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Cover illustration:

*Glaphyrus serratulae maroccanus* Chobaut (♂♂).

Photo R. Sehnal

## A contribution to knowledge of the genus *Glaphyrus* Latreille, 1807 (Coleoptera: Scarabaeoidea: Glaphyridae)

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**Abstract.** The genus *Glaphyrus* Latreille, 1807 is revised, based on study of type material, especially on three rediscovered types of Pic. New synonyms are presented. A key of all so far known species and new distributional data are added. The species spectrum is divided into two species groups basing on distribution in south Spain and north Africa - *G. maurus* - group and species known from Greece, eastern Europe and Asia - *G. oxypterus* - group. A check-list of all so far known species is added. Parameres of most species are figured.

**Key words.** Taxonomy, species groups, key, distribution, Coleoptera, Scarabaeoidea, Glaphyridae, *Glaphyrus*, Palearctic region.

### Introduction

The genus *Glaphyrus* Latreille, 1807 (type species *Scarabaeus maurus* Linné, 1758) has been revised by Champenois 1903, Reitter 1903, Medvedev 1960 and Baraud 1985 (African species only). All species had been separated into three subgenera as follows:

1. subgenus *Eoglyphyrus* Semenov, 1926 (type species: *Glaphyrus turkestanicus* Semenov, 1889), one Asian species differing by the epipleural sharp keel).
2. subgenus *Glaphyrus* Latreille, 1807 (type species: *Scarabaeus maurus* Linné, 1758), basic group of species.
3. subgenus *Hemiglyphyrus* Champenois, 1903 (type species: *Glaphyrus caucasicus* Kraatz, 1882), two species from Greece and from Armenia, Georgia and Turkey; differing by long male antennal club, almost as long as antennomeres 2 – 7 together.

New synonyms are: *G. purpureus* Pic 1947b = *G. micans* Faldermann 1835; *G. persicus* Pic 1947a = *G. caucasicus* Kraatz 1882; *G. incertus* Pic 1947b = *G. superbus* Champenois, 1898. Distribution is known from south Spain to whole northern Africa; from Greece and Eastern Europe to north-west China or to Iran, Afghanistan, Iraq and Jordan.

Note. Three species described by Schweiger in 1949 are not included in key of *Glaphyrus oxypterus* species group. The type material was not found up to now and original description is not sufficient.

*G. pubescens* – according to the author relates with *G. micans* Faldermann (elytra male and female without lateral teeth; dorsal surface with long yellow hairs), Mesopotania, Mosul, 14mm.

*G. ornatus* – relates with *G. micans* Faldermann (elytra male without lateral teeth, female with a small one; dorsal surface with short hairs; elytra female with strong and distinct intervals), Cilc. Taurus or., Asia Minor, 13-17mm.

*G. cinnaberinus* – relates with *G. superbus* (setation red cinnabar; elytral intervals partly distinct), Kermanschah, Persien, 17mm.

Type material, after original description, is in Schweiger collection.

#### Material and methods

Acronyms used in text:

MNHN Muséum national d'Histoire naturelle, Paris, France (Olivier Montreuil).

NHMW Naturhistorisches Museum, Wien, Austria (Heinrich Schönmann).

MNMS Museo Nacional de Ciencias Naturales, Madrid, Spain (Isabel Izquierdo).

#### Key of genus *Glaphyrus* Latreille, 1807 to two species groups

A. Species known from south Spain and north Africa ..... *G. maurus* - group

B. Species from Greece, east Europe and Asia ..... *G. oxypterus* - group

#### Key of *Glaphyrus maurus* species group - males

1. Elytra glabrous Algiers; Morocco; Tunisia ..... *G. maurus* (L.)
  - Elytra setose ..... 2
2. Elytra flat with regular short setae. N and E Morocco; Algiers; Tunisia; Spain (Sierra Nevada) ..... *G. serratulae serratulae* (Fabr.)
  - Setae of elytra longer and weakly striped. W and central Morocco ..... *G. serratulae maroccanus* Chob.
  - Setae of elytra long, denser and yellow-reddish. Elytra purplish-red with green lustre. S and central Morocco ... *G. serratulae villosipennis* Quedf.
  - Elytra striped without setae on distinct intervals ..... 3
3. Protibiae in basal half externally smooth ..... 4
  - Protibiae in basal half externally weakly serrated ..... 5
4. Posterior third of pronotum without punctures, except posterior angles. Morocco; ?Algiers ..... *G. panousei* Koch
  - Posterior pronotal third with two small smooth areas, but always punctate on base before scutellum. Libya; Egypt ..... *G. haroldi* Quedf.

5. Pronotum with short, sparse, irregular setae. Elytra with distinct green lustre, very shiny. Morocco and Algiers ... *G. opulentus opulentus* Bedel
  - Pronotum alike elytra wrinkled and dull. Green lustre feeble or wanting. Morocco, Ifrane; Algiers – Oran ..... *G. opulentus mesatlanticus* Kocher
  - Pronotum with dense and distinct setae ..... 6
6. Pronotal setation strong and short. Algiers; Morocco; Tunisia ..... *G. viridicollis* Luc.
  - Pronotal setation fine and long ..... 7
7. Anterior margin of clypeus with two dents. Metatibiae with two claws. Metarsal joints striolate. S Morocco ..... *G. reymondi* Koch.
  - Anterior margin of clypeus with three dents. Metatibiae with one claw. Metarsal joints smooth. Egypt ..... *G. olivieri* Cast.

#### Key of *Glaphyrus oxypterus* species group - males

1. Epipleuron weakly visible or missing ..... 2
  - Epipleuron visible, strongly keeled. Turkestan; Afghanistan ..... *G. turkestanicus* Sem.
2. Dorsal surface with black setae ..... 3
  - Dorsal surface with yellow or yellow-brown setae ..... 4
3. Head and pronotum covered by short and dense black setation. Body often with metallic lustre Transcaucasia; Iran; Syria ..... *G. festivus* Mén.
  - Only sides of pronotum with short setae. Without metal lustre. Iran ..... *G. luristanus* Reitt.
4. Pronotum black with blue lustre and yellow-brown setae. Armenia ..... *G. calvaster* Zaitz.
  - Pronotum different in colour with yellow or grey setae ..... 5
5. Antennal club longer than antennomeres 2 to 7. Greece ..... *G. modestus* Kiesw.
  - Club shorter than antennomeres from 2 to 7 ..... 6
6. Metatarsal ventral setae dark ..... 7
  - Metatarsal ventral setae yellow ..... 8
7. Legs yellow-brown without metallic colour or lustre. Metafemora weakly dilated. Iran; Iraq; ..... *G. onopordi* Reitt.
  - Legs with metallic colour or lustre. Metafemora strongly dilated. Posterior third of pronotum without punctures. S Turkey; Syria; Iraq; Palestina; Iran ..... *G. varians varians* Mén.
  - Legs alike. Dorsal surface of pronotum punctured except narrow basal strip. Turkey-Kirsehir prov. .... *G. varians turcicus* Mitt.

8. Pronotum with short setation, lateral pronotal margin bordered in posterior half. Protibiae in basal half externally weakly serrated ..... 9
- Pronotum with long setation, lateral pronotal margin bordered only near posterior angles. Protibiae in basal half externally weakly serrated or smooth ..... 12
9. Metafemora and metatibia metallic green-coppery, femora and tarsi partly black Syria; Palestina; Israel; Jordan ..... *G. aulicus* Chev.
- Legs at least partly reddish-brown, mostly with metal lustre ..... 10
10. Metafemora reddish-brown without metal lustre. Turkey; Syria; Israel; Palestina ..... *G. rothi* Har.
- Metafemora with metallic colour or lustre ..... 11
11. Dorsal surface of pronotum covered by dense, thick and quite long setae. Setae of elytra also dense, intervals almost invisible. Vertex purple-red. Iran ..... *G. laufferi* Reitt.
- Dorsal surface of pronotum with short and adpressed setation. Elytral intervals distinct. Vertex green or golden-green. E Turkey; Armenia; Azerbaijan; Iran; Iraq; Syria ..... *G. micans micans* Fald.
  - Setation and elytra as nominative form. Dorsal surface dark brazed-green, metatarsus darkened. Turkey-Sivas prov. .... *G. micans euphraticus* Mitt.
12. Metafemora distinctly widespread ..... 13
- Metafemora not distinctly widespread ..... 14
13. Dorsal surface green or golden-green. Elytral intervals wrinkled with unclear punctures. Israel; Palestina; Syria ..... *G. comosus* Har.
- Purple-green, elytra partly brown. Elytral intervals distinctly punctate. S Turkmenia; NE Iran ..... *G. superbus superbus* Cham.
  - Dorsal surface purple or with purple lustre. Armenia; Azerbaijan; E Turkey; NW Iran ..... *G. superbus straussi* Reitt.
14. Sutural angles of elytra dented. Turkestan; China; Turkey; Iran ..... *G. oxypterus* (Pall.)
- Sutural angles of elytra rounded ..... 15
15. Setation of pronotum and ventral side yellow, elytra without distinct intervals. Apical half of tibiae and tarsi yellow-brown. Iran ..... *G. muticus* Reitt.
- Setation of pronotum and ventral side white-grey, elytral intervals distinct. Tibiae reddish-brown with metallic lustre. Armenia; Georgia; Turkey ..... *G. caucasicus* Kr.

#### Type material examined:

*Glaphyrus equestris* Champenois 1898 : 248  
 Cotype (male) labelled : [Muséum Paris Egypte coll. Bosc 1828] [vittata Egypte ...] [Type] [Glaphyrus nov. spec.] [Glaphyrus equestris Champ.

Type] [Glaphyrus equestris Champ. Lectotype J. Baraud 1987] [Glaphyrus haroldi Qued. J. Baraud det. 1987] (deposited in MNHN).  
 Cotype (male) labelled : [Muséum Paris coll. Reiche in coll. Marseul 1890] [equestris Dej.] [Type] [Glaphyrus nov. spec.] [Glaphyrus equestris Champ. Type] [Glaphyrus haroldi Qued. = equestris Champ.] [Glaphyrus equestris Champ. Lectotype J. Baraud 1987] [Glaphyrus haroldi Qued. J. Baraud det. 1987] (deposited in MNHN).

*Glaphyrus haroldi* Quedenfeldt 1891: 131

Type (male) labelled : [Tripolis] [Haroldi Q. n. sp.] [ex Museo Quedenfeldt] [Bedel vidit 1895] [Type] [Muséum Paris ex coll. R. Oberthür] [Haroldi Quedfd. Tripolis Typ] (deposited in MNHN).

*Glaphyrus incertus* Pic, 1947b: 2

Holotype (female) labelled: [Persia] [varians ?] [Type] [v. incertus Pic] [Muséum Paris coll. M. Pic] [Type] (deposited in MNHN).

*Glaphyrus laufferi* Reitter, 1903: 130

Type (male) labelled : [Tombol. Baktiari] [Glaphyrus laufferi m. n. sp.] [MNCN Cat. Tipos n° 9585] [M.N.C.N Madrid] (deposited in MNMS).

*Glaphyrus muticus* Reitter, 1903: 135

Type (male) labelled : [Persia . Schiraz] [Jiots m 123] [TYPUS] [Oxypterus var. mutica Kolbe] [v. Muticus Persien Reitt.] (deposited in NHMW).

*Glaphyrus persicus* Pic, 1947a: 6

Holotype (female) labelled: [648] [Caucas. Staudinger] [persicus Kraatz] [Type] [persicus mihi] [Muséum Paris coll. M. Pic] [Type] (deposited in MNHN).

*Glaphyrus purpureus* Pic, 1947b: 2

Holotype (male) labelled: [Persia] [Type] [Muséum Paris coll. M. Pic] [purpureus n. sp.] [Type]" (deposited in MNHN).

*Glaphyrus reymondi* Kocher, 1957: 261

Cotype (female) labelled: [Vallée de l'Oued Guir de Gourrama] [Maroc 1-6-54 A. Reymond] (deposited in MNHN).

#### List of species

##### Genus *Glaphyrus* Latreille, 1807: 17

Type species *Scarabaeus maurus* Linné, 1758

Genus synonymy *Pachymerus* Faldermann, 1835: 282

Type species *Glaphyrus micans* Faldermann, 1835



**Subgenus *Eoglyphyrus* Semenov, 1926: 33**

Type species *Glaphyrus turkestanicus* Semenov, 1889

*G. (E.) turkestanicus* Semenov, 1889: 196

**Subgenus *Glaphyrus* Latreille, 1807: 17**

type species *Scarabaeus maurus* Linné, 1758

*G. (s str.) aulicus* Chevrolat, 1854: 478

syn. *G. syriacus* Harold, 1896: 437

*G. (s str.) calvaster* Zaitzev, 1923: 9

*G. (s str.) cinnaberinus* Schweiger, 1949: 115

*G. (s str.) comosus* Harold, 1869: 433

syn. *G. aulicus* Chevrolat, 1854: 479

*G. (s str.) festivus* Ménétriés, 1836: 150

*G. (s str.) haroldi* Quedenfeld, 1891: 131

syn. *G. equestris* Champenois, 1898: 248

*G. (s str.) laufferi* Reitter, 1903: 130

*G. (s str.) luristanus* Reitter, 1903: 128

*G. (s str.) maurus* (Linnaeus, 1758): 348

syn. *G. cardui* Fabricius, 1787: 21

*G. (s str.) micans micans* Faldermann, 1835: 282

**syn. nov.** *G. purpureus* Pic, 1947b: 2

*G. (s str.) micans euphraticus* Mitter, 1990: 111

*G. (s str.) muticus* Reitter, 1903: 135

*G. (s str.) olivieri* Castelnau, 1840: 153

syn. *G. fulgidus* Burmeister, 1844: 14

*G. (s str.) onopordi* Reitter, 1903: 13

*G. (s str.) opulentus opulentus* Bedel, 1884: 249

syn. *G. viridicollis* Harold, 1869: 440

*G. (s str.) opulentus mesatlanticus* Kocher, 1953: 74

*G. (s str.) ornatus* Schweiger, 1949: 114

*G. (s str.) oxypterus* (Pallas, 1771): 462

syn. *G. acuminatus* Lepechin, 1774: 313

syn. *G. uralensis* Gmelin, 1788: 1557

syn. *G. vittatus* Herbst, 1790: 143

*G. (s str.) panousei* Kocher, 1957: 259

*G. (s str.) pubescens* Schweiger, 1949: 114

*G. (s str.) reymondi* Kocher, 1957: 259

*G. (s str.) rothi* Harold, 1869: 441

*G. (s str.) serratulae serratulae* (Fabricius, 1792): 168

syn. *G. maura* Olivier, 1789: 38 [HN]

*G. (s str.) serratulae maroccanus* Chobaut, 1923: 20

*G. (s str.) serratulae villosipennis* Quedenfeld, 1887: 322

*G. (s str.) superbus superbus* Champenois, 1898: 247

**syn. nov.** *G. incertus* Pic, 1947b: 2

*G. (s str.) superbus straussi* Reitter, 1903: 134

*G. (s str.) varians varians* Ménétriés, 1836: 150

syn. *G. globulicollis* Ménétriés, 1836: 150

syn. *G. sequensi* Reitter, 1903: 131

syn. *G. varians rufipennis* Gory, 1844: 8

syn. *G. varians variabilis* Reitter, 1903: 131

*G. (s str.) varians turcicus* Mitter, 1990: 108

*G. (s str.) viridicollis* Lucas, 1847: 297

syn. *G. pulchellus* Lucas, 1855: 290

**Subgenus *Hemiglyphyrus* Champenois, 1903: 145**

Type species *Glaphyrus caucasicus* Kraatz, 1882

*G. (H.) caucasicus* Kraatz, 1882: 312

syn. *G. globulicollis* Ménétriés, 1838: 30

**syn. nov.** *G. persicus* Pic, 1947a: 6

*G. (H.) modestus* Kiesenwetter, 1858: 235

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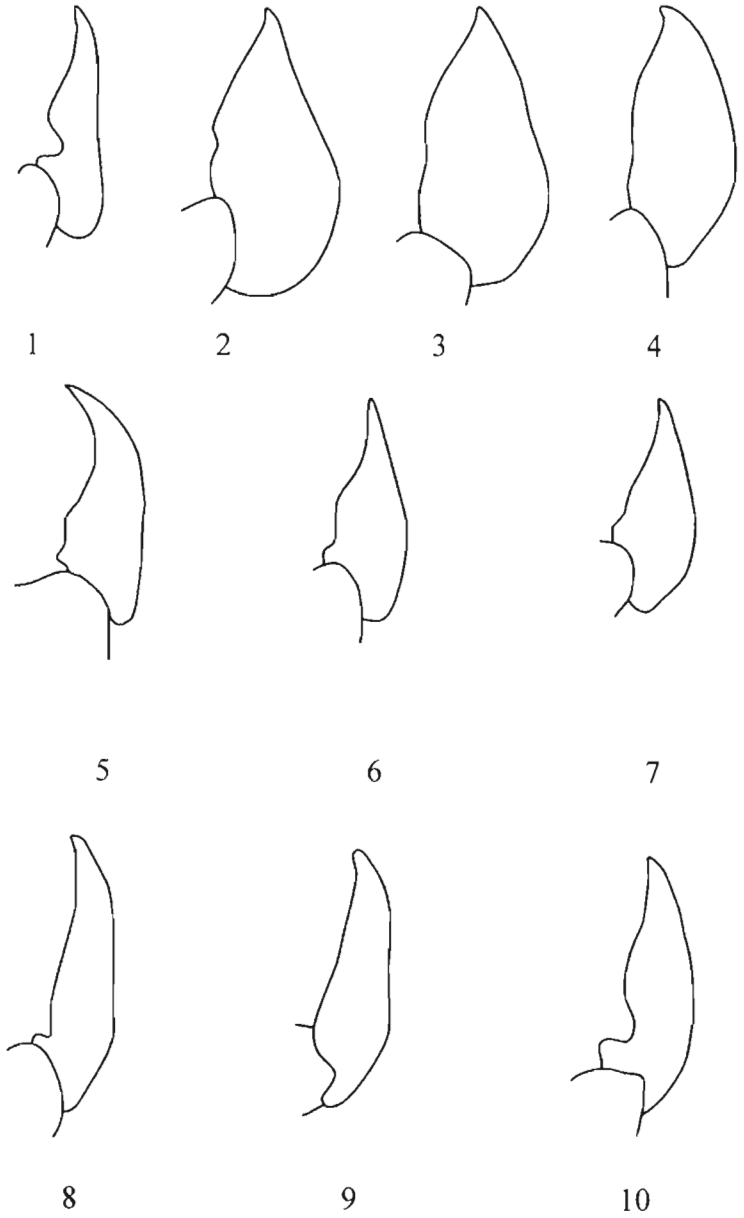
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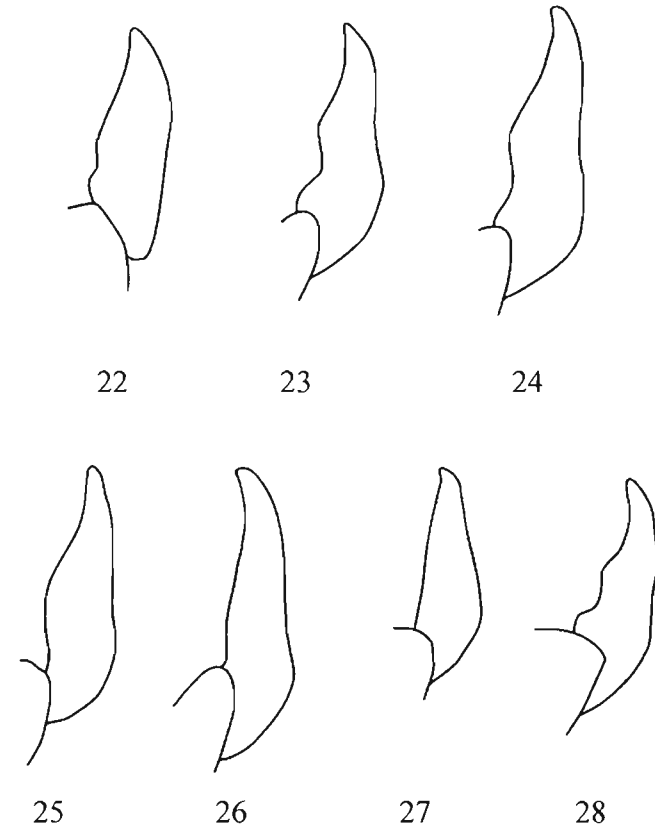
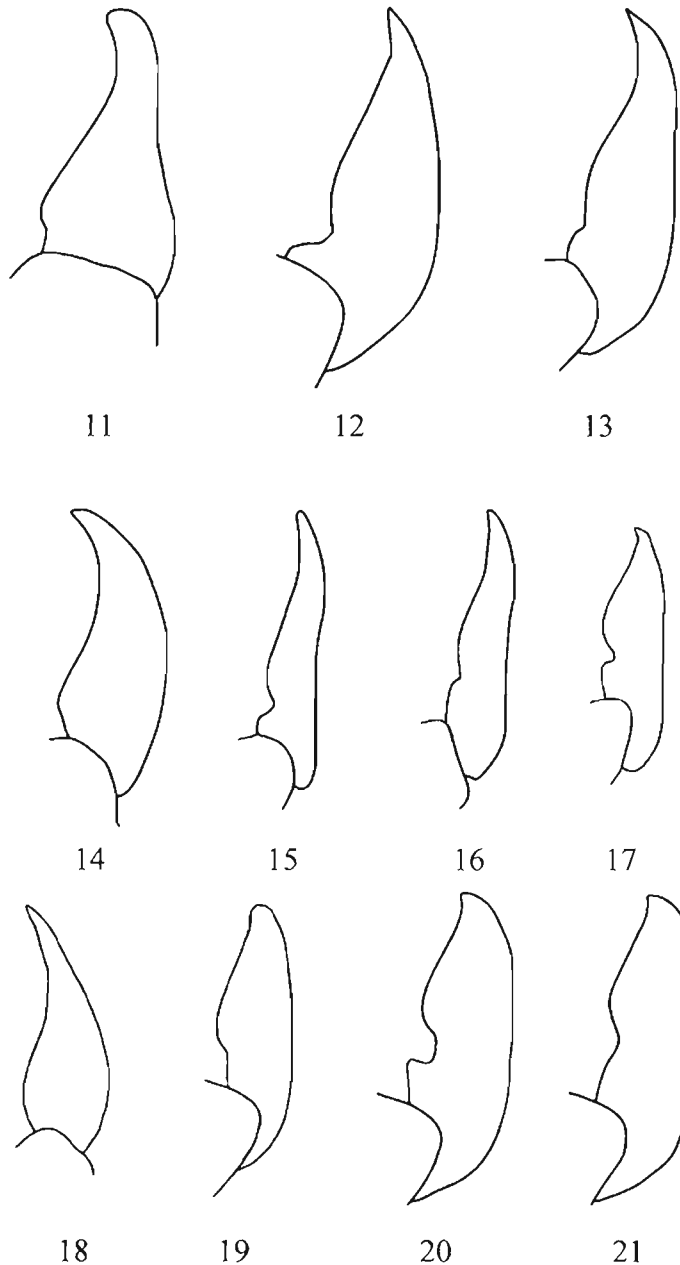
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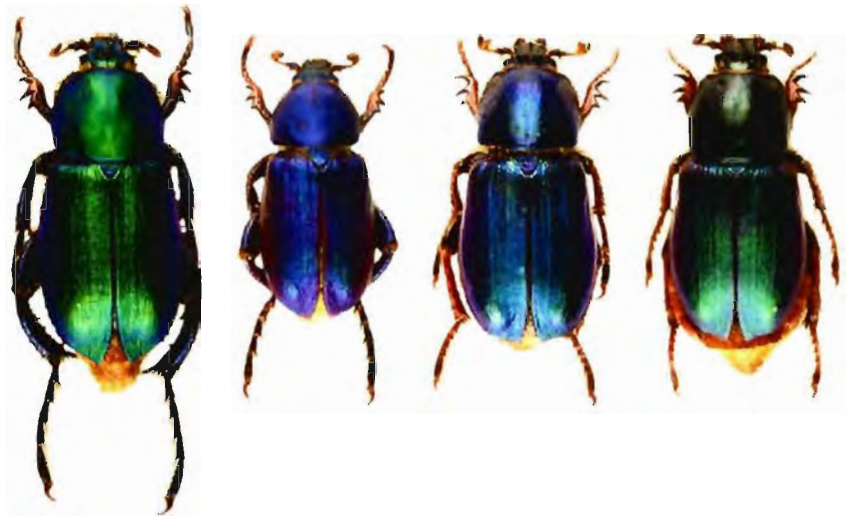
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**Figs. 1 - 28. Right paramere, lateral view.**

1. *Glaphyrus maurus* (L.), 2. *G. serratulae serratulae* (F.), 3. *G. serratulae maroccanus* Chob., 4. *G. serratulae villosipennis* Quedf., 5. *G. haroldi* Quedf. HT, 6. *G. opulentus opulentus* Bedel, 7. *G. opulentus mesatlanticus* Kocher, 8. *G. viridicollis* Luc., 9. *G. reymondi* Koch., 10. *G. olivieri* Cast., 11. *G. turkestanicus* Sem., 12. *G. festivus* Mén., 13. *G. luristanus* Reitt., 14. *G. onopordi* Reitt., 15. *G. varians varians* Mén., 16. *G. varians turcicus* Mitt., 17. *G. aulicus* Chevr., 18. *G. rothi* Har., 19. *G. laufferi* Reitt. HT, 20. *G. micans micans* Fald., 21. *G. micans euphraticus* Mitt., 22. *G. comosus* Har., 23. *G. superbus superbus* Cham., 24. *G. superbus straussi* Reitt., 25. *G. oxypterus* (Pall.), 26. *G. muticus* Reitt. HT, 27. *G. caucasicus* Kr., 28. *G. modestus* Kiesw.



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**Figs. 29 - 86. Habitus, dorsal aspect.**

29.-32. *Glaphyrus maurus* (L.) ♂♂♀♀, 33.-36. *G. serratulae serratulae* (F.) ♂♂♀♀, 37.-40. *G. serratulae maroccanus* Chob. ♂♂♀♀, 41.-42. *G. serratulae villosipennis* Quedf. ♂♀, 43.-44. *G. viridicollis* Luc. ♂♀, 45.-46. *G. opulentus opulentus* Bedel ♂♀, 47.-48. *G. opulentus mesatlanticus* Kocher ♂♀, 49. *G. olivieri* Cast. ♂, 50. *G. reymondi* Koch. ♀, 51. *G. panousei* Koch. ♀, 52.-53. *G. turkestanicus* Sem. ♂♀, 54.-57. *G. festivus* Mén. ♂♂♀♀, 58.-59. *G. luristanus* Reitt. ♂♀, 60. *G. calvaster* Zaitz. ♀, 61.-63. *G. varians varians* Mén. ♂♀♀, 64.-65. *G. varians turcicus* Mitt. ♂♀, 66.-67. *G. onopordi* Reitt. ♂♀, 68.-69. *G. aulicus* Chevr. ♂♀, 70. *G. rothi* Har. ♂, 71. *G. laufferi* Reitt. ♂, 72.-74. *G. micans micans* Fald. ♂♂♀♀, 75. *G. comosus* Har. ♂, 76.-77. *G. superbus superbus* Cham. ♂♀, 78.-79. *G. superbus straussi* Reitt. ♂♀, 80.-81. *G. oxypterus* (Pall.) ♂♀, 82. *G. muticus* Reitt. HT ♂, 83.-84. *G. caucasicus* Kr. ♂♀, 85.-86. *G. modestus* Kiesw. ♂♀.

## New species of the genus *Amphicoma* from China (Coleoptera: Scarabaeoidea: Glaphyridae)

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**Abstract.** *Amphicoma magdalena* from China (Henan Province) is described, figured and compared with related species.

**Key words:** New species, Coleoptera, Scarabaeoidea, Glaphyridae, *Amphicoma*, Palearctic region.

### Introduction

Genus *Amphicoma* Latreille 1807 is closely described and published in this periodical in 2005. *A. magdalena* is another expected new species considering to lack of Chinese material. As far as my division is situated in *A. abdominalis* species group close to *A. tesari* (Endrödi 1952), *A. emeia* Nikodým 2005 and *A. businskyi* Nikodým 2005.

### Material and methods

The presently described species is provided with red printed labels: "*Amphicoma magdalena* sp.n., HOLOTYPUS or PARATYPUS; Milan Nikodým 2007". Exact label data are cited in original description.

Acronym used in text: MNCP – Milan Nikodým collection, Roztoky u Prahy, Czech Republic.

### *Amphicoma magdalena* sp. n.

(Figs. 1 - 5)

**Type material.** Holotype male and 13 paratypes (12 males, 1 female) are labelled: White label "CHINA; W Henan; 6.-7.VII.; Funiu Shan; 33°31'N 111°56'E; BAOTIANMAN; 1500 – 1750m; Jaroslav Turna leg.; 2006 (MNCP).