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**Notes on carabid beetles from the Oriental and Neotropical regions.  
First record of *Trechodes laophilus* Deuve, 2002 from Thailand  
(Coleoptera Carabidae Trechinae) and a synonymic note on the genus *Trirammatus*  
(Coleoptera Carabidae Pterostichinae)**

**Riassunto:** Note sui carabidi delle regioni Orientale e Neotropicale. Prima segnalazione di *Trechodes laophilus* Deuve, 2002 in Thailandia (Coleoptera Carabidae Trechinae) con nota sinonimica sul genere *Trirammatus* (Coleoptera Carabidae Pterostichinae).

*Trechodes laophilus* Deuve, 2002 viene segnalato per la prima volta in Thailandia (provincia di Chiang Mai, Mae Lai River). Questa specie appare strettamente affine a *T. leclerci* Deuve, 1987 e a *T. satoi* Uéno, 1991, entrambi già noti della Thailandia. Viene fornita una chiave di identificazione, basata anche sulla morfologia dell'edeago, di tutte specie di *Trechodes* note della Regione Orientale, oltre che una mappa di distribuzione delle specie presenti in Thailandia.

Inoltre, viene stabilita la nuova sinonimia *Blennidus magellanicus* Allegro & Giachino, 2017 = *Trirammatus unistriatus nocticolor* Straneo, 1955 n. syn.

**Abstract:** *Trechodes laophilus* Deuve, 2002 is firstly recorded from Thailand (Chiang Mai province, Mae Lai River). This species is probably closely related to *T. leclerci* Deuve, 1987 and *T. satoi* Uéno, 1991, both from Thailand too. An identification key including the morphology of the aedeagus, to all *Trechodes* species recorded from the Oriental Region, as well as a distribution map of the species known so far from Thailand, are provided.

Moreover, the following new synonymy is proposed: *Blennidus magellanicus* Allegro & Giachino, 2017 = *Trirammatus unistriatus nocticolor* Straneo, 1955 syn. n.

**Key words:** distribution, taxonomy, Oriental Region, Chile, Trechodini, Pterostichinae, new synonymy.

#### INTRODUCTION

*Trechodes* species are of sporadic occurrence, rare in collections and generally only recorded from a few specimens, most of them attracted by light. Until now, only two species of *Trechodes* were known from Thailand: *T. leclerci* Deuve, 1987, described from Phang Nga province in the SW of the country (Deuve, 1987) and later recorded by Uéno (1989) also from Mt. Doi Suthep, Chiang Mai province, NW Thailand, as well as *T. satoi* Uéno, 1991, described from Mae Suya, Mae Hong Son province, NW Thailand.

Among the abundant materials generously offered to us by our friend and colleague Walter Rossi, an esteemed mycologist and specialist of Laboulbeniales, we had the opportunity to find three specimens of *Trechodes* Blackburn, 1901 from Thailand (Chiang Mai province, Mae Lai River) which belong to *Trechodes laophilus* Deuve, 2002, described from Laos and only recorded from this country. Due to the rarity

of these records, an updated distribution map of the three species from Thailand is provided, as well as an identification key including the morphological features of the aedeagus, to all *Trechodes* species recorded from the Oriental Region.

Finally, the taxonomic position of *Blennidus magellanicus* Allegro & Giachino, 2017, a species recently described from Chilean Patagonia, was re-examined and a new synonymy is proposed.

#### MATERIALS AND METHODS

Morphological analysis was carried out through the examination of habitus by a stereomicroscope Wild M3 and male genitalia, included in Canada Balsam, by a biological microscope Leitz Dialux.

The images of habitus and male genitalia were made by a Leica DFC295 camera mounted on a Leica M205 C Stereomicroscope, using the software Leica Application System V4.0.

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The material studied is deposited in the following Museums and private collections:

CAI: Gianni Allegro Collection, Moncalvo (Asti), Italy

CGi: Pier Mauro Giachino Collection, San Martino Canavese (Torino), Italy

MCSNM: Museo Civico di Storia Naturale (Straneo Collection), Milano, Italy

MRSNT: Museo Regionale di Scienze Naturali (Mateu Collection), Torino, Italy

### *Trechodes laophilus* Deuve, 2002

Material examined: 2 ♂♂, 1 ♀ Thailand, Chiang Mai, Mae Lai River, km 27 road 118, 18°54'59"N - 99°14'09"E, 470 m a.s.l., unspecified local collector (CAI, CGi).

*T. laophilus* is similar to *T. leclerci*, *T. satoi* and *T. bakeri* by the general shape and color of the body (elytra with dark median band and pale apical antennomeres) (Fig. 1). The aedeagus, however, makes pos-



Fig. 1. Habitus of *Trechodes laophilus* from Thailand.

sible an easy identification of these species as it varies both in shape and in the structure of endophallus. *T. laophilus* differs from *T. leclerci*, *T. bakeri* and *T. satoi* in the shape of the apex of the median lobe of the aedeagus which is, in lateral view, more markedly hooked upwards (Fig. 2a). It also differs in the morphology of endophallus, which is armed with two robust median tooth-like pieces (Fig. 2b) (only one in *leclerci*, three both in *satoi* and *bakeri*, but differently conformed).

According to Uéno (1990), *T. cauliops* forms a separate species group, as well as *T. bakeri*, while *T. satoi* and *T. leclerci* seem to be close relatives. Successively, Deuve considered *T. palawanensis* as a strict relative of *T. bakeri* (Deuve, 2001), and *T. laophilus* as related to *T. satoi* and *T. leclerci* (Deuve, 2002).

The distribution map of the three species from Thailand, including the record of *T. laophilus* from Laos, is illustrated in Fig. 3. It has to be noted that the record of *T. leclerci* in north-western Thailand is based on a single female specimen (Uéno, 1989), and at that time neither *T. satoi* nor *T. laophilus*, which are very similar to *T. leclerci* in external morphology, were described. For this reason it is possible that this record refers to *T. satoi* or *T. laophilus*.

The characters used in the following identification key are taken from the original descriptions of the species (Bates, 1892; Deuve, 1987, 2001, 2002; Jeannel, 1926; Uéno, 1991). For *T. cauliops* and *T. bakeri*, the re-descriptions and the illustrations respectively by Andrewes (1935) and Uéno (1988) were checked too.

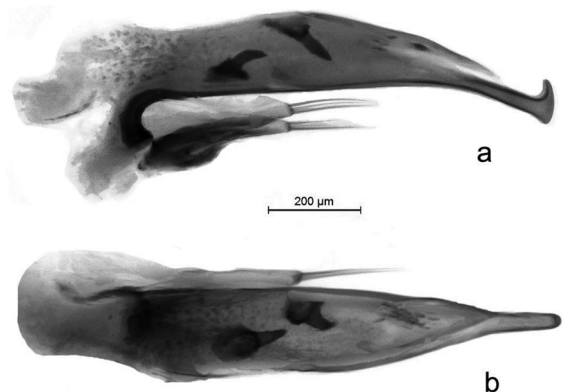


Fig. 2. Median lobe of aedeagus in left lateral (a) and dorsal view (b) of *Trechodes laophilus* from Thailand.

**Key to the *Trechodes* species from the Oriental Region**

1. Antennae and elytra concolorous brown, at most reddish towards apex .....2
  - Elytra reddish-brown with a distinct dark transverse band at middle, more or less extended along suture; antennomeres 7-11 pale (Fig. 1).....3
2. Basal peduncle of pronotum (from hind angles to base) short (about 1/7 of total length of pronotum). Species from Myanmar (Burma) .....
  - .....*Trechodes cauliops* (Bates, 1892)
  - Basal peduncle of pronotum longer (about 1/4 of total length). Species from Philippines (Palawan) .....
    - .....*Trechodes palawanensis* Deuve, 2001
3. Smaller in size (overall length = 2.80-3.00 mm)...4
  - Larger in size (overall length = 3.30-3.50 mm).....5
4. Apex of the median lobe of aedeagus longer and slenderer, with three median tooth-like pieces in en-

dophallus. Thailand.....*Trechodes satoi* Uéno, 1991  
 - Apex of the median lobe of aedeagus shorter, with a single median tooth-like piece in endophallus. Thailand .....*Trechodes leclerci* Deuve, 1987

5. Terminal spurs of male metatibiae remarkably compressed, the internal one distinctly unguiform at apex. Three median elongate sclerites in endophallus. Species from the Philippines (Luzon) .....  
 .....*Trechodes bakeri* Jeannel, 1926  
 - Terminal spurs of male metatibiae not evidently compressed, linear at apex. Two median tooth-like pieces in endophallus (Fig. 2b). Species from Laos and Thailand .....*Trechodes laophilus* Deuve, 2002

***Blennidus magellanicus* Allegro & Giachino, 2017**

Following a recent discussion with Kipling Will and Pierre Moret (2020, *in litteris*) concerning the morphological characters useful to distinguish the genus *Trirammatus* Chaudoir, 1838 from *Blennidus* Motschulsky 1865, the taxonomic position of *Blennidus magellanicus* Allegro & Giachino, 2017 was re-examined.

At a deeper examination, we realized that this taxon should actually be assigned to *Trirammatus* due to the presence of two setae at base of tarsal claws (Will, 2005) and, moreover, that it was already described as *Trirammatus unistriatus nocticolor* by Straneo (1955). The check of the type specimens deposited in the Straneo collection at MCSNM (Fig. 4) confirmed this hypothesis. The subspecies *nocticolor* of *T. unistriatus* is only found in the extreme South of Chile (Magallanes), whilst the nominal subspecies is distributed in central-southern Chile (Araucania, Los Lagos) and Argentina. When describing it, we wrongly assigned it to *Blennidus* as these genera are morphologically very similar and in need of a revision of their taxonomic status (Will, 2020 *in litteris*); moreover, we were unable to correctly observe, by optical microscope, the diagnostic character of setae at the claw base and we were also misled by the label '*Blennidus* n. sp.' (by Mateu's hand) attached to the specimens referring to this taxon in Mateu Collection (MRSNT), which confirms the difficulties in distinguishing the genus *Blennidus* from *Trirammatus*.

As the identity of *Blennidus magellanicus* with *Tri-*

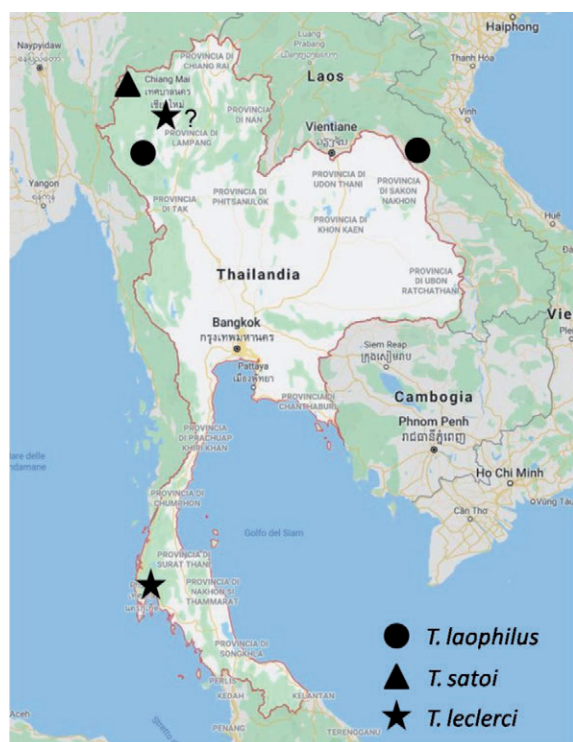


Fig. 3. Distribution map of *Trechodes laophilus*, *T. leclerci* and *T. satoi*.

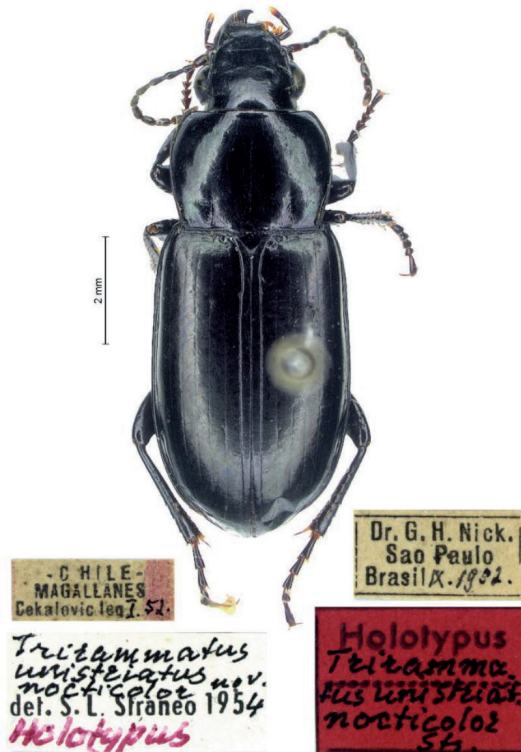


Fig. 4. Habitus and labels of *Trirammatius unistriatus nocticolor* Straneo, 1955, Holotypus.

*rammatius unistriatus nocticolor* was assessed, the following new synonymy is proposed:  
*Blennidus magellanicus* Allegro & Giachino, 2017 = *Trirammatius unistriatus nocticolor* Straneo, 1955 **syn. n.**

#### CONCLUSIONS

As *Trechodes* species are macropterous and probably good fliers, sometimes attracted by light, their actual distribution in the Oriental Region could be wider than as thought in the past, as the recent new record of *T. laophilus* in Western Thailand demonstrates. This topic could be better investigated in the future by surveys based on light trapping, although the sporadic sampling of *Trechodes* specimens makes this research certainly difficult.

Finally, the re-examination of a South American species recently described led us to establish the new synonymy of *Blennidus magellanicus* Allegro & Giachino, 2017 with *Trirammatius unistriatus nocticolor* Straneo, 1955. Studies also based on a molecular approach are currently carried out (Will, 2020 *in litteris*) in order to shed light on the taxonomic status of these genera.

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