.9x as long as eye length, moderately convergent posteriorly and regularly rounded; occipital carina wide, lamelliform, 0.5x diameter of an ocellus; POL:OOL = 1.3; ocellar area 2.1x wider than long; frons with fine, superficial, and scattered punctures (distance between punctures 2x diameter of a puncture); clypeus with coarse, deep, and scattered punctures, less dense on temple and on vertex (distance between punctures 2–3x diameter of a puncture); malar area with moderately coarse, deep, and dense punctures; occipital area polished; mandible polished and shiny, with coarse and deep punctures on base and in middle; antenna length 0.8x fore wing length; A3 5.1x longer than wide; A4 6.5x longer than wide, and

1.4x longer than A3; A5 6.5x longer than wide, and 1.3x longer than A3; following antennomeres progressively shorter; A14 weakly dorsoventrally compressed, with apex regularly rounded, 2.0x longer than wide. Setae: erect, long, and moderately dense on frons, less dense on remaining parts; semierect, short, and scattered on A1; setae length of temple as long as diameter of an ocellus.

Mesosoma (Fig. 50) coarsely sculptured; pronotum areolate rugose, with one median tooth on each lateroventral margin; propleuron shiny, polished, with very fine, superficial, and very scattered punctures (distance between punctures 4–5x diameter of a puncture); prescutum subtriangular, moderately concave in middle, transverse carinate; mesoscutum transverse carinate, with anterior margin, in lateral view, regularly rounded; notaulus deep and moderately wide; scutellum transverse carinate, with concentric carinae; mesepimeron transverse carinate; mesepisternum areolate rugose, except a small upper area punctate foveolate and shiny; metanotum mostly polished and shiny, with a few longitudinal carinae; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma polished, rugulose on sides; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with very fine, superficial, and scattered punctures; mid coxa transverse carinulate; hind coxa (Fig. 70) transverse carinate on dorsal surface, transverse carinulate on ventral surface; trochanters polished, shiny, with regular, moderately coarse, deep, and dense punctures, less coarse, moderately deep, and less dense on fore trochanter; femora dull on dorsal surface with moderately coarse, deep, and dense punctures, shiny on ventral surface, with fine, superficial, and very scattered punctures on fore and mid femora, scattered on hind femur; inner spur of mid and hind tibia, slightly longer than outer spur; hind basitarsus 9.6x longer than wide, and 1.1x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: semierect, moderately long, and scattered on dorsal surface, more dense on the remaining parts, except on propodeum, erect and long; erect, moderately dense, and long on propleuron, with setae length as fore pretarsus length; semierect, long, and dense on coxae and trochanters; recumbent, short, and dense on dorsal surface of fore and mid femora, erect, short, and scattered on ventral surface; recumbent or semierect, short, and moderately dense on hind femur.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, moderately slender, 2.4x longer than wide; segments 1 and 2 polished and shiny; following segments very finely sculptured, with very fine, superficial, and moderately dense punctures; S7 coarsely and densely punctate striolate; T8 with fine, superficial, and scattered punctures; ovipositor 1.2x longer than fore wing length; valvula 3 of ovipositor with acute apex. Setae: segments 1 and 2 glabrous; recumbent, short, and moderately dense on following segments, more dense on the last three tergites.

♂**.** Length: 8.6 mm; fore wing length: 6.0 mm. Colour, structure, and setae like ♀, except: antenna length 0.8x fore wing length; A3 3.0x longer than wide; A4 4.0x longer than wide, and 1.5x longer than A3; A5 as long and wide as A4; A13 subcylindrical 3.2x longer than wide, with apex rounded; hind basitarsus 10.2x longer than wide, and 1.2x longer than tarsomeres 2–5; petiole 3.0x longer than wide; metasomal segments 1 and 2 polished, shiny, and glabrous; following tergites with regular, very fine, superficial, and moderately dense punctures, and recumbent, short, and moderately dense setae; median part of sternites with very fine, and less dense punctures, and recumbent, short, and less dense setae; genital capsule (Fig. 90) with apex of paramere truncated, cuspis long and slightly curved, digitus wide, with lower apex narrow and long.

Intraspecific variation. Examined: 55♀, 39♂. Length: 8.0–11.1 mm (♀); 8.6–11.2 mm (♂); fore wing length: 4.5–7.8 mm (♀), 6.0–7.6 mm (♂); ovipositor length 1.0–1.2x fore wing length. The abundant material examined, coming from the entire distribution range, allows data on intraspecific variation of this species. The chromatic pattern is constant while the colour varies from light (as in holotype), with some parts of head (temple and malar area), of mesosoma, and of coxae reddish brown, to dark tones. The dark spots on the fore wing are variable, very wide to very small, or totally absent, as I stated in some specimens. The specimens without dark spots on the fore wing were considered by some authors as a distinct species, *P. immaculatus* Kieffer (= *P. galitae* Gribodo), but the continuous variation of the size of these spots, in my opinion, is only intraspecific variation.

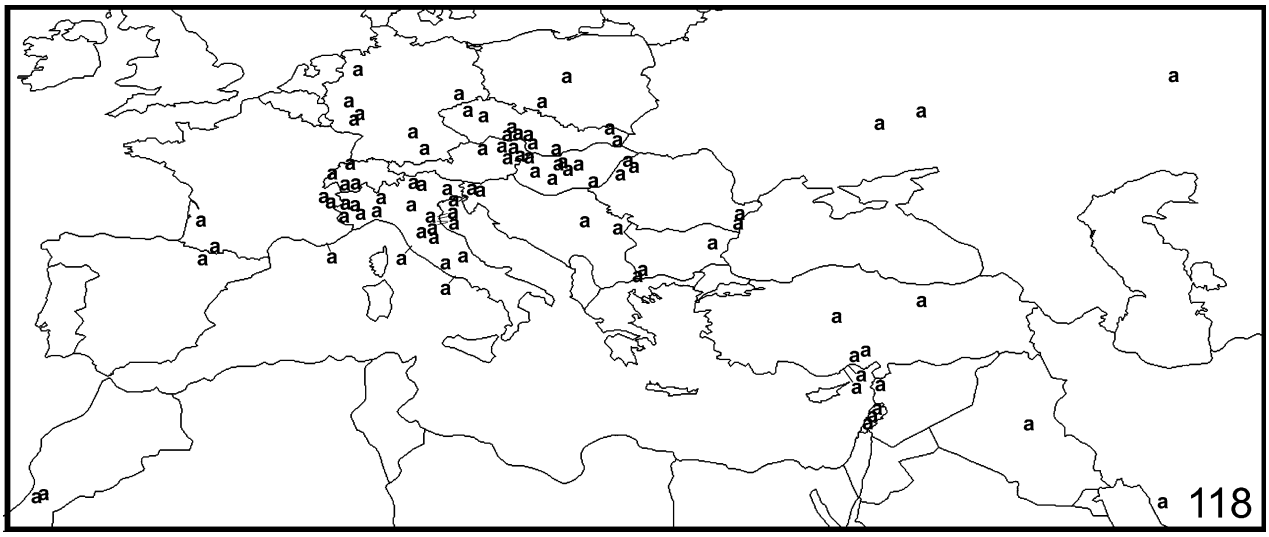


FIGURE 118. Distribution of *Pristaulacus compressus* (Spinola).

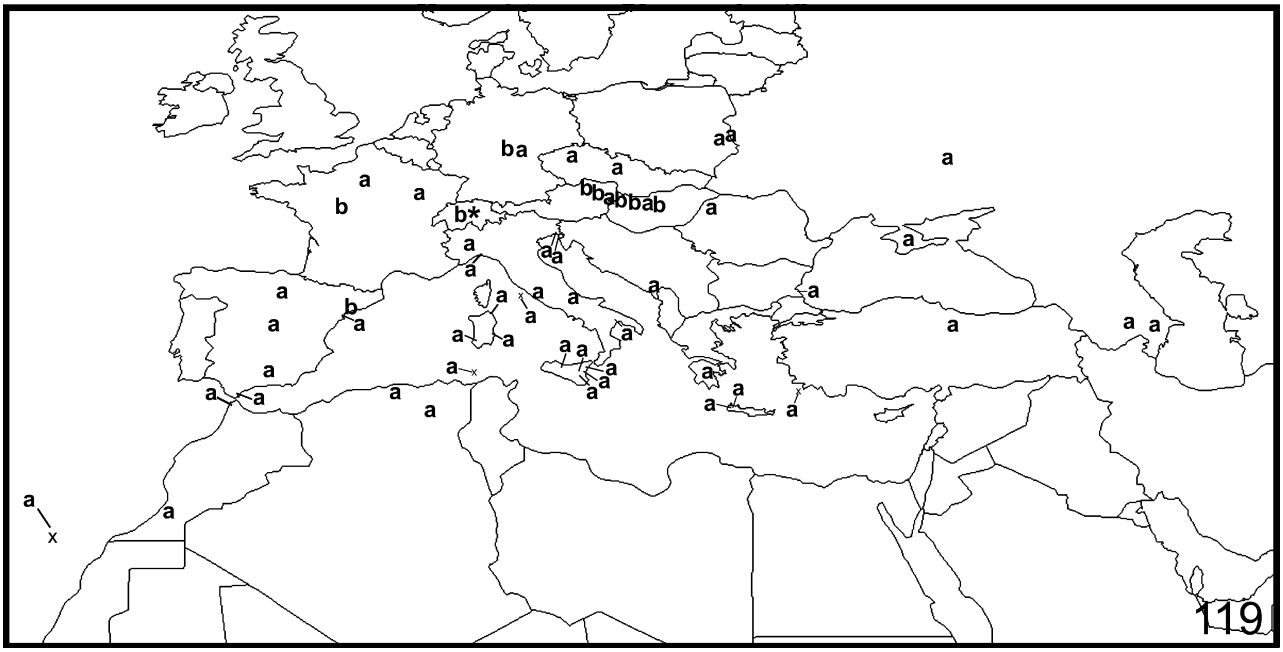


FIGURE 119. Distribution of Palaearctic species of *Pristaulacus* Kieffer. a= *P. galitae* (Gribodo); b= *P. patrati* (Audinet-Serville).

Distribution. Spain, Canary Islands (Tenerife), France, Germany, Austria, Czech Republic, Slovakia, Bulgaria, Hungary, Romania, European Russia, Ukraine, Italy, Sardinia, Sicily, Yugoslavia, Croatia (*), Greece (*), Crete Island (*) Rhodos Island (*), Turkey (*), Morocco, Algeria, Tunisia including Galita Island.

Remarks. *Pristaulacus bimaculatus* Kieffer, 1900 (type locality: "Daghestan", holotype in ZMHB, examined) was considered by Pagliano (1986) as synonym of *P. galitae* but without any comments, especially with regard to the type material. The examination of the type specimens of the two above mentioned taxa allows confirmation of this synonymy, on the basis of the congruence of the chromatic patterns and especially of the characters of exoskeleton.

Pristaulacus immaculatus Kieffer, 1904 (type locality: "Tanger", type material in MNHN, examined) was described from three specimens; for this taxon Kieffer (1904a) did not indicate an holotype, thus the type specimens should be considered as syntypes. Madl in the year 1988 (original handwritten red labels) desig-

nated, among these syntypes, one lectotype and two paralectotypes (unpublished), which I here formally establish (ICZN 1999: article 74). *Pristaulacus immaculatus* is considered as valid species by Madl (1988) and Smith (2001), although Kofler & Madl (1990) considered it as a synonym of *Pristaulacus galitae*, without any comments and any formal indication. The comparison of the type specimens of the above mentioned taxa confirms the previously proposed synonymy (Kofler & Madl 1990), and it is here formally established (**syn. nov.**). The absence of brown spots on the fore wing, indicated as the most important diagnostic feature of *P. immaculatus* (Kieffer 1904a, 1906, 1912), is within the intraspecific variability of *P. galitae*.

Pristaulacus bimaculatus arozarenae Ortega & Baez, 1985 (type locality: "Tenerife", type material in MCNC, examined) was described from five specimens without indication of holotype (Ortega & Baez 1985). These specimens are syntypes, among which I designate a lectotype and four paralectotypes (ICZN 1999: article 74). *Pristaulacus bimaculatus arozarenae* is considered as good species by Smith (2001), obviously on the basis of description only. Comparison of the type series of *P. bimaculatus arozarenae* with abundant material of *P. galitae*, including the holotype, allows establishment that the first taxon is a synonym of the second (**syn. nov.**), for the congruence of numerous important characters: a) shape, sculpture and pubescence of head; b) occipital carina lamelliform, 0.5x as wide as diameter of an ocellus; c) index length/width of antennomeres; d) shape and sculpture of mesosoma; e) presence of only one tooth on the lateroventral margin of pronotum; f) shape and sculpture of hind coxa; g) index length of ovipositor/length of fore wing; and h) chromatic pattern.

Biology. Hosts: *Trichoferus fasciculatus* (Faldermann, 1837), *Niphona picticornis* Mulsant, 1839 (Coleoptera, Cerambycidae) (Turrisi 1999); *Scobicia pustulata* (Fabricius, 1801) (Coleoptera, Bostrychidae); *Denops albofasciatus* (Charpentier, 1825) (Coleoptera, Cleridae) (Oehlke 1983); *Purpuricenus kaehleri* (Linnaeus, 1758) (Coleoptera, Cerambycidae) (Lichtenstein & Picard 1918). I add: *Pogonocherus perroudi* Mulsant, 1839, *Trichoferus berberidis* Sama, 1994, *T. cisti* Sama, 1987, *T. spartii* (Müller, 1948), *Pseudosphegesthes cinereus* (Castelnau & Gory, 1836), *Chlorophorus glabromaculatus* (Goeze, 1777) (Coleoptera, Cerambycidae). Flowers visited: *Bupleurum fruticosum* L., *Foeniculum vulgare* Miller (Apiaceae).

Pristaulacus gibbator (Thunberg, 1822)

(Figs. 11, 31, 51, 71, 98–99, 103, 117)

Ichneumon gibbator Thunberg, 1822: 270 (♀).
Aulacus Esenbecki Dahlbom, 1837: 174 (♀).
Aulacus calcaratus Kriechbaumer, 1878a: 39 (♀).
Aulacus calcaratus Kriechbaumer, 1878b: 5 (♀).
Aulacus sibiricola Semenow, 1892a: 27; 1892b: 215 (♂) (**syn. nov.**).
Pristaulacus esenbecki: Kieffer, 1912: 384.
Odontaulacus sibiricola: Kieffer, 1912: 366.
Pristaulacus gibbator: Hedicke, 1939: 9.
Odontaulacus sibiricola: Hedicke, 1939: 22.
Aulacostethus gibbator: Györfi , 1964: 50.
Pristaulacus gibbator: Smith, 2001: 286.
Pristaulacus sibiricola: Smith, 2001: 297.

Material examined. SWEDEN: "Smol", 1♂, ZML-2001 n. 456; 1♂, ZML-2001 n. 457 (sub "*Stephanus coronatus*"), coll. Thomson (MZLU). GERMANY: Schäftlarn (Baviera), 1♀ (ZSMC). AUSTRIA: Karnten, Dobratsch. Hundsmarhof, 5 Km E Badblaiburg, m 900, 26.VII.1998, 1♀ ex larva, from wood containing *Paleocallidium coriaceum* (PRCU); 4 km NE Unken, m 520–600, 26.VIII.1997, 1♀, Martin Schwarz leg. (OLML). POLAND: Biebrzanski Park, Narodowy, 5.VII.1997, 1♀, Hilszczański J. leg. (IBLP). SIBERIA: **holotype** ♂ of *A. sibiricola* Semenow labelled: "63580" (= Nizhnyaa Tunguzka river, near Enisey river, 12.VIII.1873, A. Czekanowski leg., teste S. Belokobylskij)/Gen. ign. *Aulacus* Jur. affine sp. ign./"*Aulacus*

sibiricola m. typ. ♂ un. AS. V.91/*Odontaulacus sibiricola* m. male, Typ. un., A. Semenov-Tian-Shansky det., VII.27/Holotypus *Odontaulacus sibiricola* (Sem.)" (ZIN); Urzhum, prov. Viatskoi g.(ubernii), 11–20.V.1901, 1♂, Krulikovskii leg., coll. Kokueva (ZIN); Territory of Krasnoyarsk, Enisey district, Garevka river (forest), 1♀ (without collecting data) Vetrova leg. (ZIN); Tuva, Hondergei, 1♀, pupa inside holes made by *Callidium* sp. collected 29.VI.1967, emerged 9.VIII.1967, Yanovskiy leg. (ZIN); Khaimskaya, Barguzin road, Zabaikal'sk province, 23.VIII.1907, 1♀, D. Smirnov leg. (ZIN); Magadan province, Sibit-Tiellah, near Vetrennyi, Olen' river, 6.VII.1977, 1♀, Zhiltzova leg. (ZIN).

Records from literature. Thunberg (1822), Dahlbom (1837), Kriechbaumer (1878a, b), Schletterer (1889), Semenow (1892a, b), Kieffer (1903), Györfi (1964), Hedqvist (1973), Oehlke (1983, 1984), Pagliano (1986), Kozlov (1988), Madl (1988, 1990a), Hilszczański (2002).

Type locality. The type locality of *Ichneumon gibbator* is not indicated in the original description, but it must be intended as Sweden (see Oehlke 1983 and Smith 2001).

Notes on type material. The type material of *Ichneumon gibbator* (not examined) consists of two females, one lectotype and one paralectotype, designated by Oehlke (1983) and stored in the collection of the Zoological Institute of Uppsala (Sweden).

Redescription. ♀. Length (excluding ovipositor): 12.7 mm; fore wing length: 9.6 mm.

Colour black, except: mandible (except apex) and maxillo-labial complex blackish, with articles 4–6 of maxillary palpus yellow orange; most of clypeus and legs (except part of fore coxa and trochanter, mid and hind coxae and trochanters, and hind tibia), and metasoma (except segments 1–2) yellow orange, more or less dark; labial palpus and remaining segments of maxillary palpus dark brown; hind tarsus light red orange; A1 extensively red orange; hind coxa and trochanter blackish brown; hind tibia dark brown; wings hyaline, uniformly yellowish, without dark spots, with veins and stigma light brown, the latter with margins darker; hind wing with some veins poorly defined; valvula 3 of ovipositor blackish brown. Setae: whitish to pale yellow on head; yellow gold on mandible; whitish on mesosoma; brownish on metasoma.

Head (Figs. 11, 31), from above, 1.3x wider than long, shiny; occipital margin straight; temple, from above, well developed, 1.15x longer than eye length, weakly convergent posteriorly and weakly convex; occipital carina narrow, cerciniform, 0.2x diameter of an ocellus; POL:OOL = 1.3; ocellar area 2.0x wider than long; frons transverse carinulate with punctures moderately coarse, deep, and dense (distance between punctures 2x diameter of a puncture); vertex and temple polished with punctures less coarse and scattered; median lobe of clypeus polished, with very coarse, deep, and dense punctures; lateral lobes of clypeus without punctures; malar area with irregular, fine to coarse, moderately deep, and dense punctures; occipital area polished; mandible polished and shiny, with coarse and deep punctures at base and in middle; antenna 1.2x longer than fore wing length; A3 7.5x longer than wide; A4 15.7x longer than wide, and 1.9x longer than A3; A5 16.2x longer than wide, and 1.7x longer than A3; following antennomeres progressively shorter, the apical one dorsoventrally compressed, with apex rounded, 2.7x longer than wide. Setae: erect, short, and moderately dense on frons, less dense on vertex and on temple; recumbent, moderately long, and scattered on clypeus, on lateral margins of frons and on subantennal groove; recumbent, short, and dense on malar area; semierect, strong, long, and scattered on A1; setae length of temple as long as diameter of an ocellus.

Mesosoma (Figs. 51, 103) weakly sculptured on dorsal surface, moderately sculptured on lateral parts; pronotum extensively transverse carinate, with lateroventral margins irregularly rugose punctate, regularly rounded and without teeth; propleuron polished and shiny, with some weak carinae and coarse, deep, and moderately dense punctures; prescutum triangular, not concave, polished, with coarse, deep, and dense punctures; mesoscutum transverse carinate (carinae weak and interrupted), with anterior margin, in lateral view, regularly rounded; notaulus very deep and narrow; scutellum transverse carinulate in middle, irregularly rugulose along margins; mesepimeron transverse carinate; mesepisternum areolate rugose, except a small area on upper part foveolate rugose; metanotum irregularly sculptured in middle, longitudinally carinate in lateral parts; propodeum irregularly areolate rugose on dorsal surface, with base less sculptured, transverse carinate

on hind surface; ventral parts of mesosoma extensively transverse carinulate and punctate; fore wing with vein 2-rs+m long; fore coxa polished, shiny, with fine, superficial, and scattered punctures, or confused rugulose; mid coxa finely striolate punctate; hind coxa (Fig. 71) transverse carinulate, with coarse, moderately deep, and very scattered punctures; trochanters shiny, with irregular, coarse, deep, and moderately dense punctures; femora uniformly striolate, dull on dorsal surface, with fine to moderately coarse, moderately deep, and dense punctures, weakly shiny on ventral surface, with fine, moderately deep, and very scattered punctures; spurs of mid and hind tibiae of the same length; hind basitarsus 14.5x longer than wide, and 1.2x longer than tarsomeres 2–5; claw with a small basal tooth and two well separated and equally spaced teeth. Setae: erect, short, and scattered on dorsal surface, semierect or recumbent, longer, and more dense on lateral and ventral parts; erect, long, and scattered on hind surface of propodeum; erect and moderately long and dense on propleuron, with setae length 0.6x fore pretarsus length; semierect, long, and moderately dense on coxae and trochanters, less dense on dorsal surface of hind coxa; erect, short, and moderately dense on dorsal surface of femora, scattered on ventral surface.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole long, slender, 3.0x longer than wide, longitudinally and irregularly carinulate, with coarse, deep, and scattered punctures (sometimes poorly defined); remaining part of segments 1-2 polished and shiny; following segments very finely sculptured, with moderately coarse, superficial, and dense punctures on middle of tergites and sternites, more dense on last two tergites; S7 with coarse, deep, and dense punctures; lateral parts of T8 with moderately coarse, superficial, and scattered punctures; ovipositor 1.8x longer than fore wing length; valvula 3 of ovipositor with apex acute. Setae: segments 1 and 2 glabrous; recumbent, very short, and moderately dense on remaining segments, longer on S7 and T8.

♂**.** Length: 14.8 mm; fore wing length: 10.6 mm. Colour, structure, and setae like ♀, except: antenna slightly longer than fore wing length; A3 3.8x longer than wide; A4 7.0x longer than wide, and 1.8x longer than A3; A5 as long and wide as A4; petiole 3.5x longer than wide.

Intraspecific variation. Examined: 8♀, 4♂. Length: 12.3–13.9 mm (♀); 12.0–14.8 mm (♂); fore wing length: 9.7–10.8 mm (♀), 7.3–10.6 mm (♂); ovipositor: 1.8–2.0x longer than fore wing. The colour of some parts of the body varies from light to dark tones: fore and mid coxae may be uniformly yellow orange or extensively or entirely dark brown; metasoma may be extensively darkened, with part of T1–T2 orange; clypeus and A1 may be dark brown, instead of orange. The colour of the tarsi does not vary in all the specimens examined.

Distribution. Sweden, Germany, Austria (*), Poland, Russia, including Siberia (*).

Remarks. The material examined significantly extends the distribution of this species to the south (Austria) and to the east (Russia, including Siberia).

Aulacus sibiricola Semenow, 1892 was described from one ♂ from Siberia (type locality: “Sibiria centralis: ad fl. Tunguskam Inferiorem”) (Semenow 1892a, b). The type specimen was not previously located (see Smith 2001), but I found it in ZIN collection. Recently, this taxon was correctly transferred to the genus *Pristaulacus* by Smith (2001) on the basis of its description by Semenow (1892a, b). Based upon examination of this type specimen, it is possible to establish that *Aulacus* (= *Pristaulacus*) *sibiricola* is a synonym of *P. gibbator* (**syn. nov.**). Several important features shared by these two taxa clearly support the proposed synonymy: 1) chromatic pattern; 2) shape, sculpture, and pubescence of head; 3) shape of occipital carina; 4) index length/width of A3–A5; 5) shape and sculpture of mesosoma; 6) shape of pronotum, without teeth on lateroventral margin; and 7) presence of three equally spaced teeth on the inner margin of claw. Regarding the latter character, it must be noted that in Semenow’s description it is stated only two teeth are present. However, from my examination, the basal tooth is present although very small and not easily recognizable in all the legs. Moreover, in several specimens of *P. gibbator* it is nearly absent in some legs. The specimen from Urzhum (ZIN) is incorrectly labelled as paratype of *Odontaulacus sibiricola* (Semenow) (Belokobylskij *confirmavit* 2003, *in litteris*).

Biology. Host: several authors (Hedqvist 1973; Oehlke 1983, present contribution) indicate only one host, *Callidium coriaceum* Paykull, 1800 (Coleoptera, Cerambycidae).

***Pristaulacus gloriator* (Fabricius, 1804)**
(Figs. 12, 32, 52, 72, 116)

Bassus gloriator Fabricius, 1804: 99 (♀).
Ichneumon gloriator: Thunberg, 1822: 269.
Aulacus flagellatus Nees von Esenbeck, 1834: 305 (♀).
Aulacus Erichsonii Westwood, 1841: 537 (♂).
Aulacus fasciatus Kriechbaumer, 1883: 143 (♂).
Pristaulacus gloriator: Kieffer, 1912: 383.
Pristaulacus gloriator: Hedicke, 1939: 10.
Aulacostethus gloriator: Györfi, 1964: 51.
Pristaulacus holzschuhi Madl, 1990a: 114 (♂) (**syn. nov.**).
Pristaulacus gloriator: Smith, 2001: 286.
Pristaulacus holzschuhi: Smith, 2001: 287.

Material examined. GERMANY: **holotype** ♀ of *Aulacus Erichsonii* Westwood, 1841 labelled "Berlin, Erichson S./11510/Type/*Erichsoni* Westw./Zool. Mus. Berlin" (ZMHB); Lake Liepnitz, 10.VII.1930, 1♀, S.G. Bischoff leg. (ZMHB); Germany, 1♀ (ZMUC); Mark Brandbg. Eberswalde, Britz, nördl Britz, 6.VII.1994, 611, 1♀, DEI leg. (DEI); Mark Brandbg. Eberswalde, Chorin, "Mooskuten", 29.VI.1994, 914, 1♀, DEI leg. (DEI); Mark Brandbg. Eberswalde, Gr. Ziethen Soll, nördl Gr. Ztn., 29.VI.1994, 8, 2♀, DEI leg. (DEI); Dauerleihe, Museum Annaberg, coll. Lange, 2♂ (DEI); Kalkh. (hardly readable), 11.VII.1900, 1♀, coll. Konow (DEI); Brandenburg, Angermünde, Luisenfelde, Langer Berg., 27.VI.1998, 1♀, Malaise trap, DEI leg. (DEI); Kuffhäuser, Süd-hänge, 27.V.1958, 1♂, K. Ermisch leg (DEI); environs of Eberswalde, Schillerstrasse 2, Fensgerlang, 15.V.1992, 1♂, J. Oehlke leg. (DEI); Gartz, Triepke, 1♀ (ZMHB); Kalkhorst, 30.VII.(18)90, 1♀ (ZMHB). AUSTRIA: Oberösterreich, Linz-Urfahr, Urfahr-wänd, 28.V.1999, 1♂, Martin Schwarz leg. (OLML); Mt. Tiroli, Maun, 2003, 1♀, ex larva, M. Egger leg. (OLML); Tschek, 1872, 1♂, Piesting (USNM); FRANCE: Digne, 1924, 1♀, 2♂, A. Seyrig (MNHN); Serres Iuine, 1♂, coll. J. De Gaulle, 1919 (MNHN). SLOVENIA: Karst, St. Canzian, 450 m, 29.V.1911, 1♀, Schumacher-Spaney S.V. (ZMHB). CROATIA: Plitvicka Jezera, 21–26.VII.1929, 1♀ (ZMHB). ITALY: Piedmont, environs of Torino, V.1975, 2♂, ex larva, from wood, R. Mourglia leg. (MSNP, MRSN); Bozen (= Bolzano), VI.25, 1♀, L. Kupka (DEI); Bozen, VI.(18)96, 1♀, coll. Ohlenberg (DEI); Latium, Colli Albani, Cecchina, loc. Poggio Ameno, m 280, 25.VI.1988, 1♀, M. Comba leg. (DBAC). GREECE: Metsovon (Joannina), m 1200, 8.VII.1985, 1♀, Casale leg. (MRSN). AZERBAIJAN: Caucasus, Talysh, Talysh Avearut, V.1993, 1♀, from larva of *Paraclytus reitteri*, Shamaev leg. (ZIN). GEORGIA: Caucasus, Borzhomi, Barzhem, Tifl.(isskoi) gub.(ernii), 16.VI.(19)09, 1♂, A. Bykov leg. (ZIN). 1♀ coll. Magretti (without data) (MCSN). RUSSIA: Novorossjisk, 1♀, coll. Konow (DEI); Novorossjisk, 1♀ (ZMHB). IRAN: **holotype** ♂ of *Pristaulacus holzschuhi* Madl, 1990, labelled "Iran, Guilan, 1300 m, 70 km NW Bandar-e-Pahlavi, Assalem, 5–11.5.1975, leg. Holzschuh & Ressl/e.l. 5.3.1976, ex *Paraclytus reitteri* Gglb., in *Alnus*/*Pristaulacus holzschuhi* n.sp., det. Madl 1990, ♂" (NMW). **Without geographic data**: 1♀ (HNHM); 1♀, coll. Schmiedeknecht (ZMHB).

Records from literature. Fabricius (1804), Nees von Esenbeck (1834), Westwood (1841, 1844), Kirchner (1867), Schletterer (1889), Kokujev (1910), Maidl (1923), Györfi (1964), Oehlke (1983, 1984), Pagliano (1986), Kozlov (1988), Madl (1988, 1990), Šedivý & Čapek (1988), Schwarz (1994).

Type locality. "Habitat in Germ. Dom. Smidt." (Fabricius 1804).

Notes on type material. The type material of *Bassus gloriator* consists of two females, both stored in the collection of I.C. Fabricius (ZMUC); one of which is the lectotype (not examined) designated by Oehlke

(1983), the other one belongs to *Aulacus striatus* Jurine, 1807 as stated by Oehlke (1983).

Redescription. ♀. Length (excluding ovipositor): 12.9 mm; fore wing length: 10.1 mm.

Colour black, except: mandible, with base and apex blackish and median part reddish; maxillo-labial complex brown, with articles 4–6 of maxillary palpus lighter; antenna blackish with A1 extensively red orange; trochanters blackish brown; fore femur and tibia red orange; hind femur dark red orange; hind tibia dark brown; tarsi light yellow orange; wings hyaline with veins and stigma brown; fore wing with a moderately wide brown spot below stigma, wider than half length of stigma, reaching middle part of SM2; apex of fore wing extensively infuscate; metasoma with segments 1–4 red orange, with apex and petiole blackish. Setae: whitish, except yellow gold on mandible.

Head (Figs. 12, 32), from above, 1.36x wider than long, weakly shiny except frons, dull; occipital margin straight; temple, from above, well developed, 0.8x as long as eye length, moderately convergent posteriorly and weakly convex; occipital carina narrow, cerciniform, 0.2x diameter of an ocellus; POL:OOL= 1.0; ocellar area 2.0x wider than long; frons transverse carinulate with coarse, deep, and dense punctures (distance between punctures 1–2x diameter of a puncture); vertex and temple with less coarse and scattered punctures; clypeus polished with coarse, deep, and moderately dense punctures; malar area weakly striolate punctate; occipital area polished; mandible polished and shiny, with coarse and deep punctures on base and in middle; antenna length 0.9x fore wing length; A3 6.3x longer than wide; A4 11.8x longer than wide, and 1.7x longer than A3; A5 10.8x longer than wide, and 1.4x longer than A3; following antennomeres progressively shorter, the apical one strongly compressed dorsoventrally, with apex rounded, 2.0x longer than wide. Setae: erect or semierect, short, and moderately dense on most of frons, on vertex, and on temple; recumbent, long, and moderately dense on lower and lateral parts of frons, and on clypeus; recumbent, short, and moderately dense on malar area; semierect, short, and scattered on A1; setae length of temple 0.7–0.8x diameter of an ocellus.

Mesosoma (Fig. 52) coarsely sculptured; pronotum extensively transverse carinate, except on lateroventral margins, areolate rugose to rugulose; lateroventral margins of pronotum regularly rounded, without teeth; propleuron polished and weakly shiny or dull, with coarse, deep, and very dense punctures (distance between punctures 1x or less diameter of a puncture); prescutum triangular, not concave, polished, with coarse, deep, and dense punctures; mesoscutum transverse carinate, with anterior margin, in lateral view, regularly rounded; notaulus moderately deep and narrow; scutellum transverse carinate in middle, irregularly rugulose on posterolateral corners; mesepimeron areolate rugose; mesepisternum extensively and densely foveolate rugulose; metanotum irregularly carinate, except in middle; propodeum irregularly areolate rugose; ventral parts of mesosoma extensively rugulose foveolate; fore wing with vein 2-rs+m long; fore coxa polished and shiny, with fine, superficial, and scattered punctures; mid coxa dull, transverse carinulate, with moderately coarse, deep, and moderately dense punctures; hind coxa (Fig. 72) shiny, transverse carinate, with scattered carinae on dorsal surface, dull, transverse striolate, with moderately coarse, deep, and dense punctures on ventral surface (distance between punctures about 2x diameter of a puncture); trochanters shiny, with regular, moderately coarse, deep, and dense punctures, less dense on fore trochanter; fore and mid femora dull on dorsal surface, weakly shiny on ventral surface; hind femur dull; fore and mid femora with moderately coarse, deep, and very dense punctures, less dense on ventral surface; hind femur uniformly transverse striolate, with coarse, deep, and very dense punctures; spurs of mid tibia of same length; inner spur of hind tibia longer than outer spur; hind basitarsus 10.3x longer than wide, and 1.2x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, short, and scattered on dorsal surface, semierect or recumbent, longer, and more dense on lateral and ventral parts; erect, long, and scattered on hind surface of propodeum; erect, moderately long, and dense on propleuron, with setae length 0.6–0.7x fore pretarsus length; erect, or semierect, long, and moderately dense on coxae, less dense on dorsal surface of hind coxa; erect, short, and moderately dense on trochanters; recumbent, short, and dense on dorsal surface of fore and mid femora, erect, and scattered on ventral surface, and slightly longer on fore femur; semierect or recumbent, short, and dense on hind femur.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, slender, 3.5x

longer than wide, with coarse, deep, and scattered punctures; segments 1 and 2 polished and shiny; following segments with fine, superficial, and moderately dense punctures, less dense on T3; S7 with moderately coarse, deep, and very dense punctures; T8 with poorly defined punctures; ovipositor 1.3x longer than fore wing length; valvula 3 of ovipositor with apex acute. Setae: segments 1 and 2 glabrous; recumbent, moderately long, and dense on following segments, less dense on T3.

♂**.** Length: 14.2 mm; fore wing length: 10.1 mm. Colour, structure, and setae like ♀, except: antenna as long as fore wing length; A3 3.2x longer than wide; A4 5.9x longer than wide, and 1.9x longer than A3; A5 5.9x longer than wide, and 1.8x longer than A3; hind basitarsus 9.7x longer than wide; petiole 4.0x longer than wide; metasomal segments 1 and 2 polished, shiny, and glabrous except distal margin of T2; following tergites with regular, fine, superficial, and moderately dense punctures, and recumbent, moderately long, and dense setae.

Intraspecific variation. Examined: 25♀, 13♂. Length: 10.2–15.0 mm (♀); 9.5–14.2 mm (♂); fore wing length: 8.5–11.8 mm (♀), 8.2–10.1 mm (♂); ovipositor: 1.2–1.4x longer than fore wing length. The colouration has little variability (*e.g.*, dark spots on fore wings). Sculpture of the body may be more or less developed.

Distribution. Czech Republic, Slovakia, Germany, Hungary, Austria, Romania, European and central Russia, Italy, Yugoslavia Albania, Greece (*), Turkey, Iran.

Remarks. This is one of the most common *Pristaulacus* species in central Europe, but it has a scattered distribution in the Mediterranean countries. It is newly recorded for Greece. *Pristaulacus gloriator* is easily identified by the presence of a narrow occipital carina, a rugulose frons, pronotum without teeth, four teeth on the inner margin of claw, and light yellow tarsi.

Pristaulacus holzschuhi Madl, 1990 (type locality: "Iran, Guilan, 1300 m, 70 km NW Bandar-e-Pahlavi, Assalem"; Madl 1990a) was described from one specimen (♂, preserved in NMW). The examination of this type allows establishment that this taxon is a synonym of *P. gloriator* (**syn. nov.**), for the congruence of numerous important characters: a) shape, sculpture and pubescence of head; b) width of the occipital carina; c) index length/width of antennomeres; d) shape and sculpture of mesosoma; e) lateroventral margin of pronotum without tooth; f) shape and sculpture of hind coxa; and h) chromatic pattern.

The examination of the holotype of *Aulacus Erichsonii* Westwood, 1841 (type locality: "Berlin", ZMHB), allow me to confirm the synonymy previously established by Oehlke (1983), for the congruence of the chromatic patterns and especially of the characters of exoskeleton of *A. erichsonii* with *P. gloriator.*

Biology. Hosts: *Callidium violaceum* (Linnaeus, 1758), *Chlorophorus figuratus* (Scopoli, 1763), *Paraclytus reitteri* (Ganglbauer, 1881) (Cerambycidae) (Madl 1990a); *Dicerca berolinensis* (Herbst, 1779), *Chrysobothris igniventris* Reitter, 1895 (Buprestidae) (Čapek *et al.* 1982; Šedivý & Čapek 1988).

***Pristaulacus insularis* Konishi, 1990**

(Figs. 13, 33, 53, 73, 87, 115)

Pristaulacus insularis Konishi, 1990: 650 (♀).
Pristaulacus insularis: Smith, 2001: 288.

Material examined. JAPAN: **holotype** ♀ labelled "VII.16.1966, Satomura, Mikura-jima, H. Hasegawa/Holotype, *Pristaulacus insularis* Konishi, 1990, Jpn. J. Ent. 58" (ITLJ); **paratype** ♀ labelled "Chikuzen-Okinoshima Is., Fukuoka Pref., 18.VIII.1989, R. Noda/Paratype, *Pristaulacus insularis* Konishi, 1990, Jpn. J. Ent. 58" (ITLJ); **paratype** ♂ labelled "Yakushima Is., 30.III.1987, Em. 1.IV.1989, H. Makihara/*Pristaulacus insularis* Konishi, 1990, Jpn. J. Ent. 58" (ITLJ).

Records from literature. Konishi (1990).

Type locality. "Sato, Mikura-jima Is." (Konishi 1990).

Notes on type material. The type material consists of the holotype ♀ and 49 paratypes (43♀, 6♂), mostly

preserved in ITLJ, with some paratypes in USNM.

Redescription. ♀ (holotype). Length (excluding ovipositor): 12.0 mm; fore wing length: 9.2 mm.

Colour black, except: mandible extensively dark red medially; maxillo-labial complex dark brown; A1 dark red; following antennomeres blackish; occipital carina dark brown; coxae and trochanters blackish brown; hind femur and tibia dark brown; fore and mid tibiae and tarsi red orange; hind tibia and tarsus darker; wings hyaline, with veins and stigma brown; fore wing with a small subrectangular brown spot behind stigma, reaching distal part of SM1; metasoma with apex of tergites brown; valvula 3 of ovipositor dark brown. Setae: light brown on most of head and on metasoma; whitish on lower half of frons, on clypeus, on malar area, on part of temple and on mesosoma; yellow gold on mandible.

Head (Figs. 13, 33) from above, 1.3x wider than long, polished and shiny; occipital margin medially grooved; temple, from above, moderately developed, 0.8x as long as eye length, strongly convergent posteriorly, and weakly convex; occipital carina wide, lamelliform, 1x diameter of an ocellus, absent along median occipital groove; POL:OOL= 1.3; ocellar area 2.0x wider than long; frons and clypeus polished, with moderately coarse, superficial, and dense punctures (distance between punctures 1–2x diameter of a puncture); vertex and temple with fine, superficial, and scattered punctures (distance between punctures 3–4x diameter of a puncture); malar area with irregular, coarse, deep, and dense punctures; occipital area polished; mandible polished and shiny with coarse and deep punctures on base and in middle; antenna length 0.8x fore wing length; A3 6.2x longer than wide; A4 9.8x longer than wide, and 1.6x longer than A3; A5 10.0x longer than wide, and 1.3x longer than A3; following antennomeres progressively shorter, the apical one dorsoventrally compressed, with apex rounded, 2.5x longer than wide. Setae: erect, long, and dense on upper half of frons, recumbent on lower half of frons and on clypeus; erect and moderately dense on vertex and on temple; recumbent, short, and moderately dense on malar area; semierect, short, and scattered on A1; setae length of temple 1.0–1.1x diameter of an ocellus.

Mesosoma (Fig. 53) coarsely sculptured; pronotum areolate rugose, with one moderately developed tooth on each lateroventral margin; propleuron polished and shiny, with coarse, moderately deep, and dense punctures (distance between punctures about 1x diameter of a puncture); prescutum trapezoidal, deeply concave in middle, transverse carinate; mesoscutum transverse carinate, with anterior margin, in lateral view, regularly rounded; notaulus deep and very wide; scutellum transverse carinate in middle, areolate rugose on lateral parts, especially on anterior half; mesepimeron transverse carinate; mesepisternum areolate rugose with a small area on upper part, foveolate rugulose; metanotum longitudinally carinate; propodeum areolate rugose; ventral parts of mesosoma polished, irregularly carinate on sides and medially; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with fine, superficial, and scattered punctures, except on base, irregularly rugose, with coarse, deep, and moderately dense punctures; mid coxa shiny, transverse-carinulate, with scattered punctures, except on base, polished, with moderately dense punctures; hind coxa (Fig. 73) shiny, transverse carinate on dorsal surface, polished, with fine, superficial to moderately deep, and scattered punctures (distance between punctures 4x diameter of a puncture) on ventral surface, and very short carinae on sides; base of hind coxa dull, with fine sculpture; trochanters shiny, with irregular, fine, superficial, and scattered to moderately dense punctures, very scattered on fore trochanters; femora dull on dorsal surface, with coarse, deep, and dense punctures, shiny on ventral surface, with fine, superficial, and very scattered punctures; spurs of mid tibia of same length; inner spur of hind tibia slightly longer than outer spur; hind basitarsus 12.3x longer than wide, and 1.3x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect or semierect, short, and scattered on dorsal surface, more dense and longer on lateral parts, especially on sides of pronotum, on mesopleuron, and on part of lateral lobe of mesoscutum; erect, long, and scattered on hind surface of propodeum; erect, moderately long, and moderately dense on propleuron, with setae length 0.7x fore pretarsus length; semierect, moderately long, and dense on ventral surface of fore and mid coxae; recumbent, short, and moderately dense on dorsal surface of hind coxa, erect, long, and moderately dense on ventral and lateral parts; semierect, moderately long, and dense, on trochanters; recumbent, short, and dense on dorsal sur-

face of femora, erect, longer, and scattered on ventral surface.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, slender, 3.5x longer than wide; segments 1 and 2 polished and shiny; T3–T7 and S3–S6 shiny, with very fine, superficial, and moderately dense punctures, except on lateral margins of S3–S6; S7 with fine, superficial, and moderately dense punctures; T8 shiny, very slightly sculptured, with fine and scattered punctures; ovipositor 1.1x longer than fore wing length; valvula 3 with apex acute. Setae: segments 1-2 glabrous; recumbent, short to very short, and moderately dense on T3–T7 and on median surface of S3–S6; recumbent, moderately long, and dense on S7 and T8.

♂ (paratype). Length: 9.4 mm; fore wing length: 7.2 mm. Colour, structure, and setae like ♀, except: A3 3.4x longer than wide; A4 5.4x longer than wide, and 1.6x longer than A3; A5 5.4x longer than wide, and 1.6x longer than A3; hind basitarsus 10.0x longer than wide, and 1.2x longer than tarsomeres 2–5; petiole 3.5x longer than wide; metasomal tergites and medial part of sternites except segments 1 and 2 with recumbent, very short, and dense setae; genital capsule (Fig. 87) with apex of paramere acute, cuspis moderately wide, curved, digitus wide with lower apex narrow and long.

Intraspecific variation. Examined: 2♀, 1♂. Length (♀–♂): 9.5–11.7 mm; fore wing length (♀–♂): 7.5–10.9 mm.

Distribution. Japan (Honshu, Mikura-jima Island, Hachijô-jima Island, Chikuzen-okino-shima Island, Yaku-shima Island, Amami-ôshima Island).

Remarks. *Pristaulacus insularis*, as *P. comptipennis* and *P. boninensis*, has a median occipital groove, although wider and shallower, and an entirely black metasoma.

Biology. Unknown.

***Pristaulacus intermedius* Uchida, 1932**
(Figs. 14, 34, 54, 74, 88, 115)

Pristaulacus intermedius Uchida, 1932: 190 (♀).
Pristaulacus intermedius: Hedicke, 1939: 11.
Pristaulacus intermedius: Smith, 2001: 288.

Material examined. CHINA: Shaanxi province, Mounts Qinling, Xunyangba (6 km E), 1000–1300 m, 23.V–13.VI.1998, 1♀, I.H. Marshal leg. (OLML). JAPAN: Kamakura, Kanagawa province, 2.VII.1961, 1♀, H. Nagase leg. (CPTO); Sanno rindo, Tochigi, Fukushima, 28–30.VII.1987, 1♀, H. Makihara leg. (ITLJ); Muhogaoha, Kawasaki SNI, 21.VI.1964, 1♂, N. Shimoda leg., coll. N. Katsuya (ITLJ); Tateiwamura, Pref. Fukushima, 28–29.VII.1990, 2♀, K. Konishi leg. (ITLJ, USNM); 23.VI.1990, 1♀, K. Hirano leg. (USNM); Fukuoka, Mt. Hiko, 700 m, 19–29.VI.1989, 1♀, Takeno & Sharkey leg. (AEIC); Gero-Osaka Ochai, N. Alps, Gifu Park, 5–7.VIII.1972, 1♀, coll. Jim Robertson (LACM); Tachimoto Chichibu, 15.VII.1960, 1♀ (USNM); Tokyo, XI.1931, 4♀, J.L. Gressitt (CAS).

Records from literature. Uchida (1932), Watanabe (1952), Konishi (1990).

Type locality. "Iwate (Honshu)" (Uchida 1932).

Notes on type material. The type material consists of the holotype ♀ (not examined), stored in the collection of the University of Hokkaido, Sapporo (Konishi 1990).

Redescription. ♀. Length (excluding ovipositor): 10.6 mm; fore wing length: 8.1 mm.

Colour black, except: mandible extensively red orange with base and apex blackish; maxillo-labial complex blackish with maxillary palpus lighter; legs blackish, with tibiae and tarsi brown; wings hyaline with veins and stigma dark brown; fore wing with a wide brown spot below stigma, 0.5x as wide as stigma length, reaching middle of SM2; metasoma blackish with S1, apex and sides of tergites irregularly dark red. Setae: whitish, except yellow gold on mandible, and light brown on metasoma.

Head (Figs. 14, 34) from above, 1.26x wider than long, shiny; occipital margin straight; temple, from above, well developed, 1.1x longer than eye length, weakly convergent posteriorly, and regularly rounded; occipital carina moderately wide, lamelliform, about 0.5x diameter of an ocellus; POL:OOL= 0.9; ocellar area 2.0x wider than long; frons, vertex, and temple with fine, superficial, and scattered to moderately dense punctures (distance between punctures 2–3x diameter of a puncture); clypeus and malar area with fine, deep, and dense punctures (distance between punctures 1x diameter of a puncture); mandible polished and shiny, with coarse and deep punctures on base and in middle; antenna length 0.8x fore wing length; A3 5.6x longer than wide; A4 10.0x longer than wide, and 1.6x longer than A3; A5 8.8x longer than wide, and 1.4x longer than A3; following antennomeres progressively shorter, the apical one dorsoventrally compressed, with apex rounded, 2.0x longer than wide. Setae: erect, long, and moderately dense on most of frons, vertex and temples; recumbent, long, and moderately dense on clypeus, on lateral and lower part of frons, and on malar area; semierect, moderately long and dense on A1; setae length of temple 1x diameter of an ocellus.

Mesosoma (Fig. 54) coarsely sculptured; pronotum areolate rugose to foveolate, with one well- developed tooth in middle of each lateroventral margin; propleuron polished and shiny, with very fine, superficial, and scattered punctures (distance between punctures 3–5x diameter of a puncture); prescutum triangular, deeply concave in middle, transverse carinate; mesoscutum transverse carinate with anterior margin, in lateral view, regularly rounded; notaulus deep and wide; scutellum transverse carinate; mesepimeron transverse carinate areolate; mesepisternum areolate rugose with upper part foveolate; metanotum longitudinally carinate; propodeum areolate rugose; ventral parts of mesosoma irregularly areolate rugose; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with fine, superficial, and scattered punctures, moderately coarse, deep, and dense on base; mid coxa shiny, transverse carinulate on outer half, with fine, superficial and scattered punctures, except on base, transverse striolate punctate; hind coxa (Fig. 74) shiny, transverse carinate, with dense carinae, except on medial part of ventral surface polished, with moderately coarse, deep, and scattered punctures (distance between punctures about 2x diameter of a puncture); trochanters shiny with regular, moderately coarse, deep, and moderately dense punctures; femora dull on dorsal surface, with coarse, deep, and dense punctures, shiny on ventral surface, with fine, superficial, and scattered to very scattered punctures; inner spur of mid and hind tibiae longer than outer spur; hind basitarsus 10.9x longer than wide, and 1.2x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, short, and scattered on dorsal surface, semierect or recumbent, longer and dense on lateral and ventral parts; erect, long, and scattered on hind surface of propodeum; erect, and moderately long and dense on propleuron, with setae length 0.7x fore pretarsus length; recumbent, short, and dense on dorsal surface of femora, longer and less dense on ventral surface.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, moderately slender, 2.9x longer than wide; segments 1-2 polished and shiny, except median part of apex of T2, with fine, superficial and scattered punctures; following tergites with regular, very fine, superficial, and moderately dense puncture; S7 with coarse, moderately deep, and very dense punctures; T8 with fine, superficial, and moderately dense punctures; ovipositor 1.25x longer than fore wing length; valvula 3 of ovipositor with apex acute. Setae: segments 1 and 2 glabrous (except median part of apex of T2, with semierect, short, and scattered setae); recumbent, short, and moderately dense on the following tergites.

♂**.** Length: 12.4 mm; fore wing length: 10.0 mm. Colour, structure, and setae like ♀, except: metasoma blackish brown, with T1–3 partly reddish orange; antenna length 0.75x fore wing length; A3 3.8x longer than wide; A4 5.4x longer than wide, and 1.4x longer than A3; A5 5.2x longer than wide, and 1.36x longer than A3; A13 subcylindrical, 4.4x longer than wide, with apex rounded; hind basitarsus 9.9x longer than wide, and 1.1x longer than tarsomeres 2–5; petiole 4.1x longer than wide; metasomal segments 1 and 2 polished, shiny, and glabrous, except the medial and distal part of T1 with a few punctures and setae; following tergites with regular, fine, superficial, and dense punctures, and recumbent, short, and dense setae; genital capsule (Fig. 88) with apex of paramere obliquely truncated, cuspis short and curved, digitus with lower apex long and moder-

ately narrow.

Intraspecific variation. Examined: 13♀, 1♂. Length: 10.2–10.7 mm (♀); fore wing length: 8.0–8.5 mm (♀); ovipositor 1.15–1.20x longer than fore wing length. The metasoma may be more or less extensively dark reddish brown in the proximal half.

Distribution. China, Japan (Hokkaido, Honshu, Shikoku, Kyushu).

Remarks. This is one of the most common and widely distributed *Pristaulacus* species in Japan.

Biology. Host: *Chlorophorus japonicus* (Chevrolat, 1863) (Coleoptera Cerambycidae) (Uchida 1932).

***Pristaulacus kostylevi* (Alekseyev, 1986)**
(Figs. 15, 35, 55, 75, 105, 111, 115)

Odontaulacus kostylevi Alekseyev, 1986: 16 (♀).
Odontacolus (sic!) *kostylevi*: Kozlov, 1988: 244.
Pristaulacus kostylevi: Smith, 2001: 288.

Material examined. RUSSIA, Primorski Krai: **paratype** ♀ labelled "Vinogradovka, Ussur.(iyskii) Kr.(ai), Kiritschenko, 24.VII.929/*Odontaulacus kostylevi* Aleks., V. Alekseyev det. 1985/Paratypus ♀, "*Odontaulacus kostylevi* Alekseyev" (in cyrillic) (ZIN).

Records from literature. Alekseyev (1986), Kozlov (1988).

Type locality. "Primorskii Krai, Partizansk, Fridman" (Alekseyev 1986).

Notes on type material. The type material consists of three ♀, including the holotype (not examined, collection of the Zoological Museum of Moscow).

Redescription. ♀ (paratype). Length (excluding ovipositor): 11.8 mm; fore wing length: 9.0 mm.

Colour black, except: most part of mandible (except base and apex), and maxillo-labial complex dark red; antenna blackish brown, with A1 dark red; propleuron and legs dark red brown, with tibiae and tarsi red orange more or less dark; wings hyaline, without brown spot, with veins and stigma brown; metasoma extensively reddish brown with segment 1, except petiole, base and lateral parts of T2 red orange; following tergites black brown, with lateral parts lighter; valvula 3 of ovipositor brown. Setae: mainly whitish; whitish goldish along lateral margins of frons and on clypeus; yellow gold on mandible.

Head (Figs. 15, 35) from above, 1.3x wider than long, polished and shiny; occipital margin concave; temple, from above, well developed, 1.2x longer than eye length, weakly divergent, regularly rounded posteriorly; occipital carina narrow, cerciniform, less than 0.2x diameter of an ocellus; POL:OOL= 1.0; ocellar area 2.0x wider than long; upper half of frons, vertex and temple polished with coarse, superficial, and scattered punctures (distance between punctures 5x or more diameter of a puncture); lower half of frons with coarse, superficial, and dense punctures (distance between punctures 1x or less diameter of a puncture); clypeus irregularly and finely transverse rugose, with coarse, superficial and scattered punctures; inner half of malar area dull, finely rugose, outer half shiny, with coarse, deep, and scattered punctures; occipital area polished; mandible polished and shiny with a few punctures in middle; antenna as long as fore wing length; A3 4.4x longer than wide; A4 7.1x longer than wide, and 1.6x longer than A3; A5 7.2x longer than wide, and 1.5x longer than A3; following antennomeres progressively shorter, the apical one weakly dorsoventrally compressed, weakly concave on ventral surface, with apex weakly acute, 2.1x longer than wide. Setae: mainly erect, short, and very scattered; recumbent, long, and moderately dense on latero-inferior part of frons, on clypeus, and on most part of malar area; erect and moderately long and dense on lower part of temple; semierect, short, and dense on A1; setae length of temple 0.4–0.5x diameter of an ocellus.

Mesosoma (Fig. 55) coarsely sculptured; pronotum, polished, without sculpture on anterior part, transverse carinulate on most of lateral surface, with coarse and deep punctures between carinae on upper half, striolate punctate on lower half, with short and interrupted carinulae; each lateroventral margin of pronotum

regularly rounded, without teeth; propleuron shiny, very finely sculptured, with very fine, superficial, and scattered punctures (distance between punctures 2–3x diameter of a puncture); prescutum trapezoidal, weakly concave in middle, transverse carinulate; mesoscutum transverse carinate with anterior margin, in lateral view, acute, upward curved; notaulus superficial and narrow; scutellum transverse carinate with concentric carinae on posterior half; mesepimeron transverse carinate; mesepisternum areolate rugose, except a small area on upper part, transverse carinate foveolate; metanotum punctate medially, with irregular scattered carinae on lateral parts; propodeum areolate rugose on lateral parts, irregularly transverse carinate on dorsal surface; ventral parts of mesosoma shiny, irregularly transverse carinulate; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with fine, superficial, and scattered punctures; mid coxa shiny, weakly transverse carinulate on outer half, with moderately coarse, moderately deep, and scattered punctures on inner half; hind coxa (Fig. 75) dull, transverse carinulate on dorsal surface, transverse striolate punctate on ventral surface, with coarse, superficial, and scattered punctures (distance between punctures 2–3x diameter of a puncture); trochanters weakly shiny, with coarse, deep, and dense punctures; fore and mid femora dull on dorsal surface, weakly shiny on ventral surface; hind femur dull; femora with coarse, deep, and dense punctures on dorsal surface, moderately coarse, deep, and scattered on ventral surface; hind femur extensively transverse striolate on ventral surface; spurs of mid tibia of the same length; inner spur of hind tibia slightly longer than outer spur; hind basitarsus 9.5x longer than wide, and 1.1x longer than tarsomeres 2–5; claw with two well-separated teeth, far from apex, first smaller than second. Setae: erect, short, and scattered on dorsal surface, recumbent or semierect, longer and denser on lateral parts, on anterior part of mesonotum and on ventral parts of mesosoma; erect, long, and very scattered on hind surface of propodeum; erect, and moderately long and dense on propleuron, with setae length 0.6x fore pretarsus length; semierect or erect, and moderately long and dense on coxae and trochanters; recumbent, short, and moderately dense on dorsal surface of femora, erect, short, and less dense on ventral surface.

Metasoma moderately compressed laterally, ovoidal in lateral view; petiole short, stocky, about as long as wide; segment 1 and S2, polished and shiny; T2 and following segments very finely sculptured; median part of T4–T7 with fine, superficial**,** and scattered punctures; T8 with coarse, superficial, and scattered punctures; S2 with a narrow median area with coarse, deep, and moderately scattered punctures; median part of S3–S5 with fine, superficial, and moderately dense punctures; S6 without punctures; S7 uniformly punctate, with coarse, deep, and dense punctures; ovipositor 1.4x longer than fore wing length; valvula 3 of ovipositor with apex rounded. Setae: segments 1 and 2 glabrous; semierect, short, and scattered on S2; semierect, short, and moderately dense on median part of S3–S6; recumbent, or semierect, long, and dense on S7; recumbent, short, and moderately dense on median part of T4–T7; semierect or recumbent, long, and dense on T8.

♂**.** Unknown.

Intraspecific variation. Examined: 1♀. Length: 9.3–11.5 mm (♀) (Alekseyev 1986).

Distribution. Russia (Primorski Krai).

Remarks. This species is easily recognized by the upward projecting lateral lobes of the mesoscutum. This character is considered as specialized for an endoxylic life style (Turrisi 2004; Turrisi & Pilato 2004; Turrisi *et al.* submitted), and it occurs in some Oriental species, *e.g.*, *P. krombeini* Smith, 1997, some Nearctic species, *e.g.*, *P. rufitarsis* (Cresson, 1864), and in a number of Neotropical species (Smith 2006, *in litteris*). On the other hand, *P. kostylevi* shows some plesiomorphic characters within the genus *Pristaulacus* (Turrisi 2004) such as a narrow occipital carina, a rounded lateroventral margin of the pronotum without teeth, claw with only two well-spaced teeth, and short and stocky petiole.

The correct spelling of the name of the author of this species is “Alekseyev” (Lelej A.S. 2004, *in litteris*) although is spelled “Alekseev” in his publications.

Biology. Unknown.

***Pristaulacus lindae* Turrisi, 2000**
(Figs. 16, 36, 56, 76, 89, 114)

Pristaulacus lindae Turrisi, 2000: 260 (♀).
Pristaulacus lindae: Smith, 2001: 289.

Material examined. ITALY: **holotype** ♀ labelled "Sicilia, Catania, F. Alcantara, Calatabiano, m 60 (Catania), 4.VI.1999 G.F. Turrisi leg./*Pristaulacus lindae* Turrisi sp. nov., ♀, 1999, Holotypus" (DBAC); **paratypes**: same data of holotype, 5♂ G.F. Turrisi leg. (DBAC, MCSN). Additional material: same locality of type specimens, 13.VI.2000, 4♂ (DBAC, OLML, USNM); 6.VI.2001, 1♂ (DBAC); Mount Etna, Mount Serra m 500 (Viagrande, Catania), 2.VIII.2005, 1♀ S. Bella leg. (DBAC).

Records from literature. Turrisi (2000).

Type locality. "Sicilia, Catania, Fiume Alcantara, Calatabiano, m 60" (Turrisi 2000).

Notes on type material. The type material consists of the holotype (♀) and 5 paratypes (♂).

Redescription. ♀ (holotype). Length (excluding ovipositor): 11.2 mm; fore wing length: 8.2 mm.

Colour black, except: median part of mandible, dark reddish; maxillo-labial complex blackish brown with palpi lighter; occipital carina dark brown; coxae, trochanters and femora blackish; fore tibia and tarsus red orange; mid and hind tibiae and tarsi dark brown; wings hyaline with veins and stigma brown; fore wing with a subrectangular light brown spot below stigma, weakly defined, 0.5x as wide as stigma length, reaching middle of SM2, and with two small and poorly-defined brown spots, one between SB and SD1, the other in distal part of D2; metasoma red orange, with sternites darker and petiole extensively blackish; valvula 3 of ovipositor dark brown. Setae: whitish, except extensively yellow gold on mandible.

Head (Figs. 16, 36) from above, 1.2x wider than long, polished and shiny; occipital margin straight; temple, from above, moderately developed, 0.8x as long as eye length, moderately convergent posteriorly and regularly rounded; occipital carina wide, lamelliform, as wide as diameter of an ocellus; POL:OOL= 1.3; ocellar area 2.3x wider than long; frons and vertex with moderately coarse or fine, superficial, and scattered punctures (distance between punctures more than 2x diameter of a puncture); clypeus with moderately coarse, deep, and dense punctures; temple and vertex with coarse, deep, and dense punctures; malar area striolate punctate with moderately coarse, deep, and dense punctures; occipital area polished; mandible polished and shiny with coarse and deep punctures on base and in middle; antenna 1.1x longer than fore wing length; A3 6.2x longer than wide; A4 12.2x longer than wide, and 1.7x longer than A3; A5 11.2x longer than wide, and 1.4x longer than A3; following antennomeres progressively shorter, the apical one dorsoventrally compressed, with apex rounded, 2.8x longer than wide. Setae: semierect or recumbent, moderately long, and dense on clypeus, on malar area and on lateroinferior parts of frons; erect, long, and moderately dense on remaining parts; semierect, moderately long, and dense on A1; setae length of temple 1x diameter of an ocellus.

Mesosoma (Fig. 56) coarsely sculptured; pronotum areolate rugose, with a few coarse and deep punctures, each lateroventral margin with two well-developed teeth, fore one larger than hind one; propleuron polished and shiny, with irregular and superficial punctures, fine and moderately dense on proximal half (distance between punctures about 1.5x diameter of a puncture), moderately coarse and dense on distal half (distance between punctures 0.5–1.5x diameter of a puncture); prescutum triangular, not concave, irregularly carinulate rugulose; mesoscutum transverse carinate, except anterolateral corners, areolate rugose, and hind margin, scrobiculate, with anterior margin, in lateral view, regularly rounded (Fig. 56); notaulus moderately deep and wide; scutellum irregularly transverse carinate on anterior half, areolate rugose on posterior half; mesepimeron transverse carinate; mesepisternum areolate rugose, with upper third punctate rugose; metanotum longitudinally carinate, irregularly carinate in middle; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma extensively polished, with lateral parts rugulose foveolate, and median part transverse carinate; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with fine, superficial, and scattered punctures, moderately coarse, and deep along outer side; mid coxa shiny, with moderately

coarse, deep, and moderately dense punctures, and outer side irregularly rugulose punctate; hind coxa (Fig. 76) shiny, with proximal half of dorsal surface transverse carinulate, distal half polished, base of ventral surface transverse striolate, lateral parts rugulose punctate, and remaining parts polished, with fine to coarse, superficial to deep, and moderately dense punctures (distance between punctures about 2x diameter of a puncture); trochanters shiny, regularly punctate, with fine, moderately deep, and scattered punctures on fore trochanter, moderately coarse, deep, and dense on mid and hind trochanters; dorsal surface of femora dull, with coarse, deep, and dense punctures; ventral surface of femora shiny, with fine, superficial, and very scattered punctures; inner spur of mid and hind tibiae slightly longer than outer spur; hind basitarsus 12.5x longer than wide, and 1.1x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect or semierect, short, and scattered on dorsal surface, longer and denser on lateral and ventral parts, erect, long, and scattered on hind surface of propodeum; erect and moderately long and dense on propleuron, with setae length 0.5–0.6x fore pretarsus length; semierect and moderately long and dense on coxae and trochanters, erect on dorsal surface of hind coxa; recumbent, very short, and dense on dorsal surface of femora, erect, moderately long, and very scattered on ventral surface.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, slender, 3.5x longer than wide; segments 1 and 2 polished and shiny; following segments with very fine, and moderately dense punctures, except most of lateral margins of T3–T7 and S3–S6; S7 with moderately coarse, moderately deep, and dense punctures; T8 shiny, with fine, superficial, and scattered punctures; ovipositor 1.54x longer than fore wing length; valvula 3 of ovipositor with apex acute. Setae: segments 1 and 2 glabrous; recumbent, short, and scattered to moderately dense on median part of T3–T7 and S3–S6; recumbent, short, and moderately dense on S7; erect, short, and scattered on T8.

♂**.** Length: 11.0 mm; fore wing length: 7.6 mm. Colour, structure, and setae like ♀, except: antenna length 0.9x fore wing length; A3 3.6x longer than wide; A4 5.8x longer than wide, and 1.7x longer than A3; A5 5.4x longer than wide, and 1.5x longer than A3; hind basitarsus 11.7x longer than wide; petiole 4.0x longer than wide; tergites and median part of sternites of metasomal segments, with recumbent, very short, and dense setae, except segments 1 and 2; genital capsule (Fig. 89) with apex of paramere obliquely truncate, cuspis moderately wide and curved, digitus with lower apex wide and moderately long, and upper apex moderately narrow and long.

Intraspecific variation. Examined: 2♀, 10♂. Length: 9.3–11.2 mm (♀); 9.7–11.0 mm (♂); fore wing length: 7.0–8.2 (♀); 7.0–7.6 mm (♂); ovipositor 1.54–1.57x longer than fore wing length. The rugosity of hind coxa is moderately variable and may be more or less extended and developed, but always weak in all specimens than those in the similar *P. compressus*.

Distribution. Sicily (Italy).

Remarks. This species resembles *P. compressus* for the following features: brown, lamelliform occipital carina; two teeth on the lateroventral margin of the pronotum; and four teeth on the inner margin of claw. However, it can be distinguished from the latter species by several characters of colour pattern and morphology: tarsi blackish brown; metasoma more extensively red orange; shape of the mesosoma; sculpture of the prescutum (carinulate rugulose); longer petiole; longer ovipositor (about 1.5x longer than fore wing length). Males of these two species also are distinguished by several characters of the genital capsule (Figs. 84, 89).

Biology. Type specimens, as well as additional specimens from type locality, were collected on leaves of *Morus alba* L. (Moraceae), very close to the river, probably to search for sugary substances (Turrisi 2000); the specimen from Etna (Mount Serra) was collected in an oak wood.

***Pristaulacus longicornis* Kieffer, 1911**
(Figs. 17, 37, 57, 77, 117)

Pristaulacus longicornis Kieffer, 1911: 230 (♀).
Pristaulacus longicornis: Kieffer, 1912: 386.
Pristaulacus longicornis: Hedicke, 1939: 12.
Pristaulacus longicornis: Smith, 2001: 289.

Material examined. CHINA: **holotype** ♀ labelled "Type/B.M. Type Hym. 3.a.99/*Pristaulacus longicornis* Kieff./F. Sm. Coll. 79.22/China/determined by Dr. Kieffer" (BMNH).

Records from literature. Kieffer (1911, 1912).

Type locality. "Chine" (Kieffer 1911). Unknown if Palaearctic or Oriental.

Notes on type material. This species was described on the basis of only the female, but the number of type specimens was not stated in the original description (Kieffer 1911). In BMNH I found only one specimen, in bad condition since several parts are lost: antennae (except A1–4 of one antenna); left hind wing; right fore tarsus; left fore tarsomeres 3–5; right mid leg (except coxa and trochanter); last tarsomeres of hind legs; last segments of metasoma and ovipositor. Some other parts are broken and glued on a label or included in a gel capsule. Moreover, the specimen is covered by sticky matter that does not permit a careful examination of pubescence. The bad condition of this specimen does not permit a complete study of the morphology so the following description is necessarily incomplete.

Redescription. ♀ (holotype). Length (excluding ovipositor): 15.0 mm (Kieffer 1911); fore wing length: 11.0 mm.

Colour black, except: mandible extensively dark red, with base and apex blackish; maxillo-labial complex dark red; A1 with base dark red orange; occipital carina brown; tegula brown; coxae dark red or blackish; remaining parts of legs, including spurs, red orange, with mid and hind trochanters darker; wings hyaline with veins and stigma brown; fore wing slightly infuscate on apex, with a small irregular and narrow brown spot below stigma, on distal part of SM1, about 0.3x as wide as stigma length, and a small irregular brown spot on middle part of B; metasoma reddish brown with T1 and T2 extensively red orange and petiole blackish. Setae: whitish, except yellow gold on mandible.

Head (Figs. 17, 37) from above, 1.2x wider than long, polished and shiny; occipital margin straight; temple, from above, well developed, 0.9x as long as eye length, subparallel and regularly rounded posteriorly; occipital carina wide, lamelliform, 0.5x diameter of an ocellus; POL:OOL= 1.0; ocellar area 2.0x wider than long; frons and clypeus regularly punctate, with moderately coarse, deep, and dense punctures (distance between punctures 1.5x diameter of a puncture); vertex and temple with moderately coarse, superficial, and scattered punctures (distance between punctures 2–3x diameter of a puncture); malar area extensively and deeply striolate punctate; occipital area polished; mandible polished and shiny, with coarse and deep punctures on base and in middle; A3 8.3x longer than wide; A4 14.0x longer than wide, and 1.7x longer than A3. Setae: erect, and moderately long and dense on temple; recumbent and moderately long and dense on lower half of frons, scattered on clypeus; recumbent, short, and moderately dense on malar area; recumbent, short, and moderately dense on A1; setae length of temple 0.7–0.8x diameter of an ocellus.

Mesosoma (Fig. 57) coarsely sculptured; pronotum extensively areolate rugose to irregularly transverse carinulate, except lower surface foveolate, with a weak tooth on anterior part of each lateroventral margin; propleuron polished and shiny, with irregular, coarse, superficial, and moderately dense punctures on distal half, fine, superficial, and scattered on proximal half (distance between punctures up to 5x diameter of a puncture); prescutum triangular, deeply concave in middle, with some irregular transverse carinae; mesoscutum transverse carinate, except anterolateral corners, and half outer surface of lateral lobe of mesoscutum, areolate rugose, with anterior margin, in lateral view, regularly rounded; notaulus moderately deep and narrow; scutellum transverse carinate on median surface, areolate rugose on posterolateral corners; mesepimeron transverse

carinate; mesepisternum areolate rugose, except upper third, foveolate striolate; metanotum with a few irregular carinae; dorsal surface of propodeum transverse carinate, remaining parts areolate rugose; ventral parts of mesosoma extensively transverse rugulose punctate, transverse carinate medially; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with fine, superficial, and very scattered punctures; mid coxa moderately striolate punctate; hind coxa (Fig. 77) shiny, with dorsal surface transverse carinate and ventral surface polished, except outer margin transverse carinulate, with irregular, moderately coarse, and deep punctures along inner margin and on distal part, remaining parts with a few coarse and superficial punctures; trochanters polished and shiny, with regular, fine, superficial, and scattered punctures; fore and hind femora with coarse, deep, and dense punctures on dorsal surface, with a few fine and superficial punctures on ventral surface; ventral surface of hind femur finely transverse striolate; inner spur of mid and hind tibiae longer than outer spur; hind basitarsus 14.0x longer than wide, and slightly longer than tarsomeres 2–5; claw with four well- developed teeth. Setae: erect, short, and very scattered on dorsal surface, recumbent or semierect, and moderately long and dense on anterior and lateral parts of pronotum, erect, long, and scattered on hind surface of propodeum; erect and moderately long and dense on propleuron; semierect, short, and moderately dense on fore and mid coxae; recumbent, short, and scattered on dorsal surface of hind coxa, erect and longer on ventral surface; semierect, short, and scattered on trochanters; recumbent, short, and moderately dense on dorsal surface of femora, erect, longer, and very scattered on ventral surface.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole moderately elongate and slender, 2.0x longer than wide; segment 1 polished and shiny; proximal part of segment 2 polished, very finely striolate on distal part; segments 3–5 shiny and finely striolate, with regular, very fine, superficial, and moderately dense punctures. Setae: metasomal segments mainly glabrous.

♂**.** Unknown.

Intraspecific variation. Examined: 1♀. Not known.

Distribution. China (unknown if Palaearctic or Oriental).

Remarks. Some morphological characters reported in the original description (Kieffer 1911: 230) are not correct. The pronotum has a small tooth on the lateroventral margin, and is not without teeth as stated in the original description; moreover, the length/width index of A3 and A4 are quite different than that reported by Kieffer (1911) (see present description). *Pristaulacus longicornis* is most similar to *P. galitae* and *P. chlapowskii* by the following features: moderately wide and lamelliform occipital carina, 0.5x diameter of an ocellus; presence of a tooth on each lateroventral margin of the pronotum; and presence of four teeth on the claw. It can be distinguished by the characters in the key to species.

Biology. Unknown.

***Pristaulacus morawitzi* (Semenow, 1892)**
(Figs. 18, 38, 58, 78, 117)

Aulacus morawitzi Semenow, 1892a: 29; 1892b: 217 (♀).
Pristaulacus morawitzi: Kieffer, 1912: 385.
Pristaulacus morawitzi: Hedicke, 1939: 12.
Pristaulacus morawitzi: Smith, 2001: 290.

Material examined. TURKMENISTAN: **holotype** ♀ labelled "Aschabad /Dr F. Morawitz (1891), leg. K. Einlandt/*Aulacus Morawitzi* m. ♀ typ. un., A.S., XI.91/*Pristaulacus morawitzi* m. ♀ Typ. un. A. Semenow-Tian-Shansky det., VII.27/holotypus, *Pristaulacus morawitzi* (Sem.)" (ZIN).

Records from literature. Semenow (1892a, b), Kieffer (1912).

Type locality. "Provincia Transcaspica sine indicatione loci magis determinata; verisimiliter e montibus Kopet-dagh prope oppidum Aschabad" (= Ashkhabad, Turkmenistan) (Semenow 1892a).

Notes on type material. The type material consists of the holotype ♀ (Semenow 1892a), which is in fair condition, but not well prepared. However, it lacks some parts: right fore tibia and tarsus; right last tarsomere. The body is covered with deposits.

Redescription. ♀ (holotype). Length (excluding ovipositor): 12.1 mm; fore wing length: 9.2 mm.

Colour black, except: mandible extensively dark reddish, with base and apex blackish; maxillo-labial complex blackish brown, with segments 4–6 of maxillar palpus lighter; antenna dark brown, with A1 dark red orange; legs, except coxae, red orange, with femora and hind tibia darker; wings hyaline, with veins and stigma brown (vein SC+R+RS darker); fore wing with a small brown spot below stigma; hind wing with traces of some veins; metasoma nearly entirely red orange, with dorsal part of petiole blackish, and last segments darker; valvula 3 of ovipositor dark brown. Setae: whitish, with some gold reflexes on head and on mesosoma; yellow gold on mandible; yellowish on metasoma; brown on valvula 3 of ovipositor.

Head (Figs. 18, 38), from above, 1.3x wider than long, polished and shiny; occipital margin weakly concave medially; temple, from above, well developed, as long as eye length, subparallel and regularly rounded posteriorly; occipital carina narrow, cerciniform, 0.2x diameter of an ocellus; POL:OOL = 1.2; ocellar area 2.2x wider than long; punctures regular, very fine, superficial and scattered (distance between punctures 3–5x diameter of a puncture), less defined on frons; malar area with moderately coarse, deep, and dense punctures; clypeus with coarse, deep, and moderately dense punctures; occipital area polished; mandible polished and shiny, with coarse and deep punctures on base, and in middle; antenna slender, 0.7x as long as fore wing length; A3 5.1x longer than wide; A4 7.2x longer than wide, and 1.4x longer than A3; A5 7.5x longer than wide, and 1.3x longer than A3; following antennomeres progressively shorter, the apical one dorsoventrally compressed, with apex rounded, 2.0x longer than wide. Setae: erect, short, and very scattered, except on lower half of frons and on clypeus, recumbent, short, and moderately dense, and on malar area, recumbent, short, and scattered; semierect, short, and scattered on A1; setae length of temple 0.8x diameter of an ocellus.

Mesosoma (Fig. 58) coarsely sculptured; pronotum areolate rugose, except a wide median area foveolate, with a well-developed tooth on each lateroventral margin; propleuron polished, weakly shiny, with very fine, superficial, and scattered punctures on proximal half, coarse, deep, and moderately dense on distal half; prescutum trapezoidal, moderately concave in middle, transverse carinate rugose; mesoscutum transverse carinate in middle, areolate rugose on anterior part and on lateral lobe of mesoscutum, with anterior margin, in lateral view, regularly rounded (Fig. 58); notaulus moderately deep and wide; scutellum confused rugose; mesepimeron transverse carinate; mesepisternum areolate rugose, with upper third punctate foveolate; metanotum longitudinally carinate; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma polished, with irregular carinulae laterally, and transverse carinate medially; fore wing with vein 2-rs+m short; fore coxa shiny, polished, and without defined punctures; mid coxa polished, shiny, transverse carinulate on base and on lateral parts; hind coxa (Fig. 78) transverse carinulate on proximal half of dorsal surface, polished, and without punctures on distal half, polished and with fine, superficial, and very scattered punctures (distance between punctures 4–5x diameter of a puncture) on ventral surface with some transverse carinulae near base; trochanters polished and shiny, with regular, fine, superficial, and moderately dense punctures, coarser, deeper, and more dense on hind trochanter; dorsal surface of femora dull, with moderately coarse, deep, and dense punctures; ventral surface of femora shiny, with fine, superficial, and very scattered punctures; spurs of mid and hind tibiae of the same length; hind basitarsus 9.4x longer than wide, and as long as tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, short, and scattered on dorsal surface; erect or semierect, longer and more dense on lateral and ventral parts, especially on pronotum; erect, long, and scattered on propodeum; erect, long, and moderately dense on propleuron, with setae length 0.7–0.8x fore pretarsus length; recumbent, very short, and moderately dense on dorsal surface of fore and mid femora, erect, moderately long, and scattered on ventral surface; recumbent or semierect, very short, and moderately dense on hind femur.

Metasoma strongly compressed laterally, pyriform in lateral view; petiole elongate, slender, 2.5x longer

than wide; segments 1 and 2 polished and shiny; following segments very slightly sculptured, with regular, fine, superficial, and moderately dense punctures; S7 with indistinct punctures; T8 with very fine, superficial, and very scattered punctures; ovipositor length 0.9x fore wing length; valvula 3 of ovipositor with apex acute. Setae: segments 1 and 2 glabrous; recumbent, short, and moderately dense on following segments.

♂**.** Unknown.

Intraspecific variation. Examined: 1♀. Unknown.

Distribution. Turkmenistan.

Remarks. This species is known only by the holotype. As *P. mourguesi* Maneval and *P. paglianoi* Turrisi, **sp. nov.**, it has a narrow and black occipital carina, one tooth on the lateroventral margin of pronotum and four teeth on the claw. The diagnostic characters are reported in tables 4–5. From *P. longicornis*, it is distinguished mainly by the smaller size, by the narrow occipital carina, rather than lamelliform, and by the shape of the pronotum and of the hind coxa.

Biology. Unknown.

TABLE 4. Diagnostic characters of *P. morawitzi* and *P. mourguesi* ♀.

Pristaulacus morawitzi ♀	*Pristaulacus mourguesi* ♀
Medium sized, body length, excluding ovipositor: 12.0 mm.	Large sized, body length, excluding ovipositor: 16.5 mm.
Punctures of head very fine, superficial, and scattered.	Punctures of head coarse, deep, and moderately dense, denser on frons.
Temples, from above, subparallel.	Temples, from above, convergent.
Setae of head white-gold; length of setae, on temples, 0.8x diameter of an ocellus.	Setae of head brown; length of setae, on temples, 1.1–1.2x diameter of an ocellus.
Setae of mesosoma white gold.	Setae of mesosoma brown.
Setae of propleuron whitish, as long as fore tarsomere 4.	Setae of propleuron brown, 2.0x longer than fore tarsomere 4.
Legs entirely reddish orange with tarsi paler.	Legs entirely dark brown.
Hind basitarsus 1.1x longer than tarsomeres 2–5.	Hind basitarsus 1.5x longer than tarsomeres 2–5.
Metasoma pyriform, strongly compressed, nearly entirely reddish orange.	Metasoma subcylindrical, black except segments 1 and 2, reddish.
Ovipositor equal fore wing length.	Ovipositor longer than fore wing length.

***Pristaulacus mourguesi* Maneval, 1935**
(Figs. 19, 39, 59, 79, 114)

Pristaulacus Mourguesi Maneval, 1935: 66 (♀).
Pristaulacus mourgesi (sic!): Hedicke, 1939: 12.
Pristaulacus mourguesi: Smith, 2001: 291.

Material examined. FRANCE: **holotype** ♀ labelled "Pont-Ravatgers, C.ne de S.te Croix, Vallee Francaise, Lagére, 28.VIII.(19)32, A. Mourgues/Type/*Pristaulacus Mourguesi* ♀ Maneval" (MNHN). CROATIA: Dalmazia, Hvar, 20.VI.1962, 1♀, K. Kusdas legit (NMW). GREECE: Klidi Ruins, Serres, 15.VI.1992, 1♀, G. Pagliano leg. (DBAC).

Records from literature. Maneval (1935), Oehlke (1983).

Type locality. "... au Pont-Ravatgers, commune de Sainte-Croix-Vallée-Française, Lozère" (Maneval 1935).

Notes on type material. The type material consists of the holotype ♀; it is damaged and some parts are lost: some distal antennomeres of the right antenna; left fore leg; right hind leg. The two valvulae 3 of ovipositor are broken and glued on a label.

Redescription. ♀ (holotype). Length (excluding ovipositor): 16.5 mm; fore wing length: 12.2 mm.

Colour black, except: subapical part of mandible dark red; maxillo-labial complex blackish brown, with labial and maxillary palpi brown; fore tibia and tarsus brown; mid and hind tibiae and tarsi dark brown; wings hyaline, with veins brown, and stigma blackish brown, lighter in middle; fore wing with a wide, subrectangular, brown spot below stigma, reaching middle of wing width, and apex widely infuscate; hind wing with some evident veins brown; metasomal segments 1–2 and proximal half of segment 3 red orange; base of dorsal part of petiole darkened; valvula 3 of ovipositor blackish brown. Setae: brown, except reddish gold on mandible.

Head (Figs. 19, 39), from above, 1.3x wider than long, shiny to weakly dull; occipital margin straight; temple, from above, well developed, 1.1x longer than eye length, weakly convergent posteriorly, and weakly convex; occipital carina narrow, cerciniform, 0.2x diameter of an ocellus; POL:OOL= 1.2; ocellar area 2.2x wider than long; frons and clypeus with coarse, deep, and dense punctures (distance between punctures 1x diameter of a puncture); temple and vertex irregularly punctate, with coarse, superficial to moderately deep, and scattered punctures (distance between punctures 2–3x diameter of a puncture); malar area with coarse, deep, and dense punctures; occipital area polished; mandible polished and shiny, with coarse and deep punctures on proximal half and in middle; antenna length 0.8x fore wing length; A3 3.6x longer than wide; A4 5.0x longer than wide, and 1.7x longer than A3; A5 4.7x longer than wide, and 1.5x longer than A3; following antennomeres progressively shorter, the last one slightly dorsoventrally compressed, with apex rounded, 2.5x longer than wide. Setae: erect, long, and moderately dense on frons, less dense on vertex and on temples; semierect, moderately long, and dense on clypeus; recumbent, short, and moderately dense on malar area; semierect, long, and weakly dense on A1; setae length of temple 1.1–1.2x diameter of an ocellus.

Mesosoma (Fig. 59) coarsely sculptured; pronotum areolate rugose, with lateroventral parts polished and foveolate, each lateroventral margin with a well-developed median tooth; propleuron polished, with very fine, superficial, and very scattered punctures (distance between punctures 3–4x diameter of a puncture); prescutum triangular, deeply concave in middle, polished, shiny, transverse carinulate on apical half; mesoscutum irregularly areolate rugose, except on median part, transverse carinate, with anterior margin, in lateral view, rounded, slightly protrudent; notaulus deep and very wide; scutellum areolate rugose; mesepimeron transverse carinate; mesepisternum areolate rugose, with extreme upper part foveolate; metanotum longitudinally carinate; propodeum areolate rugose, with base irregularly carinate; ventral parts of mesosoma extensively rugose foveolate, with median part transverse carinate; fore wing with vein 2-rs+m short; fore coxa polished and shiny, with fine, superficial, and very scattered punctures in middle; mid coxa shiny, slightly and irregularly rugose; hind coxa (Fig. 79) with dorsal surface transverse carinulate foveolate, and ventral surface polished with apex and sides transverse carinulate punctate, punctures fine, superficial, and scattered (distance between punctures 3x diameter of a puncture); trochanters polished, shiny, irregularly punctate, with moderately coarse, moderately deep, and scattered punctures on fore and mid trochanters, more dense on hind trochanter; dorsal surface of femora dull, with coarse, deep, and dense punctures, ventral surface shiny, with fine, superficial, and scattered to very scattered punctures; spurs of mid tibia of the same length; inner spur of hind tibia slightly longer than outer spur; hind basitarsus 9.6x longer than wide, and 1.5x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect or semierect, short, and scattered on dorsal surface, longer and more dense on propleuron, on lateral and ventral parts of mesosoma, and on fore coxae; erect, long, and moderately dense on hind surface of propodeum; erect, long, and moderately dense on propleuron, with setae length as fore pretarsus length; erect or semierect, long, and moderately dense on coxae and trochanters, erect on dorsal surface of hind coxa; recumbent, short, and dense on dorsal surface of femora, erect, moderately long, and scattered on ventral surface.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, slender, 1.9x longer than wide; segments 1 and 2 polished and shiny; following segments very finely sculptured; median part of T3–T7 and most part of T8 with regular, fine, deep, and moderately dense punctures, less dense on median part of S3–S6; S7 with regular, coarse, deep, and dense punctures; ovipositor 1.4x longer than fore wing length; valvula 3 of ovipositor with apex weakly acute. Setae: segments 1 and 2 glabrous, except lateroapical parts of T2, with a few setae; recumbent, short, and moderately dense on T3–T7, most part of T8, and on median part of S3–S6.

♂ (from Oehlke 1983: 444–445). Length: 15.0 mm; antenna length 0.8x fore wing length; A3 2.9x longer than wide; A4 1.6x longer than A3; petiole 3.0x longer than wide; fore and mid legs, from joint of femur with tibia, and excluding the last two tarsomeres, yellow brown.

Intraspecific variation. Examined: 3♀. Length (excluding ovipositor): 16.5–18.5 mm; fore wing length: 8.8–13.0 mm; ovipositor 1.4–1.6x longer than fore wing length. Holotype has the spots on fore wing narrower and paler than the other examined specimens; moreover, the spaces between punctures on frons have a fine rugosity.

Distribution. France, Croatia (*), Hungary, Greece (*).

Remarks. This species is newly recorded for Croatia and Greece. *Pristaulacus mourguesi* is one of the largest species among Palaearctic *Pristaulacus*.

Biology. Unknown.

***Pristaulacus paglianoi* Turrisi, sp. nov.**
(Figs. 20, 40, 60, 80, 92, 94, 96, 114)

Type material. MOROCCO: **holotype** ♀ labelled "Marocco, Haut Atlas, Tizi n'Test, m 2000, VII.1985, ex larva, da *Ononis* sp. contenente *Chlorophorus sexguttatus*, G. Sama leg./*Pristaulacus paglianoi* Turrisi sp.nov. 2002, ♀ holotypus" (MRSN); **paratype** ♂ labelled "Marocco, Tagazout Agadir, 18/19.IV.1990, P.L. Scaramozzino leg. (Morocco exp. Bassi-Olmi-Scaramozzino)/*Pristaulacus paglianoi* Turrisi sp. nov. 2002, ♂ paratypus" (MRSN); 2♂ **paratypes** both labelled "lg. Scaramozzino, Tagazout Agadir, 18/19.IV.1990, Marocco/Marocco exp. Bassi-Olmi-Scaramozzino/*Pristaulacus paglianoi* Turrisi sp. nov. 2005, ♂ paratypus" (DBAC); **paratype** ♂ labelled "Maroc, Haut Atlas, Tizi n'Test, 2000, ex l. *Cistus villosus*, 6.VII.85, G. Sama leg./*Trichoferus cisti* Sama, Coll. G. Sama/*Pristaulacus paglianoi* Turrisi sp. nov. 2002, ♂ paratypus" (DBAC).

Additional material. TUNISIA: Tunis, 1♂, coll. J. Pérez, 1915 (MNHN).

Etymology. Named in honour of my friend Guido Pagliano, Italian entomologist (Turin).

Type locality. Morocco: Haut Atlas, Tizi n'Test, 2000 m (a.s.l.).

Description. ♀ (holotype). Length (excluding ovipositor): 12.5 mm; fore wing length: 8.8 mm.

Colour black except: teeth of mandible, dark red; maxillo-labial complex blackish, with palpi brown; antenna blackish brown with median antennomeres lighter; coxae, trochanters and femora blackish; tibiae and tarsi dark red orange, with hind tibia and tarsus darker; wings hyaline with veins and stigma dark brown; fore wing with a wide dark brown spot below stigma, as wide as stigma length, reaching D2, a small brown spot between B and SB, and another spot between SB and SD1; metasomal segments 1–4 red orange, except dorsal part of T1; following segments blackish brown; valvula 3 of ovipositor brown. Setae: whitish, except brown on head, yellow gold on mandible.

Head (Figs. 20, 40), from above, 1.3x wider than long, polished and shiny; occipital margin straight; temple, from above, well developed, as long as eye length, subparallel, regularly rounded posteriorly; occipital carina narrow, cerciniform, less than 0.2x diameter of an ocellus; POL:OOL= 0.9; ocellar area 2.0x wider than long; frons, clypeus, and malar area with coarse, deep, and dense punctures (distance between punctures about

1x diameter of a puncture); vertex and temple with coarse, deep, and moderately dense punctures (distance between punctures about 2x diameter of a puncture); occipital area polished; mandible polished and shiny, with coarse and deep punctures on proximal half and in middle; antenna length 0.8x fore wing length; A3 3.9x longer than wide; A4 5.3x longer than wide, and 1.4x longer than A3; A5 4.9x longer than wide, and 1.3x longer than A3; following antennomeres progressively shorter, apical one slightly dorsoventrally compressed, with apex rounded, 2.2x longer than wide. Setae: erect, short, and moderately dense on frons, less dense on remaining parts, recumbent on malar area; recumbent, short, and dense on lateroinferior parts of frons; short and scattered on A1; setae length of temple 0.5–0.6x diameter of an ocellus.

Mesosoma (Fig. 60) coarsely sculptured; pronotum areolate rugose, with lateroventral parts foveolate; each lateroventral margin with one small tooth; propleuron polished and shiny, with coarse, moderately deep, and scattered punctures (distance between punctures 2–3x diameter of a puncture); prescutum subtriangular, concave in middle, polished, shiny, with a scattered apical rugosity; mesoscutum transverse carinate, coarsely and deeply punctate on lateral margins, with anterior margin, in lateral view, rounded; notaulus moderately deep and narrow; scutellum areolate rugose, except on median part, extensively polished, shiny, with coarse, deep, and scattered punctures; mesopleuron areolate rugose, with upper part of mesepisternum shiny and foveolate punctate; metanotum longitudinally carinate; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma polished and foveolate, transverse carinate medially; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with coarse, superficial, and scattered punctures, except on outer side, with dense punctures; mid coxa shiny, transverse carinulate on outer half, with coarse and scattered punctures on inner half; hind coxa (Fig. 80) shiny, with dorsal surface transverse carinate, and coarse and deep punctures between carinae, and ventral surface weakly transverse carinulate, with regular moderately coarse, deep, and dense punctures (distance between punctures 1.5–2.0x diameter of a puncture); trochanters shiny, with coarse, deep, and very dense punctures; dorsal surface of fore and mid femora dull, with coarse, deep, and dense punctures, ventral surface shiny, with moderately coarse, deep, and scattered punctures; dorsal surface of hind femur dull, with coarse, deep, and very dense punctures, ventral surface extensively transverse striolate, with less dense punctures; inner spur of mid and hind tibiae slightly longer than outer spur; hind basitarsus 8.0x longer than wide, and 1.1x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, short, and scattered on dorsal surface, semierect or recumbent, denser, and long on lateral and ventral parts of mesosoma, and on anterior part of mesonotum; erect, moderately long, and dense on hind surface of propodeum; erect, moderately long, and moderately dense on propleuron, with setae length about 0.5x fore pretarsus length; erect or semierect, moderately long, and dense on coxae and trochanters; recumbent, very short, and dense on dorsal surface of fore and mid femora and on hind femur, erect, longer and scattered on ventral surface of fore and mid femora.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole moderately elongate, 2.0x longer than wide; segments 1 and 2 polished and shiny, except a small area of proximal margin of T2, with coarse and moderately dense punctures; following segments very finely sculptured, with fine, superficial, and scattered punctures; T8 weakly sculptured, with fine, superficial, and scattered punctures, denser on apical part; S7 uniformly punctate, with coarse, deep, and moderately dense punctures; ovipositor 1.2x longer than fore wing length; valvula 3 of ovipositor with apex acute. Setae: segments 1 and 2 glabrous; recumbent, very short, and dense on following tergites; recumbent, short, and scattered on T8; recumbent, short, and moderately dense on S7.

♂ (paratype from Tagazout Agadir). Length: 12.0 mm; fore wing length: 8.3 mm. Colour, structure, and setae like ♀, except: antenna length 0.7x fore wing length; A3 3.3x longer than wide; A4 4.3x longer than wide, and 1.4x longer than A3; A5 4.0x longer than wide, and 1.3x longer than A3; A13 cylindrical, with apex rounded, 4.0x longer than wide; hind basitarsus 9.0x longer than wide; petiole 2.4x longer than wide; metasomal segment 1 polished, shiny and glabrous; metasomal segment 2 shiny, very weakly sculptured, with a few punctures and short setae on T2; following metasomal segments with dense punctures and setae.

Intraspecific variation. Examined: 1♀, 5♂. Length: 11.7–13.7 mm (♂); fore wing length: 8.1–9.0 mm (♂).

Distribution. Morocco, Tunisia.

Remarks. Among the Palaearctic *Pristaulacus*, this new species is most similar to *P. morawitzi*, by the shape of the occipital carina and by the presence of only one tooth on the lateroventral margin of the pronotum. However, it can be distinguished by several characters reported in Table 5.

Biology. Hosts: *Chlorophorus sexguttatus* (Lucas, 1849) and *Trichoferus cisti* Sama, 1987 (Coleoptera, Cerambycidae).

TABLE 5. Diagnostic characters of *P. morawitzi* and *P. paglianoi* Turrisi, **sp. nov.** ♀.

Pristaulacus morawitzi ♀	*Pristaulacus paglianoi* **sp. nov.** ♀
Head with very fine, superficial, and scattered punctures.	Head with coarse, deep, and dense punctures.
Temple, in dorsal view, subparallel.	Temple, in dorsal view, slightly divergent.
Frontal area, in dorsal view, weakly convex.	Frontal area, in dorsal view, strongly convex.
Setae of head scattered, white gold.	Setae of head dense, brown.
Setae of temple 0.8x diameter of an ocellus.	Setae of temple 0.5x diameter of an ocellus.
Setae of mesosoma white gold.	Setae of mesosoma brown.
Propleuron without punctures.	Propleuron with coarse and deep punctures.
Setae of propleuron equal length of fore tarsomere 4.	Setae of propleuron shorter than fore tarsomere 4.
Hind coxa moderately long and slender.	Hind coxa short and stocky.
Hind basitarsus slender, 9.4x longer than wide.	Hind basitarsus less slender, 8.0x longer than wide.
Legs entirely reddish orange with tarsi paler.	Legs black with tibiae and tarsi dark reddish orange (hind tarsi darker).
Ovipositor equal fore wing length.	Ovipositor longer than fore wing length.

***Pristaulacus patrati* (Audinet-Serville, 1833)**
(Figs. 21, 41, 61, 81, 119)

Aulacus Patrati Audinet-Serville, 1833: 415 (♀).
Aulacus latreilleanus Nees von Esenbeck, 1834: 304 (♀).
Pristaulacus latreilleanus: Kieffer, 1912: 384.
Pristaulacus patrati: Kieffer, 1912: 384.
Pristaulacus latreilleanus: Hedicke, 1939: 11.
Pristaulacus patrati: Hedicke, 1939: 14.
Aulacostethus patrati: Györfi , 1964: 51.
Pristaulacus patrati: Smith, 2001: 293.

Material examined. AUSTRIA: Kronstein, 16.VII.1883, 1♀, Nied.-Oest., E. Berher 1886 (NMW); Vienna, Prater, 1♀, coll. Giraud 1877 (MNHN). 1♀ (without data) (sub *Pristaulacus Latreilleanus* Nees, Schmiedeknecht det.) (DEI).

Records from literature. Audinet-Serville (1833), Labram & Imhoff (1838), Westwood (1844), Kieffer (1912), Ceballos (1956), Györfi (1964), Oehlke (1983, 1984), Madl (1988).

Type locality. "Trouvé aux environs de Tours" (Audinet-Serville 1833).

Notes on type material. The type material of *Aulacus patrati* has not been located (Smith 2001); my research in the main European collections have not stated if it is still in existence.

Redescription. ♀. Length (excluding ovipositor): 10.5 mm; fore wing length: 8.5 mm.

Colour black, except: mandible extensively red orange, with base blackish and apex reddish brown; maxillo-labial complex dark brown, with maxillary palpus lighter; antenna blackish brown with A1 and A2 dark red; fore and mid coxae, trochanters, proximal half of fore and mid femora, hind femur and tibia dark brown; hind coxa blackish brown; remaining parts of fore and mid legs brown orange; hind tarsus yellow; wings hyaline, uniformly yellowish, with veins light brown, and stigma brown, lighter in middle part; fore wing with a light brown spot below stigma, reaching SM2, and two irregular light brown spots, one between SB and SD1, other in apical part of D2; hind wing with traces of some veins; metasomal segments 1–3 and most of segment 4 red orange, with dorsal part of T1 black; valvula 3 of ovipositor blackish brown. Setae: light brown, except yellow gold on mandible.

Head (Figs. 21, 41), from above, 1.3x wider than long, polished and shiny; occipital margin slightly concave; temple, from above, well developed, 0.8x as long as eye length, weakly convergent posteriorly and weakly convex; occipital carina narrow, cerciniform, 0.2x diameter of an ocellus; POL:OOL= 1.0; ocellar area 2.4x wider than long; frons and clypeus with coarse, superficial, and dense punctures (distance between punctures as diameter of a puncture); temple and vertex with moderately coarse, deep, and moderately dense punctures; malar area irregularly punctate, with moderately coarse, deep, and dense punctures; occipital area extensively rugulose; mandible polished and shiny with coarse and deep punctures on base and in middle; antenna length 0.8x fore wing length; A3 6.0x longer than wide; A4 9.8x longer than wide, and 1.6x longer than A3; A5 8.2x longer than wide, and 1.4x longer than A3; following antennomeres progressively shorter, apical one dorsoventrally compressed, with rounded apex, 2.0x longer than wide. Setae: erect or semierect, very long, and dense on frons, less dense on vertex and temple; semierect, long, and dense on A1; setae length of temple and of frons 2x or more diameter of an ocellus.

Mesosoma (Fig. 61) coarsely sculptured; pronotum areolate rugose with a median well-developed tooth on each lateroventral margin; propleuron polished, shiny, with coarse, slightly defined, very superficial, and scattered punctures (distance between punctures 2–3x diameter of a puncture); prescutum triangular, weakly concave in middle, irregularly rugose; mesoscutum areolate rugose to irregularly transverse carinate (poorly defined carinae), with anterior margin, in lateral view, regularly rounded; notaulus deep and wide; scutellum transverse carinate, with scattered and concentric carinae; mesopleuron coarsely areolate rugose, except a small area on upper third, less coarsely areolate rugose; metanotum polished and shiny, with some longitudinal carinae; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma extensively areolate rugose, transverse carinate medially; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with poorly defined, superficial, and scattered punctures; mid coxa extensively transverse carinulate, polished on inner half; hind coxa (Fig. 81) shiny, with a few irregular transverse carinae on dorsal surface, polished, with superficial and scattered punctures on ventral surface, except on apical third, extensively transverse carinulate; trochanters polished, shiny, with irregular, fine to moderately coarse, deep, and scattered to moderately dense punctures, less dense on ventral surface of fore trochanter; dorsal surface of femora dull, with moderately coarse, deep, and dense punctures, ventral surface shiny, with fine, superficial, and scattered to very scattered punctures; ventral surface of hind femur extensively transverse striolate; inner spur of mid and hind tibiae slightly longer than outer spur; hind basitarsus 10.0x longer than wide, and 1.1x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, moderately long, and scattered, longer on lateral and ventral parts; erect, long, and scattered on hind surface of propodeum; erect, long, and moderately dense on propleuron, with setae length as fore pretarsus length; recumbent and moderately long and dense on dorsal surface of fore and mid femora, erect, longer, and scattered on ventral surface; semierect or recumbent, short, and moderately dense on hind femur.

Metasoma moderately compressed laterally, pyriform in lateral view; petiole elongate, 3.7x longer than wide; segments 1 and 2 polished and shiny; following segments very finely sculptured; median part of T3–T7 with regular, fine, superficial, and scattered punctures; S7 with moderately coarse, deep, and scattered punctures; T8 with a few punctures on apical margin; ovipositor 1.1x longer than fore wing length; valvula 3 of

ovipositor with apex acute. Setae: segments 1 and 2 glabrous; recumbent, short, and moderately dense on the remaining segments.

♂**.** The male of this species was not formally described, although some generic data are provided by Labram & Imhoff (1838) and Kieffer (1912).

Intraspecific variation. Examined: 3♀. Length (excluding ovipositor): 9.9–10.5 mm (♀); fore wing length: 8.0–8.5 mm (♀); ovipositor length 1.0–1.2x fore wing length.

Distribution. Spain, France, Austria, Germany, Hungary, Switzerland.

Remarks. This species shows two autoapomorphic characters among Palaearctic *Pristaulacus*: 1) occipital fossa transverse carinulate; 2) setae of the head very long, more than two times diameter of an ocellus (Turrisi 2004).

Biology. Hosts: *Xiphydria longicollis* (Geoffroy, 1785) (Hymenoptera, Xiphydriidae) (Ratzeburg 1852; Laboulbène 1877); also indicated as parasitoid of an unidentified *Xiphydria* Latreille (Lichtenstein & Picard 1918).

Pristaulacus proximus Kieffer, 1906

Pristaulacus proximus Kieffer, 1906: 120 (♀).
Pristaulacus proximus: Kieffer, 1912: 383.
Pristaulacus proximus: Hedicke, 1939: 14.
Pristaulacus proximus: Smith, 2001: 294.

Records from literature. Kieffer (1906, 1912).

Type locality. "Espagne, environs de Barcelone" (Kieffer 1906).

Notes on type material. The type material was not found by Oehlke (1983), and I was unable to locate it. Its depository was not indicated in the original description (Kieffer 1906).

Description. ♀ (according to Kieffer 1906: 120). Length (excluding ovipositor): 11.5 mm.

Colour black except: median part of metasoma and hind margin of following segments, red; distal part of fore and mid femora and fore tibia and tarsus rust red; mid and hind tibiae and tarsi dark brown; pronotum with a tooth on the posterior part of lateroventral margin; median lobe of mesoscutum not rope-shaped; fore wing with a brown spot behind stigma, occupying apical part of SM1 and base of SM2, and three other small brown spots, one on apical part of SD, one on second transverse discoidal vein and one on apex of wing; hind wing with some weak veins, poorly visible, closing two basal cells; hind basitarsus weakly shorter than tarsomeres 2–5; claw with four teeth; ovipositor entirely black, much longer than body.

♂**.** Unknown.

Intraspecific variation. Unknown.

Distribution. Spain.

Remarks. According to Kieffer (1906), *P. proximus* is most similar to *P. compressus* (sub *P. schlettereri*). The diagnostic features are the absence of the anterior tooth on lateroventral margin of the pronotum, and the presence of a posterior tooth instead; other differences are represented by the sculpture of the median lobe of mesonotum, without longitudinal groove, and the hind basitarsus shorter than tarsomeres 2–5. From our current knowledge it is not possible to clarify the identity of *P. proximus*, and to confirm its specific validity.

Biology. Unknown.

Pristaulacus rufipilosus Uchida, 1932
(Figs. 22, 42, 62, 82, 115)

Pristaulacus rufipilosus Uchida, 1932: 190 (♀).
Pristaulacus rufipilosus: Hedicke, 1939: 15.
Pristaulacus rufipilosus: Smith, 2001: 296.

Material examined. JAPAN: Kawairi, Mt. Iidesan (Fukushima Pref.), 30.VII–1.VIII.1985, 1♀, H. Makihara leg. (ITLJ).

Records from literature. Uchida (1932), Konishi (1990).

Type locality. "Sapporo" (Uchida 1932).

Notes on type material. The type material consists of the holotype ♀ (not examined), stored in the collection of the Hokkaido University, Sapporo (Japan) (Konishi 1990). The specimen examined was compared with the holotype by Konishi (1990).

Redescription. ♀. Length (excluding ovipositor): 15.2 mm; fore wing length: 12.1 mm.

Colour black, except: mandible (except apical part), distal half of clypeus and malar area red orange; maxillo-labial complex brown, with articles 4–6 of maxillary palpus lighter; A1 and some basal antennomeres yellow orange; pronotum, propleuron, mesopleuron and lateral parts of propodeum yellow brown more or less darkened; legs entirely yellow orange, with base of hind coxa darker; wings hyaline, slightly yellowish, with brown veins; fore wing with median part of stigma dark brown, a wide subrectangular dark brown spot below stigma, as wide as stigma length, reaching median part of SM2, and irregular brown spots between SB and SD and on base of D2; metasoma dark brown with sides of T1, S1 and extensively segment 2 lighter; valvula 3 of ovipositor dark brown. Setae: yellow gold.

Head (Figs. 22, 42), from above, 1.4x wider than long, polished and shiny; occipital margin straight; temple, from above, moderately developed, 0.7x as long as eye length, subparallel and regularly rounded posteriorly; occipital carina narrow, cerciniform, 0.2x diameter of an ocellus; POL:OOL= 1.2; ocellar area 2.0x wider than long; frons with fine, deep, and dense punctures (distance between punctures equal as diameter of a puncture); vertex and temple irregularly punctate, with fine, superficial, and scattered punctures, except ocellar area, with punctures as frons; clypeus rugulose punctate; malar area irregularly punctate, with deep and very dense punctures; mandible polished and shiny, with coarse and deep punctures on base and in middle; A3 4.1x longer than wide (other parts of antennae lacking). Setae: erect, short, and scattered on upper half of frons and on vertex, longer on temple; recumbent, and moderately long and dense on clypeus, on malar area, and on lower half of frons; recumbent, short, and scattered on A1; setae length of temple 0.6–0.7x diameter of an ocellus.

Mesosoma (Fig. 62) coarsely sculptured; pronotum transverse carinulate medially, areolate rugose on upper part of sides, foveolate on lower part of sides, each lateroventral margin anteriorly angulate without tooth; propleuron polished, shiny, and irregularly punctate, with coarse, superficial, and moderately dense punctures on outer half, fine and scattered on inner half (distance between punctures 3–4x diameter of a puncture), rugulose apically; prescutum triangular, moderately concave medially, finely carinulate rugose; mesoscutum transverse carinate, with hind margin scrobiculate, and anterior margin, in lateral view, regularly rounded; notaulus deep and moderately wide; scutellum transverse carinate; mesepimeron irregularly transverse carinate; mesepisternum areolate rugose, except a small area on upper third, foveolate; metanotum longitudinally carinate; propodeum areolate rugose, with dorsal surface transverse carinulate to irregularly carinate; ventral parts of mesosoma polished, finely punctate, transverse carinate medially; fore wing with vein 2-rs+m short; fore coxa polished, shiny, with fine, superficial, and scattered punctures, coarse and deep on inner surface; mid coxa shiny, with base striolate punctate, and remaining parts with fine, superficial, and scattered punctures, except on base, rugulose; hind coxa (Fig. 82) shiny, with dorsal surface foveolate punctate, and ventral surface polished with moderately coarse, deep, and dense punctures (distance between punctures 1–2x diameter of a puncture), except on base, striolate punctate; trochanters polished and shiny, with irregular, coarse, deep, and moderately dense punctures; dorsal surface of femora dull, with moderately coarse, deep, and dense punctures, and ventral surface shiny, with fine, superficial, and scattered punctures;

inner spur of mid and hind tibiae slightly longer than outer spur; hind basitarsus 12.5x longer than wide, and 1.6x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, short, and moderately dense on dorsal surface, recumbent, short, and dense on ventral surface, recumbent, long, and dense on pronotum and on dorsal surface of propodeum, erect, long, and dense on lateral and hind parts of propodeum; erect, moderately long, and moderately dense on propleuron, with setae length 0.4–0.5x fore pretarsus length; semierect, moderately long, and dense on hind coxa, erect on dorsal surface; recumbent, short, and dense on dorsal surface of fore and mid femora, erect, moderately long, and scattered on ventral surface; semierect to recumbent, short, and moderately dense on hind femur.

Metasoma moderately compressed laterally, subtriangular in lateral view; petiole elongate, slender, 4.2x longer than wide; segments 1 and 2 polished and shiny; following segments with very fine, superficial, and moderately dense punctures, except most of lateral margins of T3–T7 and of S3–S6; S7 striolate punctate, with coarse, moderately deep, and dense punctures; T8 shiny, with moderately coarse, deep, and scattered punctures; ovipositor 1.6x longer than fore wing length; valvula 3 of ovipositor with acute apex. Setae: segments 1 and 2 glabrous; recumbent, very short, and dense on median part of T3–T7; recumbent, short, and moderately dense on S3–S6; recumbent, short, and scattered on S7; erect, moderately long, and scattered on T8.

♂**.** Unknown.

Intraspecific variation. Examined: 1♀. Fore wing length: 11.8–12.4 mm (♀) (Konishi 1990).

Distribution. Japan (Hokkaido, Honshu, Shikoku).

Remarks. Only four specimens, including the holotype ♀, of this species are currently known (Uchida 1932; Konishi 1990). It is the only Palaearctic *Pristaulacus* species having yellow gold setae on the whole body. As with *P. mourguesi*, the hind basitarsus is 1.6x longer than tarsomeres 2–5.

Biology. Unknown.

Pristaulacus ryukyuensis Konishi, 1990
(Figs. 23, 43, 63, 83, 86, 107, 115)

Pristaulacus ryukyuensis Konishi, 1990: 648 (♀).
Pristaulacus ryukyuensis: Smith, 2001: 297.

Material examined. JAPAN: **holotype** ♀ labelled "Chuo-rindo, Amami-oshima Is., Kagoshima Pref., 1.VIII.1980, Rya Noda/Holotype, *Pristaulacus ryukyuensis* Konishi, 1990, Jpn. J. Ent., 58" (ITLJ); **paratype** ♀ labelled "Kunigami-son, Okinawa hontô Is., Okinawa Pref., 11.X.1988, H. H. Makihara/Paratype, *Pristaulacus ryukyuensis* Konishi, 1990, Jpn. J. Ent., 58" (ITLJ); **paratype** ♂ labelled "Amami-oshima Is., Kagoshima Pref., 28.III.1980, H. Makihara/Paratype, *Pristaulacus ryukyuensis* Konishi, 1990, Jpn. J. Ent., 58" (ITLJ).

Records from literature. Konishi (1990).

Type locality. "Chuo-rindo, Amami-oshima Is., Kagoshima Pref." (Konishi 1990).

Notes on type material. The type material consists of the holotype ♀ and 11 paratypes (8♀, 3♂) preserved in ITLJ.

Redescription. ♀ (holotype). Length (excluding ovipositor): 11.0 mm; fore wing length: 8.3 mm.

Colour black, except: median part of mandible and ventral part of A1 dark red; maxillo-labial complex dark brown, with articles 4–6 of maxillary palpus brown; mid femur, hind tibia and tarsus dark brown; mid tibia and tarsus brown; hind femur blackish brown; wings hyaline with veins and stigma dark brown; fore wing with a subrectangular dark brown spot below stigma, as wide as stigma length, reaching posteriorly SM1; metasoma blackish with apical margin of tergites and sternites lighter; valvula 3 of ovipositor blackish brown. Setae: whitish.

Head (Figs. 23, 43), from above, 1.4x wider than long, polished and shiny; occipital margin straight; temple, from above, weakly developed, 0.5x as long as eye length, strongly convergent posteriorly, and regularly rounded; occipital carina narrow, cerciniform, 0.2x diameter of an ocellus; POL:OOL= 1.4; ocellar area 2.0x wider than long; frons and clypeus with fine and moderately deep and dense punctures (distance between punctures 1–2x diameter of a puncture), less defined on clypeus; vertex and temple with fine, moderately deep, and scattered punctures (distance between punctures 3–4x diameter of a puncture); malar area with moderately coarse, deep, and dense punctures; occipital area polished; mandible polished and shiny, with coarse and deep puncture on base and in middle; antenna length 0.8x fore wing length; A3 4.5x longer than wide; A4 6.4x longer than wide, and 1.5x longer than A3; A5 7.0x longer than wide, and 1.5x longer than A3; following antennomeres progressively shorter, apical one dorsoventrally compressed, with rounded apex, 2.1x longer than wide. Setae: erect, moderately long, and scattered on vertex and on upper half of frons; recumbent, moderately long, and very dense on lower part of frons, on clypeus, and on malar area; erect, moderately long, and dense on temple; recumbent or semierect, moderately long, and dense on A1; setae length of temple 1x diameter of an ocellus.

Mesosoma (Fig. 63) coarsely sculptured; pronotum areolate rugose, with a lateral mucrone on each side, and a well-developed tooth on median part of each lateroventral margin; propleuron polished and shiny, with regular, very fine, superficial, and moderately dense punctures (distance between punctures 2x diameter of a puncture); prescutum triangular, moderately concave in middle, transverse carinate; mesoscutum transverse carinate, with two anterolateral, acute, hornlike processes, and anterior margin, in lateral view, acute; notaulus deep and wide; scutellum transverse carinate in middle, with concentric semicircular carinae, areolate rugose along margins; mesepimeron transverse carinate to areolate rugose; mesepisternum areolate rugose, with a small area on upper third areolate punctate; metanotum longitudinally carinate, areolate rugose in middle; propodeum areolate rugose, with base longitudinally carinate; ventral parts of mesosoma polished, shiny, punctate, transverse carinate in middle; fore wing with vein 2-rs+m short; (fore legs lost); mid coxa transverse carinate; hind coxa (Fig. 83) shiny, with dorsal surface transverse carinate, and ventral surface polished, with regular, moderately coarse, superficial, and dense punctures (distance between punctures 1–2x diameter of a puncture); trochanters shiny, with regular, coarse, deep, and moderately dense punctures, more dense on hind trochanter; dorsal surface of mid femur dull, with coarse, deep, and dense punctures, ventral surface shiny, with coarse, moderately deep, and dense punctures; hind femur dull, with coarse, deep, and dense punctures, and ventral surface extensively transverse striolate punctate; inner spur of mid and hind tibiae slightly longer than outer spur; hind basitarsus 11.4x longer than wide, and 1.3x longer than tarsomeres 2–5; claw with four well-developed teeth. Setae: erect, moderately long, and scattered on dorsal surface, moderately long and dense on lateral and ventral parts, semierect, long, and dense on pronotum, erect, long, and moderately dense on hind surface of propodeum; erect, moderately long, and dense on propleuron, with setae length 0.5–0.6x fore pretarsus length; semierect, moderately long, and dense on coxae and trochanters, erect on dorsal surface of hind coxa; recumbent, short, and dense on dorsal surface of mid femur, erect, longer, and scattered on ventral surface; very short and moderately dense on hind femur, recumbent on dorsal surface, erect on ventral surface.

Metasoma moderately compressed laterally, pyrifom in lateral view; petiole elongate, slender, 3.3x longer than wide; segments 1 and 2 polished and shiny; following segments uniformly punctate, with very fine, superficial, and dense punctures; S7 with fine, deep, and moderately dense punctures; T8 uniformly punctate, with fine, superficial, and moderately dense punctures; ovipositor slightly longer than fore wing length; valvula 3 of ovipositor with apex acute. Setae: segments 1 and 2 glabrous; recumbent, short, and very dense on following segments; longer on S7 and T8.

♂ (paratype). Length: 12.0 mm; fore wing length: 8.5 mm. Colour, structure, and setae like ♀, except: A3 4.7x longer than wide; A4 7.0x longer than wide, and 1.7x longer than A3; A5 6.8x longer than wide, and 1.6x longer than A3; hind basitarsus 10.7x longer than wide, and 1.25x longer than tarsomeres 2–5; T1 and T2 pol-

ished, shiny, and glabrous; following metasomal segments regularly punctate, with fine, superficial, and dense punctures, and recumbent, short, and dense setae; sternites with punctures and setae less dense than tergites; petiole 3.7x longer than wide; genital capsule (Fig. 86) with apex of paramere slightly pointed, cuspis wide and moderately curved, digitus wide with lower apex narrow and long.

Intraspecific variation. Examined: 2♀, 1♂. Fore wing length: 8.4–11.6 mm (♀, ♂) (Konishi 1990).

Distribution. Japan (Amami-ôshima Island, Okinawa-hontô Island).

Remarks. *Pristaulacus ryukyuensis* is easily recognizable, among the Palaearctic *Pristaulacus*, by the shape of the mesoscutum, with anterolateral margin acute, slighlty protruding (in lateral view), hornlike shaped (Figs. 63, 107). This character is found in other species from the Oriental and Neotropical Regions (Turrisi 2004).

Biology. Unknown.

TABLE 6. Subdivision of the Palaearctic *Pristaulacus* Kieffer on the basis of their distribution pattern.

Western Palaearctic *Pristaulacus*
P. barbeyi (Ferrière, 1933)
P. chlapowskii Kieffer, 1900
P. compressus (Spinola, 1808)
P. edoardoi Turrisi, **sp. nov.**
P. galitae (Gribodo, 1879)
P. gloriator (Fabricius, 1804)
P. lindae Turrisi, 2000
P. morawitzi (Semenow, 1892)
P. mourguesi Maneval, 1935
P. paglianoi Turrisi, **sp. nov.**
P. patrati (Audinet-Serville, 1833)
P. proximus Kieffer, 1906
Eastern Palaearctic *Pristaulacus*
P. boninensis Konishi, 1989
P. comptipennis Enderlein, 1912 (also Oriental)
P. insularis Konishi, 1990
P. intermedius Uchida, 1932
P. kostylevi (Alekseyev, 1986)
P. longicornis Kieffer, 1911 (unknown if Palaearctic or Oriental)
P. rufipilosus Uchida, 1932
P. ryukyuensis Konishi, 1990

Discussion

Based on data from the literature, the genus *Pristaulacus* includes 23 Palaearctic species (Kofler & Madl 1990; Smith 2001). In this revision the number is established to be 21.

The Aulacidae of the Mediterranean countries and central-eastern Asia (especially China), appear poorly known and the recent discovery of several new species (He *et al.* 2002; Turrisi 2005, present contribution; Sun & Sheng *in press*) seems to confirm this situation and suggests the need for more research for a better knowledge of the fauna from those areas.

TABLE 7. Probable parasitoid-host relationship of the Palaearctic *Pristaulacus* Kieffer. The name bearing asterisk (*) refers to new data reported in the present paper; in the third column the host plants are indicated.

Parasitoid	Xylophagous host	Host plant
P. barbeyi (Ferrière)	Buprestidae	*Abies numidica* de Lannoy ex Carriére (Pinaceae)
	**Phaenops knoteki* Reitter (Buprestidae)	**Abies cilicica* (Ant. & Kotschy) Carriére (Pinaceae)
P. boninensis Konishi	*Ceresium unicolor* (Fabricius) (Cerambycidae)	*Leucaena leucocephala* De Wit (Fabaceae)
	Unknown	*Ardisia sieboldii* Mig. (Myrsinaceae)
P. chlapowskii Kieffer	**Isotomus barbarae* Sama (Cerambycidae)	Unknown
	Isotomus speciosus (Schneider) (Cerambycidae)	**Carpinus* sp., **Ostrya carpinifolia* Scopoli (Corylaceae)
	**Aegomorphus clavipes* (Schrank) (Cerambycidae)	**Prunus cerasus* L. (Rosaceae)
	Chlorophorus pilosus (Förster) (Cerambycidae)	**Ostrya carpinifolia* Scopoli (Corylaceae)
P. compressus (Spinola)	Unknown	**Acacia* sp. (Mimosaceae)
	**Xylotrechus antilope* (Schönherr) (Cerambycidae)	*Quercus* sp. (Fagaceae)
	**Exocentrus punctipennis* Mulsant & Guillebeau (Cerambycidae)	**Ulmus* sp. (Ulmaceae)
	Unknown	**Ficus carica* L. (Moraceae)
	* *Chlorophorus dinae* Rapuzzi & Sama, (Cerambycidae)	* *Carpinus* sp. (Corylaceae), *Quercus* sp., * *Quercus cerris* L. (Fagaceae)
	**Chlorophorus glabromaculatus* (Goeze) (Cerambycidae)	**Ulmus* sp. (Ulmaceae)
	* *Chlorophorus yachovi* Sama (Cerambycidae)	* *Quercus cerris* L., * *Quercus callipri-nos* Webb (Fagaceae)
	**Chlorophorus pilosus* (Förster) (Cerambycidae)	Unknown
	**Chlorophorus sexguttatus* (Lucas) (Cerambycidae)	Unknown
	**Chlorophorus varius* (Müller) (Cerambycidae)	**Paliurus* sp. (Rhamnaceae)
	Unknown	*Robinia pseudacacia* L. (Fabaceae)
	Unknown	*Persica vulgaris* Mill. (Rosaceae)
	Xiphydria longicollis (Geoffroy) (Xiphydriidae)	*Quercus robur* L. (Fagaceae)
	Xylotrechus arvicola (Olivier) (Cerambycidae)	Unknown
	Unknown	*Corylus avellana* L. (Corylaceae)
	Unknown	*Prunus spinosa* L. (Rosaceae)
	Unknown	*Quercus* sp. (Fagaceae)
	Unknown	*Acer campestre* L. (Aceraceae)
	Unknown	*Salix alba* L. (Salicaceae)
	Unknown	*Tilia* sp. (Tiliaceae)

P. comptipennis Enderlein	*Ceresium elongatum* Matsushita (Cerambycidae)	Unknown
P. edoardoi Turrisi, **sp. nov.**	**Pedostrangalia ariadne* (Daniel) (Cerambycidae)	**Platanus* sp. (Platanaceae)
P. galitae (Gribodo)	**Pogonocherus perroudi* Mulsant (Cerambycidae)	**Pinus* sp. (Pinaceae)
	**Purpuricenus kaehleri* (L.) (Cerambycidae)	**Robinia pseudacacia* L. (Fabaceae)
	**Pseudosphegesthes cinereus* (Castelnau & Gory) (Cerambycidae)	**Quercus* sp., *Quercus cerris* L. (Fagaceae)
	Unknown	*Ficus carica* L. (Moraceae)
	**Trichoferus berberidis* Sama (Cerambycidae)	**Berberis cretica* L. (Berberidaceae)
	**Trichoferus cisti* Sama (Cerambycidae)	**Cistus* sp. (Cistaceae)
	**Trichoferus fasciculatus* (Faldermann) (Cerambycidae)	**Cistus incanus* L. (Cistaceae), *Ficus carica* L. (Moraceae)
	**Trichoferus spartii* (Müller) (Cerambycidae)	**Coronilla emerus* L. (Fabaceae)
	**Chlorophorus glabromaculatus* (Goeze) (Cerambycidae)	**Quercus ilex* L. (Fagaceae), **Pistacia terebinthus* L. (Anacardiaceae)
	Niphona picticornis Mulsant (Cerambycidae)	*Ficus carica* L. (Moraceae), **Pistacia terebinthus* L. (Anacardiaceae), **Robinia pseudacacia* L. (Fabaceae)
	**Gracilia minuta* (Fabricius) (Cerambycidae)	**Pistacia terebinthus* L. (Anacardiaceae)
	**Penichroa fasciata* (Stephens) (Cerambycidae)	**Pistacia terebinthus* L. (Anacardiaceae)
	Scobicia pustulata (Fabricius) (Bostrychidae)	Unknown
	Denops albofasciatus (Charpentier) (Cleridae)	Unknown
	Leioderus kollari Redtenbacher (Cerambycidae)	*Acer pseudoplatanus* L. (Aceraceae)
P. gibbator (Thunberg)	*Callidium coriaceum* (Paykull) (Cerambycidae)	*Picea abies* (L.) Karst (Pinaceae)
	Unknown	*Pinus sylvestris* L. (Pinaceae)
P. gloriator (Fabricius)	**Paraclytus reitteri* (Ganglbauer) (Cerambycidae)	**Alnus* sp. (Betulaceae)
	Callidiun violaceum (L.) (Cerambycidae)	Unknown
	Chlorophorus figuratus (Scopoli) (Cerambycidae)	Unknown
	Dicerca berolinensis (Herbst) (Buprestidae)	Unknown
	Chrysobothris igniventris Reitter (Buprestidae)	Unknown
P. insularis Konishi	Unknown	Unknown
P. intermedius Uchida	*Chlorophorus japonicus* (Chevrolat) (Cerambycidae)	*Aphananthe aspera* (Thunberg) Planchon in DC (Ulmaceae)
P. kostylevi (Alekseyev)	Unknown	Unknown
P. lindae Turrisi	Unknown	Unknown
P. longicornis Kieffer	Unknown	Unknown
P. morawitzi (Semenow)	Unknown	Unknown
P. mourguesi Maneval	Unknown	Unknown

P. paglianoi Turrisi, **sp. nov.**	**Chlorophorus sexguttatus* (Lucas) (Cerambycidae)	**Ononis* sp. (Fabaceae)
	**Trichoferus cisti* Sama (Cerambycidae)	**Cistus incanus* L. (Cistaceae)
P. patrati (Audinet-Serville)	*Xiphydria longicollis* (Geoffroy) (Xiphydriidae)	Unknown
	Xiphydria sp. (Xiphydriidae)	Unknown
P. proximus Kieffer	Unknown	Unknown
P. rufipilosus Uchida	Unknown	Unknown
P. ryukyuensis Konishi	Unknown	Unknown

The knowledge of the distribution of the Palaearctic *Pristaulacus* are in most cases too incomplete for a subdivision into the different chorological categories (Figs. 114–119), thus it is not possible to provide a biogeographic analysis of this fauna. The relative scarcity of chorological data is particularly evident with regards to wide areas of the Palaearctic Region, such as northern Africa, China, and Russia. However, based on available chorological data, it must be pointed out that the western and the eastern parts of the Palaearctic Region have different *Pristaulacus* species, with only one exception. The species (excluding *P. gibbator*) can be grouped on the basis of their known distribution into either western or eastern Palaearctic (Table 6). The exception is *P. gibbator*, which based on new distributional data presented here, has a wider distribution than previously stated, extending from northern and central Europe as far east as Siberia. Moreover, other relevant data on the distribution of several species of *Pristaulacus* in the Palaearctic Region are provided, *e.g.*, *P. barbeyi*, previously known from only type locality (Algeria), is extended also in southern Europe and Turkey. Three other species are known from only their type locality, *e.g.*, *P. kostylevi*, *P. morawitzi*, and *P. longicornis*, and no data were added in the present revision; a wider distribution of these species can be hypothesized, due to the lack of chorological data.

Key to Palaearctic species of *Pristaulacus* Kieffer, 1900

1. Hind margin of head more or less grooved medially, occipital carina interrupted (Fig. 102)..... 3
2. Hind margin of head straight or weakly concave, without medial groove, occipital carina not interrupted (Figs. 99, 101)..... 7
3. Occipital carina wide, lamelliform, directed upward; hind margin of head, in middle, moderately grooved (Fig. 13) .....*P. insularis* Konishi
4. Occipital carina wide, lamelliform, not directed upward; hind margin of head, in middle, deeply grooved (Figs. 5, 8, 102)..... 5
5. Fore wing with only one brown spot below stigma; fore and mid legs, except coxae, light yellow orange. .....*P. boninensis* Konishi
6. Fore wing with more than one dark spot; legs reddish brown..... *P. comptipennis* Enderlein
7. Lateroventral margin of pronotum without teeth (Fig. 105)..... 9
8. Lateroventral margin of pronotum with at least one tooth (Figs. 106–107) 21
9. Pronotum reddish yellow; setae of body gold .....*P. rufipilosus* Uchida
10. Pronotum black; setae of body whitish or brown 11
11. Claw with two teeth, first one small or very small (sometimes not evident), second one closer to first tooth than to apex (Fig. 111); petiole stocky and short (Fig. 109)..... 13
12. Claw with three or four teeth, first one small or very small, last one equidistant between previous tooth and apex (Figs. 112–113); petiole slender and long (Fig. 110)..... 15

13. Head polished, punctate (Fig. 15; similar to Fig. 100); anterior margin of mesoscutum, in lateral view, acute, projecting upward (Fig. 105); propleuron weakly rugulose..... *P. kostylevi* (Alekseyev)
14. Head extensively transverse striolate (Fig. 97); anterior margin of mesoscutum, in lateral view, rounded, not projecting upward (Fig. 44); propleuron smooth..... *P. barbeyi* (Ferrière)
15. Claw with three short teeth, each tooth with wide base, equally spaced from each other (Fig. 112); lateral lobe of mesoscutum without suprategular tooth (Fig. 103); ovipositor 2.0x longer than length of fore wing; hind tarsus light reddish orange..... *P. gibbator* (Thunberg)
16. Claw with four long teeth, each tooth with narrow base, equally spaced from each other (Fig. 113); lateral lobe lobe of mesoscutum with suprategular tooth (Fig. 104) (except *P. edoardoi* Turrisi, sp. nov.); ovipositor shorter, at most 1.7x longer than length of fore wing; hind tarsus variously coloured 17
17. Head dull, coarsely and densely striolate punctate, with hind margin convex (Fig. 9); mesosoma very shiny with scattered carinae on pronotum; lateral lobe of mesoscutum without suprategular tooth; hind tarsus reddish orange; ovipositor 1.1x longer than length of fore wing .... *P. edoardoi* Turrisi, sp. nov.
18. Head shiny, mostly polished, except frons striolate punctate (Fig. 12; similar to Fig. 98); mesosoma slightly shiny, with dense carinae on pronotum; lateral lobe of mesoscutum with suprategular tooth; hind tarsus yellow; ovipositor 1.5x longer than length of fore wing..... *P. gloriator* (Fabricius)
19. Lateroventral margin of pronotum with one tooth (Fig. 107)..... 21
20. Lateroventral margin of pronotum with two teeth (Fig. 106)..... 39
21. Hind basitarsus 1.5 longer than tarsomeres 2–5 ..... *P. mourguesi* Maneval
22. Hind basitarsus 1.1 longer than tarsomeres 2–5 23
23. Occipital carina narrow, 0.2x diameter of an ocellus, pad-shaped, black (Fig. 99)..... 25
24. Occipital carina wide, 0.5–1.0x diameter of an ocellus, lamelliform, brownish (Fig. 101) 33
25. Anterior margin of mesoscutum, in lateral view, acute (Fig. 107); veins of hind wing not complete and not pigmented, except R and A..... *P. ryukyuensis* Konishi
26. Anterior margin of mesoscutum, in lateral view, rounded (Fig. 106); veins of hind wing complete and pigmented..... 27
27. Body entirely black..... *P. intermedius* Uchida
28. Body with metasoma more or less extensively red..... 29
29. Occipital fossa uniformly rugulose; setae of head very long, 2.0x diameter of an ocellus (Fig. 21); hind tarsus yellow ..... *P. patrati* (Audinet-Serville)
30. Occipital fossa polished; setae of head shorter, 0.5–0.8x diameter of an ocellus (Figs. 18, 20); hind tarsus brown or reddish orange 31
31. Head with very fine and scattered punctures (Fig. 18); setae of head scattered, whitish; setae of mesosoma whitish; propleuron shiny, without punctures; hind coxa slender (Fig. 78); ovipositor shorter than length of fore wing..... *P. morawitzi* (Semenow)
32. Head coarsely and densely punctate (Fig. 20); setae of head dense, brown; setae of mesosoma whitish and light brown; propleuron weakly shiny, with coarse, deep, and moderately dense punctures; hind coxa stocky (Fig. 80); ovipositor longer than length of fore wing..... *P. paglianoi* Turrisi, sp. nov.
33. A3 8.3x longer than wide; A4 14.0x longer than wide..... *P. longicornis* Kieffer
34. A3 5.0–5.7x longer than wide; A4 6.5–9.5x longer than wide 35
35. Hind basitarsus shorter than tarsomeres 2–5 ..... *P. proximus* Kieffer
36. Hind basitarsus longer than tarsomeres 2–5 37
37. Occipital carina 0.5x as wide as diameter of an ocellus; temple, in dorsal view, rounded (Fig. 10); antenna shorter than length of fore wing; A1 blackish; ovipositor 1.1x longer than length of fore wing .... *P. galitae* (Gribodo)

38. Occipital carina 0.8x as wide as diameter of an ocellus; temple, in dorsal view, weakly convex (Fig. 6); antenna longer than length of fore wing; A1 extensively red orange; ovipositor 1.5–1.8x longer than length of fore wing..... *chlapowskii* Kieffer
39. Ovipositor 1.2–1.3x longer than length of fore wing; A3 as long as 2/3 of A4; tibiae and tarsi light reddish orange; hind coxa strongly transversely carinate; genital capsule of male: apex of paramere rounded, cuspis wide and strongly curved; base of digitus long and narrow; medial margin of proximal half of valva of aedeagus, in dorsal view, strongly divergent (Fig. 84)..... *P. compressus* (Spinola)
40. Ovipositor about 1.5x longer than length of fore wing; A3 shorter than 2/3 of A4; tibiae and tarsi dark brown or blackish; hind coxa extensively polished, at most with some weak transverse carinae; genital capsule of male: apex of paramere obliquely truncated, cuspis moderately wide and curved; base of digitus moderately wide and long; medial margin of valva of aedeagus, in dorsal view, subparallel (Fig. 89).. ..... *P. lindae* Turrisi

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