

## Distribution of a Conspicuous Terrestrial Hydrophilid Beetle *Cercyon lineolatus* (MOTSCHULSKY) (Coleoptera, Hydrophilidae, Sphaeridiinae)

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**Abstract** New collecting records of a terrestrial hydrophilid beetle, *Cercyon* (*Clinocercyon*) *lineolatus* (MOTSCHULSKY, 1863) are provided. This species is easily distinguished from other terrestrial hydrophilid beetle by its large body size and the colouration of elytra. Consequently, the species is newly recorded from Japan, Palau, Malaysia, Singapore, Thailand, Laos, Nepal, and Bangladesh.

**Key words:** Water scavenger beetle, New record, Oriental, Palaearctic, Oceania.

### Introduction

A terrestrial hydrophilid beetle *Cercyon* (*Clinocercyon*) *lineolatus* (MOTSCHULSKY, 1863) is a member of the tribe Megasternini (Sphaeridiinae), and is well distinct from other representatives of the genus *Cercyon* by the longitudinal yellow stripes on elytra and large body size. The species is widely distributed in tropical and subtropical Asia, but was also found in Arabian Peninsula and on Mascarene Islands (HANSEN, 1999; FIKÁČEK *et al.*, 2010; FIKÁČEK *et al.*, 2015). We had opportunities to examine the specimens of this terrestrial hydrophilid beetle, which represent additional or first record of the species from several Oriental and Oceanian countries. In this paper, we provide these collecting records of *C. lineolatus*.

### Material and Methods

Materials are deposited in the following collections: Kitakyushu Museum of Natural History & Human History (Y. MINOSHIMA) (KMNH); National Museum, Praha, Czech Republic (M. FIKÁČEK) (NMPC); Naturhistorisches Museum, Wien, Austria (M. A. JÄCH) (NHMW); Systematic Entomology, Hokkaido University, Sapporo, Japan (M. ÔHARA) (SEHU); Ehime University Museum, Matsuyama, Ehime, Japan (H. YOSHITOMI) (EUMJ); private collections of Andre SKALE, Hof, Germany (ASCH) and Shun'ichi SAKURAI, Sakata, Japan (SSCS).

The methods generally follow those used by MINOSHIMA and FUJIWARA (2009). Composite images were created using the software Image Stacking Software CombineZP (HADLEY, 2010). The photographs were modified using Adobe Photoshop CC in needed case. Regarding the morphological terminology, we follow HANSEN (1991).

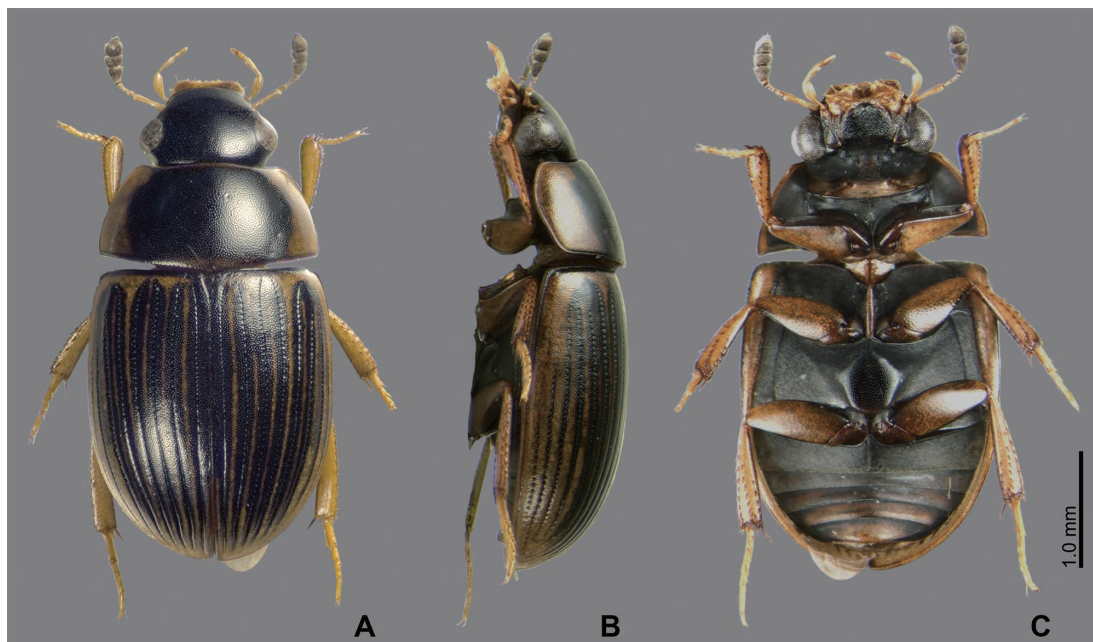


Fig. 1. Habitus of *Ceryon lineolatus* (MOTSCHULSKY, 1863). — A, Dorsal view; B, lateral view; C, ventral view.

## Results

### *Ceryon (Clinoceryon) lineolatus* (MOTSCHULSKY, 1863)

(Figs. 1–2)

*Trichopoda lineolata* MOTSCHULSKY, 1863: 444.

*Ceryon lineolatus* (MOTSCHULSKY): GEMMINGER & HAROLD, 1868: 497.

*Ceryon (Clinoceryon) lineolatus* (MOTSCHULSKY): BAMEUL, 1986: 889.

*Ceryon nigrostriatus* WU et PU, 1995 in JIA *et al.*, 1995: 127. Syn. by JIA *et al.* (2011)

*Material examined.* Bangladesh — 1 ex. (NMPC), East Pakistan, Dinajpur, X.1969, BARBE leg. China — 2 exs. (KMNH), Yunnan prov., 50 km N Jinghong, env. Gunangping, 950 m, 11–20. XI.2004, S. MURZIN leg. India — 3 exs. (NHMW), Meghalaya, W Garo Hills, Bagmara, 100 m a.s.l., 25°11.5'N 90°38.5'E, 19–21.V.1996, JENDEK & ŠAUSA leg.; 4 exs. (NHMW), Rajasthan, Mandava [= Mandawa], 28°3'25"N, 75°8'48"E, 1.X.1997, P. PUCHOLT leg.; 1 ex. (NMPC), Maharashtra, 4 km S of Lonavala, Bushi dam env., 500 m a.s.l., 24–28.X.2005, at light, J. BEZDĚK leg. Indonesia — 1 ex. (ASCH), Sulawesi Utara, 1–2 km S of Airmadidi, 260 m a.s.l., 1°22'57"N, 124°59'E, 18.II.2009, A. SKALE leg.; 2 exs. (NHMW), Sulawesi Tengah, Poso Lake, 1°47.995'S, 120°31.622'E, 6–7.II.1997, J. HAFT leg.; 1 ex. (ASCH), Sulawesi Utara, Doloduo village, 150 m a.s.l., 0°31'3"N, 123°57'24"E, 31.I–2.II.2006, A. SKALE leg. Japan — 2 exs. (KMNH, SSCS), Okinawa Pref., Yonaguni-jima Island, 9. X.2004, S. SAKURAI leg.; 2 exs. (KMNH), same data but 18–24.IV.2007; 1 ex. (SSCS), same data but 15–20.VI.2008; 1 ex. (KMNH), Takeda-rindō, Ishigaki-jima Island, Okinawa Pref., 2–9.IV.2008, S. SAKURAI leg. Laos — 2 exs. (NHMW), Khammouan, Ban Khoun Ngeun env., 250 m a.s.l., 18°7'N,

104°29'E, 4–30.XI.2000, JENDEK & PACHOLÁTKO leg. Malaysia – 2 exs. (EUM), Keningau, Sabah, Borneo, 200 m, 14.IV.1984, N. KOBAYASHI leg.; 1 ex. (EUM), same data but 27.IV.1984; 1 ex. (EUM), same data but 30.IV.1984; 1 ex. (NHMW), Sarawak, ca. 25 km E Kapit, 1°54'30"N, 113°38'E, III. 1994, J. KODADA leg. Nepal — 1 ex. (SEHU), Narayani, Bhainse, 21.X.1975, S. TAKAGI leg.; 1 male, Narayani, Adhabar, 24.X.1975, S. TAKAGI leg.; 1 ex. (SEHU), Bagmati, Kathmandu City, 13.VII.1983, Ent. Inst. Hokk. Univ; 1 ex. (NHMW), Bagmati, Godavari, 27°36'N, 85°24'E, 16–17.V.1992, I. JENÍŠ leg. Palau — 2 exs. (EUM), Palau Island, Koror, VII.1953, J. W. BEARDSLEY leg., m-6466. Singapore — 3 exs. (EUM), Sg. Buloh, Nature Park, 10.VII.1992, K. LIM leg. Taiwan — 1 ex. (SEHU), Pingtung Prov., Sizhongchi, 11.V.1986, M. ÔHARA leg.; 1 ex. (EUM), Chiaí Hsien, Talin, 18–22.VIII. 1981, light trap in paddy field, no collector data. Thailand — 1 ex. (NMPC): Nan Province, Bo Klua, 700 m a.s.l., 19°08'N 101°10'E, 22–26.IV.1999, D. HAUCK leg. Vietnam — 2 exs. (NHMW), Dong Nam Bo, Nam Cat Tien National Park, 11°20'30"N, 107°9'12"E, 1–15.V.1994, PACHOLÁTKO & DEMBICKÝ leg.

*Diagnosis.* Body (Fig. 1) elongate oval, moderately convex. Dorsal surface weakly lustre; ventral surface mostly lustreless dark brown. Pronotum black with broad yellowish lateral margin. Elytra bicoloured, black with light yellowish brown stripe among serial punctures and lateral margin (Fig. 1). Antenna 9-segmented, about four-fifths as long as width of head. Ground punctures on pronotum coarse and dense, punctures separated by about their own diameter to two times of that (Fig. 2A). Prosternum (Fig. 2E) well-developed, carinate medially, bearing dense pubescence except on posterolateral part. Ground punctures on elytra rather coarse and dense. Elytra (Fig. 2B) with 10 distinct striae deeply impressed; 1st to 5th completely impressed; 6th to 8th impressed about basal three-fourths; 9th slightly shorter than 6th; posterior ends of 6th and 9th and 7th and 8th united; 10th shorter than 8th. Mesoventral tablet (Fig. 2C, F) slender, about 8.5 times as long as wide, pointed apically; surface of the tablet flat, bearing irregularly arranged and rather sparse punctures. Metaventricle (Fig. 2C, G) with raised pentagonal glabrous area at middle portion. Anterior margin of protibia rounded. Femora without dense pubescence; middle femora evenly and sparsely covered with fine and setiferous punctures.

This species is easily identified from other terrestrial hydrophilid beetles by the colouration of elytra: black surface with yellowish stripes between serial punctures. No hydrophilid species are similar to *C. lineolatus* occurs in Asia in general; *Cercyon (Paracycreon) laminatus* SHARP, 1873 may be similar in size, but this species has different colouration, i.e., pronotum and elytra pale brown, occasionally with darker spots but never with stripes; and its mesoventral process forming a longitudinal lamina, i.e., mesoventral tablet is absent.

*Biology.* BAMEUL (1986) mentioned the species inhabits cow and rabbit excrement.

*Distribution.* Palaearctic: United Arab Emirates, China, Japan (Yonaguni-jima Island, Ishigaki-jima Island) (FIKÁČEK *et al.*, 2010; JIA *et al.*, 2011; and this study). Oriental: Bangladesh, India (Bihar, Maharashtra, Meghalaya, Rajasthan), Indonesia (Sumatra, Sulawesi), Laos, Malaysia (Borneo), Nepal, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam (ORCHYMONT, 1928; HANSEN, 1999; and this study). Oceania: Palau (this study). Afrotropical: Mascarene Islands (Mauritius Island, Réunion Island). (VINSON, 1958; BAMEUL, 1986).

According to the distributional records of HANSEN (1999), FIKÁČEK *et al.* (2010), and JIA *et al.* (2011), until now not recorded from Bangladesh, Japan, Malaysia, Nepal, Laos, Singapore, Thailand, and Palau. It is difficult to infer the extremely widespread species is native or introduced species in respective countries.



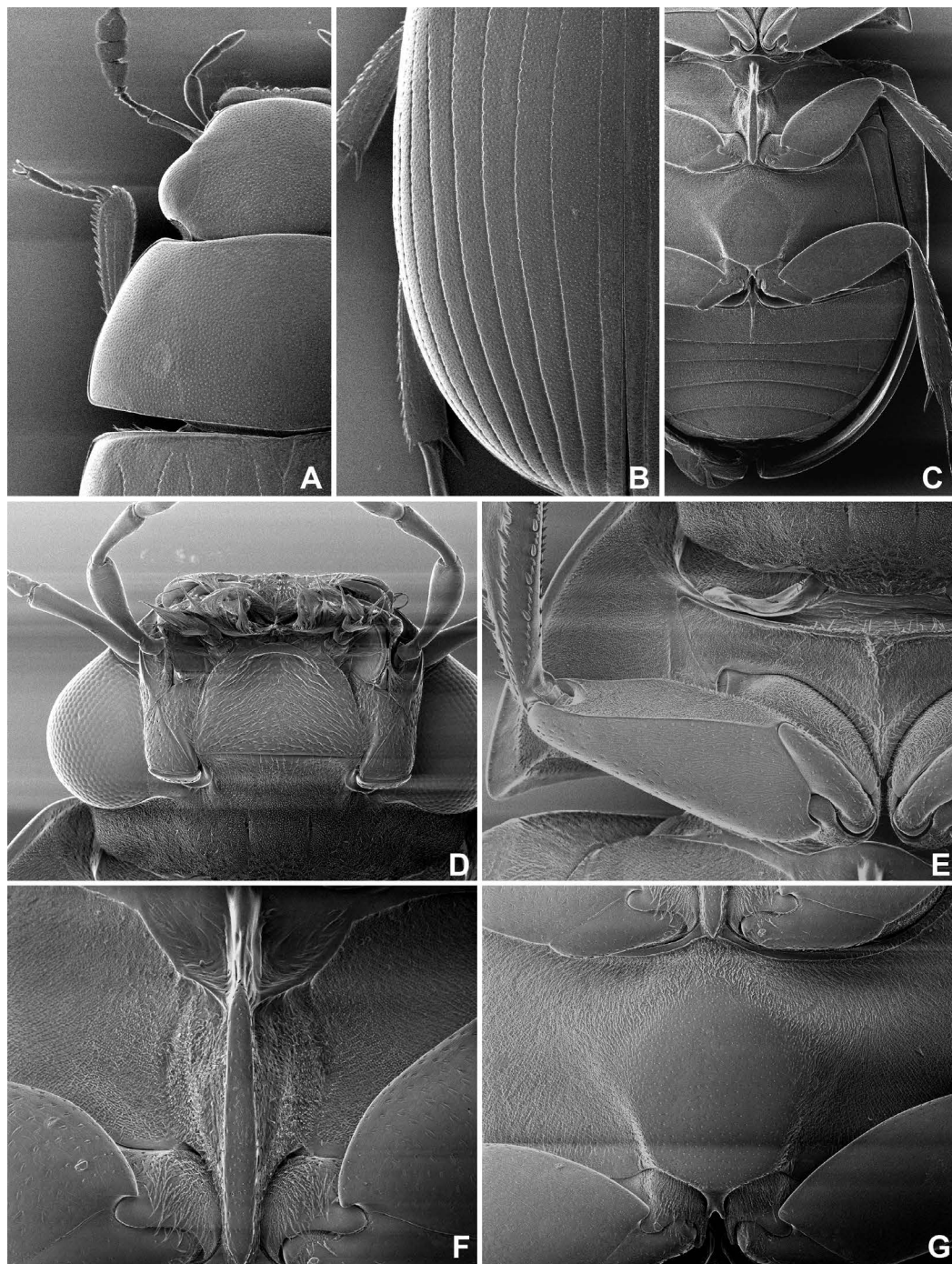


Fig. 2. SEM photographs of *Ceryon lineolatus* (MOTSCHULSKY, 1863). — A, Head and pronotum, dorsal view; B, elytra, dorsal view; C, meso- and metaventrites and abdomen, ventral view; D, head, ventral view; E, prosternum, ventral view; F, mesoventral tablet, ventral view; G, metaventricle, ventral view.

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### 要 約

蓑島悠介・Martin FIKÁČEK・大原昌宏：特徴的な陸生ガムシ *Cercyon lineolatus* (MOTSCHULSKY) (鞘翅目ガムシ科) の分布。—— ケシガムシ属 *Cercyon* の一種シマケシガムシ (和名新称) *Cercyon (Clinocercyon) lineolatus* (MOTSCHULSKY, 1863) は、本属のなかでは大型種であること、上翅に特徴的な黄色の縦縞模様を持つことから容易に他種と区別される。本種を図示し簡潔に記載するとともに、アジアおよびオセアニア各地からの新たな採集記録を報告し、既知の記録と合わせた。日本を含む8カ国からは分布初記録となった。ただし、日本を含む各国において、本種が在来種か移入種かについては定かではない。なお、BAMEUL (1986) によると、本種は食糞性である可能性が高い。

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