

Notes on a Problematical Himalayan Lucanid Beetle,
Dorcus rudis WESTWOOD in PARRY (1864),
a Junior Synonym of *Dignophorus elegans* (PARRY, 1862)

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Abstract *Dorcus rudis* WESTWOOD in PARRY (1864), described from India based on a single female specimen, is suppressed as a junior synonym of *Dignophorus elegans* (PARRY, 1862), after a careful examination of the holotype of the former.

The Himalayas are zoogeographically one of the most intriguing areas on the Earth, and many entomological surveys have been conducted during the last two centuries. As the results of these surveys, many new taxa of lucanid beetles have been discovered. However, due to difficulty for accession to their habitats rather than to actual rarity, description of a new taxon was frequently carried out on the basis of only a single specimen of one sex, and sometimes this has caused systematic confusion.

Dorcus rudis (Figs. 1–4) was originally described by WESTWOOD from the Indian Himalayas (Fig. 5) in a paper authored by PARRY (1864). It was described on the basis of a single female specimen, and no information of its male has been available for more than one hundred and forty years since its description. Because the lower classification of the family Lucanidae is generally quite difficult when based solely on female characters as compared with those of males, the taxonomic status of this species has been controversial, and many different systematic arrangements have been proposed as mentioned below.

When describing *Dorcus rudis*, WESTWOOD (in PARRY, 1864) put both *Dorcus* and *Prosopocoilus* in his description as its possible generic names although the latter of them was attached with question mark “?”, and this means that he hesitated whether this species should be placed in the genus *Dorcus* or *Prosopocoilus*.

PARRY (1864) moved this species from the genus *Dorcus* to the genus *Cladognathus* on the basis of its posterior angle of the prothorax with emargination (Fig. 4). Afterwards he considered this species as “incerati generis”, and temporarily put it back to the genus *Dorcus* (PARRY, 1870). VAN ROON (1910) regarded it as a junior synonym of Indian *Dorcus derelictus*, the male of which had also been unknown, but this arrangement was contradicted by subsequent authors such as BOILEAU (1913) and HOULBERT (1915 b). On the other hand, ARROW (1935) concluded that *Prosopocoelus sulcatipennis* also described from India by HOULBERT (1915 a) based on a single female

was identical with *Dorcus rudis* after comparison of both the type specimens, and he suppressed the former as a junior synonym of the latter.

As to the genus to which *rudis* belongs, BENESH's (1960) arrangement to regard it as a member of the genus *Prosopocoilus* has been accepted by MAES (1982) and KRAJCIK (2001, 2003).

On my visit to the British Museum (Natural History), London, in November 1998, I found out another female specimen of *D. rudis* deposited in the general collection in addition to the holotype. Later, through the courtesy of the late Professor M. SATÔ, Nagoya Women's University, I was able to examine three additional female specimens of *D. rudis* collected in Nepal and deposited in the National Science Museum (Natural History), Tokyo, Japan. This succession of discoveries of additional specimens of *D. rudis* suggested that the male of this strange species might be well known or at least not so rare, though it was beyond my ability to give any more suggestions on the male's habits.

Contrary to *D. rudis*, *Cladognathus elegans* was described by PARRY (1862) on the basis of a single male specimen also from India. The type specimen of *C. elegans* was a relatively small male, and this led to the confusion for its taxonomic status, as frequently happens in the classification of the family Lucanidae showing a great range of individual variation in males. Actually, PARRY (1870) moved this species from the genus *Cladognathus* to the genus *Eurytrachelus* soon after his own description.

In 1895, WATERHOUSE established a new genus *Dignophorus* as an ally of the genus *Cladognathus* with *Dignophorus atkinsoni* from Singapore as its type species. VAN ROON (1910), who considered *Cladognathus elegans* as a member of the genus *Hemisodorcus*, regarded *Dignophorus atkinsoni* as a junior synonym of *Hemisodorcus elegans*, and he also suppressed the genus *Dignophorus* as a junior synonym of the genus *Hemisodorcus*. ARROW (1950) confirmed that the male type specimen of *Dignophorus atkinsoni* was a well-developed form of *Cladognathus elegans*, and suggested that the type locality of *D. atkinsoni*, Singapore, should be incorrect. Afterwards, MAES (1982) downgraded the genus *Dignophorus* to one of the subgenera of the genus *Macrodercas*, and NAGAI (1985) also considered the former as a junior synonym of the latter. Recent authors such as MIZUNUMA & NAGAI (1994), MIZUNUMA (2000) and KRAJCIK (2001, 2003) have followed BENESH's (1960) arrangement and regarded *Dignophorus* WATERHOUSE as a valid genus.

On the other hand, NAGEL (1928) described for the first time the female of *Dignophorus elegans*, though he regarded it as a member of the genus *Hemisodorcus* in his description. Its habits are quite similar to those of *Dorcus rudis* as was already pointed out by several authors including MIZUNUMA (2000). Further, the locality of the three females of *D. rudis* deposited in the National Science Museum (Natural History), Tokyo, "Rele Khola near Annapurna, Nepal", is the same as that of the male of *D. elegans* illustrated in MIZUNUMA & NAGAI's *Lucanid Beetle of the World* (MIZUNUMA & NAGAI, 1994, plate no. 356). These facts strongly suggest that *Dorcus rudis* might be a female of *Dignophorus elegans*. However, as ARROW (1950) pointed



Figs. 1-5. Holotype of *Dorcus rudis* WESTWOOD in PARRY, 1864; 1, dorsal view; 2, ventral view; 3, lateral view; 4, prothorax and elytra; 5, labels.

out, NAGEL's female of *Hemisodorcus elegans* was of unknown origin, and until adequate grounds exist for associating the two sexes, it was safer to regard the female of *Dignophorus elegans* yet unknown.

Recently, the breeding of stag beetles as pets has become a very popular hobby in Japan, and many living individuals of various species including *Dignophorus elegans* have been imported. Fortunately, as a result of the current situation of breeding of *Dignophorus elegans*, its male-to-female correspondence became reliable, and after a careful comparison, I confirmed that the habits of female *Dignophorus elegans* were perfectly identical with those of the type of *Dorcus rudis*. Thus, in the present paper, I will suppress *Dorcus rudis* as a junior synonym of *Dignophorus elegans*.

Dignophorus elegans (PARRY, 1862)

- Cladognathus elegans* PARRY, 1862, Proc. ent. Soc. London, **3**: 110; type locality: India; Trans. ent. Soc. London, **3** (2): 27.
- Eurytrachelus elegans*: PARRY, 1870, Trans. ent. Soc. London, **1870**: 92.
- Hemisodorcus elegans*: VAN ROON, 1910, Coleopt. Cat., pars 8: 32 — NAGEL, 1928, Dtsch. ent. Z., **1928**: 277. — DIDIER & SÉGUY, 1953, Encycl. ent., Paris, **27**: 133.
- Dorcus elegans*: ARROW, 1950, Fauna India, 135.
- Dignophorus elegans*: BENESH, 1960, Coleopt. Cat. Suppl., 8: 55 — MIZUNUMA & NAGAI, 1994, Lucanid Beetle of the World, 260. — MIZUNUMA, 2000, Stag Beetles, **2**: 73. — KRAJCIK, 2001, Lucanidae of the World, 29; 2003, Lucanidae of the World, **2**: 56.
- Macrodercus (Dignophorus) elegans*: MAES, 1982, Revta. Nicarag. Ent., **22**: 82.
- Macrodercus* [!] *elegans*: NAGAI, 1985, Coleopt. Cat. World Lucanidae, 121.
- Dignophorus atkinsoni* WATERHOUSE, 1895, Ann. Mag. nat. Hist., (6), **16**: 157; type locality: Singapore.
- Dorcus [Prosopocoilus?] rudis* WESTWOOD in PARRY, 1864, Trans. ent. Soc. London, **3**(2): 35; type locality: India. [Syn. nov.]
- Cladognathus rudis*: PARRY, 1864, Trans. ent. Soc. London, **3**(2): 35.
- Dorcus rudis*: PARRY, 1870, Trans. ent. Soc. London, **1870**: 112. — BOILEAU, 1913, Trans. ent. Soc. London, **1913**: 254. — ARROW, 1935, Trans. ent. Soc. London, **83**: 105; 1950, Fauna India, 90. — DIDIER & SÉGUY, 1953, Encycl. ent., Paris, **27**: 149.
- Prosopocoilus rudis*: BENESH, 1960, Coleopt. Cat. Suppl., 8: 76. — MAES, 1982, Revta. Nicarag. Ent., **22**: 82. — NAGAI, 1985, Coleopt. Cat. World Lucanidae, 104. — KRAJCIK, 2001, Lucanidae of the World, **41**; 2003, Lucanidae of the World, **2**: 156.
- Prosopocoelus sulcatipennis*, HOULBERT, 1915, Insecta, **5**: 51; type locality: India. — ARROW, 1935, Trans. ent. Soc. London, **83**: 105.

Specimens examined. 1♀, “rudis ♀ type PARRY Cat. 35 Ind. Vel Ins Ind” (locality: India vel Insulis Indicis); attached with labels: 85/28; *Prosopocoelus sulcatipennis* HOULB. compared with type. J. G. A. (Holotype of *D. rudis*, deposited in the British Museum (Natural History) London, BMNH (E) 604066); 1♀, Darjeeling, Himalayas, PASCAL coll. 1936. 58. *Dorcus (Eurytrachelus) submolaris* M. E. BACCHUS det. 1959. (deposited in the British Museum (Natural History), London); 3♀, Rele Khola 2100 m near Annapurna South Nepal 12–16 May 1989 Col. T. MIYASHITA (deposited in the National Science Museum (Natural History), Tokyo).

Specimens compared. 1♀ (*D. elegans*, emerged from larva of which parents were

collected in Trisuli, Nepal in 2005).

Notes

After VAN ROON (1910) regarded *D. atkinsoni* whose type locality was Singapore as a junior synonym of *H. elegans*, many authors such as DIDIER & SÉGUY (1953), BENESH (1960), MEAS (1982) and NAGAI (1985) included Singapore and/or Malaysia in the distributional range of *D. elegans* in addition to the Himalayas. So far as I am aware, however, no specimen of *D. elegans* has been collected from Singapore and/or Malaysia. This fact suggests that Singapore as the type locality of *D. atkinsoni* should be incorrect as was already pointed out by ARROW (1950), and that the distributional range of *D. elegans* might be restricted to the Himalayan Region.

Recently, NAGAI (2000) described the second and third members of the genus *Dignophorus*, *D. costipennis* and *D. rubrolateris*, both from northern Myanmar, in the same paper. Although the female of *D. rubrolateris* has still been unknown, females of *D. elegans* and *D. costipennis* share such characteristics as the prothorax with oblique emargination at the posterior angles and the elytra with destitute of costae, by which they are distinguished from other females of the genus *Dorcus* and *Prosopocoilus*, and these should be considered as the diagnosis of the females of the genus *Dignophorus*.

In addition to these three congeners, *Prosopocoilus prosopocoeloides*, originally described by HOULBERT (1915 a) based only on male specimens from Bhutan, as the type species of the genus *Pelecognathus* HOULBERT, 1915, shares many characters with *D. elegans*, and it should be placed in the genus *Dignophorus* as was already mentioned by ARROW (1950). However, all the males of *Prosopocoilus prosopocoeloides* hitherto known were not the full-development form, and further examination is necessary in order to confirm the taxonomic status of this species.

Anyway, it is expected that further field works on the Himalayas and their surrounding areas may possibly yield well-developed male of *P. prosopocoeloides* and/or females of *D. rubrolateris* and clarify detailed distribution and zoogeography of the genus *Dignophorus*.

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要 約

荒谷邦雄：エレガンスクワガタ *Dignophorus elegans* (PARRY, 1862) の下位同物異名であることが判明したヒマラヤから記載された謎のクワガタムシ *Dorcus rudis* WESTWOOD in PARRY (1864) に関する覚書き。—— 雌1個体に基づいてインドヒマラヤから記載された *Dorcus rudis* WESTWOOD in PARRY (1864) は、長い間その正体が不明で、所属すべき属など分類学的な取り扱いが確定していなかった。本種に関する故佐藤正孝名古屋大学名誉教授の貴重なご助言と、大英自然史博物館に所蔵されている本種のホロタイプを検討した結果、本種は同じくインドヒマラヤから記載された *Dignophorus elegans* (PARRY, 1862) のこれまで未知であった雌であることが判明したので、本論文中で前者を後者の下位同物異名として処理した。

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