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Key and new records for the western palaearctic species of *Gorytes* LATREILLE 1804 with description of a new species (Hymenoptera, Sphecidae, Bembicinae)

C. SCHMID-EGGER

A b s t r a c t : The western Palaearctic species of *Gorytes* are diagnosed, keyed, their distribution summarized, and new records are given. *Gorytes schmidti* SCHMID-EGGER, new species, from eastern Turkey is described. The tyloids on male flagellomeres are described and used as characters for recognition of the species. The taxonomical state of *Pseudoplisus kohlii* HANDLIRSCH is discussed.

K e y w o r d s : Hymenoptera, Sphecidae, *Gorytes*, key, new species, western Palaearctis

Introduction

The genus *Gorytes* was revised by HANDLIRSCH (1888) for the first time. He treated all species of the world known to him and later described some additional species (HANDLIRSCH 1895). DE BEAUMONT (1953) revised the western Palaearctic species. NEMKOV (1990) provided a key for all central and eastern Palaearctic species of *Gorytes* with faunistic notes about the former USSR. BITSCH et al. (1997) treated and keyed the European species of *Gorytes*. Table 1 presents a summary of all described taxa of *Gorytes* from the Palaearctic region.

The aim of this paper is to present a new and complete key for the western Palaearctic species of *Gorytes* (including Europe, Turkey, the Caucasus, and the countries around the Mediterranean Sea). A new key is necessary because DE BEAUMONT's key does not include all species in both sexes. A new species is also incorporated in the key. It was not possible to examine the species from central and eastern Asia, consequently only central Asian data from unambiguously identified species are taken into account. The taxonomic state of many species from Central Asia is doubtful and requires further revision.

The present study of *Gorytes* is based mainly on the markedly *Gorytes* collection from the Oberösterreichisches Landesmuseum in Linz/Austria. The collection includes a large number of western and central Palaearctic specimens collected by several czechian scientists, including M. Halada, K. Kocourek and others and comprises approximately 1400 specimens. Several additional collections were also examined.

Tab. 1: Checklist of Palaearctic species of *Gorytes*. WP = western Palaearctic (treated in the present key), CP = central and eastern Palaearctic, JA = Japan.

Valid name	WP	CP	JA	Synonyms, subspecies, and remarks
Gorytes aino TSUNEKI 1963			●	
africanus MERCET 1905	●			
albidulus (LEPELETIER 1832	●	●		
ambiguus HANDLIRSCH 1888		●		*heptapotamiensis* KAZENAS 1972 (syn., sensu NEMKOV 1989) *nobilis* NESTEROV 1993 (syn., sensu NEMKOV 1995) *sogdianus* GUSS. 1952 (syn., sensu NEMKOV 1989) *verhoeffi* TSUNEKI 1967 *zaysanicus* KAZENAS 1987 (syn., sensu NEMKOV 1989)
fallax HANDLIRSCH 1888	●	●		
flaviventris F. MORAWITZ 1894		●		
foveolatus HANDLIRSCH 1888	●	●		ssp. *dichrous* MERCET 1906 ssp. *longicornis* HANDLIRSCH 1888
harbinensis TSUNEKI 1967		●		described from China
hebraeus DE BEAUMONT	●			
ishigakiensis TSUNEKI 1982		●		(sensu NEMKOV 1989, 1990)
kulingensis YASUMATSU 1943		●		described from China
laticinctus (LEPELETIER 1832)		●		ssp. *koreanus* HANDLIRSCH 1888 (stat. nov. sensu NEMKOV 1989); *radoszkovskyi* HANDLIRSCH (sensu NEMKOV 1989)
maculicornis F. MORAWITZ 1889		●		*eous* Guss. 1932 (sensu NEMKOV 1989)
neglectus HANDLIRSCH 1895	●	●		*hakutozanus* TSUNEKI 1963 (sensu NEMKOV 1989)
nigrifacies (MOCSARY 1879)	●	●		
nobilis NESTEROV 1993		●		
pieli YASUMATSU 1943		●		*takeuchii* TSUNEKI 1963 (sensu NEMKOV 1989)
planifrons (WESMAEL 1852)	●	●		
pleuripunctatus (A. COSTA 1859)	●	●		ssp. *barbarus* DE BEAUMONT 1953 ssp. *fraternus* MERCET 1906
procrustes HANDLIRSCH 1888	●	●		
quadrifasciatus (FABRICIUS 1804)	●	●		
quinquecinctus (FABRICIUS 1793)	●	●		ssp. *sinuatus* (A. COSTA 1869)
quinquefasciatus FABRICIUS	●	●		ssp. *eburneus* CHEVRIER 1870 ssp. *intercedens* HANDLIRSCH 1893 ssp. *levantinus* PULAWSKI 1961 ssp. *mauretanicus* HANDLIRSCH 1898 *proximus* HANDLIRSCH (syn., sensu NEMKOV 1989)
schlettereri HANDLIRSCH 1888	●			ssp. *ponticus* DE BEAUMONT 1967
schmiedeknechti HANDLIRSCH 1888	●			

Valid name	WP	CP	JA	Synonyms, subspecies, and remarks
schmidti SCHMID-EGGER	●			new species
sulcifrons (A. COSTA 1869)	●	●		ssp. *laevigatus* KOHL 1880 ssp. *mongolicus* TSUNEKI (*Gorytes mongolicus*, stat. nov. as ssp. sensu NEMKOV 1989)
tobiasi NEMKOV 1990		●		
tricinctus (PÉREZ 1905)		●	●	
not *Gorytes*				
Oryttus kaszabi TSUNEKI 1971		●		*Gorytes kostjuki* NESTEROV 1994 (syn., sensu NEMKOV 1995)
Pseudoplisus kohlii HANDLIRSCH 1888	●	●		*Gorytes koslovi* NESTEROV 1993 (syn., sensu NEMKOV 1995). NEMKOV (1990) placed *P. kohlii* in *Gorytes*

Sources of material

Specimens from the following institutions and private collections were examined (abbreviations used are given). If no collection is indicated, the specimens are deposited in the OLL:

Amsterdam.....Zoölogisch Museum Amsterdam/Netherlands
DEI.....Deutsches Entomologisches Institut Eberswalde/Germany
Leiden.....Nationaal Natuurhistorisch Museum, Leiden/Netherlands
NHMW.....Naturhistorisches Museum Wien/Austria
Niehuis.....coll. Oliver Niehuis, Albersweiler/Germany
OLL.....Oberösterreichisches Landesmuseum/Biologiezentrum Linz/Austria.
Schlaefle.....coll. Wolfgang Schlaefle, Kaiseraugst/Switzerland
SE.....coll. Christian Schmid-Egger, Berlin/Germany
ZMB.....Museum für Naturkunde, Institut für Systematische Zoologie Berlin/Germany

Methods

D i a g n o s i s : Most treated species are described in detail by DE BEAUMONT (1953) and BITSCH et al. (1997). To avoid repetition of these descriptions, brief additional descriptions in the key (in brackets) and a short diagnosis in the text seems sufficient to characterize the species in the present paper. Detailed descriptions were only provided when insufficient in the above mentioned papers.

D i s t r i b u t i o n : The distribution pattern summarizes information of BITSCH et al. (1997) which includes data of DE BEAUMONT (1953). See both sources for detailed geographic information. Additional information about the central Asian distribution of the species are taken from NEMKOV (1990). Records include only specimens examined by the author. Distribution is mentioned in the key only, when the species distribution is restricted to a small geographic area.

Characters: The morphologic terminology employed in this paper in general follows BOHART & MENKE (1976). Most characters used in the present key were also used by DE BEAUMONT (1953) or BITSCH et al. (1997). Additionally, the number, form and color of tyloids in males flagellomeres were used for the first time, facilitating identification of some similar species. This character complex was never mentioned except by LOMHOLD (1981). The mesonotum and tergites might have "macropunctures". These are large punctures whose diameter comprises a fifth or a sixth of the diameter of a lateral ocellus. Also the very fine "micropunctures" are used for description. The propodeal dorsum comprises coarse ribs or wrinkles which might be parallel or net-like. Some species have a partly or completely smooth propodeal dorsum. Tergal length and width of tergal bands are measured parallel to the body axis.

Variation: Frequently former authors (e.g. DE BEAUMONT 1953, MERCET 1906) described geographic variations and local races as subspecies. In most cases these "subspecies" were based on color pattern. In my opinion these are not subspecies but forms or varieties. Most of the examined species of *Gorytes* with a large distribution develop a more or less geographic variation in color (in general: increase of yellow color in southern or south-western populations) and some minor variation in morphology. But all variation appears continuous, with no abrupt changes to a new form observed. These "subspecies" were not formally synonymized here because examination of the corresponding types was not possible; however, subspecies names among the records below are not mentioned.

Key to western Palaearctic species of *Gorytes*, males

1. Propodeum baso-laterally rugulose sculptured. Mesopleuron with a few large punctures or wrinkles. (Head and thorax black laterally, clypeus in specimens from the East black. Femora black except apex reddish or yellow. Tergites I-IV with pale bands, which might be interrupted medially. Specimens from France and Spain are markedly lemon yellow painted, clypeus might be yellow). ..... *G. nigrifacies* MOCSARY
- Propodeum baso-laterally and mesopleuron smooth and shiny 2
2. Tergites with dense macropunctures. Punctures 1-2 diameters apart 3
- Tergites without macropunctures, at most with few scattered micropunctures 4
3. Mesosternal carina laterally prolonged, one side as long as combined flagellomeres I+II (fig. 3). Flagellomere X 1.5x as long as basal width. (Yellow in most specimens: labrum, clypeus, inner margin of eyes, pronotum, pronotal lobe, epimere, scutellum, and propodeum laterally) ..... *G. pleuripunctatus* COSTA
- Mesosternal carina short, as long as pedicellus (fig. 4). Flagellomere X twice as long as basal width. (Head black except clypeus and flagellomeres, clypeus often partly or completely black, thorax black except small yellow stripes on pronotum and scutellum. Specimens from north Africa might be markedly yellow painted). ..... *G. foveolatus* HANDLIRSCH

Tergites without macropunctures

4 Propodeal dorsum smooth in ventral part, with short and fine basal longitudinal wrinkles. Fore- and midtibia yellow and black, hindtibia reddish. (Tergite I-IV with yellow band, which might be interrupted, tergite V with lateral band-like spots. Pronotal lobe black. Clypeus, labrum, mandible basally and pedicellus below yellow. Fore- and midfemora black except yellow apex, hindfemora reddish with black base. Specimens from Israel and Jordan lemon yellow, from Turkey pale yellow.) Armenia, Israel, Jordan, Turkey ..... *G. hebraeus* DE BEAUMONT

- Propodeal dorsum with continuous coarse wrinkles. Color patt,ern of legs otherwise 5

5 Flagellomeres II-III with large oval tyloids (as large as midocellar diameter), flagellomere I and IV with small tyloids (fig. 11). Metapleuron in upper forth without wrinkles. Face between antennal base and midocellus with a fine and distinct raised line. (Mesonotum without macropunctures. Thorax laterally and clypeus apically often black. Large spots on inner margin of eyes.). Central and western Europe ..... *G. planifrons* WESMAEL

- Tyloids narrower, normally more tyloids visible (fig. 9, 10). Metapleuron in upper forth with horizontal wrinkles in most species. Face without this line 6

6 At least pronotal lobe or spot behind it yellow 7

- Thorax laterally black, including pronotal lobe 17

7. Sternites IV-VI basally with hairbrush or dense short setae. Wrinkles of propodeal dorsum often apically reduced. (Species is difficult to recognize if hairbrush is worn down. Color pattern of abdomen is variable: specimens from Spain, Syria and Jordan are markedly yellow painted with large yellow tergal bands and a yellow clypeus, propodeum often laterally yellow; specimens from central and eastern Europe and Turkey have narrow yellow or pale yellow bands, clypeus is black or partly yellow; specimens from central Asia have pale yellow bands. Legs are yellow/black or reddish/black. Macropunctures on mesonotum might be missing. Flagellomeres II-V laterobasally with long reddish or black tyloids. Sometimes a barely visible tyloid on flagellomere I and VI. Flagellomeres often reddish below or completely reddish.) ..... *G. quinquefasciatus* PANZER

- Sternites without hairbrush. Propodeum and clypeus otherwise 8

8. Base of tergite I laterally and between dorsal carina with markedly striation. At least flagellomeres I-IV with narrow linear black tyloids (fig. 10). Postscutellum and scutellum apically often longitudinally wrinkled. Tergites with continuous lemon yellow bands. (Clypeus and large stripe on inner margin of eye yellow) 9

- Base of tergite I only with two dorsal carinas, at most with some indistinct wrinkles laterally. Tyloids otherwise, often reddish and/or large (fig. 9). Postscutellum and scutellum smooth. Bands on tergites variable (yellow or pale, continuous or interrupted). (If base of tergite I wrinkled, tyloids narrow and black, bands on tergites interrupted: cf. *G. albidulus)* 11

Base of tergite I with striation

9 Only flagellomeres I-IV (sometimes also flagellomere V) with tyloids. Pronotal lobe yellow. Labrum black. Postscutellum and scutellum densely wrinkled. Base of tergite I indistinctly wrinkled. (Mesonotum smooth or with indistinct macropunctures on entire length, flagellomere V sometimes with short tyloid. Forefemora III predominantly black. Remaining color *G. quinquecinctus*-like. If mesonotum with coarse punctures and labrum yellow, cf. *G. schmiedeknechti* ..... *G. fallax* HANDLIRSCH

- Flagellomeres II-VIII (sometimes also flagellomere IX) with tyloids (fig. 10). Pronotal lobe black, spot on metapleuron yellow. Postscutellum markedly and tergite I wrinkled. Labrum in most specimens yellow ..... 10.

10 Face below antennal socket with yellow spot. Band on tergite II twice as width as band on tergite I or tergite III, in most specimens larger than half tergal length. ..... *G. laticinctus* LEPELETIER

- Face below antennal socket black. Bands on tergites I-III similar in size. ..... *G. quadrifasciatus* FABRICIUS

Base of tergite I smooth

11 Mesonotum with macropunctures ..... 12.

- Mesonotum smooth, without macropunctures ..... 15.

12 Labrum black. Mesonotum with small punctures, 2-4 diameters apart, punctures as wide as punctures on frons. (The following species might be confused with *G. quinquefasciatus* (Nr. 7), if sternal hairbrush is worn down.) ..... 13.

- Labrum yellow. Mesonotum with large and coarse punctures, punctures confluenced to furrows. Punctures often touching each other, twice as wide as punctures on frons ..... 14.

13 Bands on tergites I-VI lemon yellow, continuous. Hindtibia yellow and black. Clypeus yellow. (Flagellomeres II-VI with black or reddish narrow tyloids which cover the entire length of flagellomeres. Tyloid VI might be reduced in length or missing (fig. 9). Labrum always black or with dark yellow margin.) ..... *G. quinquecinctus* FABRICIUS

- Tergites I-VI with pale yellow bands, often interrupted. Hindtibia reddish. Yellow marking on clypeus reduced to a basal spot or clypeus completely black.. (Flagellomeres II-V, sometime also VI, with linear reddish tyloids) ..... *G. procrustes* HANDLIRSCH

14 Mesosternal carina as long as combined flagellomeres I and II (fig. 3). Pronotal lobe, a large spot on upper mesopleuron and propodeum laterally yellow. (Markedly yellow: space between clypeus and flagellum, pedicellus flagellum below, legs; with black stripes on mid- and hindfemora and hindtibia. Flagellomeres II-VI with large reddish or dark tyloids). Eastern Turkey. ..... *G. schmidti* SCHMID-EGGER new species

- Mesosternal carina short (fig. 4). Pronotal lobe and propodeum laterally black, small spot on upper mesopleuron yellow. (Labrum, clypeus and inner margin of eyes yellow. Reddish longitudinal tyloids on flagellomeres II-V. Hindtibia darkened below. Specimens from Bulgaria: mandible, inner margin of eyes, tyloids, and thorax sides black. Turkish specimens might also have black mesopleuron. In one specimen pronotal lobe is tinged with yellow.). If large orange tyloids on flagellomeres II-VII, cf. *G. pleuripunctatus*. Greece, Bulgaria, Turkey. ..... *G. schmiedeknechti* HANDLIRSCH

Mesonotum without macropunctures

15. Tergites I-V with pale yellow bands, which might be interrupted medially. Legs II and III reddish, femora partly black. Pronotal lobe black, spot behind it pale yellow. (Labrum black with yellow margin, clypeus all yellow. Inner margin of eyes with longitudinal spot next to antennal socket. Flagellomere X twice as long as basal width. Flagellomere II-VIII with black and narrow tyloids (cf. fig. 10). If clypeus partly black, compare with *G. procrustes*.) ..... *G. albidulus* LEPELETIER

- At least tergite I-VI with continuous lemon yellow band. Color of legs otherwise. Pronotal lobe yellow or thorax laterally completely black. ..... 16.

16. Flagellomeres II-IV with reddish tyloids. Propodeal dorsum smooth in most parts, with short and fine longitudinal wrinkles basally. Femora and hindtibia reddish, black above. (Flagellomere I-VII reddish below. Tergites I-VI with yellow band. Compare also *G. quinquefasciatus* which has large lateral propodeal yellow spots in northwest Africa and Spain, whereas it is probably always black in *G. africanus*). Morocco, Spain. ..... *G. africanus* MERCET

- Flagellomeres I-VIII (sometimes also flagellomeres IX and X) with large reddish tyloids (first and last tyloids often missing, tyloids sometimes dark). Propodeal dorsum with longitudinal wrinkles; which continue on lateral and dorsal part of propodeum. Forefemora II yellow with reddish spots or all black. (Color yellow, in specimens from Turkey whitish-yellow. Most specimens have large lateral spots on propodeum. Specimens from Spain and Morocco often have a smooth surface on apical part of propodeal dorsum). ..... *G. sulcifrons* COSTA

17. All femora, tarsi and hindtibia black. Flagellomere II-VI with broad, oval, dark tyloids. Labrum yellow. (Propodeum with regular, longitudinal wrinkles, without transverse striation.). Northern Europe (high-boreal), Siberia ..... *G. neglectus* HANDLIRSCH

- Tyloids and color of legs otherwise. Labrum black (except in *G. schmiedeknechti*). Central and southern Europe, central Asia ..... 18.

18. Labrum yellow. Mesonotum coarsely and densely punctate (punctures a diameter apart, twice as wide as puncture on frons). Turkey, Bulgaria, Greece ..... *G. schmiedeknechti* HANDLIRSCH

- Labrum black. Mesonotum smooth or with small and scattered punctures. ..... 19.

19. Tergites I-VI with pale yellow bands, often interrupted. Hindtibia reddish. Yellow marking on clypeus reduced to a basal spot or clypeus completely black ..... *G. procrustes* HANDLIRSCH

- Tergal bands lemon yellow, continuous. Hindtibia black below or yellow/black. Clypeus yellow (some specimens of *G. schlettereri* from Turkey with reduced yellow marks). ..... 20.

20. Mesonotum with macropunctures. Flagellomeres I-VI (-VII) with large, orange tyloids (specimens from Poland and Fennoscandia might have black thorax sides. ..... *G. quinquecinctus* FABRICIUS

- Mesonotum smooth or leather-like. Flagellomeres I-VI with black linear tyloids. (Pedicellus, scutellum and tergite (IV)-V-VI black. Hindtibia black and reddish. Apical free margin of clypeus slightly emarginated.) European Alps, Caucasus and mountains in Turkey. ..... *G. schlettereri* HANDLIRSCH

Key to western Palaearctic species of *Gorytes*, females

1 Inner margin of eyes nearly parallel downwards. Distance between antennal socket and eye at least one diameter of antennal socket (fig. 1). Tergite VI even triangular, shiny, with macropunctures. 2

- Inner margin of eyes strongly convergent downwards. Distance between antennal socket and eye less than one diameter of antennal socket (fig. 2). Tergite VI otherwise. .. 5

2 Tergites I-V with pale yellow bands, sometimes interrupted medially. Femora, tibia and tarsi reddish, forefemora partly black. Tergite VI shiny, punctate (cf. fig. 7). (Labrum and clypeus black, pale spot on inner margin of eyes next to antennal socket. First flagellomeres reddish, last flagellomeres black. Pronotal lobe black, spot behind it pale yellow.). ..... *G. albidulus* LEPELETIER

- Tergites I-V with continuous lemon yellow bands. Forefemora at most specimens black or black/yellow. 3

3 Labrum and clypeus completely yellow. Lower part of face (also space between and above antennal socket) markedly yellow painted. Band on tergite II twice as wide as bands on tergites III and VI, at least half as wide as tergal length. *G. laticinctus* LEPELETIER

- Either labrum nor clypeus complete yellow. If labrum yellow, than clypeus partly black. Bands on tergites narrower, equal in width or variable. 4

4 Upper metapleuron smooth, without transverse wrinkles. Mesonotum without macropunctures. (Clypeus black or with small triangular basal spot). Central and western Europe. ..... *G. planifrons* WESMAEL

- Upper metapleuron with some horizontal wrinkles. Mesonotum with macropunctures. (Clypeus with broad anterior or posterior yellow borders or completely black. Tibia reddish or yellow, sometime darkened above.) ..... *quadrifasciatus* FABRICIUS

Inner margin of eyes convergent

5 Pygidial area apically narrow, lateral sides concave, densely punctate, apically densely setose (fig. 8). 6

- Pygidial area even triangular, punctate or with dense longitudinal wrinkles, asetose (fig. 5, 6, 7). 7

6 Tergites with dense macropunctures, punctures 1-2 diameters apart. Mesopleuron with some large macropunctures. Forefemora yellow. Flagellomere IX at least 1.5x its basal width. (Specimens from south-east Europe: clypeus black or with reduced apical light marks. Bands on tergite I-V pale, often interrupted. Legs red except black parts of femora. Specimens from other origins: labrum and clypeus yellow, tergites I-V with large yellow bands, fore- and midtibia yellow.). ..... *G. foveolatus* HANDLIRSCH

Tergites without macropunctures, at most with a few scattered micropunctures. Mesopleuron smooth or with a few small and indistinct punctures. Forefemora black, apically reddish. Flagellomere IX as long as basal width. (Clypeus with reduced basal yellow markings. Bands on tergite I-V pale, often interrupted. Legs red except black parts of femora.). ..... *G. procrustes* HANDLIRSCH

7 Mesosternal carina prolonged (fig. 3). 8

- Mesosternal carina short (fig. 4). 9

8 Pygidial area between punctures velvet-like. Tergites with dense macropunctures, punctures 1-2 diameters apart. Flagellomeres reddish. Propodeum black or laterally with small yellow spots (rarely with large spots). Mesonotum only with macropunctures. ..... *G. pleuripunctatus* COSTA

- Pygidial area with smooth and shiny interspaces. Tergites without macropunctures, at most with a few scattered fine punctures. Flagellomeres darkened above. Propodeum with large lateral spots. Mesonotum anteriorly with longitudinal furrows between macropunctures. Eastern Turkey. ..... *G. schmidti* SCHMID-EGGER new species

Mesosternal carina short

9 Pygidial area densely longitudinally striate (stripes might include punctures), wrinkled or densely punctate. No shiny interspaces visible (fig. 5, 6). 10

- Pygidial area scattered punctate, in most specimens with shiny interspaces. Interspaces in average larger than one diameter of punctures (fig. 7). 15

Pygidial area densely sculptured

10 Labrum black (or dark reddish). 11

- Labrum yellow. 13

11 Pronotal lobe and a spot behind it yellow. Femora markedly yellow painted. (Mesonotum with macropunctures. Compare also *quinquefasciatus*, if clypeus is black and pygidial area is densely sculptured between punctures.). ..... *G. quinquecinctus* FABRICIUS

- Thorax laterally including pronotal lobe black. Femora black and reddish ..... 12.

12 Clypeus yellow. Propodeum laterally in anterior part smooth and shiny. Mesonotum without macropunctures. (Femora black, apically reddish). European Alps, Caucasus and mountains in Turkey. ..... *G. schlettereri* HANDLIRSCH

- Clypeus black. Propodeum laterally sculptured. Mesopleuron with a few large punctures or wrinkles. (Head and thorax black, pronotum, scutellum and flagellum below yellow. Tergites I-IV with pale yellow band, interrupted medially. Legs reddish, all femora withish yellow below, forefemora also black above.). . *G. nigrifacies* MOCSARY

13 Basal half of propodeal dorsum with fine and even longitudinal wrinkles, apical half nearly smooth and microsculptured or shiny. Remaining dorsal and lateral parts of propodeum smooth with few indistinct even wrinkles. Pygidial area densely punctate, sometimes slightly wrinkled, punctures without interspaces. Diameter of punctures variable (fig. 6). (Mandible basally, labrum and clypeus yellow. Flagellum and tibia reddish, except a few black parts. Forefemora yellow below, black above. Specimens from Israel and Jordan lemon yellow, from Turkey pale yellow). Armenia, Turkey, Jordan, Israel. ..... *G. hebraeus* DE BEAUMONT

- Propodeal dorsum completely and coarsely wrinkled or striate. Pygidial area longitudinally striate (fig. 5). 14

14 Pronotal lobe yellow. Mesonotum without macropunctures. Propodeum in most specimens laterally with large yellow spot. Hindtibia reddish. (Color yellow, in specimens from Turkey whitish-yellow.). ..... *G. sulcifrons* COSTA

- Pronotal lobe black. Mesonotum with dense and irregular macropunctures and some furrows. Propodeum and hindtibia above black, in specimens from Greece hindtibia also all yellow. Greece, Turkey. ..... *G. schmiedeknechti* HANDLIRSCH

Pygidial area scattered punctate

15 Mesonotum without macropunctures, Propodeal dorsum only posterior-laterally wrinkled, the remaining surface smooth. Space beside dorsal area with some indistinct parallel wrinkles. (Labrum, clypeus and flagellum yellow. Legs except coxae reddish or yellow. Specimens of *G. quinquefasciatus* with reduced mesonotal puncture and yellow hindtibia might be confused with *G. africanus*.) Morocco, Spain ..... *G. africanus* MERCET

- Mesonotum with macropunctures. Propodeal dorsum coarsely wrinkled at most on basal half..... 16

16 Hindtibia and hindtarsi mainly black, labrum yellow. (Clypeus yellow, thorax in most specimens completely black. Wrinkles of propodeal dorsum even parallel. Northern Europe (high-boreal) and Siberia..... *G. neglectus* HANDLIRSCH

- Hindtibia and hindtarsi yellow or reddish yellow, labrum black. Species of central and southern Europe and temperated Asia 17

17 Yellow stripes on inner margin of eyes half as long as inner margin of eye, touching clypeus in most specimens. Pygidial area smooth and shiny between punctures. Sculpture on propodeal dorsum coarse, net-like. (Labrum black. Femora black except red apex, tibia yellow. Punctures on frons and mesonotum slightly smaller than in following species.)..... *G. fallax* HANDLIRSCH

- Yellow stripes on inner margin of eye short, not touching clypeus. Pygidial area finely sculptured between punctures (fig. 7). Propodeal dorsum with parallel longitudinal wrinkles, often missing in posterior part. (Color and extent of color variable: specimens from Spain, Syria and Jordan are markedly yellow painted and have large yellow bands, specimens from central and eastern Europe and Turkey have narrow yellow bands, specimens from central Asia have pale yellow bands. Legs are yellow/black or reddish/ black. Macropunctures on mesonotum might be absent or barley visible in few specimens.)..... *G. quinquefasciatus* PANZER

Gorytes africanus MERCET 1905

Gorytes africanus MERCET 1905: 464: female. Morocco: Tanger; DE BEAUMONT 1953: 195 (revision); NEMKOV 1990: 683, 685 (in key); BITSCH et al. 1997 (revision).

D i a g n o s i s : The female of *G. africanus* is easily recognizable by a smooth mesonotum and a smooth apical half of the propodeal dorsum. The labrum and clypeus are yellow, the clypeus might be black on basal third. Legs are completely reddish yellow. The species might be confused with *G. quinquefasciatus*, which occurs in a markedly yellow painted form in the western Mediterranean. *G. quinquefasciatus* has often a black labrum and always distinct punctures on mesonotum. The pygidial plate is finely sculptured between the punctures, whereas it is shiny between the punctures in *G. africanus*.

The male of *G. africanus* is characterized by a smooth mesonotum and a nearly smooth propodeal dorsum (with some basal wrinkles on propodeal dorsum). The labrum and the clypeus are yellow. The male resembles the male of *G. sulcifrons*. The latter species might also have reduced wrinkles on the propodeal dorsum. But both species might easily be distinguished by their number of tyloids. *G. africanus* has large tyloids only on flagellomeres II-IV, and a short tyloid on flagellomere V, whereas *G. sulcifrons* has tyloids on flagellomeres I-VIII (often also on IX). The flagellomeres are black above and orange below in *G. africanus*, the frons is less dense punctate than in *G. sulcifrons*. The markedly yellow painted male of *G. quinquefasciatus* in northwest Africa might also be confused with *G. africanus*, if the sternal hairbrush is worn down.

D i s t r i b u t i o n : Morocco and Spain.

Records: MOROCCO: 1 female Taroudant 18.4.1990; 1 male Essaouria 9.5.1995 (SE).

Gorytes albidulus (LEPELETIER 1832)

Hoplisus Albidulus LEPELETIER 1832: 65, female, incorrect original capitalization. Holotype: France: Paris area; *Gorytes albidulus*: DE BEAUMONT 1953: 173 (correct name; revision); BITSCH et al. 1997 (revision), NEMKOV 1990 (fauna of central Asia).

Diagnosis: The female is unique by the character combination of a parallel inner margin of the eyes, pale tergal bands, red legs and a black clypeus.

The male might be confused with *G. procrustes* if identified with the keys of DE BEAUMONT (1953) or BITSCH et al. (1997). It is characterized by its color pattern: Lower margin of labrum, clypeus, spot behind pronotal lobe and interrupted bands on tergites I-IV are pale yellow. The legs are black and red; and flagellomeres II-VIII have linear black tyloids. The similar *G. procrustes* has a partly or completely black clypeus, its pronotal lobes are yellow, the space behind them is black, the tyloids on flagellomeres II-VI are large and reddish. *G. albidulus* do not vary geographically.

Distribution: Europe and palaearctic Asia.

Records: Bulgaria: Slancev Brjag 1972 - Germany: Berlin 1889 (DEI); Leipzig 1932 (DEI); Dessau (DEI); many records in ZMB - Kazakhstan: 10km E Ddjambul 1994 - Kirgisia: Taldi-Bulag 90km E Talias 1992 – Mazedonia: Lake Prespa 1965 (Leiden) - Poland: Lenkowe near Ossowicz 1915 (ZMB) - Slovakia: Malacky (1994), Cajov 1960; Chotin 1960; Sandanski 1971, Kamenica 1964; Sturovo 1964; Kuty 1973 – SPAIN: Soria 1989 (Schlaefle), Villalaba de la Sierra/Cuenca; Las Rozas/Madrid - Turkey: 10km W Ürgüp 1998; Gevas, Van Gölü 1993; 20km W Van 1997; 20km W Agri 1997.

Gorytes fallax HANDLIRSCH 1888

Gorytes fallax HANDLIRSCH 1888: 489, female, male. Syntypes: Austria: Wien; Switzerland and Russia (Daghestan): no specific localities (Kraków, NHMW); DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision).

Diagnosis: The female belongs to the species group with a scattered punctate pygidial area. It can easily be recognized by the black labrum, the well developed yellow stripes on the inner margin of the eyes and an irregular wrinkled propodeal dorsum.

The male has a distinctly longitudinally wrinkled metanotum and a posterior margin of the scutellum which characterizes the species. It has long narrow and black tyloids on the flagellomeres II-IV and a long yellow stripes on the inner margin of the eyes. DOLLFUSS (1991) mentioned problems to recognize the first character in some males from the museum of Vienna. Probably these specimens do not belong to *G. fallax*. The similar male of *G. quinquecinctus* has reddish and large tyloids on the flagellomeres I-VI and a less developed yellow stripe on the inner margin of the eye. For further diagnosis and separation of related species see comments at *G. quadrifasciatus*.

Distribution: Europe to Siberia.

Records: AUSTRIA: Burgenland, Neusiedl (ZMB) - Bulgaria: Slancev Brjag 1972 - Czech Rep.: Cerna 1994; Majdalena 1996; Frantiskov 1977; Raby 1970; Chium u. Tribone 2000, Kobyli 1999 - Germany: Rhinland-Palatinate, Büchelberg 1996 (SE), Freiburg 1992 (SE); Brandenburg, Eberswalde: N. Golzow 1992; Kl. Zieth. Serwester See 1992; 1996; (all DEI); Leipzig Umgebung 1956 (DEI); Dessau (ZMB); Berlin (ZMB) - Greece: Trakia, Trud 1997 - Netherlands: Ermelo 1937 (Leiden) - Slovakia: Krelovs Chlumec 1977, Sturovo 1977; Kobyli 1970 – Ukraine: female 1999 Crimea, Simpheropol (OLL).

Gorytes foveolatus HANDLIRSCH 1888

Gorytes foveolatus HANDLIRSCH 1888: 485, male, female (female =?). Lectotype: male, Dalmatia: Spalato, now Croatia: Split (NHMW); designated by DE BEAUMONT 1953: 187, 188; *Gorytes foveolatus dichrous* MERCET 1906: 120; males and females, Spain; *Gorytes foveolatus longicornis* HANDLIRSCH 1898: 488, male, Algeria (NHMW); DE BEAUMONT 1953 (revision), BITSCH et al. 1997 (revision); NEMKOV 1990 (fauna of Ukraine and Russia).

Diagnosis: The female can easily be recognized by the narrow and densely punctate pygidial plate and the coarsely punctate tergites. The males of *G. foveolatus* have also coarsely punctate tergites, but a short mesosternal carina and a short flagellomere X. The similar *G. pleuripuncatus* has a long mesosternal carina and a long flagellomere X.

The flagellomeres II-V of *G. foveolatus* from east Europe and Turkey have narrow reddish tyloids on the entire length, the flagellomere VI has only a short tyloid. Tyloids in specimens from western Europe are larger; these specimens have also a reddish tyloid on flagellomere I.

Variation: The "subspecies" *dichrous* and *longicornis* from the western Mediterranean are markedly yellow painted and show some small differences in clypeus proportions. In my opinion these characters are only based on geographic variation and do not characterize real subspecies.

Distribution: North west Africa, southern and south east Europe, Turkey to Ukraine and Russia, also in Syria and Jordan.

Records: Albania: Polican W. Tomor 1961 (DEI) – Algeria: Bouira 1971 - Bulgaria: Nessebr 1982; Slancev Brjag 1972 – Greece: Fuss Olympos; Levadia (Schlaefle 1966), Korinth 1988 (Schlaefle); 40km N Lamia, Domonos 1996; Korinthos 1966; Arahnea/Argolis (Amsterdam) - Jordan: NW Shuna 1996 - Kroatia: Ulcinj 1962; Radovica 1977; Bale, Istria 1962 (Leiden) - Mazedonia: Babuna valley near Titov Veles, 1965 (Leiden) - Morocco: Azrou; Larache 1990 (Schlaefle), 5km SE Azrou 1995; El Menzel, 30km E Sefrou 1995; Tissa 1997; Bzou 1995; Fes, Lot Jornu 1997 – Spain: Albalate 1989 (Schlaefle), Monsanto 1946 (Leiden); Weg Ronda Campillos (Amsterdam) - Syria: 30km Dara, Nawa 1996; Dibbin, 30km S of Suwayda 1996; Khabab 1996 - Turkey: SSO Milas, Camkoy 1998 (SE); 10km W Gaziantep (1997); Antalya, 7km W Goltaria 1996 (SE); Sultan Daglari, Yalvac 1993; Konya, 30km S Akshehir 1998; 30km E Manisa 1998; Kahraman Maras 1998; 10km SW Simak; Izmir 1998 - Ukraine: Krym, Karadagh 1925 (ZMB) – Ukraine: female 1999 Crimea, Eupatoria (OLL).

Gorytes hebraeus DE BEAUMONT 1953

Gorytes hebraeus DE BEAUMONT 1953: 181 female. Holotype: female, Jordan: Jericho (NHMW); DE BEAUMONT & BYTINSKI-SALZ 1959 (description of male); NEMKOV 1990 (fauna of Armenia).

Diagnosis: The female is characterized by the densely punctate pygidial area which is unique between the treated species (Fig. 6). Some lateral punctures are furrow-like prolonged. The propodeal dorsum has very fine longitudinal wrinkles, which are more fine than in the remaining western Palaearctic species. The wrinkles are indistinct in the apical part of the propodeal dorsum, the remaining space is microsculptured or shiny. The propodeum is laterally shiny with some scattered punctures.

The male can easily be recognized by the smooth propodeal dorsum with some short wrinkles basally and ventrally. The wrinkles are missing in smaller specimens.

Description of male from Turkey: 9-10 mm. Pale yellow are: Basal mandibular spot, labrum, clypeus, stripes on inner margin of eyes, scapus below,

narrow band on pronotum, small spot on tegulae, narrow bands on tergites I-IV (sometimes also on tergite V) which might be interrupted. Fore- and midfemora except reddish apex and fore- and midtibia below black, remaining parts of these legs pale yellow. Hindfemora basally, hindtibia apically below and last tarsal segment black.

Frons with large and dense punctures, mesonotum with some very small and scattered punctures. Flagellomeres V-XI as long as maximal width. Flagellomeres II-VI with large black or blackish-reddish tyloids covering the entire length of flagellomeres. Flagellomere I and VII with reduced tyloids. Thorax laterally shiny with few punctures. Propodeal dorsum shiny and smooth (with blue gleam), in large specimens with indistinct wrinkles basally and beside the dorsal area. Dorsal area with longitudinal furrow. Marginal cell of forewing darkened.

V a r i a t i o n : As mentioned by DE BEAUMONT (1953), the females from Israel and Jordan have lemon yellow paintings and are markedly yellow, whereas the color is pale yellow and more reduced in Turkish specimens. The scutellum is completely yellow and the postscutellum has a small yellow spot at Israelian and Jordanian species, the tergal bands are not interrupted (only the scutellum with small transversal band, tergal bands are sometimes interrupted in Turkish specimens). The females from Turkey measures 9-10 mm, the females from Jordan 11,5 mm.

D i s t r i b u t i o n : Israel, Jordan, Turkey, Armenia.

R e c o r d s : Jordan: Wadi Mujib 2 females 23.4.1997 (Schlaefle, SE) - Turkey: Cappadocia, Ürgüp; 15. June 1998; 20km E Horasan 3. July 1997; Sultan Daglari, Yalvac 5. July 1993; Agri 27. June 1993 (males and females).

Gorytes laticinctus (LEPELETIER 1832)

Euspongus Laticinctus LEPELETIER 1832: 66, male, female, incorrect original capitalization. Syntypes: France: Paris area and Pyrénées (Turin); DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision).

D i a g n o s i s : The female and the male are both characterized by the characters mentioned in the key (fig. 1). The male is similar to *G. quadrifasciatus* and *G. fallax*. The flagellomeres II-VII (-VIII) have linear black tyloids (cf. fig. 10). For further diagnosis and separation of related species see comments at *G. quadrifasciatus*.

R e m a r k s : A female from "Korea" (coll. ZMB) from the Radozskowski's collection is labeled as "*Gorytes koreanus* HANDLIRSCH" and carry also a red "type" label. It belongs to *G. laticinctus* with normal yellow color pattern in face below antennal sockets. The band on tergite II is as narrow as bands on the remaining tergites. *G. koreanus* is treated as subspecies of *G. laticinctus* by NEMKOV (1989).

D i s t r i b u t i o n : North west Africa, Europe and Turkey to east Asia.

R e c o r d s : Many records from Austria, Poland, Spain, Italy, Kroatia, Germany, Bohemia, Romania, Czech Rep., Ukraine, Slovakia and Switzerland (SE, DEI, OLL, ZMB, Schlaefle, Leiden, Amsterdam).

Gorytes neglectus HANDLIRSCH 1895

Gorytes neglectus HANDLIRSCH 1895: 916, male, female. Syntypes: Siberia between Irkutsk and mouth of Ussuri River (NHMW or Kraków?), see NEMKOV 1989: 72; LOMHOLD 1981 (key, description).

Diagnosis: *G. neglectus* is characterized by the typical color pattern. The male has the labrum and the clypeus all yellow, thorax, all femora, hindtibia and hindtarsi are black. The female has an all yellow labrum and clypeus, thorax, tibia and hindtarsi are all black. It has strongly convergent inner margins of eyes and a shiny pygidial area with macropunctures. *G. neglectus* occurs only in the high north of the Palaearctic region.

Description of male: Yellow are: labrum, clypeus, spot above clypeus, long stripes on inner margin of eyes, narrow bands on tergites I-IV, some spots on apical margin of sternite II, apical spot on fore- and midfemora, stripe on inner frontal side of tibia and tarsi. Upper face of thorax with fine and dense micropunctures. Wrinkles on propodeal dorsum regular and parallel. Scapus black. Flagellomeres II-VI with large dark reddish tyloids, flagellomere I with indistinct tyloid.

Description of female (based on LOMHOLDT 1981 and HANDLIRSCH 1895): Yellow are: labrum, clypeus, stripes along inner margin of eyes, narrow bands on tergites I-IV, stripe on inner frontal side of tibia and tarsi I and II. Remaining surface of head and thorax black, sometimes with small yellow spots on pronotum. Inner margin of eyes strongly convergent downwards. Mesonotum with fine micropunctures. Pygidial area shiny, punctate, anteriorly with distinct macropunctures.

Distribution: Northern Fennoscandia (Finish Lapland, predominantly north of the Polar circle), Soviet Karelia (LOMHOLD 1981) and Siberia.

Records: Russia: Siberia, Prov. Ussuri, Partizany fl. Sutshan, male 18.6.1927 (SE)

Gorytes nigrifacies (MOCSARY 1879)

Hoplisus nigrifacies MOCSÁRY 1879: 134 male, female. Syntypes: Hungary: Budapest; DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision); NEMKOV 1990 (fauna of central Asia).

Diagnosis: *G. nigrifacies* has unique thorax sides. The entire propodeum and upper part of the metanotum are coarsely sculptured. The mesonotum is distinctly punctate (punctures are 4-6 diameters apart). The abdomen has some scattered macropunctures, which are less dense as in *pleuripunctatus* and *foveolatus*, but denser as in remaining species. The male flagellomeres I-VI have narrow black or reddish tyloids. The head and thorax of specimens from eastern Europe and Asia are mostly black, these specimens have narrow pale yellow bands on the pronotum and often a spot on the scutellum, the flagellum of the female is yellow below, the tibia III is reddish and black. Specimens from France and Spain are markedly lemon yellow painted, the clypeus of the males might be partly or completely yellow, the scutellum and a spot behind the pronotal lobe is yellow, tergal bands are large, the tibia III is often yellow and black.

Distribution: Central and southern Europe, to Turkey and Daghestan.

Records: Azerbaijan: Yardmly, Avash 1996 (SE) - Bulgaria: Topolnovgrad 1982 (DE) - France: Monpellier, Lac de Salagou 1996 (SE) Saon 1983 (Schlaefle); Carpentras; Millau; Varages/Var; Tryas/Var; Sault/Vaucluse (Amsterdam) - Jordan: N. Shuna 1996 - Romania: Dobrogea, Camaraua, Fetii 1994 - RUSSIA: Grusia, Dzvari 1978 - Slovakia: Kovakov 1974 – SPAIN: Sesoria 1981 (Schlaefle); La Aliseda, Avila, 1961; Dept. Malaga, 4km S Torremolinos, Benalmadena 1983; Barco de Avila 1967, Leon, N. of Sahagun 1967 (Leiden); Elhaurin el Grande/Malaga; Almunecar/Granada; Rio Peyales/Avilam, Calicasas/Granada (Amsterdam) – Portugal: Albufeira/Algarve (Amsterdam) - Turkey: 60km SE Mut, Kirobasi 1997; 10km W Ürgüp 1998 - Ukraine: 2 males 1999 Crimea, Karaloi (OLL).

Gorytes planifrons (WESMAEL 1852)

Hoplisus planifrons WESMAEL 1852: 100, female. Holotype: female, Belgium: Bruxelles area (Bruxelles); DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision).

D i a g n o s i s : Both sexes of *G. planifrons* are characterized by their smooth surface of the upper metapleuron. Most other *Gorytes* species have at most some parallel wrinkles on the metapleuron. Also the black clypeus with the basal yellow spot is typical for *G. planifrons* in both sexes. The mesonotum is smooth with only some fine and indistinct punctures. The structure of the propodeal dorsum is very coarse and honeycomb-like.

The male is also characterized by the typical tyloids: the flagellomeres II and III have large oval-form reddish tyloids, which are as large as a midocellar diameter, whereas the flagellomeres I and IV have only small tyloids (Fig. 11).

D i s t r i b u t i o n : Europe.

R e c o r d s : Austria: Salzburg (ZMB, very old label) - Bulgaria: Sandanski 1967; Pirin Begovica 1987 (OLL); Jane Sandanski 1952 (DEI) – Germany, Baden-Württemberg: Kaiserstuhl, Schelingen 1994 (SE); Grissheim 1999 (SE) – Kroatia: Istrien, Vozilici 1997 (W.H. Liebig) - Romania: Banat, Herkulesbad 1934 (ZMB) – Switzerland: Gandria 1963 (Schlaefle).

Gorytes pleuripunctatus A. COSTA 1859

Hoplisus pleuripunctatus A. COSTA 1859: 31, male, female. Lectotype: male, Italy: Lecce (Napoli) designated by DE BEAUMONT 1953: 4; *Gorytes pleuripunctatus barbarus* DE BEAUMONT 1953: 186. Morocco, Ifrane (Lausanne); *Gorytes pleuripunctatus fraternus* MERCET 1906: 119. Syntypus: Spain, env. Madrid.; BITSCH et al. 1997 (revision); NEMKOV 1990 (fauna of central Asia, as *pleuripunctatus pleuripunctatus* and *pleuripunctatus barbarus*).

D i a g n o s i s : *G. pleuripunctatus* shares an unique character with *G. schmidti* nov. spec. among the western palaearctic *Gorytes* species: The mesosternal carina is laterally prolonged (fig. 3). Tergites are distinctly macropunctured in both sexes. The female of *pleuripunctatus* is also characterized by the velvet-like surface of the pygidial area. Male flagellomeres I-VII have large oval reddish tyloids contrasting with the black flagellum in eastern populations, but barely visible in north African specimens. The latter have a light orange flagellum.

V a r i a t i o n : The "subspecies" *barbarus* and *fraternus* from the western Mediterranean are markedly yellow painted. In my opinion these characters are only based on geographic variation and do not characterize real subspecies.

D i s t r i b u t i o n : North west Africa, southern and east-central Europe to Turkey and central Asia.

R e c o r d s : ?Austria: "Ebelsbg. Schiltenbg. Autob. Dst. Mönchsgr. 6.8.51 leg. Hamann" - ALGERIA: G. Kabylia, Ait Hassan 1971; Tiemcan, El Ourit 1930 (ZMB) - Azerbaijan: S Baku, Kura bride N Salyany 1996 - Bulgaria: Slancev Brjag 1972; Sandanski 1969; Ploski 1990; Polenica 1990, Kresna 1990; Harmanli 1969; Varna-Galata 1978; Micurin, Izgrev 1988; Kulata 1978; Arkutino, S Burgas (DEI); Untere Kamtschija 1935 (ZMB); S. Simitli 1938 (ZMB) - FRANCE: Provence, 20km WnW St. Tropez, W les Mayons 1997 (SE); Landes - Arengosse; Beziers (Amsterdam) - Greece: Preveza 1997; Chalkidike, Kassandra 1977 (SE); Sparta; Pyrgos; Fuss Olympos; Zakynthos (Schlaefle 1963-1988); Starea (Amsterdam) - Hungaria: Simontornya 1932 (DEI) - IRAN: Elburs 1927;localities unreadable (ZMB) - Kroatia: Ulcinj (Dalmatien) 1963 (SE) Omis (Amsterdam) – Mazedonia: Babuna valley near Titov Veles, 1965 (Leiden), - Morocco: 40km S Guercif 1995; 15km SE Sefrou 1995; Oasis 10km S Ouarzazate 1995 (SE); Erfoud; Rich; Ait Saoun; Gorges du Todra (all Schlaefle, 1990) Cap Saf 13.6.1962 (Schlaefle, det. *G. pleuripunctatus barbarus* by de Beaumont 1963); Asni, Imlil 1966 (Leiden) - Slovakia: Sturova

1962; Kovekov 1965; Cejc 1965; Streda n. Bodrog 1977; Kamenica 1963 - SPAIN: Catalonien, Palamos (ZMB) Soria 1986; Girona, Playa de Pols 1989; Burg Coca 1981 (Schlaefle); Caldas de Reyes 1963 (Leiden); Granada, Calicasas (Amsterdam) - Turkey: SSO Milas, Camiköy 1998 (SE); Göreme 1988 (SE); Acigöl, Cardak 1993; Nemrut Dagi, Karadut 1993; 20km N Mardin 1997; Izmir 1998; Ankara, 40km W of Ayas 1998; 20km NW Igdir 1998; Mardin, Hop Gecidi 1978; 40km E Mut, Cornelek 1997; Aciöl, Cardak 1993; Van Gölü, Gevas 1993; Tuzlagozu (Bayran) 1998; 10km SW Simak 1998; Zelve near Nevsehir 1997; Halfeti (Birecik) 1998; Göreme 1993 (Schlaefle); 30 km W Tunceli (Amsterdam) - Ukraine: Krym, Karadagh 1925 (ZMB).

Gorytes procrustes HANDLIRSCH 1888

Gorytes Procrustes HANDLIRSCH 1888b: 490, male, female, incorrect original capitalization. Syntypes: many localites in Austro-Hungary, Croatia, Greece, Italy (NHMW); DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision); NEMKOV 1990 (fauna of central Asia).

D i a g n o s i s : The female of *G. procrustes* is characterized by the narrow pygidial area which is apically densely punctate and setose (fig. 8). The similar *G. foveolatus* has coarsely punctate tergites whereas tergites of *G. procrustes* are smooth. The propodeal dorsum of *procrustes* might be without wrinkles in the apical part. The mesonotum is coarsely and densely punctate in both sexes.

The males of *G. procrustes* have pale yellow bands on tergites I-IV or I-V, which are sometimes interrupted. The labrum and parts of the clypeus (or the entire clypeus) are black. Specimens with weak mesonotum puncture might be confused with *G. albidulus* (see above). Flagellomeres II-V (VI) have linear reddish tyloids. The anterior free margin of the clypeus has a V-shaped emargination.

R e m a r k s : Two males and two females from Pola, leg. Schletterer in the coll. ZMB (Pola could not be identified) carry red "type" labels. Two of them are identified by KOHL, the remaining two by HANDLIRSCH. They belong probably to the type series.

D i s t r i b u t i o n : Southern and east-central Europe to central Asia.

R e c o r d s : Austria: Neusiedl, Tal (ZMB) - Albania: Borshi S. Vlora 1961 (DEI) - Bulgaria: Slancev Brjag 1977; Melnik 1967; Sandanski 1978; Arkutino, S Burgas (DEI); Kyustendil (Amsterdam) - Greece: Olympia 1963; Levadia 1966; Korinth 1988; Megalopolis 1963 (Schlaefle); Korfu 1973 (SE); Kerkya, Dassia 1971; Attika, Marathon 1971 (Leiden); Korinthos 1966 - Hungaria: M. Besnyö (ZMB) - Kazakhstan: Issik 1992 - Kroatia: Ulcinj (Dalmatien) 1963 (SE), Krk 1986 (Schlaefle); Mumjan 6 km NO Buje/Istrien (Amsterdam) - Italy: Sicily, Randazzo, Lago di Gurrida 1999 (SE) - RUSSIA: Grusia, Lisie lake 1973; Dzvari 1978 – SPAIN: Avila, Zapardielde 1961 (Leiden); Las Rozas/Madrid; Fresnadillas/Madrid; Alhaurin el Grande/Malaga; Piedrahita/Avila (Amsterdam) - Slovakia: Sturovo 1962; Cajcov 1960; Vinickz - Ukraine: males and females 1999 Crimea, Eupatoria; Belogorst (OLL).

Gorytes quadrifasciatus (FABRICIUS 1804)

Mellinus 4.fasciatus FABRICIUS 1804: 298, male, incorrect original spelling. Holotype (or lectotype?): Germany (Kobenhagen); DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision).

D i a g n o s i s : The female is recognizable by the black face, the yellow labrum, and a central horizontal band on the clypeus. The last flagellomeres are completely darkened, whereas the first flagellomeres are reddish below. It might be confused with *G. neglectus* from the extreme north which has a complete yellow clypeus and with the markedly yellow painted *G. laticinctus*. The male of *quadrifasciatus* is similar to *G. fallax* and *G.*

laticinctus. These closely related species have a striated tergal base I, an often striated postscutellum and narrow and long black tyloids on the flagellomeres. *G. fallax* can be distinguished from *G. quadrifasciatus* and *G. laticintus* by a less dense striation on the tergite I and a more intensive striation on the postscutellum. The pronotal lobe is yellow and the mesopleuron is black, whereas the pronotal lobe is black and the upper mesopleuron has a yellow spot in *G. quadrifasciatus* and *G. laticinctus*. *G. quadrifasciatus* can be separated from *G. laticinctus* by the black space above the clypeus (*G. laticintus* has always a small yellow spot above the clypeus) and the narrower band on tergite II. The flagellomeres II-VII (-VIII) of both species have linear black tyloids (fig. 10), whereas the tyloids of G. *fallax* are reduced to flagellomeres I-IV.

BITSCH et al. (1997) discuss the similarity *of G. quadrifasciatus* and *G. laticintus* and wonder whether both taxa belong to a single species. As mentioned by DE BEAUMONT (1953), the female of *G. quadrifasciatus* shows a broad geographic variation in the color pattern. The clypeus of specimens from Germany, Tchechia and Slovakia has a complete yellow band, which might be shortened to three spots. The inner orbit of the eyes has a small yellow spot. The tergal bands of these specimens are narrow (the tergal band II is 0,25 tergal length), the tergite V is black. The femora are black on basal half or two thirds, and apically reddish. The forefemora is yellow below. The tibia are completely reddish. Females from Fennia have a similar color pattern, but the tergite V has a central yellow spot or a reduced band, the tibia are darkened above.

Females from Greece, Macedonia and Bulgaria have a complete black face (some specimens with a small and indistinct spot on upper corner of clypeus or on inner orbit of eyes). The tergal band I is half as large as the tergal length at these specimens, the tergite V has always a reduced central yellow band. The legs are black, the fore- and midfemora below and all tibia above have a large yellow band. The forefemora and hindfemora are apically yellow reddish.

D i s t r i b u t i o n : Europe to east Asia, northwest Africa.

R e c o r d s : Austria?: 1 male Meisdorf 1953 - Bulgaria: Vlabi 1993; Sandanski 1993 - Czech Rep.: Praha, Prokopske 1989 - Estonia: Tallin 1982 - Fennia: Helsinki 1963, Hirvensalmi 1968; Papilla Lammi 1954 (Leiden) – FRANCE: Alpes de Ht. Provence, Marcaux 1971 (Leiden) - Germany: Hornau 1924; Taunus/Hessen Lersbach 1961; Mecklenburg-Vorpommern, Darß-Zingst 1994 (SE) – Many specimens from Germany in DEI and ZMB - Greece: Ep. Thesportien, Paramithias Gebirge, Ag. Kiriaki 1993; Korfu 1973 (SE); Kerkyra, Dassia 1971 (Leiden) - ITALY: Piemont, Val Ferret 1925 (ZMB) – Kirgisia: 3 males, 2 females 22.July 1998 Alai, Mt. Ridge N-slope, Katta-Karakol riv. 39'52'N/73'22'E 2600m NN (OLL) - Kroatia: Buzet 1993 (SE); Plitvicka, Jezera 1929 (ZMB) - Macedonia: Prilep 1976 – Netherlands: many records (Leiden) - POLAND: Stettin 1910 (DEI), Lenkovo near Ossowitcz 1915 (ZMB) - Romania: 10km S Turda 1985 (DEI) - "Russia": Bialowies (ZMB) - SLOVAKIA: Somotor; Hranice/Moravia 1933 - Slovenia: Zesenice 1936 (ZMB) – SPAIN: Leon (Amsterdam) - Switzerland: Wallis, Evolaine 1991 (Schlaefle), Sierre 1967 (Schlaefle), Riazzino 1963 (Schlaefle) - Ukraine: male 1999 Crimea, Simpheropol (OLL).

Gorytes quinquecinctus (FABRICIUS 1793)

Mellinus 5.cinctus FABRICIUS 1793: 287, female, incorrect original spelling. Lectotype: female, n. Europe (Kobenhagen), designated by DE BEAUMONT 1953: 178; BITSCH et al. 1997 (revision).

D i a g n o s i s : The female of *G. quinquecinctus* is unique by the longitudinally striate pygidial area (fig. 5), the black labrum and yellow clypeus, yellow pronotal lobe and a yellow spot behind it. The male has a similar color pattern, but the yellow color on the

clypeus or on the thorax sides might be reduced. Flagellomeres II-VI have black or reddish oval tyloids which covers the entire length of flagellomeres (fig. 9). Sometimes flagellomere I or VII has also a short tyloid. If labrum is yellow, compare with other species, e.g. with *G. schmiedeknechti* from Bulgaria (see below). A single male from Roma (Italy, coll. SE) has a yellow labrum. *G. quinquecinctus* males from Poland and Fennoscandia have sometimes black thorax sides and a tyloid on flagellomere VII. The similar *G. neglectus* has black tyloids.

G. quinquecinctus and *G. quinquefasciatus* are difficult to distinguish if the sternal hairbrush of the latter species is worn down. Often hairbrush is visible between overlapping sternites. In general, the flagellomere VI of *G. quinquecinctus* has a long tyloid whereas is it missing in *G. quinquefasciatus*. But this character is difficult to recognize because tyloids on flagellomere VI (and VII in *quinquecinctus*) might be reduced.

D i s t r i b u t i o n : The most common species in Europe and central to eastern Asia. Records from north west Africa are doubtful.

R e c o r d s : Europe: Many Records from Bulgaria, Czech Rep, Italy, Germany, Greece, Portugal, Slovakia, Switzerland (DEI, OLL, Schlaefle, SE, Leiden, Amsterdam). Dagestan: Tapzozks (?, handwritten) male 29 June1957 (Leiden) - Iran: Recht, Tahergourabe, V.1950 (Staatliches Museum für Naturkunde, Stuttgart/Germany) – Former USSR: Baschkirien, 20km N Pavlovka 1982 (DEI) - Russia, Sibiria: Barnaul, Tjagun 130km 1993 (SE). - Syria: 20km NE of Latakia 1996 -Turkey: Nemrut Dag, Karadut 1998; 10km E Manavgat 1997; Izmir 1998; 20km NW Igdir 1997; Halfeti/Birecik 1998; Katha/Adiyaman 1998; Agri 1993; 20km W Van 1997; Tuzlagozu/Baylan 1998: Samandagi (TR mer occ.) 1995; 10km W Ürgüp 1998; Kagisman/Kars 1988 (SE); Göreme 1988 (SE); Hakkari 1988 (SE); 2 males 10.6.2000 W Ürgüp (Niehuis) – Ukraine: males, females Crimea, Eupatoria; Simpheropol; Kerch 1999 (OLL)

Gorytes quinquefasciatus (PANZER 1798)

Mellinus quinquefasciatus PANZER 1798: fasc. 53, female. Holotype (or syntypes?): female, Austria (depository?), *Gorytes quinquefasciatus eburneus* CHEVRIER 1870: 270 male and female syntypes from Switzerland, Vaud. (Genève); *Gorytes quinquefasciatus intercedens* HANDLIRSCH 1893: 281 male Holotype from Spain, Madrid (Madrid); *Gorytes quinquefasciatus levantinus* PULAWSKI 1961: 93. Male and female types from Lebanon and Syria (San Francisco), *Gorytes quinquefasciatus mauretanicus* HANDLIRSCH 1898: 489. Syntypes from Algeria (coll. Vienna), DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision); NEMKOV 1990 (fauna central Asia, as *quinquefasciatus levantinus*).

D i a g n o s i s : The female is characterized by the typical pygidial area with scattered punctures and indistinct microsculpture in-between (fig. 7), the more or less dense and coarse mesonotal puncture, and the apically reduced wrinkles on propodeal dorsum. It is similar to female of *G. africanus*, when punctures on mesonotum are reduced.

The male is unique by the dense hairbrush or long and dense setae on sternites III-VI. The color pattern is also variable, another typical feature is the reduced propodeal structure as in females. Flagellomeres II-V have laterobasally long reddish or black tyloids. If the hairbrush is worn down, the species might be confused with *G. quinquecinctus*, *G. procrustes* (see key) and with *G. africanus*. The latter has a more smooth propodeal dorsum, propodeum is black laterally (always?), whereas it is yellow touched in *G. quinquecinctus* from northwest Africa. In Spain, the male might be confused with *G. sulcifrons*.

V a r i a t i o n : Specimens from southern origin (Spain, northwest Africa, Turkey, Syria) are markedly light yellow painted with yellow tibia e and flagellomeres. Most

males from Spain have a large lateral yellow spot on the propodeum. Females from France might have a yellow labrum. The markedly yellow painted specimens from Syria to Jordan (described as ssp. *levantinus*) and also from northwest Africa and southern Spain have a less reduced sculpture on propodeal dorsum. The populations from eastern Europe and central Asia have pale lemon narrow bands on tergites, legs are reddish, clypeus is often black. Based on the color pattern, many forms have been described as subspecies. In my opinion such color pattern's are not suited to distinguish these taxa as subspecies. They represent on the contrary a geographic or a climatic variation.

D i s t r i b u t i o n : Palaearctic.

R e c o r d s : Europe: Many records from Albania, Bulgaria, Germany, France, Croatia, Spain and Switzerland (OLL, DEI, SE, ZMB, Schlaefle, Leiden, Amsterdam). China: Xiexian, Zhongtiab Shan 111,6'/34,8' 1996 (SE). ISRAEL: Tiberias (Amsterdam) (agree with "ssp. *levantinus*") - Jordan: N. Shuna 1996 (agree with "ssp. *levantinus*") - Kazakhstan: Fabritchny 40km E Alma Ata (1992); Aksaj/Alma Ata 1974; Issik 1982; Medeo, Tchimbulak 1991; SE Tchilik 1992 – Kirgisistan: many males and females Ala Archa, Uzum Bula V. Mai 2000 - Lebanon: Becharré 1966; Kadiska 1960; Cedars 1960 (Leiden, 7 males, 4 females, agree with "ssp. *levantinus*") - Morocco: E Kenitra 1965 (SE) - Syria: Tartun 1996, 30km Dara, Nawa 1996 (agree with "ssp. *levantinus*") - USSR: Baschkirien, 20km N Pavlovka 1982 (DEI) - Turkey: Avgadi, 30km NW Erdemnli 1996; Tuzlagozu/Baylan 1998:;20km E Gurun 1997, Seydissehir 2001 (OLL); 56km NNW Marmaris, 15km E Milas 1998 (SE).

Gorytes schlettereri HANDLIRSCH 1893

Gorytes Schlettereri HANDLIRSCH 1893: 281, female, incorrect original capitalization. Holotype: female, Austria: Tirol: Reschen Pass (NHMW); *Gorytes schlettereri ponticus* DE BEAUMONT 1967: 314. Male and female types from Turkey (London); DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision); NEMKOV 1990 (fauna of Georgia, as *schlettereri ponticus*).

D i a g n o s i s : The species is characterized by the black thorax sides and the yellow clypeus and black labrum. The clypeus might have a black zone below. The mesonotum has no or only some few scattered and small macropunctures, the remaining sculpture is leather-like. The female has a striate pygidial area and five tergal bands, the male has four or five tergal bands. Male flagellum with black linear tyloids on whole length of flagellomeres I-VII.

V a r i a t i o n : The "subspecies" *ponticus* from Turkey described by DE BEAUMONT (1967) is mainly characterized by a coarser structure of the propodeal dorsum. This character cold be confirmed at the examined material. But it is barely visible and in my opinion not suited to recognize the Turkish populations as valid subspecies. It represents rather a geographic variation. Without examination of the types I will not synonymize the subspecies *ponticus* formally.

D i s t r i b u t i o n : European Alps, Caucasus and mountains in Turkey.

R e c o r d s : FRANCE: Ht. Savoie, 7 km SE col Mont Cenis 1800m NN 1995 (SE, in BITSCH et al. 1997) - ITALY: Alto Adige, Paznauntal 1200 m NN, 1931 (ZMB) - GEORGIA: Caucasus centr., Svanetia, Mestia 1800-2000m, 1989 - TURKEY: Bolu lake env. (Abant Golü) 1993.

Gorytes schmiedeknechti HANDLIRSCH 1888

Gorytes Schmiedeknechti HANDLIRSCH 1888: 492, male, incorrect original capitalization. Lectotype: male, Greece: Parnassus (NHMW), designated by DE BEAUMONT 1953: 181; DE BEAUMONT 1967 (description of female); NEMKOV 1990 (fauna of Azerbeijan).

D i a g n o s i s : The species is unique by the large and coarse mesonotal punctures,

which are often confluenced to furrows. The only other *Gorytes* species in the treated region with a similar sculpture is *G. schmidti*, which has a prolonged mesosternal carina. *G. schmiedeknechti* has a typical color pattern: Labrum, clypeus and spot on upper mesopleuron are yellow, pronotal lobe is black. But in some males, the mesopleuron is black too, in one male specimen from Turkey, the pronotal lobe is touched by yellow. The propodeal dorsum is extremely coarse sculptured. Flagellomeres I-V of males have a narrow reddish or black tyloid, flagellomere VI has a shortened tyloid.

D i s t r i b u t i o n : Bulgaria, Greece, Turkey, Syria and Azerbaijan.

R e c o r d s : Bulgaria: Sandanski 1969; Pirin-Sugarevo 1987 (only males) - Greece: "Parnaß", "coll. Schmiedeknecht", "*Hoplisus Schmiedeknechti* n.sp. male", red label "type" (ZMB) [designed as Paralectotype, because Parnass is type locality *of G. schmiedeknechti*]; Mistras 1971 2 males 1971; Tolos Beach female 1971; Corfu, Palaeokastritsa 1971 (Leiden) - Turkey: Alanya, Didarde Burnu 1997 36°32'N/31°59'E (DEI), Halfeti (Birecik) 1998; 30km NW Erdemli, Avgadi 1996; Samsun 1996; N of Akseki 1998, Konya, 30km S Aksehir 1998; 25mE Golbasi 1998.

Gorytes schmidti SCHMID-EGGER, new species

D i a g n o s i s : *Gorytes schmidti* is unique among the treated *Gorytes* species in combining a prolonged metasternal carina (fig. 3) and coarse furrow-like punctures on the mesonotum. The tergites are smooth. Only *G. pleuripunctatus* has also a prolonged metasternal carina, but it has a weak puncture on the metanotum and distinct macropunctures on the tergites. *G. schmidti* and *G. pleuripunctatus* are probably closely related because of the unique character of the prolonged carina.

D e s c r i p t i o n o f f e m a l e : 12 mm. Lemon yellow are: Basal half of clypeus, stripes on inner margin of eyes (half as long as inner margin of eyes, touching clypeus), an isolated spot above clypeus, scapus, flagellum below except last four flagellomeres, large band on pronotum, pronotal lobe, a large spot on upper mesopleuron (behind pronotal lobe), tegulae, praecostal plates and a small spot on lateral-apical corner of mesonotum, scutellum, a reduced spot on postmetanotum, very large lateral spots on propodeal sides, large bands on tergites I-V, entire sternite VI, bands on sternites I-III, lateral spots in sternite IV and V, forefemora and II below. Legs are reddish-yellow, coxae and forefemora-II below, the entire forefemora II. Hindtibia apically and all tarsi above black. Frons and mesonotum covered with large punctures, one diameter or less apart, punctures confluenced to deep and long furrows. Scutellum smooth, postmetanotum apically with some short wrinkles. Median part of propodeal dorsum with 10 parallel wrinkles through lateral fields, but these are irregularly sculptured. Anterior part of propodeum sides smooth, metapleuron and epimere of mesopleuron with some horizontal and vertical wrinkles – like crumpled. Lower part of mesopleuron with small but deep punctures. Tergites with a few very small punctures. Pygidial plate with scattered punctures, some are furrow-like. The remaining surface is finely sculptured. Prolonged mesosternal carina as in *G. pleuripunctatus*. Wings with reddish-brown veins, marginal cell of forewing strongly darkened, darker than the reddish stigma.

D e s c r i p t i o n o f m a l e h o l o t y p e : 11 mm (paratype 10 mm). Lemon yellow are: Mandible except black apex, labrum, clypeus (with reddish lower margin in paratype), large spot between base of scapus and clypeus, stripe on inner margin of eye on half length, scapus and pedicellus. First three flagellomeres reddish-yellow below (first seven in paratype). Color pattern of thorax and abdomen as in female, post-

metanotum and tergite VII black. Legs yellow, coxae, trochanter and femora black above, hindtibia dorso-apically and hindtarsi reddish black. Structure of body and color of wings as described in female. Flagellomeres II-VI with large reddish tyloids (dark in paratype). The male paratype agrees well with the holotype.

Etymology: The species is named after Prof. Dr. Konrad Schmidt, Heidelberg/ Germany, a friend and specialist of Sphecidae, who supported decisively the authors work on Hymenoptera.

Distribution: Eastern Turkey.

Type Material: HOLOTYPE: male "TR. mer. or. Nemrut Dagi, Karadut, 2. July 1993 leg. Mi. Halada" [37°57'N 38°40'E] (coll. OLL). PARATYPES: 1 male, 1 female: "TR-Hakkari, Esendere, 21. July 1988, leg. Schmid-Egger" [37 °36'N 44 °36'E] (coll. SE) – male 30.8.2000 Turkey, E, 30km W Baykan leg. M. Halada (OLL).

Gorytes sulcifrons (A. COSTA 1869)

Hoplisus sulcifrons A. COSTA 1869: 81, female. Holotype or syntypes: female, Italy: Sardegna: no specific locality (Napoli); DE BEAUMONT 1953 (revision); BITSCH et al. 1997 (revision); NEMKOV 1990 (fauna of central Asia).

Diagnosis: The female of *G. sulcifrons* can be recognized by the dense striation on the pygidial area in combination with a yellow labrum and pronotal lobe. The mesonotum is smooth. The male is characterized by the smooth mesonotum, the yellow labrum and pronotal lobes. It has flagellomeres I-VIII (-IX) with large reddish tyloids (tyloid I and last tyloids often reduced, tyloids sometimes dark). The medial part of the propodeal dorsum has parallel wrinkles which might be reduced in males from south-west Europe. Such specimens might be confused with *G. africanus*, but the latter has less tyloids on flagellomeres. The males of *quinquecinctus* from south west Europe are also similar to *sulcifrons*. They have only tyloids on flagellomeres II-V, the propodeum is laterally largely yellow touched.

Variation: Specimens from Europe and north west Africa are lemon yellow painted, whereas populations from Turkey and from Tajikistan are characterized by a whitish yellow color. Some males from Kazakhstan are as lemon yellow painted as the European specimens, legs III are completely black, sculpture of propodeal dorsum is in both sexes more irregular and more coarse as in European specimens. A few males from Spain have black tyloids. The specimens from Lebanon are markedly light lemon yellow painted with a large lateral propodeal spot and large tergal bands. They resembles the specimens from Morocco in color pattern.

Distribution: Central and southern Europe to Turkey, Lebanon and central Asia, north west Africa.

Records: Austria: Neusiedler See, Hackelsberg 1940 (ZMB) - France: Roussillion, Banyuls 1994 (SE); Vallé de Durance, Briancon 1995 (SE); Corse, Ajacco 1996 (SE); Grenoble (ZMB) -Greece: Epirus, Ioannina, NE Skamneli 1990 - Hungaria: Ujpest 1906 (DEI); Simontornya 1933 (DEI) - Italy: Western alpes, Aosta, Prelles 1995 (SE); Alto Adige, Vintschgau, Schluderns 1992 (SE); Ligurien, Villavova die Albenga 1995, Sardignia: Algh. Porticciola; Palau, St. Tereza (1991 Schlaefle) - Kazachstan: 10km E Ddjambul 1994; Vanovka, 80km E Ddjambul 1992; Fabritchny 40km E Alma Ata (1992); Issik 1992, Alma Ata, 35 km sep Aksay 1981; Kuyuk 40 km SW Djambul 1992 - Kirgisia: Tash-Arik, 11km E Talas 1992; Frunse 1983 – Lebanon: Becharré 1966; Kadiska 1960; Cedars 1960 (Leiden, 4 females, 18 males) Morocco: Kenitra 1965 (SE); Kentitra 1990 (Schlaefle) – Portugal: Pampilhosa 1985; Monchique, Algarve 1967 (Leiden) - Romania: Brasov Zizin 1994 - Slovakia: Cajkov 1960; Kobyli 1965 - SPAIN: Soria 1989, Coca 1989,

Albalate 1989; Girona, Playa de Pols (Schlaefle); Sierra Nevada, Yegen 1988 (SE); Prov. Salamanca, Villar de Ciervo 1987 (SE); Prov. Salamanca, Villar de Yega, Vado de la Vina 1985 (SE;) Catalonia, Palamos (ZMB); Val de Ordesa 1923 (ZMB) – many records in coll. Leiden and Amsterdam - Switzerland: Siders 1886 (ZMB); Wallis: Euseigne 1990; Leuk 1992; Sierre 1954, (all Schlaefle) - Tadjikistan: Darvazskij chrebet, Tavildara 1990; Taskent, 40km vych. Circik 1981 - Turkey: Prov. Hakkari, Yüksekova 1988 (SE); Hakkari, town, 1988 (SE), Prov. Hakkari, Suvari-Halili-Pass, 2200m NN 1982 (SE); Konja, Eregli 1991; Göreme 1998 (SE), Van-Muradye 1988 (SE); Agri env.1993; NE-Turkey, Camardi 1991; 30km E Tatvan 1997, Gevas/Van Golü 1993; 20km W Van 1997 - Uzbekistan: Tashkent env. 41'54'N 70'20'E 1997; Aktass, Tashkent env. 1976, 70km NE Tashkent 1994.

Discussion of *Pseudoplisus kohlii* HANDLIRSCH 1988

Gorytes kohlii HANDLIRSCH 1888: 196, male and female. Syntypes Dalmatia (Vienna) – DE BEAUMONT 1953: revision; NEMKOV 1999, revision, removed from *Pseudoplisus* to *Gorytes*. – *Laevigorytes kohli (*HANDLIRSCH*):* ZAVADIL & ŠNOFLÁK 1948, created the subgenus *Laevigorytes*, which is a synomym of *Pseudoplisus*. – *Pseudoplisus kohlii* (HANDLIRSCH): BOHART & MENKE (1976): moved it from *Gorytes* to *Pseudoplisus* ASHMEAD 1899; BITSCH ET AL. 1997: 238: revision; TSCHUCH & BROTHERS (2000): striulatory organs.

R e m a r k : The species in not included into the key. It can easily be identified by the below mentioned charactes or by the keys of Bitsch et al. (1997) and others.

D i a g n o s i s : The species markedly differs from the Palearctic *Gorytes* by the prolonged (subpetiolate) tergite I and the smooth propodeal dorsum. The female has a completely smooth and shiny pygidial area with some scattered macropunctures. The distance between eyes and scapus and between both scapi is less than half diameter of an ocellus. Clypeus laterally, pronotal lobe and small spot on upper mesopleuron, large spots on propodeum laterally and tergite VI are completely yellow. The scutellum has only two small median spots. The flagellomeres are longer than in *Gorytes* species: Flagellomere I is 2,3x as long as apical width (distinctly shorter in *Gorytes*).

Main color pattern, distances of scapi and length of flagellomeres in male is similar as in female, clypeus and tergites IV to VII are all yellow. Flagellomeres I-VI (one specimen: also flagellomere VII) have reddish linear tyloids, which cover the whole length of the flagellomeres. The terminal tyloid is shorter than the other tyloids.

D i s c u s s i o n : HANDLIRSCH (1988) noticed that *P. kohlii* belongs in an isolated species group within the genus *Gorytes*. Later, ZAVADIL & ŠNOFLÁK (1948) established the monotypic subgenus *Laevigorytes* for the species, but BEAUMONT (1953) considered *Laevigorytes* as a synonym of *Gorytes*. In their generic revision of sphecid wasps, BOHART & MENKE (1976) placed *G. kohlii* in the genus *Pseudoplisus*. BITSCH et al. (1997) followed this opinion. Recently NEMKOV (1999) placed *kohlii* back in *Gorytes*. He argued that two important characters of *Pseudoplisus kohlii* and the closely related *Gorytes ishigakiensis* (TSUNEKI 1982), the smooth metapostnotum (= propodeal dorsum), and the subpetiolate gaster, are not suited for genus distinction because of their variablity. Also these characters occur in *Gorytes* as well.

I could observe an increase in striation of the propodeal dorsum from the West to the East in *kohlii*. The male of *kohlii* from Kazakhstan has some distinct lateral wrinkles on the propodeal dorsum, whereas the specimens from Greece and Turkey have a completely smooth surface. The increase of striation on the propodeal dorsum in eastern populations can also be observed in *Gorytes sulcifrons* and *G. quinquefasciatus*.

Nevertheless, in my opinion the problem is not solved by this reasoning, and I will not

follow NEMKOV (1999). TSCHUCH & BROTHERS (2000) observed striulatory organs in some species of *Pseudoplisus* including *kohlii,* whereas they are not mentioned for *Gorytes* s. str. BOHART (2000) gives a detailed character list for (neotropical) *Pseudoplisus* which has to be discussed for *kohlii* too. Also the divergent proportions of the flagellomeres have to be taken into account for a grouping of the mentioned species. Only a phylogenetic analysis, which bases on a full character analysis and members of both genera worldwide, will bring reliabe results.

D i s t r i b u t i o n : Southwest Europe and Syria to Central Asia.

R E C O R D S : Greece: female 5 July 1988 N-Korfu, Rohda (SE) – Turkey: male 4 July 1993 Silifke (SE); female Antalya (Amsterdam) – Kazakhstan: male 23 June 1995 Matai desert 78,6'N / 46'E.

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Zusammenfassung

Die westpaläarktischen Arten der Gattung *Gorytes* werden diskutiert und kurz beschrieben, ihre Verbreitung summarisch dargestellt und neue Funde aufgeführt. Ein Schlüssel für die Arten wird vorgestellt. *Gorytes schmidti* SCHMID-EGGER wird als neue Art aus der Türkei beschrieben. Die Tyloide auf den Flagellomeren der Männchen werden beschrieben und als Unterscheidungssmerkmale verwendet. Der taxonomische Status von *Pseudoplisus kohlii* HANDLIRSCH wird diskutiert.

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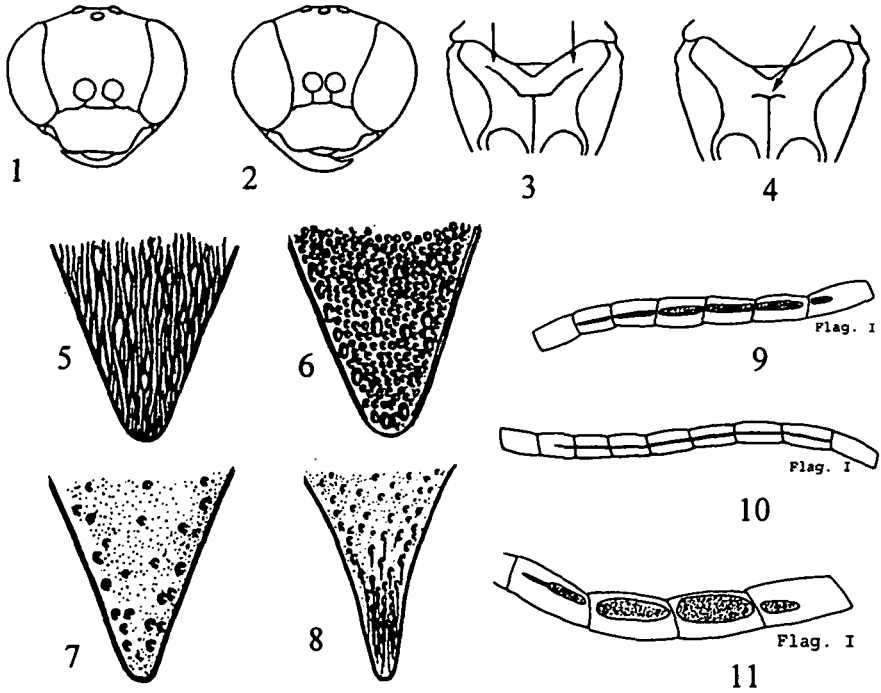
Address of the author: Dr. Christian SCHMID-EGGER
Flemingstr. 10, D-10557 Berlin, Germany
Email: c.schmid-egger@t-online.de



Figures: 1-11. **1** – *Gorytes laticinctus* female, head frontal; **2**. *G. quinquefasciatus* female, idem; **3** – *G. pleuripunctatus* female, mesosternum from below, mesosternal carina; **4** – *G. quinquecinctus* female, idem; **5** – 8 Female pygidial area: **5** – *G. quinquecinctus*; **6** – *G. hebraeus*; **7** – *G. quinquefasciatus*; **8** – *G. procrustes*; **9** – *G. quinquecinctus* male, flagellomeres I-VIII, tyloids; **10** – *G. quadrifasciatus* male, flagellomeres I-IX, tyloids. Figures 1-8 from DE BEAUMONT (1953).