

## Revisional notes on *Galeruca* 2 (Coleoptera, Chrysomelidae)

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**Abstract:** Information concerning several species of the genus *Galeruca* GEOFFROY is presented. It is argued that *Galeruca malakkana* MOHAMEDSAID is a junior synonym of *Eupachytoma gigantea* (ILLIGER). *Galeruca parallelipennis* n. sp. is described. The synonymization of *Galeruca sequensi* REITTER with *Galeruca circumdata* DUFTSCHMID is reaffirmed. The spelling of *Galeruca dahlui* (JOANNIS) is fixed.

**Key words:** Coleoptera, Chrysomelidae, Galerucinae, *Galeruca*, *Eupachytoma*, lectotype designation, new synonymy, new species.

### Introduction

Species of the genus *Galeruca* GEOFFROY, 1762 occur in the palearctic and nearctic region. The range of some species is extended to the northern parts of the oriental region. It was interesting that recently a new species, *Galeruca malakkana*, has been presented from Malaysia. Far more South in the oriental region than any known *Galeruca* species. Results of the study of type specimens of this species are presented.

Study of specimens from China revealed a new species from Tibet. The new species is presented. Study of the status of some species in the *Galeruca interrupta*-group made the study of the types of *Galeruca sequensi* necessary. The study of the types affirmed a historical synonymization.

The name of *Galeruca dahlui* needed fixation because ongoing different citations.

The following abbreviation for collections will be used:

HNHM Hungarian Natural History Museum, Budapest, Hungary

RBCN Ron Beenen Collection, Nieuwegein, The Netherlands

RMNH Nationaal Natuurhistorisch Museum, Leiden, The Netherlands

UKM Centre for Insect Systematics, Universiti Kebangsaan Malaysia, Bangi, Malaysia

*Galeruca malakkana* MOHAMEDSAID, 1998

*Galeruca malakkana* MOHAMEDSAID, 1998: 101

The description of this species was based on three specimens from the collection of the Nationaal Natuurhistorisch Museum (Leiden; RMNH). The holotype and one of the paratypes are curated in RMNH, the other paratype is curated in the collection of the Universiti Kebangsaan Malaysia (Bangi, UKM). All three specimens bear labels „Malakka, v.d. DOES DE BOYE”, indicating that these specimens have been collected in Malaysia.

Recent study of the holotype and paratype from the Nationaal Natuurhistorisch Museum clearly revealed these specimens to belong to the African genus *Eupachytoma* LABOISSIÈRE. In *Eupachytoma* two distinct groups can be recognised. Males of the first group bear bristles on the antennae with curved apices. Males of the other group have normal bristles. The holotype of *Galeruca malakkana* belongs to the first group. One species in this group, *Eupachytoma gigantea* (ILLIGER), is easily recognised by the shape of the aedeagus (fig. 1). The very typical shape of the apex of the aedeagus is clearly visible in the holotype and also depicted by MOHAMEDSAID (1998: fig. 4). Other morphological characters confirm the specimens of *Galeruca malakkana* to belong to *Eupachytoma gigantea*. Therefore *Galeruca malakkana* is to be regarded a junior synonym of *Eupachytoma gigantea*.

The labels indicating that these specimens were collected in „Malakka” most probably give a false indication. We can only guess what the real collecting locality has been. *Eupachytoma gigantea* is an African species occurring in central parts of the African continent. I have seen specimens from Ghana, Togo, Republic Congo, Rwanda, Uganda and Burundi. If the indi-

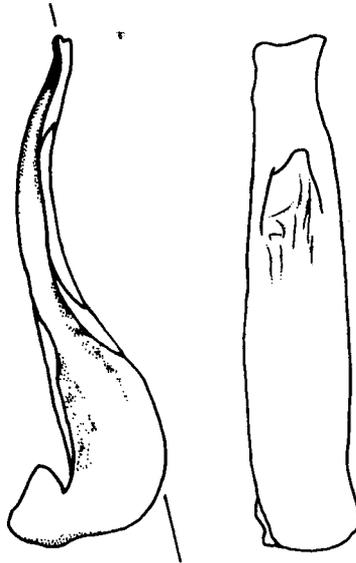


Fig. 1: *Eupachytoma gigantea*: aedeagus, left lateral view (a); aedeagus, dorsal view (b). Specimen from collection of the Musée Royal de l'Afrique Centrale, Tervuren, collected in Ruwenzori.

cation "Malakka" is a degeneration of "Malakal" these specimens have been collected in the South of Sudan.

The name on the label "V. D. DOES DE BOYE" did not give any clue to the real collecting locality. However, OVERMEER & DUFFELS (1967) mention cicad-specimens labelled "Malaya (VAN DER DOES DE BIJE)" of which it is not probable (but not impossible) that they have been collected in Malaysia (pers. comm. DUFFELS, 2000). It indicates that it is possible that failures have been made during the relabelling of specimens from the collection of VAN DER DOES DE BOYE (OR VAN DER DOES DE BIJE).

### *Galeruca parallelipennis* n. sp.

#### Types

##### Holotype (RBNC):

CHINA, Qinghai, C Tibet, Tangula Shan, Geladandong-Gletscher, Basecamp 5240 m., hochalp. init. Kobr. pygmaea-Rasen, unter Steinen, 21.8.1989, leg. DICKORÉ / TYPE, *G. parallelipennis*, R. BEENEN det 2001.

##### Paratype (RBNC):

CHINA, Qinghai, C Tibet, Tangula Shan, Geladandong-Gletscher, Basecamp 5240 m., hochalp. init. Kobr. pygmaea-Rasen, unter Steinen, 21.8.1989, leg. DICKORÉ / PARATYPE, *G. parallelipennis*, R. BEENEN det 2001.

#### Description of the holotype

Male. Length: 5.75 mm (total); 5.55 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 2.95 mm. Long winged (macropter). General colour black; slightly greasy shining. Oblong; elytra flattened and almost parallel; without costae. Covering the abdomen completely. Habitus as in figure 2.

Head: maximal width of head across the eyes: 1.35 mm. Vertex strongly punctate. Length of hairs a bit longer than the diameter of the punctures they stand in. Vertex with a fine and regular median longitudinal impressions. Frontal tubercles well defined; punctate in posterior part. Antennal segments 1 to 6 shiny; dorsal part of segment 7 pubescent especially in apical, produced part; segments 8 and 9 with dorsal part dull due to pubescence, ventral part shining; segments 10 and 11 completely dull due to pubescence. The right antenna is separated and glued to the same card as the beetle. Labrum with eight large bristles. Apical margin not marginate. Maxillary palps with apical segment cone shaped.

Pronotum: maximal width: 1.90 mm (in middle). Maximal length in the middle: 0.90 mm. Front border slightly arched. Front corners rounded. Front angles not depressed. Lateral borders rounded from front corners to the middle, from middle to base almost parallel. Base of pronotum bilobed. Margin of lateral borders small; near front angles a bit wider. Margin of lateral borders extending to the outer parts of the base. Upper surface almost



Fig. 2: *Galeruca parallelepennis* n. sp.: habitus of holotype, dorsal view.

even; shallow depressions near anterior corners and at both sides on the disc. Punctures less strong, evenly spread. No hairs on the pronotum. Surface of the pronotum black, shining.

Scutellum: broadly rounded. Evenly punctate with punctures approximately half the diameter of the punctures on the pronotum. Black, shining.

Elytra: almost parallel. Flattened expansion of elytral margin narrow: near humerus widened, behind humerus becoming very narrow. Elytra without costae. Evenly punctate. Punctures large. Between punctures finely wrinkled giving the elytra a greasy shine. With very small bristles emerging from the punctures (visible when from side-view). Punctures at apical part of elytron less impressed than at base of elytron; near apex disappearing. Elytral epipleura even, shining and brown; wide at base, parallel until half of the metasternum, consequently gradually narrowing to almost disappearing at anal sternite.

Underside: male genital groove in last abdominal sternite distinct. Legs black. Claws pseudobifid (inner lobe of claw much smaller than outer lobe).

Aedeagus: figure 3.

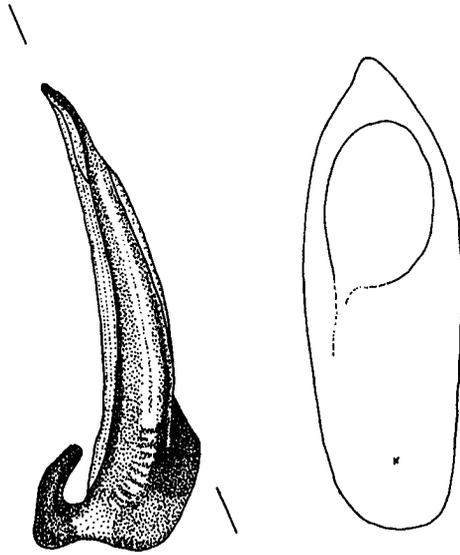


Fig. 3: *Galeruca parallelepennis* n. sp.: aedeagus of holotype, left lateral view (a); dorsal view (b).

Paratype: Female. Length: 7.00 mm (total); 6.60 mm (from the anterior border of the eyes to the tip of the elytra). Greatest width across both elytra: 3.90 mm. Long winged (macropter). General colour black; slightly greasy shining. Oblong; elytra flattened and almost parallel; without costae. Covering the abdomen almost completely; the apical part of the last visible tergite uncovered.

The paratype is very similar to the type except for the dimensions and sex. A genital groove is absent, the tarsi of the front legs are narrow and the antennae lack the shining parts. The head and pronotum show larger punctures and are dull.

The paratype shows large holes in both elytra and lacks large parts of the abdominal contents, most probably due to former dermestid feeding.

#### Diagnosis

This species is the only black species in the subgenus *Galeruca* that lacks costae and has flattened and almost parallel elytra.

#### Etymology

The new species name is based on the parallel appearance of the elytra.

*Galeruca sequensi* REITTER, 1903*Galeruca Sequensi* REITTER, 1903: 138*Galeruca interrupta circumdata*, GRESSIT & KIMOTO, 1963: 401

REITTER published in 1903 a key for the genus *Galeruca*. He included only species of which he had seen specimens. In this key he also presented some new species. One of these is *Galeruca sequensi* from "Ostsiberien: Quellgebiet des Irkut; Mongolei".

The collection of REITTER preserved in the Hungarian Natural History Museum (Budapest, HNHM) contains 6 specimens of *Galeruca sequensi* apparently labelled by REITTER. One specimen from this series is labelled as holotype; five others as paratypes and a single one not having any indication of type-status. The labels of holotype and paratypes were tagged later (Otto MERKL in litt, November 1997). However the specimens from this series have to be regarded as syntypes. REITTER did not make any difference between the specimens in his original description. I hereby fix the lectotype and paralectotypes.

## Types

Lectotype (HNHM, present designation):

"Quell. d. Irbut REITTER. / handwritten label, not recognizable / Coll. REITTER / Holotypus 1903 *Galeruca Sequensi* REITTER / *Galeruca sequensi* REITTER, 1903: 138, Lectotype design. R. BEENEN 1999", male specimen.

Paralectotypes (HNHM, present designation):

"Quell. d. Irbut Reitter. / Coll. REITTER / Paratypus 1903 *Galeruca Sequensi* REITTER / *Galeruca sequensi* REITTER, 1903: 138, Paralectotype design. R. BEENEN 1999" 1 male specimen;

"Quell. d. Irbut REITTER. / Coll. REITTER / *Galeruca sequensi* REITT. det HAVELKA, 1957 / *Galeruca sequensi* REITTER, 1903: 138, Paralectotype design. R. BEENEN 1999" 1 female specimen;

Transbaikalien, Leeder, REITTER / handwritten label, not recognizable / Coll. REITTER / Paratypus 1903 *Galeruca Sequensi* REITTER / *Galeruca sequensi* REITTER, 1903: 138, Paralectotype design. R. BEENEN 1999" 1 female specimen;

"Baikal / *Galeruca Sequensi* m. / Coll. REITTER / Paratypus 1903 *Galeruca Sequensi* REITTER / *Galeruca sequensi* REITTER, 1903: 138, Paralectotype design. R. BEENEN 1999" 1 male specimen;

Baikal Coll. REITTER / Paratypus 1903 *Galeruca Sequensi* REITTER / *Galeruca sequensi* REITTER, 1903: 138, Paralectotype design. R. BEENEN 1999", 2 female specimens.

## Diagnosis

This taxon is very similar to *Galeruca circumdata* DUFTSCHMID and must be regarded as a local form: *G. circumdata* var. *sequensi*. It has already been listed in the synonymy of this species by GRESSIT & KIMOTO (1963). These authors seem to be unsure about the place where the types

are preserved; they indicate Vienna with a question-mark (? Wien). Therefor I assume that their conclusion is not based on the study of the types. The present study, however, affirm the suggested synonymization. It is interesting that *G. circumdata* var. *sequensi* shows similarities to a variety from North-western Europe: *G. circumdata* var. *oelandica* (BOHEMAN).

### *Galeruca dablui* (JOANNIS, 1865)

*Adimonia Dablui* JOANNIS 1865: 36

*Adimonia Dablui* HEYDEN, 1867: 382

*Adimonia Dablui* KRAATZ, 1873: 199

*Galeruca Dablui* WEISE, 1886: 657

*Galeruca Dablui* REITTER, 1903: 137

*Galeruca Dablui* LABOISSIÈRE, 1934: 50

*Galeruca dablui* OGLOBLIN, 1936: 50

*Galeruca dablui* WILCOX, 1971: 118

De JOANNIS (1865) used two different spellings for *Galeruca dablui*. In the formal description (page 36) the species name was spelled as *Adimonia Dablui*. In the same work the name was spelled *A. dablui* in the key (page 14) and in the index (page 165). The International Code of Zoological Nomenclature (INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE, 1999) provides in such a case: the first author to have cited both names and to have selected one spelling as correct, fixes this spelling as the correct original spelling. Up till now no such deliberate fixation has been made.

The first publication in which *Galeruca dablui* was referred to was the article by HEYDEN (1867). HEYDEN spelled it as *Adimonia Dablui*. Subsequently KRAATZ (1873) also used the spelling *Adimonia Dablui*. Therefor and for reason of the original spelling in combination with the formal description I choose this spelling for fixation. The spelling *Adimonia dablui* JOANNIS, 1865 is to be used as the correct original spelling.

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### References

- GRESSIT, J. L. & S. KIMOTO. (1963): The Chrysomelidae (Coleopt.) of China and Korea. Part 2. - Pacific Insects Monograph 1B: 301-1026.

- HEYDEN, L. von. (1867): Über deutsche Käfer. Erstes Stück. - Berl. Ent. Z. 11: 376-383.
- INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE. (1999): International Code of Zoological Nomenclature. Fourth Edition. International Trust for Zoological Nomenclature, London. pp I-XXIX, 1-306.
- JOANNIS, M. L. de. (1865): Gallerucides, tribu de la famille des Phytophages, ou Chrysomélines. - Abeille 3: 1-168.
- KRAATZ, G. (1873): Ueber *Adimonia fontinalis* Boh. Thomson. - Berl. Ent. Z. 17: 198-199.
- LABOISIÈRE, V. (1934): Galerucinae de la faune Française. - Ann. Soc. ent. France 103: 1-108.
- MOHAMEDSAID, M. S. (1998): *Galeruca malakkana* spec. nov. from Malaysia. - Zool. Med. Leiden 72: 101-104.
- OGLOBLIN, D. A. (1936): Chrysomelidae, Galerucinae. - Faune de l'URSS, Coleoptera 26: i-xiv, 1-455.
- OVERMEER, W. P. J. & J. P. DUFFELS. (1967): A revisionary study of the genus *Dundubia* Amyot & Serville (Homoptera, Cicadidae). - Beaufortia 14: 29-59.
- REITTER, E. (1903): Uebersicht der mir bekannten Coleopteren-Arten der Gattung *Galeruca* Geoffr. - Wiener Entomologischer Zeitung 22: 133-139.
- WEISE, J. (1886): Chrysomelidae. In: Naturgeschichte der Insekten Deutschlands (W. F. Erichson ed.) 6(4): 567-663. - Stricker, Berlin.
- WILCOX, J. A. (1971-1975): Chrysomelidae: Galerucinae. - Coleopterorum Catalogus Supplementum, pars 78: 1-770.

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