

Revision of the genus *Eudolia* Jacoby, 1885 (Chrysomelidae: Alticinae)

Ревизия рода *Eudolia* Jacoby, 1885 (Chrysomelidae: Alticinae)

L.N. Medvedev
Л.Н. Медведев

Institute for Problems of Ecology and Evolution, Russian Academy of Sciences, Leninsky prospect 33, Moscow 119071, Russia.
Институт проблем экологии и эволюции РАН, Ленинский проспект 33, Москва 117071, Россия.

KEY WORDS: Coleoptera, Chrysomelidae, Alticinae, *Eudolia*, identification key, new species.

КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Chrysomelidae, Alticinae, *Eudolia*, определительный ключ, новые виды.

ABSTRACT. A revision of the Oriental genus *Eudolia* Jacoby, 1885 is proposed. A key to 14 species is given and 5 species: *E. fulvicornis* (Sumatra), *E. curvicornis*, *E. laosica* (both Laos), *E. vietnamica* (Vietnam), *E. birmanica* (Myanmar) are described as new to science.

РЕЗЮМЕ. Проведена ревизия ориентального рода *Eudolia* Jacoby, 1885. Приведён ключ для определения 14 видов, 5 из которых: *E. fulvicornis* (Суматра), *E. curvicornis*, *E. laosica* (оба из Лаоса), *E. vietnamica* (Вьетнам), *E. birmanica* (Мьянма) описаны как новые для науки.

Introduction

A small Oriental genus *Eudolia* Jacoby, 1885 for a long time was monotypical and characterized mainly with a form of prothorax strongly constricted at base (Fig. 1). Later Maulik [1926] described 3 more species from India and Burma, but divided them mostly with coloration and even proposed that all these species may be really one. Two more species described by Bryant [1942] have very feeble, almost indistinct basal constriction of prothorax, but their placement in this genus was undoubtful. Additional two species were described in the last years [Medvedev, 1990, 2006]. In this paper a new 5 species are described as well.

A first key was given by Scherer [1969] for 4 continental species, which figured also aedeagi for two species.

Now it is clear, that males differ well enough with a structure of antennae and form of aedeagus, while females might be divided only with coloration which sometimes variable.

Holotypes and paratypes of new species are kept in the following museums and privat collections:
NHMB — Naturhistorische Museum, Basel;
BM — British Museum of Natural History, London;
cLM — collection of L. Medvedev, Moscow.

A KEY TO SPECIES

- 1(6) Prothorax transverse, about 1.5 times as wide as long, very feebly, almost indistinctly constricted before base (Fig. 2), proportion of broadest to narrowest width consists 1.02–1.08 times.
- 2(5) Upperside not metallic. Apical antennal segments black.
- 3(4) Elytra finely punctuate, with interspaces mostly more large than punctures. In male antennal segment 10 with short and obtuse protuberance, segment 11 ovate, with rounded apex (Fig. 4). Dark fulvous, 4 apical segments black, 11th segment with fulvous apex. Length 2.8 mm (not 3.0 mm as was given in original description). *E. brunnea* Bryant
- 4(3) Elytra strongly punctuate, with interspaces mostly more small than punctures. In male antennal segment 10 with more long and acute protuberance, segment 11 quadrangular with truncate apex (Fig. 5). Dark fulvous, sometimes elytra more darkened, almost piceous, in male 5–6, in female 3 apical antennal segments simple (Fig. 6), black, 11th segment with more light apex. Aedeagus — Fig. 15. Length 2–3 mm. *E. malayana* Bryant
- 5(2) Elytra dark metallic green. Antennae entirely fulvous. Body dark reddish fulvous to fulvous. Antennal segments 10 and 11 moderately thickened in male (Fig. 7). Length 3.0 mm. *E. fulvicornis* sp.n.
- 6(1) Prothorax more or less constricted before base (Fig. 3). Upperside or at least elytra metallic.
- 7(8) Prothorax transverse, about 1.5 times as wide as long, deeply constricted before base, proportion of broadest to narrowest width consists about 1.5 times. Antennae of male with strongly widened 8–10 segments, with segment 9 especially broad (Fig. 8). Fulvous, elytra metallic blue, antennae black with 3 or 4 basal segments and 11th segment fulvous, underside piceous, hind legs often darkened. Aedeagus — Fig. 16. Length 3.5–4.5 mm. *E. sumatrana* Jacoby
- 8(7) Prothorax feebly transverse, not more than 1.3 times as wide as long, moderately or feebly constricted before base, proportion of broadest to narrowest width consists about 1.2 times. Elytra metallic blue or violaceous. Continental species.
- 9(12) Prothorax dark metallic blue, head blackish. Underside black.

- 10(11) Antennal segments 5 and 6 thickened in male. Antennae black with 2 (male) or 6 (female) basal segments fulvous. Legs fulvous (according Kimoto, 2000 hind legs of male black). Length 4.5–5.0 mm. *E. nila* Maulik
- 11(10) Antennal segments 4–6 thickened in male, segments 4 and 3 curved, segment 3 with short erect hairs on concave side (Fig. 9). Antennae of male black with 4 basal segments fulvous. Legs fulvous with tarsi and apices of tibiae black. Aedeagus — Fig. 17. Length 4.6 mm. *E. curvicornis* **sp.n.**
- 12(9) Prothorax not metallic.
- 13(22) Prothorax and head black, dark piceous or dark chestnut-brown. Underside black.
- 14(19) Antennae of male with thickened segments.
- 15(18) Antennae of male with segments 5 and 6 thickened.
- 16(17) Antennae of male with segment 5 excavated near base, axe-like (Fig. 10). Antennae black with only basal segment fulvous. Anterior legs fulvous with basal half of femora black, mid legs black with fulvous knees, hind legs entirely black. Aedeagus — Fig. 18. Length 4.7 mm. See also point 23. *E. indica* L. Medvedev, male.
- 17(16) Antennae of male with segment 5 elongate ovate, not excavated near base (Fig. 1). Antennae black with 4 basal segments fulvous. Legs fulvous, sometimes hind legs darkened. Aedeagus — Figs 19–20. Length 3.5–4.5 mm. *E. himalayensis* Maulik
- 18(15) Antennae of male with thickened apical segment (Fig. 11), black with 7 basal segments and apex of apical segment fulvous. Legs fulvous. Aedeagus — Fig. 21. Length 3.4–4.1 mm. *E. laosica* **sp.n.**
- 19(14) Antennae of male without thickened segments (Fig. 12).
- 20(21) Antennae black with 4 (male) or 6 (female) basal segments fulvous. Legs fulvous. Aedeagus constricted before apex (Fig. 21). Length 3.6–4.1 mm. *E. vietnamica* **sp.n.**
- 21(20) Antennae black with 6 basal segments fulvous (male). Anterior legs fulvous, mid and hind legs dark. Aedeagus (Figs 23–24) not constricted before apex. Length 3.5 mm. *E. nepalica* L. Medvedev
- 22(13) Prothorax and head fulvous or red.
- 23(24) Underside black, antennae black with fulvous basal segment, legs fulvous or with dark femora. Head and prothorax red fulvous. Length 5.0–5.1 mm. See also point 16. *E. indica* L. Medvedev, female
- 24(23) Underside red (might be darkened in *E. ratula* Maulik).
- 25(28) Species from Myanmar and Assam. Antennal segments 5 and 6 thickened in male.
- 26(27) Antennal segment 9 thickened in male (Fig. 13). Head, prothorax and legs fulvous, antennae black with 3 or 4 basal segments fulvous. Aedeagus thin, not widened to triangular apex (Fig. 25) with central ridge on underside. Length 3.5–3.8 mm. *E. birmanica* **sp.n.**
- 27(26) Antennal segment 9 not thickened in male. Color variable, head and prothorax red fulvous, legs fulvous, but hind legs often darkened, antennae piceous with fulvous basal segments or fulvous with piceous middle segments or entirely fulvous. Aedeagus (Figs 26–27) without central ridge on underside. Length 3.0–4.5 mm. *E. ratula* Maulik
- 28(25) Species from North Vietnam. Head, prothorax, underside and legs fulvous. Length 3.4–3.5 mm. Male unknown. *E. sp.* A

A list of species

Eudolia brunnea Bryant, 1942

DISTRIBUTION. West Sarawak (Mt. Matang), Penang Island. Type was studied. In the original description this

species was figured under the erroneous name “*Eudolia papuana*”.

REMARK. Female up to now unknown.

Eudolia malayana Bryant, 1942

DISTRIBUTION. Malay Peninsula: Perak, Cameron Highland: Sumatra. Type was studied.

Eudolia fulvicornis L. Medvedev, **sp. n.**

Fig. 7

HOLOTYPE (♂): Sumatra, Tandjong, leg. Morava (LM).

DESCRIPTION. Head, prothorax and scutellum dark reddish fulvous, antennae fulvous with slightly darkened apical segment, elytra dark metallic green, underside and legs fulvous.

Head impunctate, frontal tubercles large, transverse, quadrangular, well delimited, interantennal space narrow and ridged. Antennae reach anterior quarter of elytra, proportions of segments are as 10–7–7–5–5–6–6–7–7–6–10, two apical segments moderately thickened, preceding segments about twice as long as wide (Fig. 7). Prothorax 1.35 times as wide as long, narrowed to base, proportion of maximal to minimal width consists 1.02 times, sides straight, not emarginated before base, surface convex, practically impunctate, without impression before base. Elytra 1.5 times as long as wide, with well developed basal convexity and postbasal impression, strongly punctuate (except basal convexity), shining. Aedeagus was lost during preparing. Length of body 3.0 mm.

Eudolia sumatrana Jacoby, 1885

DISTRIBUTION. Sumatra.

Eudolia nila Maulik, 1926

DISTRIBUTION. Myanmar (Ruby Mines), India (Assam, Manipur), Thailand (Chiengmai Prov.). Indication for Thailand [Kimoto, 2000] needs confirmation.

Eudolia curvicornis L. Medvedev, **sp. n.**

Figs 9, 17

HOLOTYPE (♂): Laos, Khammouang Prov., Ban Khounkham (Nahin), 18°13' N, 104°31' E, 200 m, 27.IV.2005, leg. O. Gorbunov (LM).

DESCRIPTION. Upperside metallic blue, head blackish blue with fulvous labrum, antennae black with 3 basal segments and basal half of 4th segment fulvous, underside black, legs fulvous with black tarsi and apices of tibiae.

Head impunctate, interantennal space convex, frontal tubercles convex, sharply delimited posteriorly. Antennae almost reach middle of elytra, proportions of segments are as 11–4–7–8–8–8–7–8–8–12, segments 4–7 thickened, segment 3 and 4 feebly curved, segment 4 with short erect hairs on concave side, preapical segments about twice as long as wide (Fig. 9). Prothorax 1.3 times as wide as long, broadest at anterior angles, with almost straight side margins, slightly constricted before base, surface convex, finely and sparsely punctuate. Elytra 1.65 times as long as wide, with high basal convexity and distinct postbasal impression, strongly punctuate, shining. Aedeagus — Fig. 17. Length of body 4.6 mm.

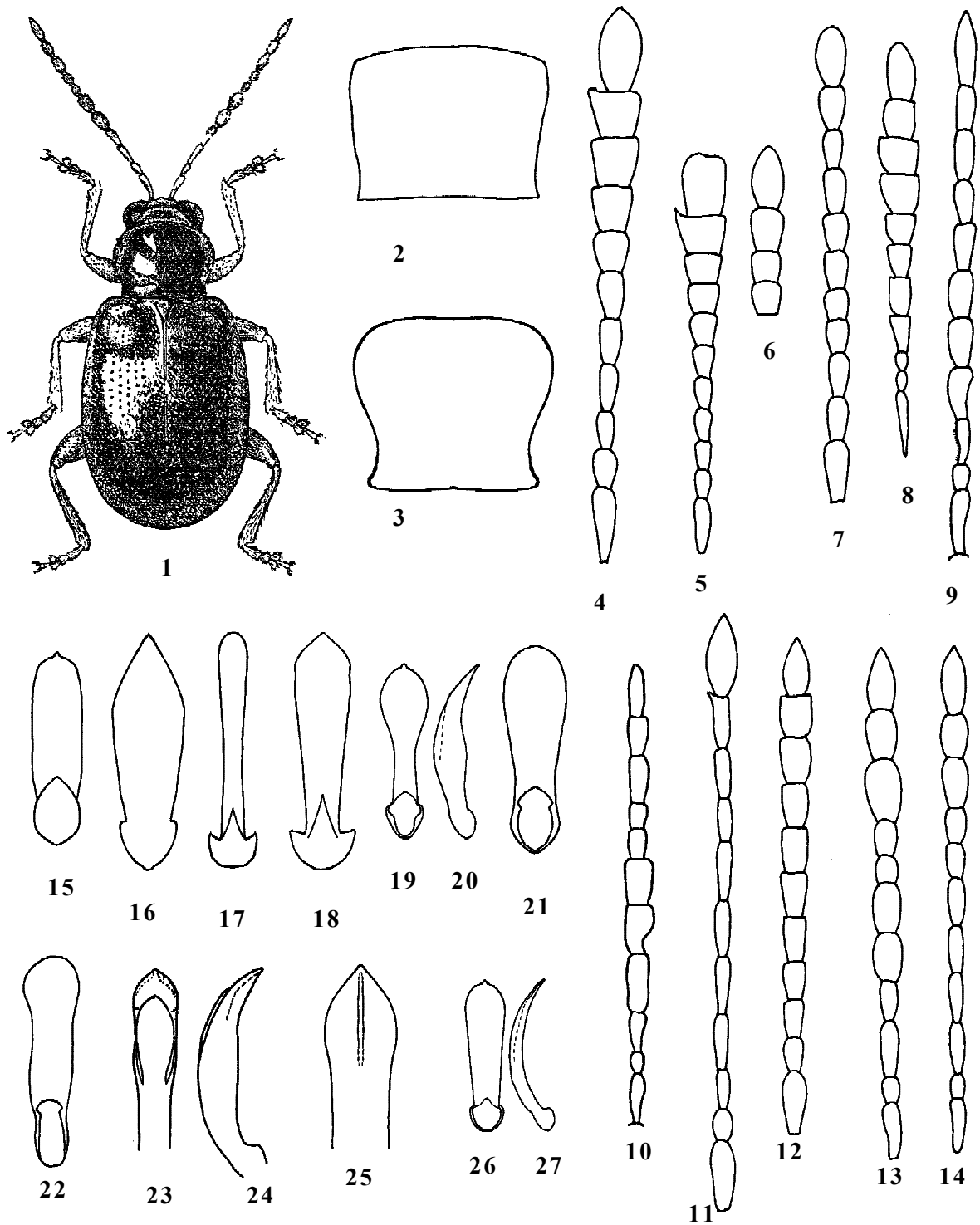
Eudolia indica L. Medvedev, 2006

DISTRIBUTION. NE India: Meghalaya.

Eudolia himalayensis Maulik, 1926

Figs 1, 19–20.

DISTRIBUTION. India: Uttar Pradesh, Sikkim.



Figs 1-27. *Eudolia* spp.: 1, 19-20 — *E. himalayensis*; 2, 4 — *E. brunnea*; 3, 13-14, 25 — *E. birmanica* sp.n.; 5-6, 15 — *E. malayana*; 7 — *E. fulvicornis* sp.n.; 8, 16 — *E. sumatrana*; 9, 17 — *E. curvicornis* sp.n.; 10, 18 — *E. indica*; 11, 21 — *E. laosica* sp.n.; 12, 22 — *E. vietnamica* sp.n.; 23-24 — *E. nepalica*; 26-27 — *E. ratula*; 1 — general view; 2, 3 — prothorax; 4-14 — antenna (6 — 4 apical segments); 15-27 — aedeagus; 4, 5, 7-13 — males; 6, 14 — females; 15-19, 21-22, 25-26 — ventral view; 23 — dorsal view; 20, 24, 27 — lateral view; 1 — by Maulik, 1926; 19-20 and 26-27 — by Scherer, 1969.

Рис. 1-27. *Eudolia* spp.: 1, 19-20 — *E. himalayensis*; 2, 4 — *E. brunnea*; 3, 13-14, 25 — *E. birmanica* sp.n.; 5-6, 15 — *E. malayana*; 7 — *E. fulvicornis* sp.n.; 8, 16 — *E. sumatrana*; 9, 17 — *E. curvicornis* sp.n.; 10, 18 — *E. indica*; 11, 21 — *E. laosica* sp.n.; 12, 22 — *E. vietnamica* sp.n.; 23-24 — *E. nepalica*; 26-27 — *E. ratula*; 1 — общий вид; 2, 3 — переднеспинка; 4-14 — антенна (6 — 4 верхних членика); 15-27 — эдеагус; 4, 5, 7-13 — самцы; 6, 14 — самки; 15-19, 21-22, 25-26 — снизу; 23 — сверху; 20, 24, 27 — сбоку; 1 — по Maulik, 1926; 19-20 и 26-27 — по Scherer, 1969.

Eudolia laosica L. Medvedev, **sp. n.**

Figs 11, 21

HOLOTYPE (♂): Laos, Phongsaly Prov., Phongsaly env., 21°42' N, 102°6' E, 28.V–20.VI.2003, 1500 m, leg. V.Kuban (NHMB).

PARATYPES: same locality, 8 ♂♂, 13 ♀♀ (NHMB, 5 ex. — LM); 1 ♀ — Laos, Louangnamtha Prov., Namtha to Muang Sing, 21°9' N, 101°19' E, 900–1200 m, 5–13.V.1997, leg. V.Kuban, (NHMB).

DESCRIPTION. Head black with fulvous labrum, antennae fulvous with segments 8–11 black, apical segment with extreme apex dark fulvous to piceous, prothorax, scutellum and underside black, elytra metallic blue, greenish blue or violaceous, legs fulvous.

Head impunctate, interantennal space ridged, frontal tubercles convex, delimited behind with deep transverse sulcus. Antennae reach humeral tubercles, proportions of segments are as 11–5–6–9–9–9–9–7–8–8–13, preapical segments about twice as long as wide, intermediate segments not thickened in male, apical segments distinctly thickened in male (Fig. 11). Prothorax 1.25 times as wide as long, feebly constricted in basal third, surface convex, impunctate except a group of punctures in basal impression. Elytra 1.5 times as long as wide, with very distinct basal convexity and postbasal impression, strongly punctuate, shining. Aedeagus — Fig. 21. Length of body 3.4–4.1 mm.

DIAGNOSIS. Differs well with feeble basal constriction of prothorax, color of antennae and enlarged apical antennal segment of male.

Eudolia vietnamica L. Medvedev, **sp. n.**

Figs 12–22.

HOLOTYPE (♂): Vietnam, Tam Dao, 14. IV. 1986, 900 m, leg. L. Medvedev (LM).

PARATYPES: 1 ♀, same locality and date (LM); 1 ♂ — same locality, 12–22.IV. 1986, leg. L. Medvedev et al. (LM).

DESCRIPTION. Black, elytra metallic blue, labrum, 4 (male) or 6 (female) basal segments of antennae and legs fulvous; vertex sometimes dark reddish.

Head impunctate, interantennal space narrow and ridged, frontal tubercles convex and sharply delimited. Antennae reach anterior third of elytra, without thickened segments in male, proportions of segments are as 10–5–6–6–7–7–7–7–7–9, preapical segments about 1.6 times as long as wide (Fig. 12). Prothorax 1.1 times as wide as long, broadest at anterior angles, side margins convex, shining, practical impunctate except large punctures on basal impression. Elytra 1.5 times as long as wide, with high basal convexity and deep postbasal impression, rather finely punctuate except more large punctures in postbasal impression, shining. Aedeagus (Fig. 22) slightly asymmetrical (possibly it is not constant character). Length of body 3.6–4.1 mm.

Eudolia nepalica L. Medvedev, 1990

DISTRIBUTION. Nepal: Arun river.

Eudolia birmanica L. Medvedev, **sp. n.**

Figs 3, 13–14

HOLOTYPE (♂): Upper Burma, Nam Tamai Valley, 27°42' N, 97°54' E, 14.VIII.1938, 4000 ft, leg. R. Kaulback (BM).

PARATYPES: 1 ♂, same locality (BM), 2 ♀♀ (BM, LM).

DESCRIPTION. Fulvous, antennae black with 3 or 4 basal segments fulvous, elytra metallic blue.

Body elongate. Head impunctate, frontal tubercles large, quadrate, feebly convex, interantennal space ridged. Antennae reach middle of elytra, proportions of segments in female as 10–5–9–8–7–8–6–5–8–7–11 (Fig. 14), in male 9–4–9–7–7–8–5–5–10–8–10, with segments 5, 6 and 9 strongly thickened (Fig. 13). Prothorax 1.2 times as wide as long, distinctly but deeply constricted before base (Fig. 3), proportion of broadest to narrowest part is 1.25; surface shining, impunctate except punctures in transverse basal impression. Elytra 1.5 times as long as wide, strongly punctuate, with well developed basal convexity and postbasal impression. Aedeagus (Fig. 25) thin, not widened to triangular apex, underside with central ridge. Length of male 3.5–3.6 mm, of female 3.7–3.8 mm.

Eudolia ratula Maulik, 1926

DISTRIBUTION. Myanmar (Ruby Mines, Momeik), India (Assam). A female type from Ruby Mines was studied.

REMARK. According Maulik [1926], this species is very variable in color and structure of antennae, but it is very possibly that samples from Myanmar (= Birma) and Assam can belong to different species. I accept for terra typical of this species Ruby Mines, which was cited first in the original description.

References

- Bryant G.E. 1942. New species of Chrysomelidae (Halticinae) from Malaya, Borneo, New Guinea and N. Queensland // *Annals and Magazine of Natural History*. Ser.11. Vol.9. P.332–340.
- Kimoto S. 2000. Chrysomelidae (Coleoptera) of Thailand, Cambodia, Laos and Vietnam. VII. Alticinae // *Bulletin of the Institute of Comparative Studies of International Cultures and Societies*. Vol.26. P.103–299.
- Maulik S. 1926. Fauna of British India, including Ceylon and Burma. Chrysomelinae and Halticinae // London, Taylor and Francis. P.1–442.
- Medvedev L.N. 1990. Chrysomelidae from the Nepal Himalayas, II (Insecta, Coleoptera) // *Stuttgarter Beiträge zur Naturkunde*. Ser.A. Nr.453. P.1–46.
- Medvedev L.N. 2006. New genus and new species of Oriental Chrysomelidae (Coleoptera) // *Entomologica Basiliensia et Collectionis Frey*. Bd.28. S.353–375.
- Scherer G. 1969. Die Alticinae des indischen Subkontinentes (Coleoptera, Chrysomelidae) // *Pacific Insects Monograph*. Vol.22. P.1–251.