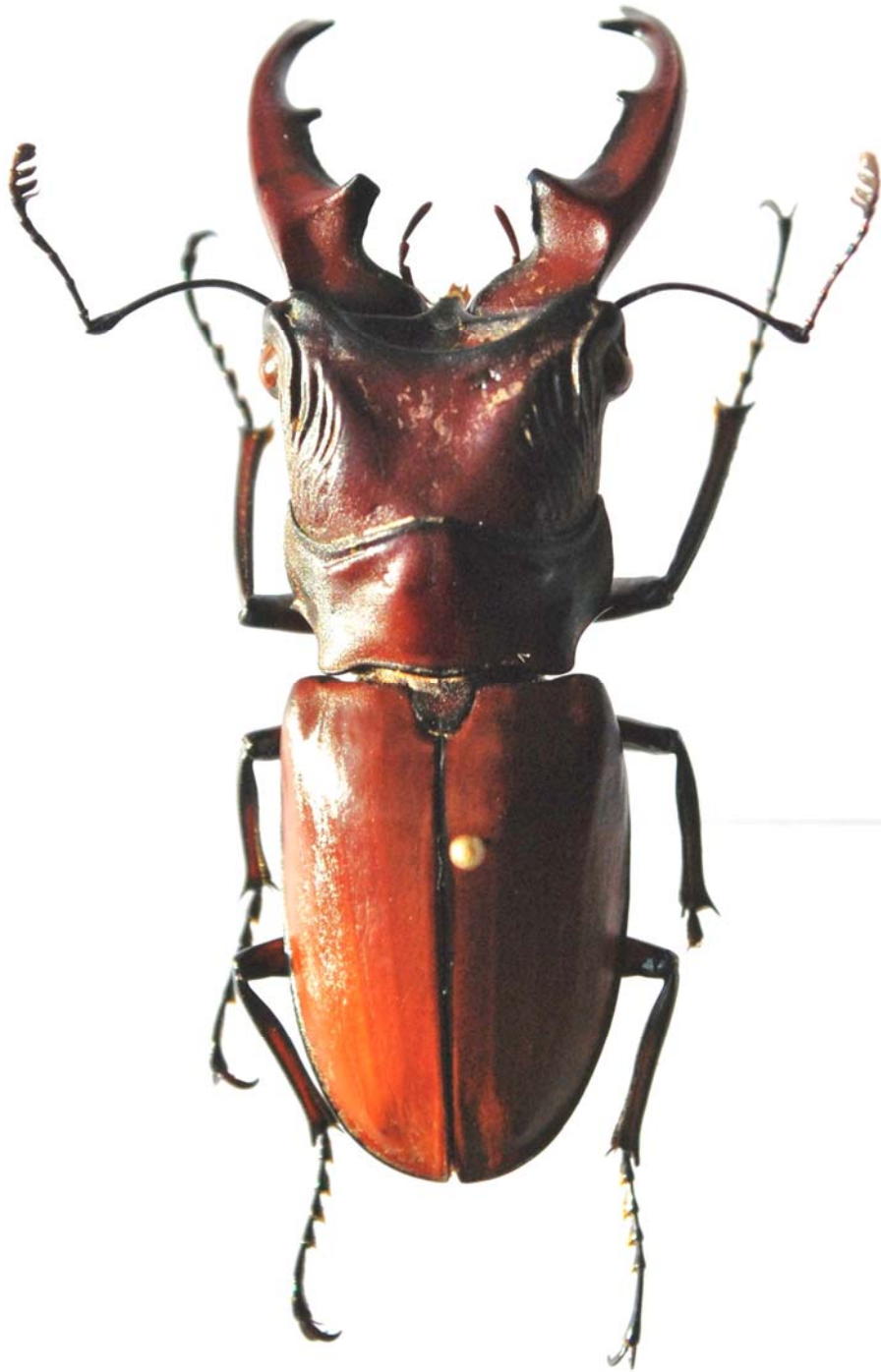


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Contents

K.-D. Schenk: Description of new *Lucanidae* from Asia and remark about
Neolucanus zebra (Coleoptera, Lucanidae).

Cover

Cyclommatus asahinai nanlingensis spec. nov.

Description of new *Lucanidae* from Asia and remark about *Neolucanus zebra*
(Coleoptera, *Lucanidae*).

Klaus-Dirk Schenk

Abstract

One new species of the genus *Lucanus* SCOPOLI, 1763, *Lucanus chinhillensis* spec. nov. from north-western Myanmar (Chin Hills), a new species of the genus *Neolucanus* THOMSON, 1862, *Neolucanus ingae* spec. nov. from north-western Vietnam and a new subspecies of the genus *Cyclommatus* Parry, 1863, subgenus *Cyclommatus* Didier, 1927, *Cyclommatus asahinai nanlingensis* sspec. nov. are described, pictured and compared with the related taxa. A specimen similar to *Neolucanus zebra* Lacroix, 1988 from Taiwan Island, recently captured in China, Guangdong province, is figured.

Key words

Coleoptera, *Lucanidae*, *Lucanus chinhillensis*, *Lucanus tsukamotoi*, *Lucanus viheari*, *Lucanus fairmairei*, *Neolucanus ingae*, *Neolucanus kirsteni*, *Neolucanus zebra*, *Cyclommatus asahinai nanlingensis*, Myanmar, Vietnam, Thailand, Laos, China, Guangdong, Taiwan.

***Lucanus chinhillensis* spec. nov.**

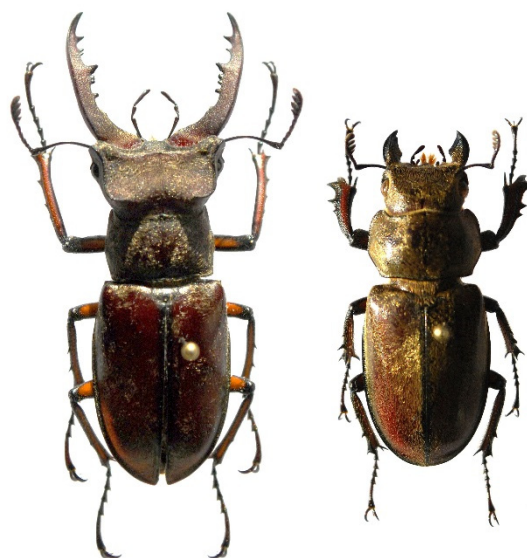


Fig. 1: ***Lucanus chinhillensis*** spec. nov. ♂ holotype and ♀ paratype (allotype), north-western Myanmar, Chin Hills, Lim-Kai, VI. 2000.

Holotype. ♂, north-western Myanmar, Chin Hills, Lim-Kai, 1500-1600m, VI. 2000, local collector, in coll. K.- D. Schenk, Wehretal, Germany.

Paratypes. 1 ♂ and 2 ♀, same collecting data and 1 ♂ and 1 ♀ north-western Myanmar, Chin Hills, Tanzing, 28. V. 1999, local collector, in coll. K.- D. Schenk, Wehretal, Germany.

Etymology. The name of the new species is adapted from the collecting site of the type specimens, the Chin Hills of north-western Myanmar.

Description and diagnosis. ♂ holotype (Fig. 1), total length 39,5 mm, mandibles length 11,3 mm, head width 10,8 mm, prothorax width 9,5 mm, elytra length 17,0 mm, elytra width 11,8 mm. The total length of the ♂ paratypes is 35,5 mm and 36,7 mm. Head, mandibles and prothorax are blackish-brown; the elytra are dark reddish-brown with blackish-brown suture and lateral margins. The downside is dark brown. Femora and tibiae are yellowish-brown with blackish-brown joints, inner and outer edges. Tarsi, antennae and palpi are blackish-brown. The body is densely covered dorsally and ventrally with a sparse pubescence of pale hairs. This pubescence is more sparsely on the elytra. The pale yellowish hairs are longer on the ventral part of the body.

The body is slender. The head is transverse, very minutely granulated and dull. The frontal carina of the head is only slightly raised in the middle. The short, triangular clypeolabrum is accompanied by an acute spine on each side. The front angles of the head are acute and significantly broader than the well developed hind lobes of the head.

The mandibles are relatively strait; only bend inside near the basis and the tip. The mandibles have the strongest tooth somewhat in front of the middle of the inner side. The posterior part of this tooth has a small knob. The inner tooth of the final fork is relatively short and directed forward. The left mandible has two small teeth placed closely together near the final fork and the right one has only one. Posterior of the median tooth are two small tubercles placed closely together, one more separated small tooth and a very small knob closer to the basis. Further there is a small knob at the downside of each mandible close to the basis. The antennal clubs are 4-jointed. The prothorax is minutely granulated. It is less wide than the elytra. The elytra are very fine punctured; glossier than the prothorax and the head. The shoulders have minute spines. The anterior and median tibiae have two spines; the hind tibiae are without spines.

♀ allotype (Fig. 1), total length 27,8 mm, prothorax width 9,2 mm, elytra length 16,3 mm, elytra width 10,7 mm. The total length of the ♀ paratypes is 27,1 mm and 28,4 mm. The ♀ is dark reddish brown, darker upon head, thorax and outer edges of elytra; glossier than the ♂. The femora are blotched with orange; the tibiae are darker than in ♂. The body is only sparsely covered with pale yellow hairs.

Lucanus chinhillensis spec. nov. is belonging to the *Lucanus fortunei*-group. The closest taxa are *Lucanus tsukamotoi* Nagai, 2002 from Thailand (Nan), Laos (Mt. Phu Pane) and northern Vietnam (Yen Bai Province) as well as *Lucanus viheari* Schenk, 2013 from Cambodia (Preah Vihear Province). The holotype of *L. chinhillensis* spec. nov. is representing a smaller male. It is compared here with a smaller male of *L. tsukamotoi* from north-eastern Thailand (Nan) (Fig. 2) and with the holotype of *L. viheari* (Fig. 3). It should be mentioned that the populations of *L. tsukamotoi* from northern Laos (Mt. Phu Pane) and north-western Vietnam (Yen Bai Province) are slightly different from the population from the type-location of *L. tsukamotoi* (Thailand, Nan) and are probably representing a subspecies. *L. chinhillensis* spec. nov. can be separated from *L. tsukamotoi* NAGAI, 2002 from Thailand, Nan by the following external morphological characters:

male ♂

- head, mandibles and prothorax blackish-brown
- elytra dark reddish-brown, only sparsely covered with pale yellow hairs
- final fork of the mandibles less opened as at *L. tsukamotoi*,
outer and inner tooth of the final fork shorter

- median inner tooth of the mandibles with a small knob at posterior side. Between the middle tooth and the final fork two small teeth placed closely together (*L. tsukamotoi* with 3 - 4 small teeth)

female ♀

- entire body more reddish-brown
- the total body is significantly less covered by yellowish-pale hairs
- the shoulders of elytra are more prominent than at *L. tsukamotoi*
- the tips of the anterior femora are shorter

Notes. One ♂ of *L. chinhillensis* spec. nov. from Burma, northern Chin Hills (E. Y. Watson leg.) is figured by Arrow (ARROW, 1949, plate IV., Fig. 5). But this specimen was misidentified as *L. fairmairei*. 3 more specimens of *L. chinhillensis* spec. nov. (2 ♂ and 1 ♀) from Chin Hills, Myanmar, are figured by Fujita (FUJITA, 2010, plate 44, figs. 268-1 to 268-3) but are also wrongly identified as *L. fairmairei*. It should be noted that the type specimen of *L. fairmairei* was captured from “Se-Pin-Lou-Chan”, a location in China between Ya-an and Luding in western Sichuan (in former times a part of Tibet). Further it has been pointed out before that the distribution of *L. fairmairei* is restricted to some places in Sichuan and Guizhou only (HUANG ET CHEN, 2010, p. 68-72). Those locations are far away from the Chin Hills in Myanmar (Fig. 4).

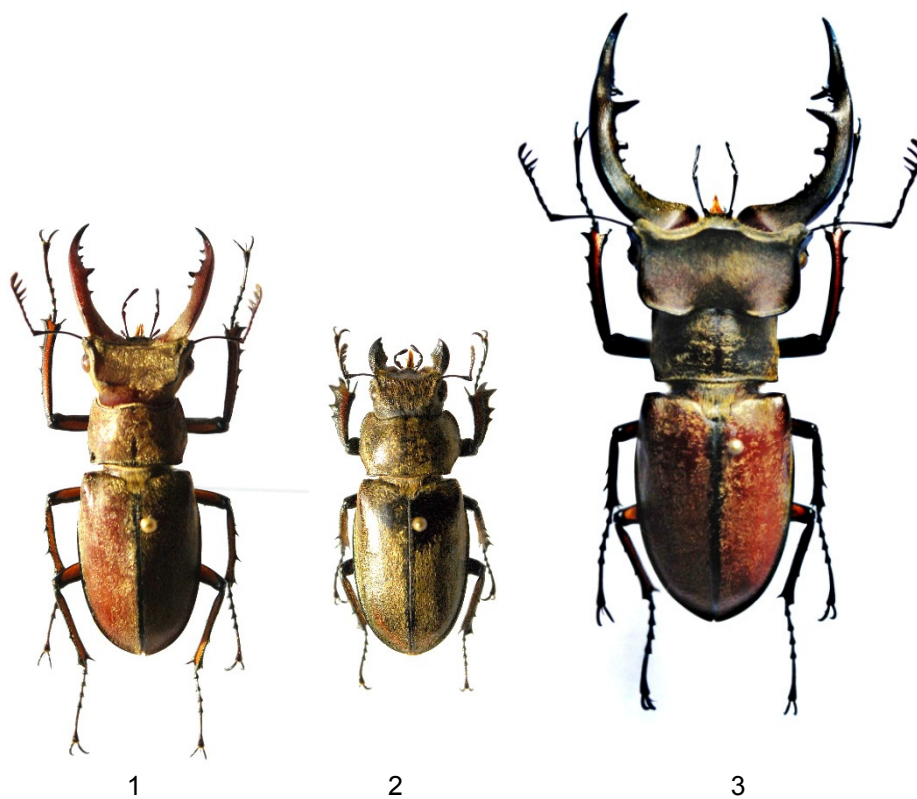


Fig. 2: *Lucanus tsukamotoi* Nagai, 2002, ♂ (1) and ♀ (2) captured in north-eastern Thailand, Nan area, 2200 m, VI. 1993 and *Lucanus tsukamotoi* ssp.?, large ♂, (3) from northern Laos, Mt. Phuh Pane.

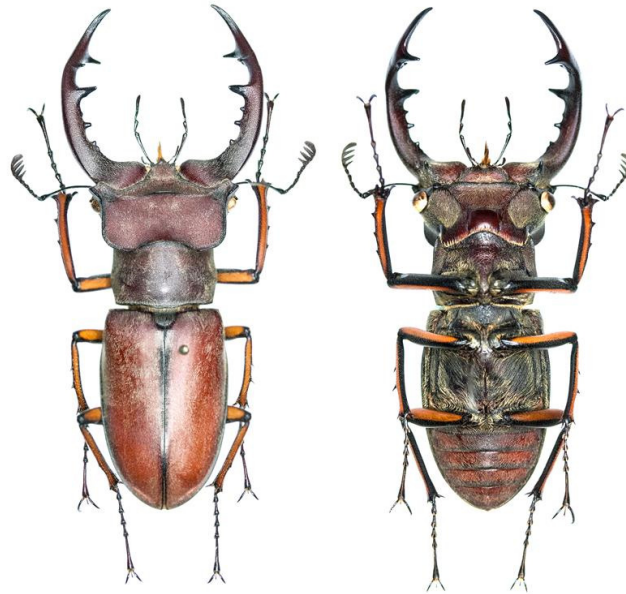


Fig. 3: *Lucanus viheari* Schenk, 2013, ♂ holotype, 44,3 mm (dorsal and ventral) from Cambodia, Preah Vihear Province, Choam Khsant, VI 2011.

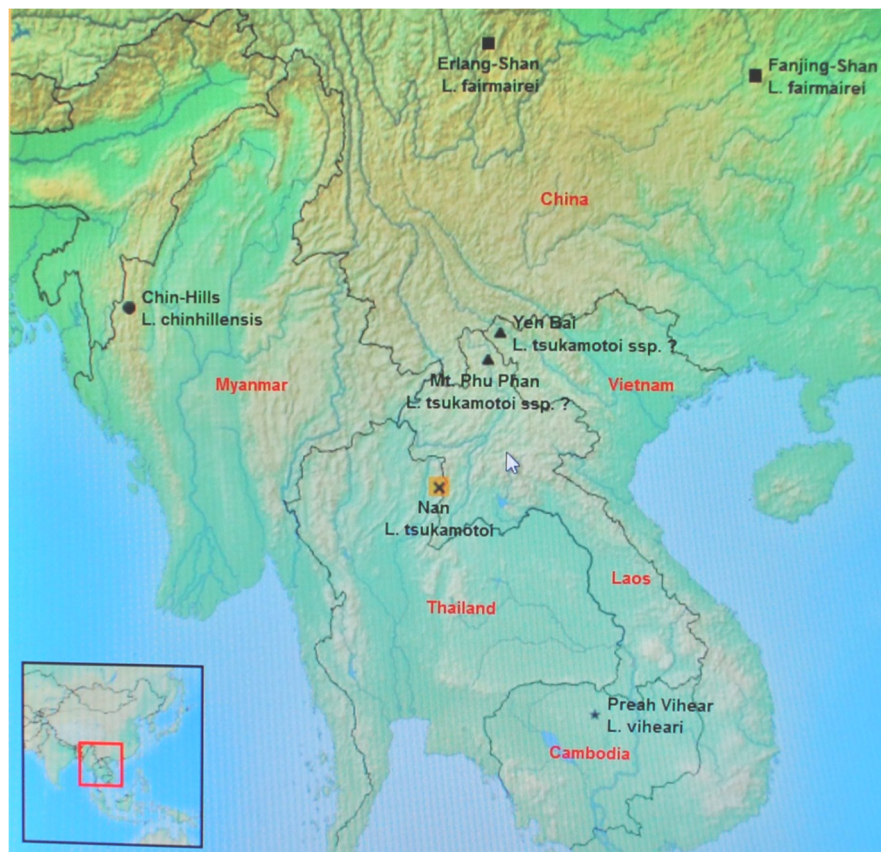


Fig. 4: Distribution of *L. chinhillensis* spec. nov., *L. tsukamotoi*, *L. viheari* and *L. fairmairei* in Asia

***Neolucanus ingae* spec. nov.**



Fig. 5: *Neolucanus ingae* spec. nov., ♂ holotype and ♀ paratype (allotype), north-western Vietnam, Yen Bai Province, Mu Cang Cai, 900 - 1100 m.

Holotype. ♂, north-western Vietnam, Yen Bai Province, Mu Cang Cai, 900 - 1100 m, Dong leg., in coll. K.- D. Schenk, Wehretal, Germany.

Paratypes. 6 ♂, 7 ♀ (allotype), same collecting data, in coll. K.- D. Schenk, Wehretal, Germany, 1 ♂, 1 ♀, same collecting data, in coll. A. Kirchner, Neuburg, Germany.

Etymology. The new species is named after the youngest daughter of the author.

Description. ♂ holotype (Fig. 5), total length 33,3 mm, mandibles length 5,1 mm, prothorax width 12,8 mm, elytra length 17,8 mm, elytra width 13,1 mm. Total length of the male paratypes 27,8 - 33,5 mm. Dorsally and ventrally uniform black and shining. The prothorax and the elytra are less glossy at lateral margins. The dorsal surface of the head is minutely granulated. The vertex is broadly concave emarginated and significantly depressed. The eyes are completely divided by the canthi. The canthi are relatively narrow and parallel-sited, angulated in front and obtusely round posterior. The convex epistom is very small. The mentum is densely covered by short brown hairs.

The mandibles are about as longer as the head, first strait at the tips curved inward. There are 5 small, irregular teeth at the inner margin. The dorsal surface of the mandibles is minutely punctured. The antennal clubs are formed by 3 lamellate antennomeres.

The pronotum is more shining at the central part and less shiny laterally. The surface is very minutely punctured. The lateral margins are convex; the median and posterior angles are slightly angulated but not acute. The elytra are oval elongated, about as wide as the prothorax. The surface is very minutely and sparsely punctured.

The protibiae have 2 teeth behind the apical fork. The lateral margins of mesotibiae and metatibiae are without spines. The ventral side is punctured; the epipleurae are smooth. The sternal process is short and rectangular, not prominent.

♀ allotype (Fig. 5), total length 30,8 mm, prothorax width 12,7 mm, elytra length 17,5 mm, elytra width 13,1 mm. Total length of the ♀ paratypes 26,7 - 33,2 mm. The colour and the structure of the surface of the body are the same as at the ♂; but the head is stronger punctured and the elytra are less elongate. The anterior tibiae are wider and have 3 teeth behind the apical fork.



Fig. 6: *Neolucanus kirsteni* Schenk, 2013, central Vietnam, Da Nang, Ba Na
♂ holotype (38,5 mm) and ♀ paratype (allotype, 37,7 mm).

Diagnosis. The colour, shape and structure of the body of *Neolucanus ingae* spec. nov. are similar to that of *N. kirsteni* Schenk, 2013 (Fig. 6.) from central Vietnam. *N. ingae* spec. nov. can be separated from *N. kirsteni* by the following external morphological characters:

- body smaller, elytra more elongated and parallel-sided
- mandibles, head and prothorax more shining
- mandibles more regularly rounded, less strong punctured, upper lateral margins round not sharp and like a carina
- canthi anterior more angulated and less oblique, posterior less acute
- hind angles of prothorax not spiny
- protibiae only with two small teeth behind the apical fork
- sternal process short and rectangular, not prominent and spiny as at *N. kirsteni*

Notes. Two ♂ *Neolucanus*-specimens captured near Lai Chau in northern Vietnam are figured by Fujita (FUJITA, 2010, plate 52, figs. 318-11 and 318-12). Those specimens are looking like *N. ingae* spec. nov. but are misidentified as *N. castanopterus elongatulus* Möllenkamp, 1907. As mentioned by Möllenkamp *N. castanopterus elongatulus* from China, Yunnan is very close to the nominotypical taxon *N. castanopterus castanopterus* Hope, 1831 (MÖLLENKAMP, 1907) and has orange-brown elytra.

***Cyclommatus asahinai nanlingensis* sspec. nov.**

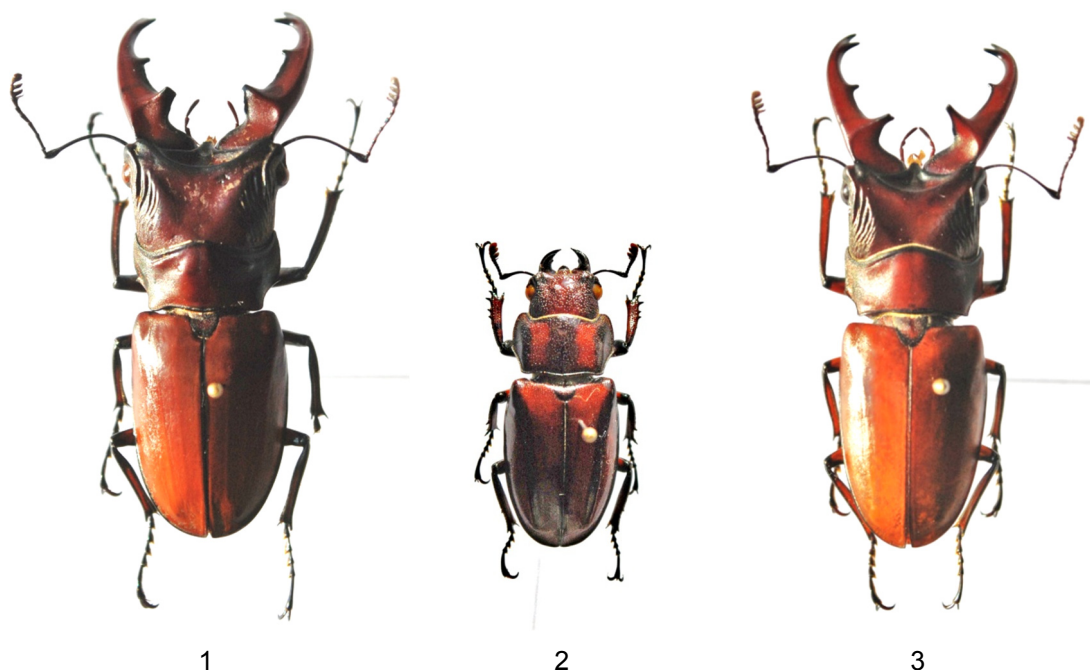


Fig. 7: *Cyclommatus asahinai nanlingensis* sspec. nov.

♂ holotype (1) and ♀ paratype (allotype) (2) from China, Guangdong province, Nanling Nature Reserve and *Cyclommatus asahinai asahinai* Kurosawa, 1974 (3) from Taiwan Island, Puli.

Holotype. ♂, south-eastern China, Guangdong Province, Nanling Nature Reserve, H. Quin leg., in coll. K.- D. Schenk, Wehretal, Germany.

Paratypes. 4 ♂ and 5 ♀, same collecting data, in coll. K.- D. Schenk, Wehretal, Germany.

Etymology. The new taxon is named after the collecting site of the type specimens.

Description. ♂ holotype (Fig. 7), total length 45,6 mm, mandibles length 11,8 mm, head width 10,1 mm, prothorax width 9,3 mm, elytra length 15,1 mm, elytra width 10,5 mm. Total length of the male paratypes 41,6 - 44,5 mm.

♀ (allotype), total length 25,6 mm, mandibles length 11,8 mm, head width 10,1 mm, prothorax width 9,3 mm, elytra length 15,1 mm, elytra width 10,5 mm. Total length of the femal paratypes 18,2 - 22,3 mm.

Diagnosis. *Cyclommatus asahinai nanlingensis* sspec. nov. is belonging to the subgenus *Cyclommatus* Didier, 1927. It can be separated from the nomino-typical taxon *Cyclommatus asahinai asahinai* Kurosawa, 1974 from Taiwan Island by the following external morphological characters.

male ♂

- bigger size, body more massive
- colour of the entire body darker
- head and prothorax broader
- mandibles more massive

- basal tooth of left mandible shorter, more truncate; basal tooth of right mandible shorter, less acute.
- elytra less elongated

female ♀

- colour of the entire body darker and more reddish
- black longitudinal marks on prothorax and elytra wider

***Neolucanus zebra* Lacroix, 1988**

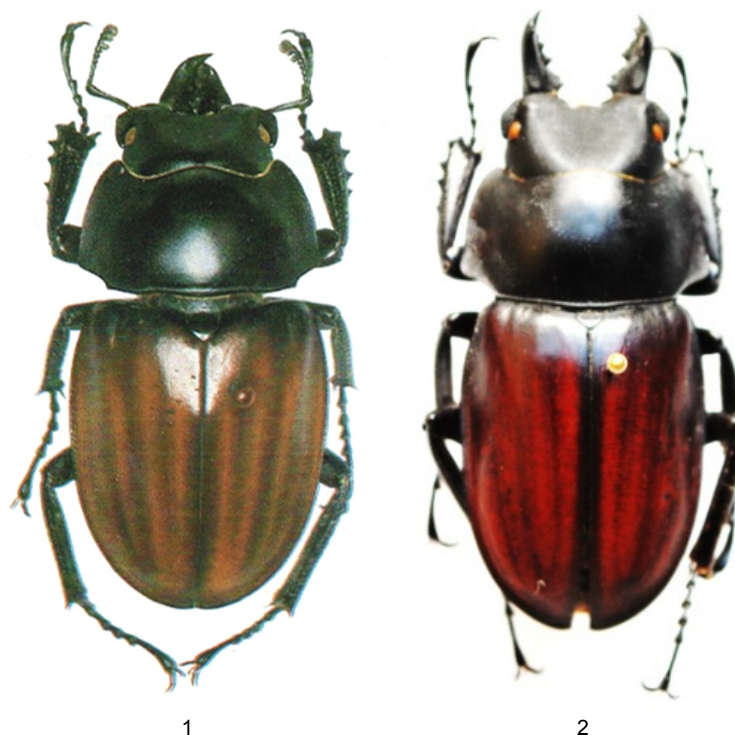


Fig. 8: ***Neolucanus zebra*** Lacroix, 1988, ♂ holotype (47,0 mm) from Formosa, Puli, 1972 (adapted from the original publication) (1) and a specimen from China, Guangdong, Nanling Nature Reserve, 2011 (in coll. Benoit, France) (2).

N. zebra Lacroix, 1988 was described by a unique male specimen from Taiwan Island, Puli. No further specimens of *N. zebra* have been mentioned in the entomological literature so far. Fig. 8. is showing a ♂ specimen collected in northern Guangdong, Nanling Nature Reserve (stored in the collection of Mr. P. Benoit, Belfort, France) in comparison to the type specimen of *N. zebra* from Taiwan Island, Puli. This specimen from Guangdong is looking like *N. zebra*; but the body is slightly more elongated.

Without having further evidence some entomologists are regarding *N. zebra* as a chromatic form of *N. swinhoei* Bates, 1866 or as a hybrid form. But *N. zebra* seems to be closer related to *N. fiedleri* Schenk, 2006 than to *N. swinhoei*. *N. zebra* is regarded by the author as a “good” species which is distributed at Taiwan Island and the Chinese Mainland also.

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