

A contribution to *Pararhabdotis* Kraatz, 1899 and *Ruteraetia* Krikken, 1980, with description of new subgenus and new species (Coleoptera: Scarabaeoidea: Cetoniinae: Cetoniini)

Stanislav JÁKL

Geologická 1218/2c, CZ-152 00, Praha 5, Czech Republic
email: stanley.jakl@seznam.cz

Taxonomy, new subgenus, new species, new records, Coleoptera, Scarabaeidae, Cetoniinae, Cetoniini, *Protaetia*, *Pararhabdotis*, *Ruteraetia*, *Legrandia*, Oriental Region

Abstract. Diagnosis of the genus *Pararhabdotis* Kraatz, 1899 and *Ruteraetia* Krikken, 1980 is given. *Ruteraetia* Krikken, 1980 is raised from synonymy with *Pararhabdotis* Kraatz and recognised as a valid genus in the tribe Cetoniini. New species and new subgenus of *Ruteraetia* from continental Malaysia, similar with both mentioned genera is described and named *Ruteraetia* (*Legrandia* subgen. nov.) *pahangensis* sp. nov. Taxonomical key between all three higher taxa and its representatives is provided and new records for species belonging here are given.

INTRODUCTION

Pararhabdotis was described by Kraatz in 1899 as a genus. Currently it is recognised as a genus in tribe Cetoniini with three known species, *Pararhabdotis setigera* Schoch, 1898 *Pararhabdotis siberutensis* Jákl & Krajčák, 2006 and *Pararhabdotis tubericeps* Krikken, 1980. The latter one was originally described as *Ruteraetia tubericeps* by Krikken (1980), but synonymised with *Pararhabdotis* Kraatz by Legrand & Chew Kea Foo (2010).

Recently I had a chance to study interesting cetoniine male specimen from Pahang in continental Malaysia, which is similar with *Pararhabdotis tubericeps* Krikken. The insect very much resembles the Krikken's species, but the structure of aedeagus is quite different. After its examination, other external, morphological characters were also found. A comparative study of all representatives of *Pararhabdotis* Kraatz revealed that *Ruteraetia* Krikken should be recognised as a distinct genus, differing significantly from *Pararhabdotis* Kraatz. For the new insect occurring in Pahang I propose to establish new subgenus of *Ruteraetia*, which is described in taxonomical part of the article.

MATERIAL AND METHODS

The following codens of institutional and private collections are used in text:
BMHN British Museum Natural History, London, England;
MKCP Milan Krajčák, private collection, Plzeň, Czech Republic;
MNHN Muséum National d'Histoire Naturelle, Paris, France;
RMNH Rijksmuseum van Natuurlijke Historie, Leiden, Netherland;

SJCP Stanislav Ják, private collection, Praha, Czech Republic;
SMFD Forschungsinstitut und Naturmuseum Senc-kenberg, Frankfurt-am-Main,
Germany.

The specimen of the newly described species is provided with red printed label for HOLOTYPUS. Label data are cited for the material examined, individual labels are indicated by a double slash (//), individual lines by a single slash (/).

TAXONOMY

Genus *Pararhabdotis* Kraatz, 1899

Pararhabdotis Kraatz, 1899: 123 (original description); Schenkling, 1921: 262 (catalogue); Mikšič, 1979: 222 (in key); 1982: 14 (in key), 1982: 129 (in monograph); Sakai & Nagai, 1998: 253 (iconography); Krajčák, 1998: 35 (catalogue); Legrand & Chew Kea Foo, 2010: 36 (Cetoniidae of Sabah).

Ruteraetia Krikken, 1980: Legrand & Chew Kea Foo, 2010: 36 (= *Pararhabdotis* Kraatz).

Type species *Pararhabdotis spinigera* Kraatz, 1899 = *Pararhabdotis setigera* Schoch, 1898.

Pararhabdotis setigera Schoch, 1898

(Figs. 1-5)

Pararhabdotis setigera Schoch, 1898: 72 (original description); Schenkling, 1921: 262 (catalogue); Mikšič, 1982: 130, figs. 20A-20B (monograph); Sakai & Nagai, 1998: 253, figs. 792-1 (male, Sumatra), 792-2 (female, Cameron Highlands); Krajčák, 1998: 35 (catalogue); Legrand Chew Kea Foo, 2010: 36, fig. 53 (parameres), photo 88 (male), 89 (female).

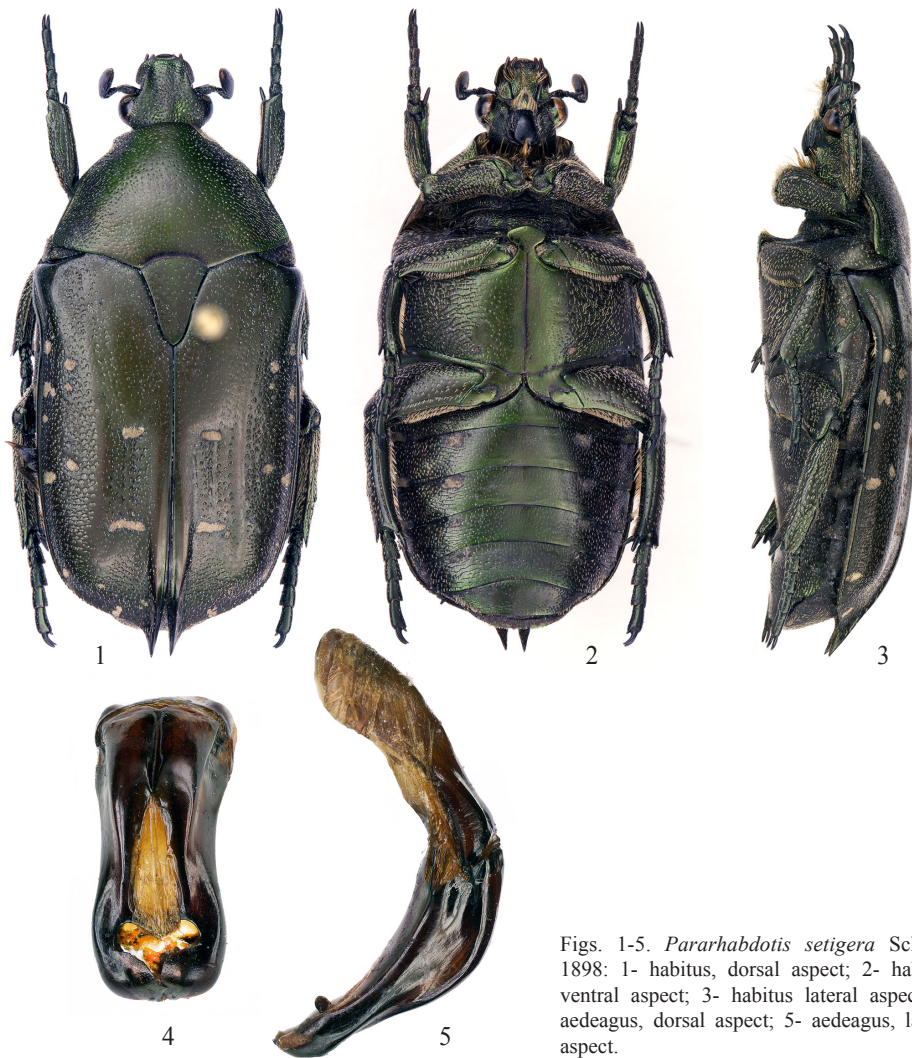
Protoetia spinigera Kraatz, 1899: 124 (original description); Schenkling, 1921: 264 (catalogue); Mikšič, 1979: 236 (= *Pararhabdotis setigera* Schoch, 1898); Type locality - Insula Nias (= Nias Island, Indonesia); Type material - Holotype in DEIC.

Type locality. Insel Nias“ (= Nias Island, Indonesia).

Type material. Holotype in SMFD.

Material examined: 8 ♂♂ (SJCP) labelled: Indonesia, West Sumatra/ HARAU VALLEY, 500-800m/ cca 20 km N of Payakumbuh/ 6. 2005, St. Jakl lgt; 2 ♂♂ (SJCP) labelled: Indonesia, West Sumatra/ HARAU valley, 5. 2006/ 20 km N of Payakumbuh/ St. Jakl lgt, 400-600m; 1 ♂ (SJCP) labelled: Indonesia/ W. Sumatra prov./ Mt. Kerinci, 8. 95/ native collectors; 1 ♂ (SJCP) labelled: Indonesia, West Sumatra/ MT. TALANG, 1200-1600m/ SOLOK AREA, 6. 2003/ St. Jakl lgt; 2 ♀♀ (SJCP) labelled: Indonesia, West Sumatra/ HARAU valley, 400-600m/ 20 km N of Payakumbuh/ St. Jakl lgt, 5. 2007; 1 ♀ (SJCP) labelled: W. SUMATRA/ Mt. Singgalang/ 6.1995 (all handwritten); 1 ♂ (SJCP) labelled: Indonesia, S Kalimantan/ MERATUS MTS., 5.2005/ S slopes of MT. Besar/ 400m, local collectors lgt; 5 ♂♂, 2 ♀♀ (SJCP) labelled: INDONESIA, V. 2017/ SW Kalimantan 1000-/ 1500m, MT. BAWANG/ Madi vill. env., local collector leg.; 1 ♂ (SJCP) labelled: Kumpulan/ Mt. Muan Chone/ nr. Ranong/ S. THAILAND/ MAR. 2001.

Distribution. INDONESIA: Kalimantan (new record), Sumatra and Nias Islands; MALAYSIA: Borneo and Malaysian Peninsula; South Thailand (new record).



Figs. 1-5. *Pararhabdotis setigera* Schoch, 1898: 1- habitus, dorsal aspect; 2- habitus, ventral aspect; 3- habitus lateral aspect; 4- aedeagus, dorsal aspect; 5- aedeagus, lateral aspect.

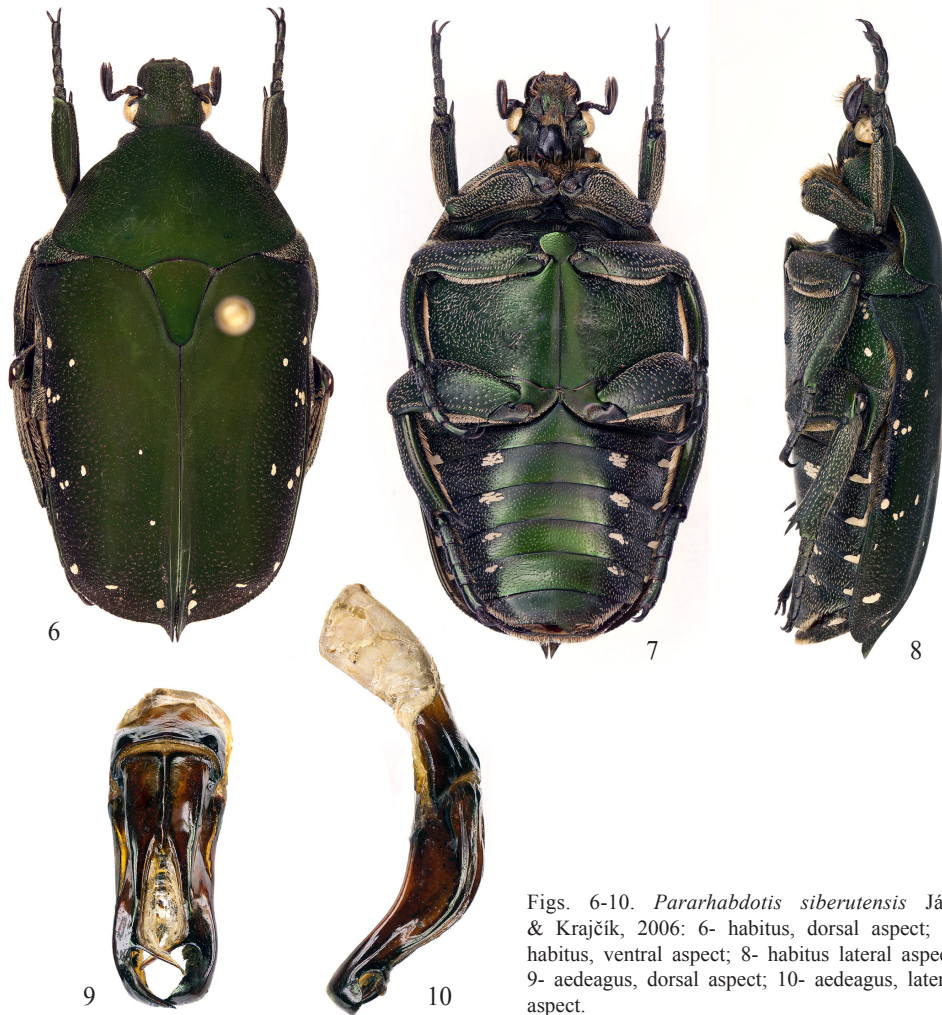
***Pararhabdotis siberutensis* Jákl & Krajčák, 2006**
(Figs. 6-10)

Pararhabdotis siberutensis Jákl & Krajčák, 2006 : 8, figs. 15-18 (original description).

Type locality. Indonesia, Mentawai Islands, Siberut Island (northern part), Bojakan vill. env.

Type material. Holotype ♂ (SJCP) labelled: Indonesia, Mentawai Isls./ SIBERUT ISL., north, 50-200m/ BOJAKAN VILL. ENV., 12. 2004/ St. Jakl lgt. Allotype ♀ (SJCP) labelled: same as holotype, but 5. 2004. Paratype: 1 ♂ (BMHN, ex MKCP) labelled: Indonesia/ South Siberut I./ Salappa vill. env., 2. 2006/ St. Jakl lgt.

Distribution. INDONESIA: Mentawai Archipelago, Siberut Island.



Figs. 6-10. *Pararhabdotis siberutensis* Jákl & Krajčik, 2006: 6- habitus, dorsal aspect; 7- habitus, ventral aspect; 8- habitus lateral aspect; 9- aedeagus, dorsal aspect; 10- aedeagus, lateral aspect.

Genus *Ruteraetia* Krikken, 1980 valid genus

Ruteraetia Krikken, 1980: 187 (original description); Mikšič, 1982: 83 (monograph); Sakai & Nagai, 1998: 253 (iconography); Krajčik, 1998: 48 (catalogue).

Type species: *Ruteraetia tubericeps* Krikken, 1980 (by original monotypy).

Note. Legrand & Chew Kea Foo (2010) synonymised *Ruteraetia* Krikken with *Pararhabdotis* Kraatz. Comparative study of all known species of *Pararhabdotis* Krikken and study of

similarly looking species (described in this article) revealed that *Ruteraetia* Krikken and *Pararhabdotis* Kraatz differ in several important characters and should be treated as different genera in tribe Cetoniini.

Subgenus *Ruteraetia* Krikken, 1980

Ruteraetia (Ruteraetia) tubericeps Krikken, 1980

(Figs. 11-15)

Ruteraetia tubericeps Krikken, 1980: 188, figs. 9-14 (original description); Mikšič, 1982: 84, figs. 11a-11c (monograph); Sakai & Nagai, 1998: 253, figs. 793-1 (male, Sumatra), 793-2 (female, Sumatra); Krajčik, 1998: 48 (catalogue).

Pararhabdotis tuberifrons Krikken: Legrand & Chew Kea Foo, 2010: 37, fig. 54 (parameres), photo 90-92 (male, female, form) [misspelling].

Type locality. Indonesia, East Kalimantan, Balikpapan, Moan River, 50 m.

Type material. Holotype (RMNH) labelled: E. Borneo - 50m/ Balikpapan XI. 50/ Moan River/ A. M. R. Wegner. Paratypes 1 ♂, 1 ♀ (MNHN, ex Ruter collection) labelled: „Borneo”.

Material examined: 1 ♂ (SJCP) labelled: Indonesia, West Sumatra/ MT. SANGGUL, 1000-1300m/ Landai vill. Env., cca 30 km N/ of Payakumbuh, 10. 2004, St. Jakl lgt; 6 ♂♂, 2 ♀♀ (SJCP) labelled: INDONESIA/ W. Sumatra/ V. 1992/ native collectors; 1 ♂ (SJCP) labelled: W. Sumatra/ SINGGALANG Mt./ 1000-2000m/ III.-IV. 1992; 5 ♂♂, 1 ♀ (SJCP) labelled: Indonesia, W. Sumatra/ HARAU valley, 400-600m/ 20 km N of Payakumbuh/ St. Jakl lgt, 5. 2007; 1 ♂ (SJCP) labelled: W. Sumatra/ TALANG Mt./ 1500-2500m/ III.-IV. 1992; 1 ♀ (SJCP) labelled: Indonesia/ Nias Island/ 3. 1996/ native collectors; 1 ♀ (SJCP) labelled: INDONESIA, Mentawai Isls./ N SIBERUT ISL., XII. 2007/ Bojakan vill. env., 50 m alt./ St. Jakl lgt.

Distribution. INDONESIA: Kalimantan, Sumatra, Nias (new record) and Siberut (new record) Islands.

Subgenus *Legrandia* subgen. nov.

Type species: *Ruteraetia (Legrandia) pahangensis* sp. nov. (by monotypy).

Description. Body oval, its coloration bronze to olive green with abundant white ornament. Size (excluding pygidium) 16.1 mm, humeral width 9.2 mm.

Head. Olive green to bronze, in frons gently narrowing to apex, clypeus running more or less parallel. Punctuation dense, especially in frons. Interspaces in frons smaller than punctures diameters, in clypeus diameters of punctures and interspaces approximately same. Clypeal apex elevated, its midlength with shallow excision. Lateral sides of clypeus distinctly developed, narrowing to clypeal apex. Setation short, whitish. Antennae short, brownish pedicel same long as black stalk. Antennal scapus rugosely punctured.

Pronotum. Coloration olive green, sides narrowing moderately sharply to apex. Sides with whitish maculae, one in anterior, pronotal half, second (group of small patches) in posterior half. Posterolateral margins also with whitish ornament. Pronotal sides striolate,



Figs. 11-15. *Ruteraetia (Ruteraetia) tubriceps* Krikken, 1980: 11- habitus, dorsal aspect; 12- habitus, ventral aspect; 13- habitus lateral aspect; 14- aedeagus, dorsal aspect; 15- aedeagus, lateral aspect.

rest of pronotum moderately punctured. Impunctate middle line present. Pronotal setation short, its coloration whitish. Lateral margins with border throughout its total length, basal margin impunctate.

Scutellum. Olive green, more or less triangularly shaped. Anterolateral margins with punctures, rest of scutellum impunctate.

Elytra. Coloration olive to bronze. White ornament abundant. Anterior half (except of sides) with moderately developed punctation, sides and apex with more dense horse shoe shaped punctation. Each elytron with impression in elytral posterior half bearing 4 striolate lines, its

interspaces with horse shoe shaped punctures. Side, apex and elytra, posterior impression with numerous white maculae. Elytra disc gently merging to lateral ridge. Humeral calli absent, apical calli moderately developed. Sutural ridge elevated in posterior half, protrusion over elytral apex moderately developed. Elytral, posterolateral margins and apex slightly dentate.

Pygidium. Dark green to black with dense striolation and abundant whitish maculation.

Ventrum. Bronze in abdomen, metasternum and prosternum, lighter green in metasternal plate. Excepting metasternal plate and abdominal centre, with cover of moderately long white setation. Abdominal impression missing, in front of abdominal apex with mild constriction. Sides of abdomen with horse shoe shaped punctation, metasternum striolate. Apex of mesometasternal process wide, wider than its length. Prosternum and mentum setose and striolated.

Legs. Rather short, femurs, tibia and tarsi olive green to bronze. Protibia bidentate. Meso- and metatibia carinate in posterior half. Tibial spurs very short, especially in metatibia.

Genitalia. Structure of male parameres rather complex and unique in *Cetoniini* tribe (Figs. 19-20).

Variability and sexual dimorphism. Only holotype male was available for study, female unknown.

Differential diagnosis. Newly described subgenus is at the first sight extremely similar with nominotypical subgenus, especially in dorsal coloration and ornamentation pattern. But structure of male parameres is completely different. *Legrandia* subgen. nov. is completely missing abdominal impression, head is parallel with emarginate clypeal apex and very broad lateral declivities. Head in nominotypical subgenus is conically developed with lobed apex of clypeus, lateral declivities in clypeus visible, but vague. Elytral sutural ridge in nominotypical subgenus in its posterior half sharply developed, distinctly protruding over elytral apex, but rather obtuse in *Legrandia* subgen. nov.

Etymology. New subgenus is named after my best friend and colleague, Jean-Philippe Legrand (Paris, France).

***Ruteraetia (Legrandia) pahangensis* sp. nov.**

(Figs. 16-20)

Type locality. Malaysia, Pahang, Cameron Highlands.

Type material. Holotype ♂ (SJCP) labelled: Cameron/ Highland/ Pah. MALAYSIA/ 1987.

Description. See generic description of *Ruteraetia (Legrandia)*. It is based on same specimen (holotype).

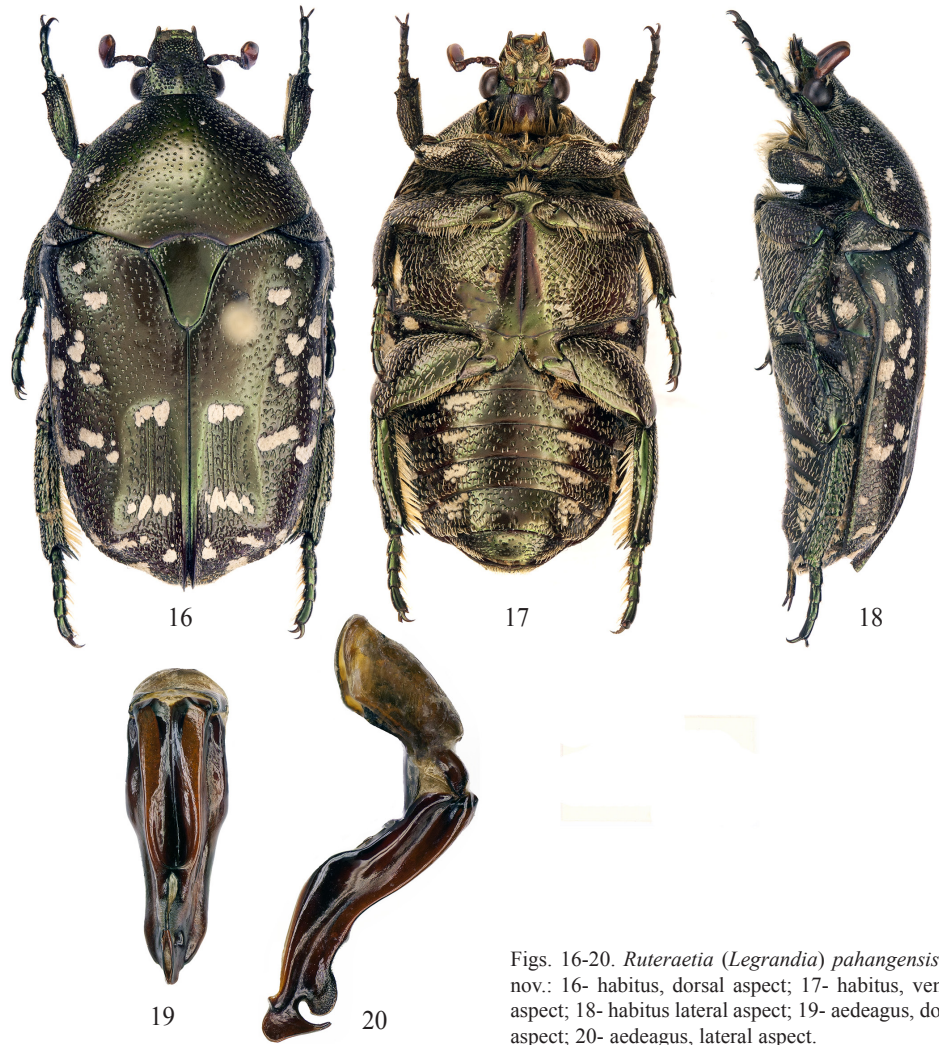
Variability and sexual dimorphism. Only one male, holotype was available for study.

Differential diagnosis. The newly described species can be confused only with *Ruteraetia* (s. str.) *tubericeps* Krikken, 1980. It can be very easily separated in several characters. I. Coloration of dorsum in *R. tubericeps* grassy green, but olive to bronze in newly described species; II. Abdominal impression in *R. tubericeps* distinctly developed, but missing in the

new species; III. Shape of head in *R. tebericeps* conical with elevated and lobed clypeal apex, but more or less parallel running with emarginate clypeal apex in the new species; IV. Lateral declivities of clypeus in *R. tebericeps* indistinctly developed, but broad in the newly described species; V. Elytral sutural ridge in *R. tebericeps* sharply elevated and protruding over elytral apex, but rather obtuse, not much drawn out over elytral apex in the new species; VI. Shape of male parameres completely different with simply developed parameres in *R. tebericeps*, but complex parameres structure in the new species (Figs. 19-20).

Etymology. Named after Pahang state in continental part of Malaysia.

Distribution. MALAYSIA: Pahang, Cameron Highlands.



Figs. 16-20. *Ruteraetia (Legrandia) pahangensis* sp. nov.: 16- habitus, dorsal aspect; 17- habitus, ventral aspect; 18- habitus lateral aspect; 19- aedeagus, dorsal aspect; 20- aedeagus, lateral aspect.

TAXONOMICAL KEY (FOR *RUTERAETIA* KRIKKEN
AND *PARARHABDOTIS* KRAATZ SPECIES)

- 1(2) Body elongate, size 20-24 mm, with or without basallic tomentum, pronotum missing whitish ornamentation, apex of mesometasternal process more or less circularly shaped. In males inner paramere rim completely overwhelmed by outer paramere rim *Pararhabdotis* Kraatz, 1898
- 1a(1b) Dorsal part of body missing basallic tomentum, shining. Head conically developed, base of frons longer than clypeal apex *Pararhabdotis setigera* Schoch, 1898
- 1b(1a) Dorsal part of body with dark green basallic tomentum, opaque. Head more or less parallel, base of frons same long as clypeal apex *Pararhabdotis siberutensis* Jákl & Krajčik, 2006
- 2(1) Body short, size 14-18 mm, always without basallic tomentum, pronotum with whitish maculae, apex of mesometasternal process much wider than long. In males inner paramere rim normally developed, not overwhelmed by outer paramere rim *Ruteraetia* Krikken, 1980
- 2a(2b) Head conically developed with lobed clypeal apex. Lateral declivities of head indistinct. Males with abdominal impression and simply developed parameres *Ruteraetia (Ruteraetia) tubericeps* Krikken, 1980
- 2b(2a) Head more or less parallel running, clypeal apex with mild emargination. Lateral declivities of clypeus very broad. Abdominal impression in males missing. Structure of male parameres very complex, not simply developed *Ruteraetia (Legrandia) pahangensis* sp. nov.

ACKNOWLEDGEMENT. I am deeply obliged to Arnošt Kudrna (České Budějovice, Czech Republic) for his continuing help with digital photography.

REFERENCES

- JÁKL S. & KRAJČIK M. 2006: Cetonine beetles from Siberut Island, Indonesia, with descriptions of new species (Coleoptera, Scarabaeidae). *Animma.X* 16 : 1-20.
- KRAATZ G. 1899: *Pararhabdotis* nov. Gen. Cetonidarum Coryphoceridarum. *Deutsche Entomologische Zeitschrift* 1899: 123-124.
- KRAJČIK M. 1998: *Cetoniidae of the world, Catalogue-Part I. Zlatohlávkovití světa. Katalog-Část I*. Most: Krajčik [published privately by the author], 96 pp. + 36 pp.
- KRIKKEN J. 1980: New cetonine taxa from Africa and Asia. *Revue française d'Entomologie (N.S.)* 2(4): 185-189.
- LEGRAND J.-P. & CHEW KEA FOO S. 2010: *Les Cetoniinae du Sabah, Collection Ex Natura. Vol. 1*. Paris: Magellanes, 123 pp.
- MIKŠIČ R. 1979: Die Gattungen der Cetoniini der Palaearctischen und Orientalischen Region. (Coleoptera, Lamellicornia, Cetoniinae). *Posebni Otisak Zemljskogovo Muzeja, Prirodne Nauka, Sarajevo* (N.S.) 18: 213-242.
- MIKŠIČ R. 1982: *Monographie der Cetoniinae der palaearctischen und orientalischen Region. Coleoptera, Lamellicornia. Band 4. Systematischer Teil*. Sarajevo: Forstinstitut in Sarajevo, 530 pp. + 14 pls.
- SAKAI K. & NAGAI S. 1998: The Cetoniinae beetles of the World. Pp. 1-6 + 7-150 unpag. (pls. 1-144) + 151-421 + 3 unpag. In: FUJITA H. (ed.): *Mushi-Sha's iconographic series of insects* 3. Mushi-Sha, Tokyo, 2 unpag. + 342 + 5 unpag. (in Japanese and English)
- SCHENKLING S. 1921: Scarabaeidae: cetonidae. Pars 72. In: SCHENKLING S. (ed.): *Coleopterorum Catalogus. Volumen XXI*. Berlin: W. Jung, 2 unpag. + 431 pp.
- SCHOCH G. 1898: Genera und Species meiner Cetoniden-Sammlung. *Mittheilungen der Schweizerischen Entomologischen Gesellschaft* V: 37-96.

Received: 20.5.2019

Accepted: 20.6.2019

Printed: 5.10.2019

