

Two new species of the genus *Thalatha* WALKER, 1862 from near Alice Springs, West MacDonnell Range, Northern Territory, Australia (Lepidoptera, Noctuidae, Acronictinae)

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Abstract: The two new species *Thalatha ellery* sp. n. and *T. ilparpa* sp. n. are described from the West MacDonnell Range in Central Australia. These species differ significantly in the external morphology as well as in the genital structures from the next similar species *T. guttalis* (WALKER, 1866). Both species differ also clearly from each other. While *T. guttalis* is known from the northern, tropical areas of Australia and was described from northern Queensland, the new species have been collected in the dry, arid areas of Central Australia.

Zwei neue Arten der Gattung *Thalatha* WALKER, 1862 aus der Nähe von Alice Springs, West-MacDonnell-Range, Northern Territory, Australien (Lepidoptera, Noctuidae, Acronictinae)

Zusammenfassung: Die beiden neuen Arten *Thalatha ellery* sp. n. und *T. ilparpa* sp. n. werden von der West-MacDonnell-Range in Zentralaustralien (Northern Territory) beschrieben. Die Arten unterscheiden sich sowohl in der äußeren Morphologie als auch in den Genitalstrukturen deutlich von der nächstähnlichen Art *T. guttalis* (WALKER, 1866). Untereinander sind sie ebenfalls deutlich unterschiedlich. Während *T. guttalis* von den nördlichen, tropischen Bereichen Australiens bekannt ist und aus Nord-Queensland beschrieben wurde, sind die neuen Arten in den trockenen bis ariden Bereichen von Zentralaustralien gesammelt worden.

Introduction

The region of the West MacDonnell Range in the Red Centre of Australia around Alice Springs is a highly interesting area for biodiversity of endemic species (see, e.g., ELDRIDGE & CLOSE 1992, DAVIS et al. 1993, ELDRIDGE et al. 1994, CRISP et al. 2001, SLATYER et al. 2007a, 2007b, MISHLER et al. 2014).

Several mammal species are endemic there, e.g. the Black-footed Rock-Wallaby *Petrogale lateralis* (GOULD, 1842) with one subspecies at MacDonnell Range, the Central Rock-Rat *Zyzomys pedunculatus* (WAITE, 1896), further some land snails and some frogs of the genus *Anura* as well as some plants (e.g. LEACH et al. 1988, WURST 1990, ELDRIDGE & CLOSE 1992, ELDRIDGE et al. 1994, GIBSON 2000, PAVEY et al. 2003, SLATYER et al. 2007a, 2007b, McDONNELLAN et al. 2012). Furthermore the Central Carpet Python (*Morelia bredli* (GOW, 1981) (CLULOW & SWAN 2018) and the Perentie Varan *Varanus giganteus* (GRAY, 1845) (SWAN 1995) and the Centrian tree frog *Litoria gilleni* (SPENCER, 1896) (CLULOW & SWAN 2018). Furthermore, this region has the highest biodiversity of lizards in the world (VAN OOSTERZEE 2018).

The biogeographical situation is special because of the isolation of the region (e.g. WALTER 1979, DEPARTMENT OF THE

ENVIRONMENT AND WATER RESSOURCES 2007, UDVARDY 1975, EBACH 2012, EBACH et al. 2013, DAVIS et al. 1993). This rock formation is surrounded by deserts, like the Simpson desert in the southeast and the Gibson Desert, the Great Sandy Desert and the Tanami Desert in the North (EBACH 2012, EBACH et al. 2013). More about the isolated area in the „Red Centre“ of Australia can be read in e.g. SCHULTZ (1988), EBACH (2012) and VAN OOSTERZEE (2018).

During a collection trip, the authors studied this area in and around the East and West MacDonnell Ranges in March and April 2019. Within this trip, many interesting species could be collected, including the two new species described here. Several more new species could be collected and described (BUCHSBAUM & CHEN 2019, 2020) from other trips in the northern part of the Northern Territory.

Thalatha WALKER, 1862

The genus contains 9 species which are known only from Australia and New Guinea, except only one species which is recorded from the Southeast Asian region India, Burma, peninsula Malaysia and Borneo, *Thalatha sinens* (WALKER, 1857) (HOLLOWAY 1989, KETTNER 2019, HERBISON-EVANS & CROSSLEY 2020, TREE OF LIFE 2020).

Only two species are similar to the new species. These are *Thalatha guttalis* (WALKER, 1866) and *Thalatha artificiosa* TURNER, 1936, but they are different in the wing markings and not known from the Centre of Australia. The closest species is *T. guttalis* which occurs in the northern, tropical parts of Australia.

Material and methods

The moths were collected at night with a lamp with black light, an UV-LED (Fig. 8) and a white LED-lamp with white screen in front of a Campervan side. The collection time was from ca. 19:00 h (24-h-timescale) until about midnight. One specimen was collected by light trap with UV and white LED lamps near the other collection site, but in a different biotope (Figs. 7, 9, 10).

The specimens were killed with KCN poison and pinned after death. Preparation was made at home in laboratory with normal spreading board, the genitalia dissection was done with standard methods, and the genitalia were mounted in Euparal. Genitalia slide scans were taken with Nikon coolscan 3000 and finished for publication with Adobe Photoshop 7.0.1. The map was created by MapCreator 3.0 (www.primap.com).

Thalatha ilparpa sp. n.

(Fig. 1, 2, 7 & 14.)

Holotype ♂: Australia; Northern Territory; West MacDonnell [sic] Rg.; Point Haward Lookout; 23°48'18" S, 133°10'31" E; 15 April 2019, LF; leg. Mei-Yu CHEN & U. BUCHSBAUM.

Paratypes (in total 2 ♂♂): 1 ♂, Australia; Northern Territory; West MacDonnell [sic] Rg.; near Alice Springs; 23°45'40" S, 132°46'54" E; 6 April 2019, LF; leg. Mei-Yu CHEN & U. BUCHSBAUM. 1 ♂, Australia; Northern Territory; West MacDonnell [sic] Rg.; near Alice Springs; 23°45'40" S, 132°46'54" E; 14 April 2019, LF; leg. Mei-Yu CHEN & U. BUCHSBAUM.

Holotype and Paratypes are stored in the Zoologische Staatssammlung München (ZSM), later to be deposited in the Australian National Insect Collection (ANIC), Canberra.

Etymology: The new species *Thalatha ilparpa* sp. n. is named after the type locality where the first specimens were collected at the campground "Temple Bar" near the village Ilparpa, in the West MacDonnell Range National Park near Alice Springs.

Description and differential diagnoses to *Thalata guttalis* (WALKER, 1866)

Thalatha ilparpa:

♂ Wingspan: 25–26 mm, average 25,3 mm, Forewing length: 10 mm, average 10,0 mm (n = 4).

T. guttalis:

♂ Wingspan: 23–25 mm average 24 mm, Forewing length: 19–11 mm, average 10,4 mm (n = 4).

♀ Wingspan: 27–29 mm, average 28 mm, Forewing length: 12 mm, average 12 mm (n = 3).

Head, thorax, abdomen black and white. Antenna black, in *T. guttalis* pale brown. Forewings also black and white. Palpi black with small white dot at middle. In *T. guttalis*, palpi with larger white dot in the middle and white at the tip. Frons with a large black dot. Legs with large black parts, whereas *T. guttalis* has only small black segments. Apex with a black rounded mark which is not round in *T. guttalis*, only black spots around. Median waved black line from costa to dorsum. In *T. guttalis*, only black spots on costa in the middle and at dorsum. Hindwings white with black zone from apex to termen. Antemedial light black line from costa to dorsum. Median black spot below costa. In *T. guttalis*, only small black spot on apex.

Underside: Apex of forewings marked black. Black stripes at costa in postmedian, median and subbasal region. Black markings also at termen on cilia. Hindwing: Apex black. Black discal spot and black interrupted stripe in antemedial position. In *T. guttalis*, the markings are greyish black, not demarcated and larger from apex to median region and hindwing is similar to the new species with greyish black markings without discal spot. Greyish black spots on costa at antemedial and postmedial position.

Male genitalia: Uncus thin, long and pointed, in *T. guttalis* longer. Valvae slim, weakly sclerotized, rounded, dull pointed. Valvae of *T. guttalis* longer, wider. Ampulla slim pointed and in *T. guttalis* larger, wider, stronger sclerotized. Juxta strongly sclerotized, rounded and in *T. guttalis* smaller, flatter. Vinculum wide, pointed, less sclero-

tized. In *T. guttalis* narrow, longer dull pointed. Phallus short, weakly sclerotized, without cornuti. In *T. guttalis* larger, with weaker sclerotized cornuti.

Distribution: The species is only known from the type locality Ilparpa in the West MacDonnell Range, near Alice Springs, and Point Haward Lookout, near Ellery Creek (Fig. 16).

Biology and foodplants unknown. The habitat is an *Acacia* shrubland and Hummock grassland surrounded by *Spinifex* plants (*Triodia* and *Plechrachne* spp.) and the second collection site is a dry river habitat with rocks surrounded by *Eucalyptus* open woodland (DEPARTMENT OF THE ENVIRONMENT AND WATER RESSOURCES 2007).

Thalatha ellery sp. n.

(Fig. 3, 4, 8 & 15.)

Holotype ♂: Australia; Northern Territory; West MacDonnell Rg.; near Alice Springs; 23°45'40" S, 132°46'54" E; 06 April 2019, LF; leg. Mei-Yu CHEN & U. BUCHSBAUM.

Paratypes (in total 2 ♂♂): 1 ♂, Northern Territory; West MacDonnell Rg.; Ellery Creek Big Hole; 23°44'41" S, 132°59'1" E; 3 April 2019, Ltrap; leg. Mei-Yu CHEN & U. BUCHSBAUM. 1 ♂, Australia; Northern Territory; West MacDonnell Rg.; Ellery Creek Big Hole; 23°44'41" S, 132°59'1" E; 4 April 2019, LF; leg. Mei-Yu CHEN & U. BUCHSBAUM.

Holotype and Paratypes are in Zoologische Staatssammlung München (ZSM), later to be deposited in Australian National Insect Collection (ANIC).

Etymology: The new species *Thalatha ellery* sp. n. is named after the type locality where the first specimens were collected, "Ellery Creek Big Hole" in the West MacDonnell Range National Park.

Description and differential diagnoses

♂ Wingspan: 22–24 mm, average 23,0 mm, Forewing length: 10 mm, average 10,0 mm (n = 4).

For comparison with *T. ilparpa* and *T. guttalis* sizes, see above.

Head, thorax, abdomen black and white. Antenna brown, in *T. guttalis* pale brown and in *T. ilparpa* black. Forewings also black and white. Palpi black at the tip and white at base. In *T. guttalis*, palpi with larger white dot in the middle and white at the tip. Frons with a small black dot. In *T. guttalis* and *T. ilparpa* black dot larger. Legs ringed black and white, in *T. guttalis* with only small black segments and in *T. ilparpa* tibia black. A line-shaped curved black rounded marking at the apex. In *T. guttalis*, this marking is not rounded, only black spots around and in *T. ilparpa* there is a strong black filled marking. Medially, a waved slim black line from costa to dorsum which is splitted in the middle in a double line. With clear reniform and orbicular stigma. In *T. guttalis*, only black spots at costa in the middle and at dorsum. In *T. ilparpa* the medial line is only one strong black waved line. Hindwings white, with weak black discal spot and also a few weak black spots at termen. In *T. guttalis*, a larger weak black marking at apex and no discal spot and in *T. ilparpa* stronger and larger black marking at apex and only small discal spot.



Fig. 1a–c: *Thalatha ilparpa* sp. n., ♂ Holotype; 1a: ups., 1b: uns., 1c: genitalia (150519-5). **Fig. 2a–c:** *T. ellery* sp. n., ♂ Holotype; 2a: ups., 2b: uns., 2c: genitalia (G161019). **Fig. 3 a–c:** *T. guttalis*, ♂, Australia, Northern Territory (NT) near Barunga, Maranoboy, 14°33'3" S, 133°0'4" E; 3a: ups., 3b: uns., 3c: genitalia (150519-2). **Fig. 4:** *T. ilparpa* sp. n. life resting on screen. **Fig. 5:** *T. ellery* sp. n. life resting on screen. **Fig. 6:** map with type locality and distribution of *T. ilparpa* sp. n. and *T. ellery* sp. n. **Fig. 7–8:** Collection site habitat Ellery Creek Big Hole; 8: center see light trap. **Fig. 9:** Collection site habitat Point Haward. **Fig. 10:** Collection site Temple Bar Campground, Ilparpa village. — Photos Mei-Yu CHEN.

Underside of forewing with black rounded apical marking. In *T. ilparpa*, this apical marking is a spot completely filled black. At costa, bright black markings and greyish black blurred middle spot. In *T. guttalis*, the black markings and spots all bright greyish black and blurred and in *T. ilparpa* deeper black and sharply marked. Hindwings with greyish bright black discal spot and one black spot at costa and a few black spots at termen. In *T. guttalis*, bright greyish black spots at costa and at apex and in *T. ilparpa* deeper black apical marking and wavy black subbasal line. Medial black markings at costa and dorsum and also black discal spot.

Male genitalia: Uncus wide, long, pointed. Valvae short, stocky, rounded. In *T. guttalis* slim and long, and in *T. ilparpa* more slim. Ampulla wide, stocky, pointed. In *T. ilparpa* and *T. guttalis* more slim. Juxta more slim than in both other species, with longer and sclerotized hairs. Vinculum wide and pointed, less sclerotized. Phallus short, wide, less sclerotized, without cornuti.

Distribution: The new species is known from the type locality Ilparpa and was collected at the nearby Temple Bar camp ground and in Ellery Creek Big Hole in the West MacDonnell Range.

Biology and food plants unknown. The habitat is an *Acacia* shrubland and hummock grassland surrounded by spinifex plants (*Triodia* and *Plechrachne* spp.), while the second collection site is a dry river habitat with rocks surrounded by *Eucalyptus* open woodland (DEPARTMENT OF THE ENVIRONMENT AND WATER RESSOURCES 2007).

Discussion

The species most similar to both of the new species is *T. guttalis*, which was described from Queensland by WALKER (1866) and is also recorded from the Northern Territory, but only in the north around Darwin (ATLAS LIVING AUSTRALIA 2020 and own collections from October and November 2016). North Queensland and the northern region of the Northern Territory are tropical wet areas and are climatically different from the dry area around Alice Springs. The “Red Centre” in Northern Territory is an arid, dry, hot desert region (DEPARTMENT OF THE ENVIRONMENT AND WATER RESSOURCES 2007, EBACH 2012, EBACH et al. 2013, VAN OOSTERZEE 2018).

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