

Parachelonia murphyi, a new species of Afrotropical Nystemerini (Lepidoptera, Arctiidae, Arctiinae) from Malawi (East Africa)

Parachelonia murphyi, новый вид афротропических Nystemerini (Lepidoptera, Arctiidae, Arctiinae) из Малави (Восточная Африка)

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Abstract. A new species of the genus *Parachelonia* (tribe Nystemerini) is described from Malawi (East Africa). Formerly this genus was considered to be endemic to Madagascar. It lacks sexual modifications to its legs in males and the male genitalia differ from other genera in the tribe. The new species is characterized by rounded its forewing apex, darker colouration of veins, oblique light band on forewings, and wide dark margin of the hindwings which reaches the tornal angle. A list of species in the genus *Parachelonia* is presented.

Резюме. Описывается новый вид рода *Parachelonia* (триба Nystemerini) из Малави (Восточная Африка). Ранее этот род считался эндемичным для Мадагаскара. В этом роде отсутствуют модификации ног у самцов и гениталии самцов отличны от всех остальных родов трибы. Новый вид характеризуется округлённой вершиной передних крыльев, отсутствием осветления по жилкам, прямой светлой кривой перевязью на передних крыльях и широкой тёмной каймой на задних крыльях, достигающей торнального угла. Приводится список видов рода *Parachelonia*.

Introduction

In 2013, I have received a number of tiger-moths collected by Mr. R. J. Murphy in Malawi, East Africa. Among them, several specimens of *Neuroxena*-like species were found. By the wing pattern they are slightly similar to *Parachelonia rubriceps* (Mabille, [1879]) (Fig. 3) from Madagascar with the genitalia structure unknown.

By the wing pattern, *Parachelonia* Aurivillius, [1900] is similar to *Neuroxena* Kirby, 1896, with the type species *N. ansorgei* Kirby, 1896 (Fig. 5). These genera are treated as a single genus by Goodger and Watson [1995]. Later Viette [1998: 223] noted that he is «not sure that the genera *Neuroxena* Kirby, 1896, and *Parachelonia* Aurivillius, 1900 are synonyms? The genus

Parachelonia ... is probably to be kept for the malagasy species». Thus, he assigned the species set from Madagascar for *Parachelonia* as a distinct genus but without mention of morphological criteria for such a decision. However, according to the wing pattern, the species attributed to *Neuroxena* and the type species of *Parachelonia* differ noticeably. *Neuroxena* species (most of them are from West Africa, while the type species occurs in Kenya, Uganda and Zaire and *N. postrubidus* (Rothschild, 1933) was described from Zaire [Goodger, Watson, 1995]) have a narrow dark margin on the hindwings at least near the tornal angle, often light veins on the forewings, and a straight and narrow oblique light band on forewings. The hitherto known species of *Parachelonia* have a wide dark margin on the hindwings even at the tornal angle and often a curved wide light band on the forewings. Generic position of species from Madagascar (so attributed to *Parachelonia* by Viette) with dark hindwings and small light spots on it is uncertain till the male genitalia will be studied. Unfortunately, the male genitalia of the *Parachelonia* type species, *P. rubriceps* Mabille, [1879], as well as other species of the genus, remain unknown. All my attempts to find any male specimen of this species for dissection were unsuccessful; for example, all specimens of this species in BMNH collection are females.

The list of the known species of *Parachelonia* and the description of the new species are given below.

Parachelonia Aurivillius, 1899 [1900]

Entomologisk Tidskrift 20: 234, 239.

Type species: *Chelonia rubriceps* Mabille, [1879] (Fig. 3)

Description. Male (based on not type species) antennae bipectinate with long adjoining branches. Eyes large, semiglobal, naked. Palpi straight with porrect apical unit. Proboscis



Figs 1–6. *Parachelonia* and *Neuroxena* species, adults; 1–2: *P. murphyi*. 1 — holotype, male, white form; 2 — paratype, male, orange form. 3–4: *P. rubriceps*. 3 — lectotype, female; 4 — lectotype labels. 5–6: *N. ansorgei*. 5 — holotype, female; 6 — holotype labels.

Рис. 1–6. Имаго родов *Parachelonia* и *Neuroxena*. 1–2: *P. murphyi*. 1 — голотип, самец, белая форма; 2 — паратип, самец, оранжевая форма. 3–4: *P. rubriceps*. 3 — лектотип, самка; 4 — этикетки лектотипа. 5–6: *N. ansorgei*. 5 — голотип, самка; 6 — этикетки голотипа.

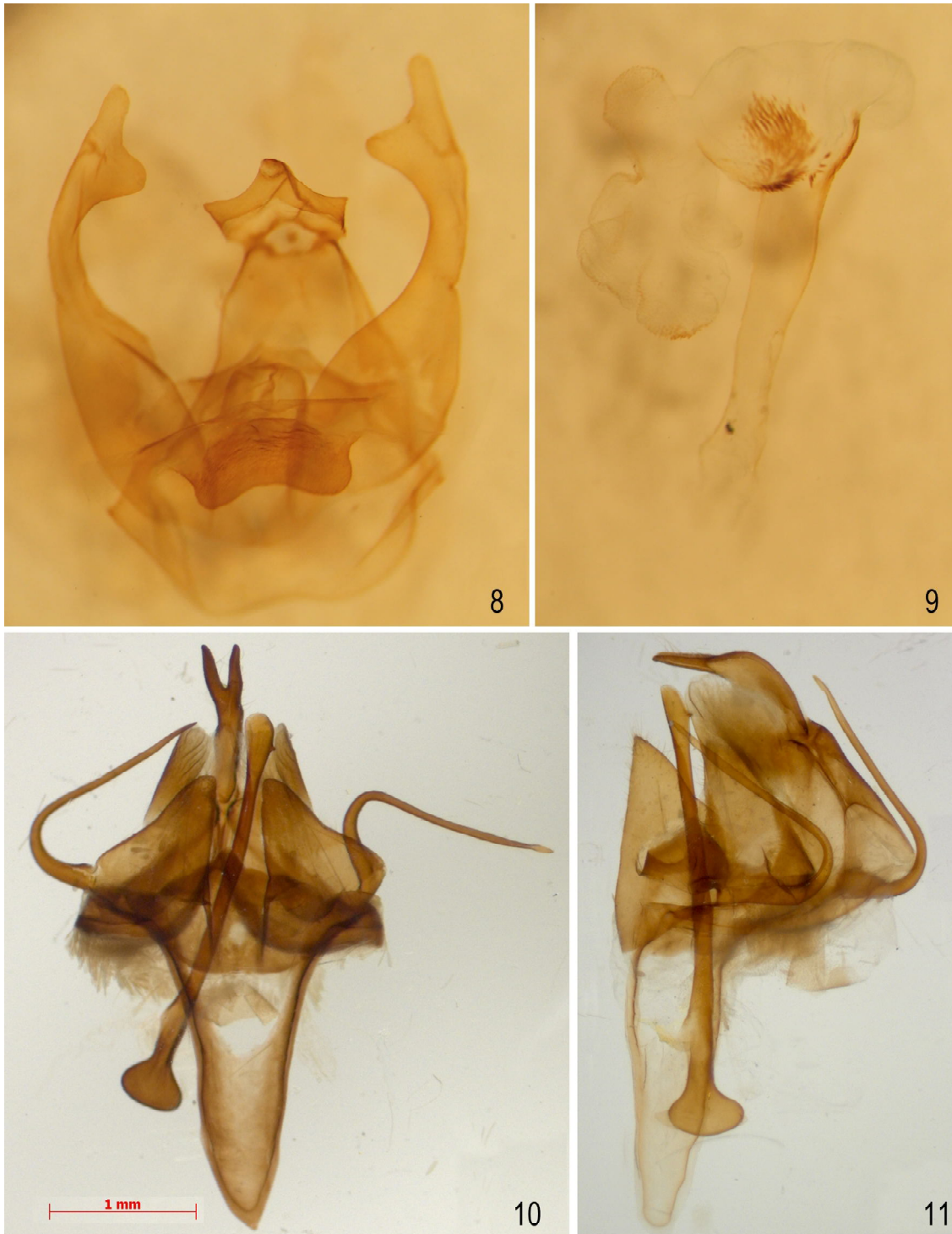
well developed. Head covered with dark scales. Tegulae and patagiae unicolorly dark with a mixture of light scales at bases. Fore tibia epiphysis narrow, long, equal to the tibia length. Middle tibiae with a single apical pair of spurs, hind tibiae with two pairs of spurs, which are slightly longer than tibia diameter. No sexual modifications of legs visible. Abdomen light with a dorsal row of dark spots. Forewing veins R_5 and R_4 from the radial vein near the central cell apex, R_{2+3} stalked, R_5 from the cell apex. Forewings dark with an oblique light band. Hindwings light at base and in middle with a broad dark margin.

Remarks. 1) Males of *P. rubriceps* are probably unknown; no specific male character has been cited in the species and genus descriptions; no male specimen was found even in the Natural History Museum (London) collection. 2) *Neuroxena lasti* (Rothschild, 1910) and *N. auremaculatus* (Rothschild, 1933) from Madagascar, as well as *N. rectilineata* (de Toulgoët, 1972) from Comores differ from *Parachelonia* species by dark hindwings with small light postdiscal

spots or anal area, so these species are not included in *Parachelonia*. Probably, they are not congeneric to *Neuroxe-*



Fig. 7. *Parachelonia murphyi*, female, paratype.
Рис. 7. *Parachelonia murphyi*, самка, паратип.



Figs 8–11. *Neuroxena ansorgei* and *Parachelonia murphyi*, male genitalia, types. 8–9. *N. ansorgei*, Uganda, N. Buddu, Arctiidae slide 3620. 8, general view without aedeagus; 9, aedeagus. 10–11. *P. murphyi*. 9, paratype, orange form, ventral view; 11, holotype, white form, lateral view.

Рис. 8–11. *Neuroxena ansorgei* и *Parachelonia murphyi*, гениталии самцов, типы. 8–9. *N. ansorgei*, Уганда, севернее Buddu, Arctiidae slide 3620. 8, общий вид без эдеагуса; 9, эдеагус. 10–11. *P. murphyi*. 9, паратип, оранжевая форма, вид снизу; 11, голотип, белая форма, вид сбоку.

na also, but this should be cleared up only after male genitalia studying.

Parachelonia rubriceps (Mabille, [1879])

Fig. 3.

Chelonia rubriceps Mabille, [1879]: 88. Type locality: «Madagascar, in insula Sanctæ Mariæ nomine dicta». Lectotype, female, figured by Goodger and Watson, 1995: 32, pl. 3, fig. 66.

Eohemera biplagiata Gaede, 1926: 115, fig. 18e. Type locality: «Madagaskar». A synonym by Viette [1990: 182, 1998: 223].

Distribution. Madagascar [Goodger, Watson, 1995].

Parachelonia simulans (de Toulgoët, 1971)

Eohemera simulans de Toulgoët, 1971: 88, fig. 10. Type locality: «Madagascar Est, 6 km au Nord-Ouest de Fanovano».

Distribution. Madagascar [Goodger, Watson, 1995].

Parachelonia murphyi Dubatolov, **sp.n.**

Figs 1–2.

Material. Holotype — ♂, «Mughese forest (top) / Chitipa dist., N. Malawi / 1900 m 9°39' S 33°32.5' E / 23–25 May 2013 R.J. Murphy». Deposited in Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals, Novosibirsk, Russia. **Paratypes:** 10♂♂, 1♀, the same label.

Description. Head in dark brown adjoining scales and yellow one along eyes. Male antennae bipectinate with narrow and long adjoining branches, middle ones about 1.35 mm length that is about ten times longer than the stem diameter. Female antennae saw-like. Palpi straight with porrect apical unit, basal unit in dark yellow scales, apically in dark brown scales, the second unit dark brown, but with dark yellow scales at base, apical unit entirely dark brown. Thorax dark brown, patagia and tegulae bases with a mixture of dark yellow scales. Abdomen dark yellow dorsally and whitish ventrally, with rows of dark brown spots: a dorsal one and two lateral (tergal) consists of small spots, ventral one and two lateral (sternal) — of large spots. Forewings broad, dark brown with an oblique straight white band from costa slightly proximally from the discal vein towards the tornal angle. Hindwings white or yellowish-orange with wide brown margination; this margination has short broadly triangular widening towards the base above vein M_2 and A_1 fold.

Male genitalia (Figs. 9–10). Tegumen broad, uncus narrow, apically bifurcated, directed downwards, sacculus triangular in shape, cucullus long, very narrow, U-curved, connected with a costal part of sacculus at its base, juxta star-like, saccus narrowly triangular, 1.5 times longer than sacculus. Aedeagus straight, long, narrow, with an oval widening at proximal end, with a small spine near apex; vesica small.

Remarks. The placement of the new species in the genus *Parachelonia* is tentative, based on similarities in the wing pattern, because the male genitalia of all formerly known species of the genus are still unknown.

Differential diagnosis. The new species differs noticeably from other species of the genus by rounded forewing apex, so a distance between light oblique band to apex is 1.5 times shorter than the distance between this line and the wing base; in *P. rubriceps* and *P. simulans* this band goes from middle of costal margin, and the forewing is elongated at apex. The oblique light band is nearly straight in the new species, like in *P. simulans*, but in the latter species the forewing apex is elongate. Dissimilar to the new species, the light oblique

band of forewing is disrupted by the cubital vein and curved at this place in *P. rubriceps*. On the other hand, hindwing pattern of the new species orange form is very similar to those of *P. rubriceps* and *P. simulans*. It consists of white or orange basal and central part of the wing and broad dark margin. This margin is always narrow in all *Neuroxena* species, at least at the tornal angle. So, the new species can be easily distinguished from all *Neuroxena* and *Parachelonia* species by the wing pattern.

The male genitalia structure of the new species is dissimilar to all known Nyctemerini genera: *Neuroxena* (type species *N. ansorgei* Kirby, 1896) has a star-like uncus with three shortly triangular rays (Figs 7–8), the valves with a single apical process, and the aedeagus with a patch of small spine-like cornuti. The species of the Afrotropical *Nyctemera sensu lato* species were revised by Dubatolov [2006]. None of them have bifurcated uncus, and only *Xylecata* Swinhoe, 1904 (*X. hemixantha* (Aurivillius, 1904) was studied) has more or less similar valve structure but the costal process is strong, the saccus is finger-like, the aedeagus short and the vesica with heavy spine-like cornuti. Moreover, several genera of Afrotropical Nyctemerini, like *Podomachla* Strand, 1909 (type species *Nyctemera apicalis* Walker, 1854) and *Chiro-machla* Strand, 1909 (type species *N. leuconoe* Hopffer, 1858) have special modifications of legs in males [Dubatolov, 2006] that are absent in the new species. Male genitalia of other Afrotropical Nyctemerini genera (*Agaltara* de Toulgoët, 1978, *Argina* Hübner, [1819], *Alytarchia* Wallengren, 1863, *Caryatis* Hübner, [1819], *Diota* Wallengren, 1865, *Galtara* Walker, [1863], *Ischnarctia* Strand, 1903, *Karschiola* Gaede, 1926, *Utetheisa* Hübner, [1819], *Pseudogaltara* de Toulgoët, 1978, *Afrocoscina* Dubatolov, 2011) were figured by Watson and Goodger [1995], de Toulgoët [1978]) and Dubatolov [2011]; all have quite different structure from the new species.

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