

Taxonomic changes among some tiger beetles from India (Coleoptera, Cicindelidae)

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The following taxa are synonymized: *Neocollyris (Orthocollyris) crassicornis andamana* (Bates, 1878) syn. nov. = *N. crassicornis* (Dejean, 1825); *Neocollyris (Mesocollyris) metallica* Naviaux, 2004 syn. nov. = *N. shyamrupi* Saha and Halder, 1986; *Neocollyris (Mesocollyris) fowleri* Naviaux, 1995 syn. nov. = *Neocollyris (Stenocollyris) nilgirica* Fowler, 1912; and *Jansenia tetrastacta dehliensis* Matalin and Anichtchenko, 2012 syn. nov. = *Jansenia tetrastacta* (Wiedemann, 1823). *Neocollyris (Stenocollyris) nilgirica* Fowler, 1912 is transferred to the subgenus *Mesocollyris* Naviaux, 1994. *Cicindela (Ancyilia) zingaroana* Werner and Wiesner, 2008 is elevated to full species rank.

Key words: India, Cicindelidae, taxonomy, synonymy.

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INTRODUCTION

During the preliminary work for A Field Guide to the Tiger Beetles of India (Pearson et al. 2020), the authors noticed five taxonomic inconsistencies, which are described and corrected below.

MATERIAL AND METHODS

The specimens used in this study are housed in Daugavpils University Beetle Collection (Daugavpils, Latvia) and private collections of the authors.

The habitus photographs were obtained with a digital camera Canon EOS 6D with Canon MP-E 65 mm macro lens, using Helicon Focus auto montage and subsequently was edited with Photoshop.

High-resolution images, including type specimens and additional material, are available at <http://www.carabidae.pro>.

RESULTS

1. *Neocollyris (Orthocollyris) crassicornis* (Dejean, 1825)

Neocollyris (Orthocollyris) crassicornis andamana (Bates, 1878) **new synonymy**

Henry Walter Bates described *Collyris Andamana* in 1878 (p. 335) based on two female specimens (Fig. 1) from the Andaman Islands (in Latin): “Similar to *C. crassicornis* (Dej.) (Fig. 2), but larger and the five antennal segments longer and slenderer. Dark blue or purple; femora reddish brown; thorax as in *C. crassicornis* little constricted, more conical, abruptly constricted anteriorly, very strongly transversely wrinkled; elytra with cylindrical shape, coarsely confluent punctate, points expanded toward apex; labial palps reddish brown.”

In his monograph on the genus *Neocollyris*, Roger Naviaux lists (1995: 150) *andamana* as a subspecies of *Neocollyris (Orthocollyris) crassicornis* (Dejean 1825): “Differs from the nominative form by its larger size, its more elongate shape and its more coarse elytral sculpture”, (continued in French) “The characters of *andamana* are very close to those of *crassicornis* and *subclavata*; it was considered a subspecies of the latter because of its appearance, but it differs mainly by the less humped shape of the vertex. On the other hand, the fact that *subclavata* also exists in the Andaman Islands tends to show the opposite. The concept of a distinct species is not proven, it seems to be a good geographical race of the species *crassicornis*. ... Length 14–18 mm.”

The body length of *N. crassicornis* is 11–18 mm, (Naviaux gives 11–15.5 mm, 1995: 149), especially females from South India, Mysore State, in the collection of the first author, are generally larger with 18.0 mm body length. The sculpture of the elytra surface is variable - the larger the specimen the coarser the sculpture.

The Andamans fit seamlessly into the distribution range of *N. crassicornis*: Sri Lanka, India

(Arunachal Pradesh, Assam, Jharkhand, Karnataka, Kerala, Odisha, Tamil Nadu, Uttarakhand, West Bengal), Nepal, Bangladesh, Bhutan, Myanmar, Thailand, Laos, Vietnam, Malaysia (Malacca), Indonesia (Sumatra, Jawa, Bali), China (Fujian, Guangdong, Guangxi, Hainan, Hong Kong, Jiangxi, Yunnan, Zehjiang), Taiwan. The specimens from the Andaman Islands cannot be distinguished from specimens from other localities by size and elytral surface sculpture, as these are within the range of variation of the species. *N. andamana* (Bates, 1878) is thus included herein as a synonym of *N. crassicornis* (Dejean, 1825).

2. *Neocollyris (Mesocollyris) shyamrupi* Saha and Halder, 1986

Neocollyris (Mesocollyris) metallica Naviaux, 2004 **new synonymy**

Robert Acciavatti (Pittsburgh, PA) pointed us to an article published by Saha and Halder in 1986



Fig. 1–2. Habitus. 1) Lectotype female of *Neocollyris (Orthocollyris) crassicornis andamana* (Bates, 1878) syn. nov., digital image by Azadeh Taghavian, MNHN. 2) *Neocollyris (Orthocollyris) crassicornis* (Dejean, 1825) female, from N India, Uttarakhand, 5km N Ramnagar. Scale = 5 mm

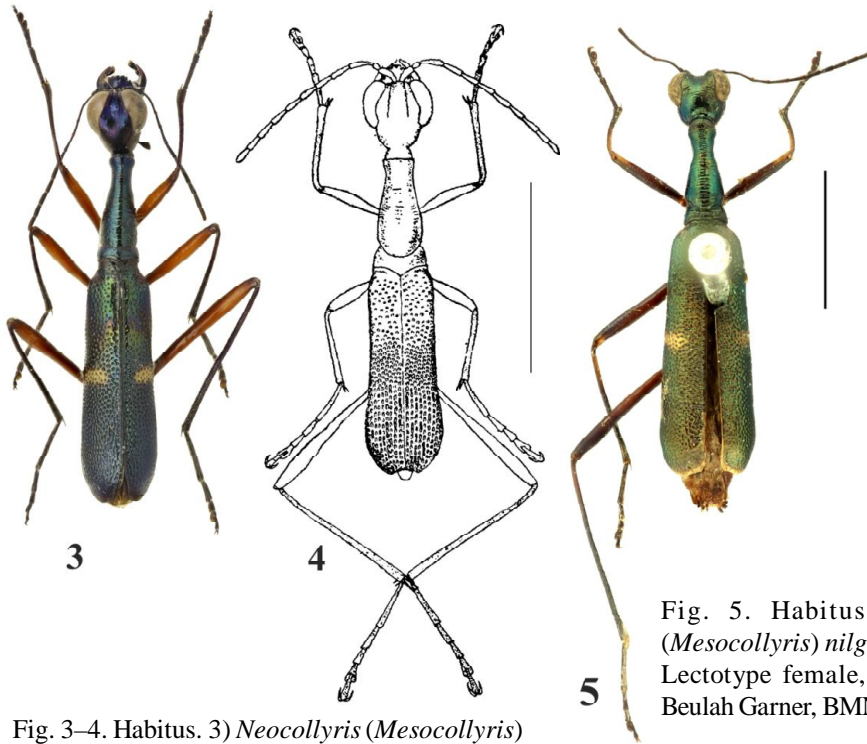


Fig. 3–4. Habitus. 3) *Neocollyris* (*Mesocollyris*) *metallica* Naviaux, 2004 syn. nov., male, from Tamil Nadu, Nilgiri Hills. 4) *Neocollyris* (*Mesocollyris*) *shyamrupi* Saha and Halder, 1986 comb. nov., drawing of Saha and Halder (1986: 139). Scale = 5 mm.

Fig. 5. Habitus of *Neocollyris* (*Mesocollyris*) *nilgirica* Fowler, 1912, Lectotype female, digital image by Beulah Garner, BMNH. Scale = 5 mm.

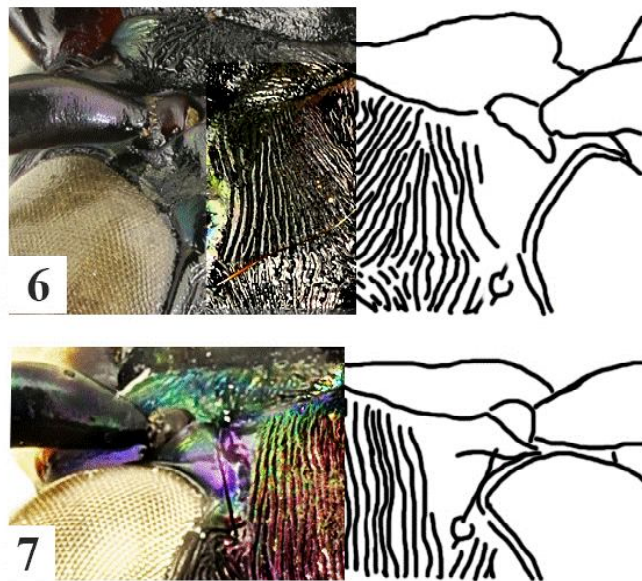


Fig. 6–7. Frons. 6) *Cicindela* (*Ancyliina*) *andrewesi* (Horn, 1894). 7) *Cicindela* (*Ancyliina*) *zingaroana* Werner and Wiesner, 2008 bon. spec.

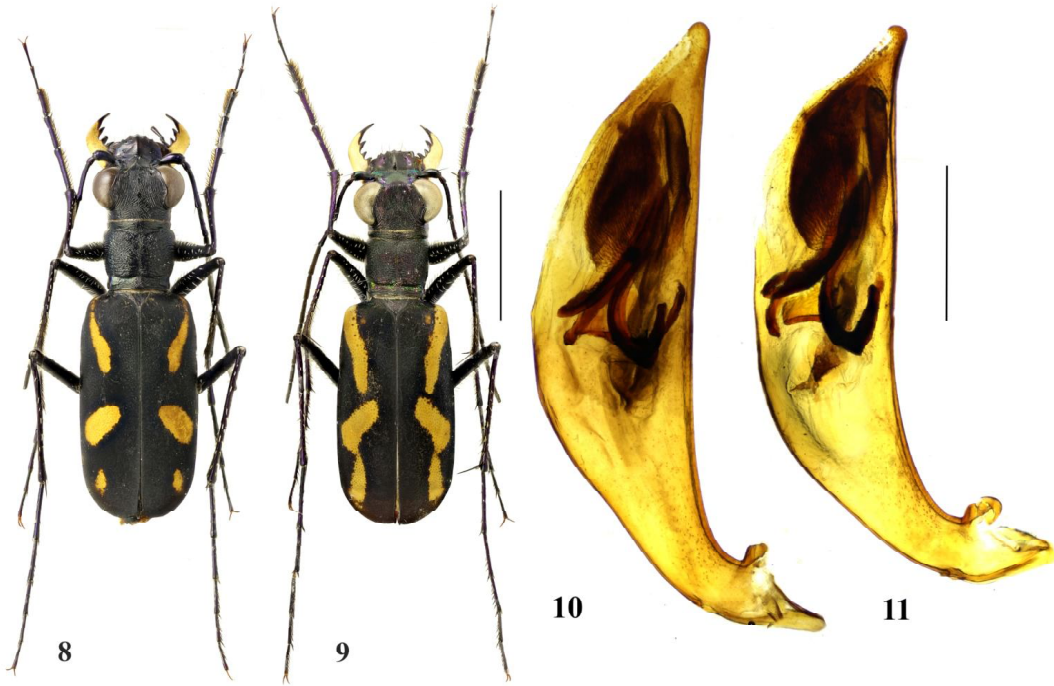
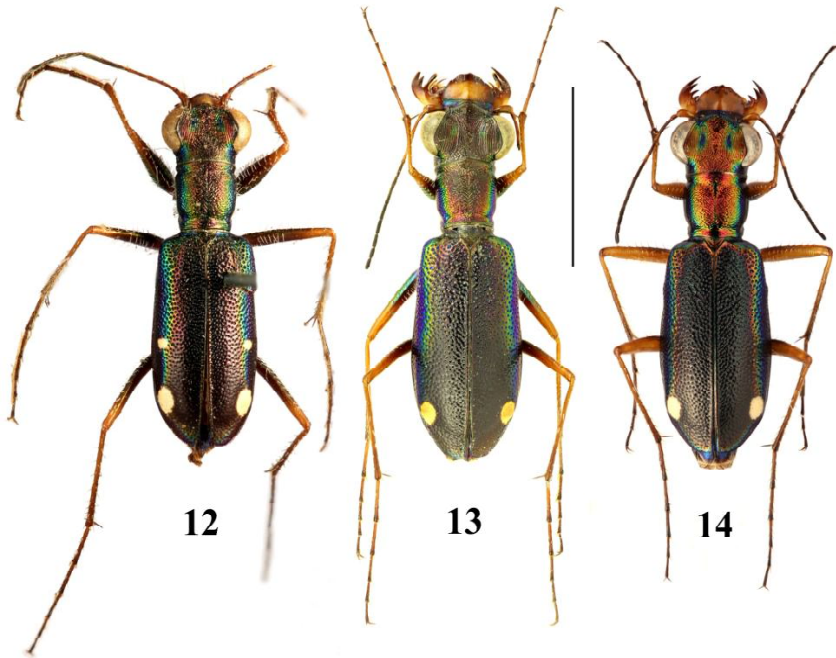


Fig. 8-9. Habitus. 8) *Cicindela (Ancylia) andrewesi* (Horn, 1894). 9) *Cicindela (Ancylia) zingaroana* Werner and Wiesner, 2008 bon. spec. (Paratype). Scale = 5 mm

Fig. 10-11. Aedeagus. 10) *Cicindela (Ancylia) andrewesi* (Horn, 1894). 11) *Cicindela (Ancylia) zingaroana* Werner and Wiesner, 2008 bon. spec. (Paratype). Scale = 1 mm



Figures 12-14. Variability of *Jansenia tetrastacta* (Wiedemann, 1823). Habitus. 12) Bengal. Lectotype. 13) Bihar, Palaman Nat Park. 14) *J. t. dehliensis* Matalin and Anichtchenko, 2012, Paratype, **syn. nov.** Scale = 5 mm

in the Records of the Zoological Survey of India. In it is a description of *Neocollyris shyamrupi* (1986: 138–140). Unfortunately, this article was unknown not only to us, but also to Roger Naviaux, the deceased specialist of the Collyridini. Naviaux described (2004:117, 118) *Neocollyris (Mesocollyris) metallica*, which should be conspecific to *shyamrupi* according to both descriptions. To verify this, we tried to borrow the type of the species for study or at least to get a picture of the type. In the work of Saha and Halder it is mentioned that holotype male and two paratype females are preserved in the Zoological Survey of India, Kolkata. With the support of Prof. V. P. Uniyal (Dehradun, India) we have tried to locate these specimens. Unfortunately, without success. The person in charge of the beetle section at ZSI informed us that the specimens are untraceable. Because of this fact, a recovery of “typical” *shyamrupi* is not expected in the foreseeable future, and because the descriptions of both species are virtually identical, *N. metallica* Naviaux, 2004 is placed into synonymy of *N. shyamrupi* Saha and Halder, 1986.

3. *Neocollyris (Mesocollyris) nilgirica* Fowler, 1912 new combination

Neocollyris (Stenocollyris) nilgirica Fowler, 1912

Neocollyris (Mesocollyris) fowleri Naviaux, 1995
new synonymy

The basis on which Roger Naviaux described the species *Neocollyris (Mesocollyris) fowleri* is not obvious. He described this species (1985: 79, 80) from a female specimen that is housed in the BMNH (Beulah Garner called this to our attention, Fig. 5), and it is labeled as the holotype of *Neocollyris nilgirica*. In the opinion of Naviaux (1995: 80), this specimen does not match Fowler’s description, and it likely is mislabeled. Elsewhere (1995: 106, 107) Naviaux reproduced Fowler’s original description (1912: 260, 261) of *N. nilgirica* because he could not find the holotype specimen of the species. However, the female from BMNH with the type label of *N. nilgirica* completely agrees with Fowler’s description, and

there is no doubt about the identity. The type of *N. nilgirica* is therefore also the type of the species *N. fowleri*.

We speculate why Naviaux placed the species *nilgirica* in the subgenus *Stenocollyris* Naviaux, 1995. The shape of the labrum and the formation of its teeth is a good feature to distinguish the subgenera *Mesocollyris* Naviaux, 1995 and *Stenocollyris*. In *Mesocollyris* the middle labial teeth are not protruded but on the same level as the rest of the apical teeth. In *Stenocollyris*, the middle labial teeth are preferred; all teeth are longer than in *Mesocollyris*. Fowler writes nothing about the shape of the labrum and the formation of the teeth in the description of *nilgirica*. But because Naviaux compares *nilgirica* with *Neocollyris (Stenocollyris) andrewesi* (Horn, 1894), we assume that he presupposed a similar labrum with protruding long teeth for *nilgirica*, which is typical of the *Mesocollyris*-labrum. Based on these details, we place *Neocollyris (Mesocollyris) fowleri* into synonymy with *Neocollyris (Stenocollyris) nilgirica*, which is moved into the subgenus *Mesocollyris*.

4. *Cicindela (Ancyliia) zingaroana* Werner & Wiesner, 2008 *bona species*

Cicindela (Ancyliia) andrewesi zingaroana was described by Werner and Wiesner in 2008 (2008: 16). During a re-examination of the material of *C. andrewesi zingaroana* (Fig. 9), we noticed some additional features not mentioned in the original description. In all studied specimens, the frontal grooves converge with each other at an acute angle along the midline (Fig. 6), while in nominotypical subspecies frontal grooves are always parallel (Fig. 7). No clear differences in the structure of the endofalus were found between *C. andrewesi* s. str. and *C. a. zingaroana*; however, in *C. a. zingaroana* the apex of the aedeagus is slightly bent downward (Fig.11), which was also noted in the figure in the original description (Werner & Wiesner 2008). Based on these characters, along with the previously known differences in elytral pattern (Figs. 8-9), we propose that *Cicindela (Ancyliia) zingaroana*

Werner and Wiesner, 2008 be elevated to a bona species.

5. *Jansenia tetrastacta* (Wiedemann, 1823)

Cicindela tetrastacta Wiedemann, 1823
Jansenia tetrastacta delhiensis Matalin & Anichtchenko, 2012 **new synonymy**

The subspecies *J. t. delhiensis* Matalin and Anichtchenko, 2012 was described on the basis of 17 specimens collected in Central Ridge Reserve Forest (New Delhi City). The main features distinguishing it from the nominotypical subspecies were a lack of or indistinct small middle spots on the elytra, unicolored pale inner surface of hind femora, and more transverse labrum in males, i. e. 1.7–2.3 (1.9) times as wide as long in *J. t. delhiensis* compared to 1.6–1.8 (1.7) times as wide as long in *J. tetrastacta* s. str. The study of additional material, and re-study of type series of *J. t. delhiensis*, established that these characters are highly variable, and are found throughout other populations (Figs 12–14). New synonymy is proposed here.

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