

## New records of tiger beetles (Coleoptera: Cicindelidae) from different Asian regions

### Новые находки жуков-скакунов (Coleoptera: Cicindelidae) из различных регионов Азии

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KEY WORDS: Coleoptera, Cicindelidae, tiger beetles, Asia, new records, regional fauna.

КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Cicindelidae, жуки скакуны, Азия, новые находки, региональная фауна.

ABSTRACT: Based on recent data from field and museum collections I report on previously unknown localities of several species of tiger-beetles from different regions of Asia. The following species and subspecies are recorded for the first time in regional faunas: *Cylindera (Ifasina) somnuki* Naviaux, 1991 from Vietnam; *Cylindera (Eugrapha) erudita* (Wiedemann, 1823) from Afghanistan; *Cylindera (Eugrapha) inscripta* (Zoubkoff, 1833) from Mongolia; *Calomera aulica aulica* (Dejean, 1831), *Hyphaetha copulata copulata* (Schmidt-Göbel, 1846) and *Salpingophora maindroni* (W.Horn, 1897) from India, *Therates fulvicollis* Thomson, 1860 from Western New Guinea.

РЕЗЮМЕ: По результатам обработки полевых сборов и музейных коллекций приводятся точки новых находок жуков-скакунов из различных регионов Азии. Следующие таксоны впервые отмечены в региональных фаунах: *Cylindera (Ifasina) somnuki* Naviaux, 1991 — Вьетнама; *Cylindera (Eugrapha) erudita* (Wiedemann, 1823) — Афганистана; *Cylindera (Eugrapha) inscripta* (Zoubkoff, 1833) — Монголии; *Calomera aulica aulica* (Dejean, 1831), *Hyphaetha copulata copulata* (Schmidt-Göbel, 1846) и *Salpingophora maindroni* (W. Horn, 1897) — Индии, *Therates fulvicollis* Thomson, 1860 — Новой Гвинеи.

#### Introduction

The tiger beetle fauna of Asia includes a quarter of all known cicindelid species [Cassola & Pearson, 2000].

Every year many of them are recorded from additional new localities by numerous collectors. Additionally new locality data for several Asian species were gleaned from the collection of the Zoological Institute of Russian Academy of Science. Specimens included in this study are housed in the following museums and private collections:

ZISP — Zoological Institute of Russian Academy of Science (St.-Petersburg, Russia);

MPU — Moscow State Pedagogical University (Moscow, Russia);

DF — collection of Dmitry Fedorenko (Moscow, Russia);

ES — collection of Eugeny Shankhiza (Moscow, Russia);

IM — collection of Igor' Melnik (Moscow, Russia);

IO — collection of Igor' Ovsyannikov (Moscow, Russia);

OM — collection of Oleg Mosalov (Serpukhov, Russia);

PB — collection of Pavel Budilov (Birobidzhan, Russia);

SD — collection of Sergey Dementiev (Moscow, Russia);

SK — collection of Sergey Kazantsev (Moscow, Russia);

SS — collection of Sergey Saluk (Minsk, Byelorussia).

#### Species accounts

*Cicindela* (s. str.) *altaica koschagachensis* Matalin, 1999

MATERIAL: 1♀ — SE Altai, Chuya River, Chagan-Uzun, 13.06.1989, leg. S. Saluk (SS).

NOTE: The Altai-Sayanian endemic *C. altaica* Eschscholtz, 1829 is represented by two subspecies. The nominal form is distributed on Altai piedmont plain and in Altai (valleys of Teletskoe Lake, Katun, Chulyschman and Chuya Rivers) and Western Sayan mountains [Matalin, 1999].

as well as in Kuznetskiy Alatau [Dudko et al., 2002]. Until recently, *C. altaica koschagachensis* was known only from the type locality — Chuiskaya steppe, Uch-Telets lake, near Kosch-Agach [Matalin, 1999]. This new record is a more north-western locality, but still on the Chuiskaya steppe.

*Cylindera* (s. str.) *davidi* (Fairmaire, 1886)

MATERIAL: 1♀ — China, southern Gansu, Wudu, 10.VI.2005, leg. A. Gorodinskiy (MPU).

NOTE: Previously this species was known from five Chinese provinces: Beijing, Xinjiang, Sichuan, Yunnan and Shaanxi [Wiesner, 1992; Sawada & Wiesner, 2003; Li-Zhong, 2002; Puchkov & Matalin, 2003; Shook & Wiesner, 2006; Shook & Wu, 2010]. This new locality is from Gansu Province is from near the frontier with Sichuan Province. Although Shook and Wu [2007] reported specimens of *C. davidi* from Gansu, they did not indicate the exact locality.

*Cylindera* (s. str.) *germanica germanica* (Linnaeus, 1758)

MATERIAL: 9♂♂8♀♀ — Turkey, Antalya Prov., 4.8 km SSW Demre, Mediterranean Sea coast, periodically flood salt meadow, h~9 m, 36°13.847' N, 29°56.418' E, 7.05.2010, leg. S. Dementiev & E. Shankhiza (SD, ES, MPU).

NOTE: This species is one of the most common Palaearctic tiger beetles and has a vast range from Europe through Middle East, Caucasus and Central Asia to Western Siberia [Wiesner, 1992; Puchkov & Matalin, 2003]. In Turkey *C. germanica* previously was known from the provinces

Artvin, Burdur, Çankiri, Erzurum, Izmir, Rize and Trabzon [Korel, 1988; Cassola, 1999; Avgir & Özdikmen, 2007]. These present specimens from the province of Antalya are the first recorded from there. All of them were collected on the periodically flood salt meadow along the sea coast (Fig. 1).

*Cylindera* (s. str.) *obliquefasciata obliquefasciata* (Adams, 1817)

MATERIAL: 12♂♂32♀♀ — C Sakhalin, 6 km SW Vostochniy vill., Pugachev mud volcano, 48°13'39''N 142°33'46''E, 20.07.2003, leg. I. Melnik; 21♂♂31♀♀ — some locality, 20.07.2003, leg. P. Budilov (ZISP, MPU, IM, PB).

NOTE: This subspecies occurs in Eastern Siberia, Mongolia, North-Eastern China and North Korea [Gebert, 1992; Wiesner, 1992; Puchkov & Matalin, 2003; Bezborodov et al., 2008]. Recently *C. o. obliquefasciata* was found in the south of Russian Far East near Russian-North Korea frontier [Bezborodov et al., 2008]. However, in Sakhalin this species was unknown [Gebert, 1992; Wiesner, 1992; Lafer et al., 1997; Puchkov & Matalin, 2003; Vertyankin, 2007], until these specimens were collected there.

*Cylindera* (*Ifasina*) *discreta discreta* (Schaum, 1863)

MATERIAL: 1♀ — Malaysia, Pahang, Taman Negara, Kuala-Tahan env., 23–29.VI.1997, leg. S. Kazantsev (SK).

NOTE: This species is widely distributed in Singapore, on Greater and Lesser Sunda Islands (Sumatra, Borneo, Jawa, Sulawesi, Sebesi, Flores), Tukang Besi Islands and Moluccas (Buru), as well as in Northern Australia [Wiesner,



Fig. 1. Habitat of *Cylindera* (s. str.) *germanica germanica* in Antalya province, Turkey (photo by Sergei Dementiev).

Рис. 1. Местобитание *Cylindera* (s. str.) *germanica germanica*, Анталия, Турция (фото Сергея Дементьева).

1992]. In continental Malaysia *C. d. discreta* was known only from the state of Malacca [Wiesner, 1992]. The new locality reported here is the second place in continental Malaysia from which this subspecies is now known. This new locality also now represents the northern limit of geographic range of *C. d. discreta*.

*Cylindera (Ifasina) somnuki* Naviaux, 1991

MATERIAL: 1♀ — S Vietnam, Song Ben, 160 km NNE Ho Chi Minh, Bu Gia Map env., 19–21.V.1995, leg. A. Napolov (MPU); 2♂ — Vietnam, Binh Phuoc Prov., env. Bu Gia Map, Bu Gia Map Nat. Park, 12°11'37''N / 107°12'21''E, h ~ 350–540 m, 13.IV.2009 and 20–21.IV.2009, leg. D. Fedorenko (DF); 3♂ — same locality, 26.IV–4.V.2013, leg. D. Fedorenko (DF, MPU); 1♂1♀ — S Vietnam, Lam Dong Prov., 35 km NW of Bao Loc, Loc Bao env., 11°50'12''N / 107°38'25''E, h ~ 650 m, 17–22.IV.2012, at light, leg. D. Fedorenko (DF).

NOTE: This species was described from Chiang Mai Province of Thailand [Naviaux, 1991], and until recently was known only from the north-western part of this country [Naviaux & Pinratana, 2004]. In 2003 it was collected in Bolikhamsai Province of Laos, near the village of Borikham [Cassola, 2011]. *C. somnuki* is readily distinguished from the related *C. viridilabris* (Chaudoir, 1852) by the shape of labrum (Figs 2–3), sculpture of pronotum (Figs 4–5), elytral pattern (Figs 6–7) as well as shape of aedeagus (Figs 8–11). These specimens from Vietnam are the first known from this country.

*Cylindera (Eugrapha) erudita* (Wiedemann, 1823)

MATERIAL: 1♂ — Afghanistan, Dzhahalabad reg., Samarkhel, 10 km E from Dzhahalabad, 03.07.67, leg. Ularov (SS).

NOTE: This species has a wide distribution area in the northern India from Punjab, Jammu & Kashmir and Himachal Pradesh through Uttarakhand, Uttar Pradesh, northern Madhya Pradesh, Bihar and West Bengal to Sikkim, Assam and Arunachal Pradesh states as well as to eastern Nepal [Fowler, 1912; Pearson & Ghorpadé, 1987; Werner, 1987; Acciavatti & Pearson, 1989; Puchkov & Matalin, 2003; Sawada & Wiesner, 2006], but it not known from Pakistan [Cassola, 1976, 2010; Korel, 1987; Acciavatti & Pearson, 1989; Puchkov & Matalin, 2003; Rafi et al., 2010]. Thus, this new record from Afghanistan considerably expands the distribution area of *C. erudita* to the west.

*Cylindera (Eugrapha) inscripta* (Zoubkoff, 1833)

MATERIAL: 1♀ — Mongolia, Govi-Altai aimak, Shagra somon, h~1000 m, 08.07.2003, leg. S. Churkin (SS).

NOTE: This species occurs from south-eastern Russia and Azerbaijan through Iran, Turkmenistan, Uzbekistan, Kazakhstan and Kirgizstan to north-western China [Wiesner, 1992; Li-Zhong, 2002; Puchkov & Matalin, 2003; Shook & Wiesner, 2006; Shook & Wu, 2010]. This specimen is the first record of *C. inscripta* for Mongolia. A similar and related species, *C. mongolica* Faldermann, 1835, is known from Mongolia, but these two species are easily distinguished by the shape of labrum (Figs 12–13), pronotum (Figs 14–15) and coupling sulcus of females (Figs 16–17), as well as elytral pattern (Figs 18–19) and shape of aedeagus (Figs 20–23).

*Jansenia dasiodes* Acciavatti et Pearson, 1989

MATERIAL: 1♂ — India, Kerala, 8 km W Ariankavu, 27.V.1986, leg. K. Ghorpade (SS).

NOTE: Previously this species was known from two Indian states: Karnataka and Tamil Nadu [Acciavatti & Pearson, 1989]. This new locality from the state of Kerala is near the frontier of Tamil Nadu state.

*Lophyra histrio* (Tschitschérine, 1903)

MATERIAL: 1♂1♀ — India, Gujarat, Naliya env., Wadsar, Khari riv., 23.345°N 68.774°E, 4.X.2012, leg. K. Tomkovich (IO, OM); 1♂2♀♀ — India, Gujarat, Narajan Sarovar, 23.673°N 68.532°E, 7–9.X.2012, leg. K. Tomkovich (IO, MPU).

NOTE: Previously *L. histrio* was recorded from the Arabian Peninsula [Wiesner, 1992; Puchkov & Matalin, 2003], Iran [Naviaux, 1983; Wiesner, 1992; Puchkov & Matalin, 2003], Afghanistan [Wiesner, 1992; Puchkov & Matalin, 2003], Pakistani state Sind [Cassola, 1976, 2010; Acciavatti & Pearson, 1989; Puchkov & Matalin, 2003; Rafi et al., 2010] and Indian state Rajasthan [Acciavatti & Pearson, 1989; Puchkov & Matalin, 2003]. These specimens of *L. histrio* from Gujarat is the first from this state, and also the most south-eastern locality for this species.

*Calomera aulica aulica* (Dejean, 1831)

MATERIAL: 2♂♂4♀♀ — India, Gujarat, Narajan Sarovar, 23.673°N 68.532°E, 7–9.X.2012, leg. K. Tomkovich (IO, MPU).

NOTE: This species has a wide distribution from West, North and East Africa, Greece (Pelopones) and the Middle East to the Arabian Peninsula [Wiener, 1992; Puchkov & Matalin, 2003] Iraq, Iran [Naviaux, 1983; Puchkov & Matalin, 2003] and Pakistan [Maindron, 1899; Cassola, 1976, 2010; Acciavatti & Pearson, 1989; Puchkov & Matalin, 2003; Rafi et al., 2010]. This specimen collected in Gujarat state is not only most eastern site of its entire range but also is the first record of *C. a. aulica* in India.

*Hypaetha copulata copulata* (Schmidt-Göbel, 1846)

MATERIAL: 3♀♀ — India, Gujarat, Narajan Sarovar, 23.673°N 68.532°E, 7–9.X.2012, leg. K. Tomkovich (IO).

NOTE: Previously this species was known from coastal habitats on the Arabian Peninsula (Saudi Arabia, United Arab Emirates and Oman) [Wiesner, 1992; Puchkov & Matalin, 2003], Iranian provinces Bušehr and Hormozgân [Naviaux, 1983; Puchkov & Matalin, 2003] as well as from the Pakistani state of Sind [Maindron, 1899; Dover & Ribeiro, 1921; Cassola, 1976; Acciavatti & Pearson, 1989; Puchkov & Matalin, 2003; Rafi et al., 2010]. These specimens of *H. c. copulata* are the first for India and the most eastern site of its entire known range.

*Hypaetha quadrilineata* (Fabricius, 1781)

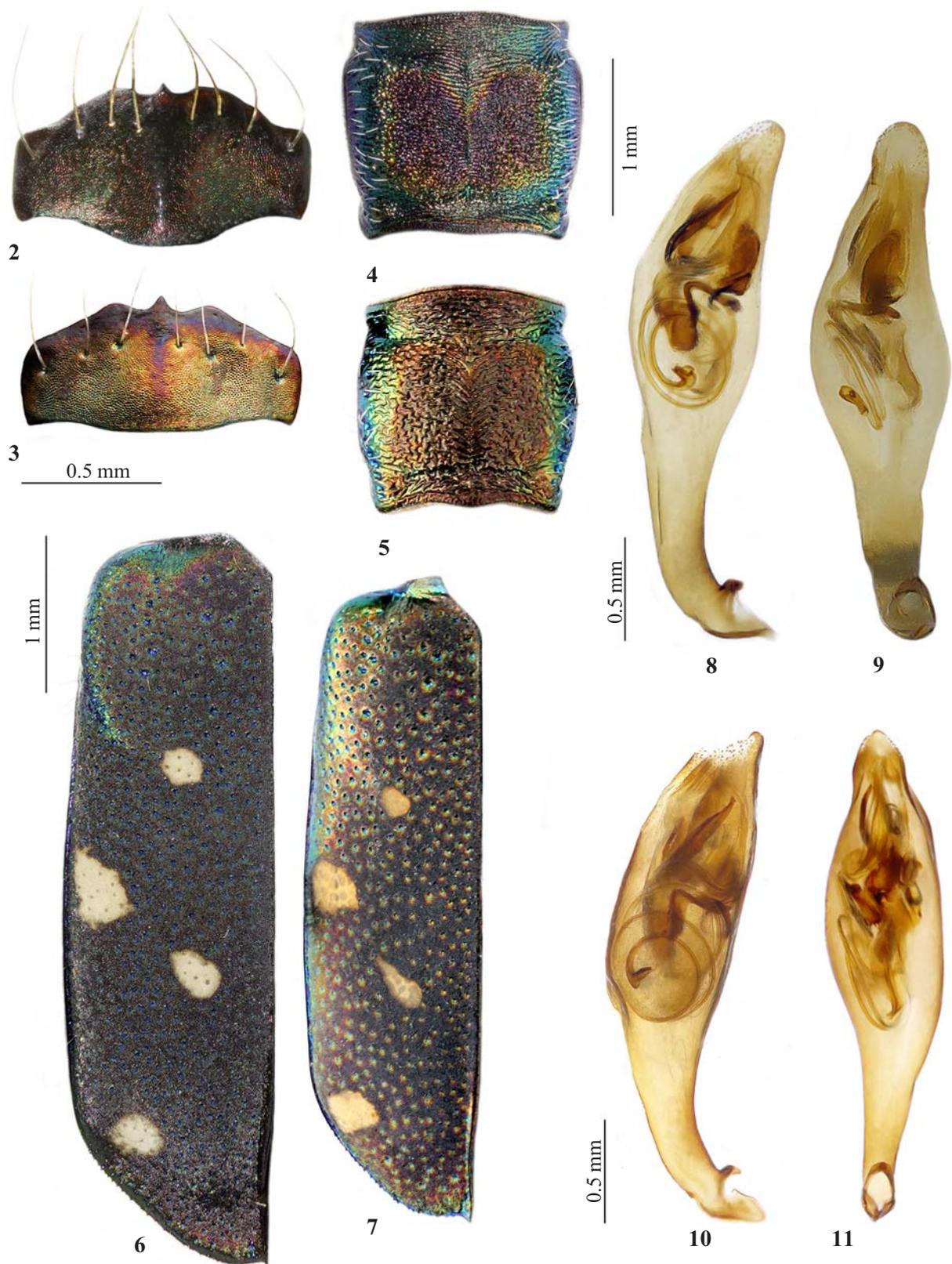
MATERIAL: 1♂2♀♀ — India, Gujarat, Narajan Sarovar, 23.673°N 68.532°E, 7–9.X.2012, leg. K. Tomkovich (IO).

NOTE: This species occupies sandy beaches of coastal regions in Iranian province Hormozgân [Naviaux, 1983; Puchkov & Matalin, 2003], Pakistani state Sind [Cassola, 1976; Acciavatti & Pearson, 1989; Puchkov & Matalin, 2003; Rafi et al., 2010], Indian states Maharashtra, Goa, Kerala, Tamil Nadu, Andhra Pradesh, Orissa and West Bengal [Maindron, 1899; Dover & Ribeiro, 1921; Acciavatti & Pearson, 1989], Sri Lanka [Naviaux, 1984; Acciavatti & Pearson, 1989], as well as in Myanmar, Thailand and Malaysia (Malacca) [Wiesner, 1992]. This is the first record of *H. quadrilineata* for Gujarat state.

*Salpingophora maindroni* (W. Horn, 1897)

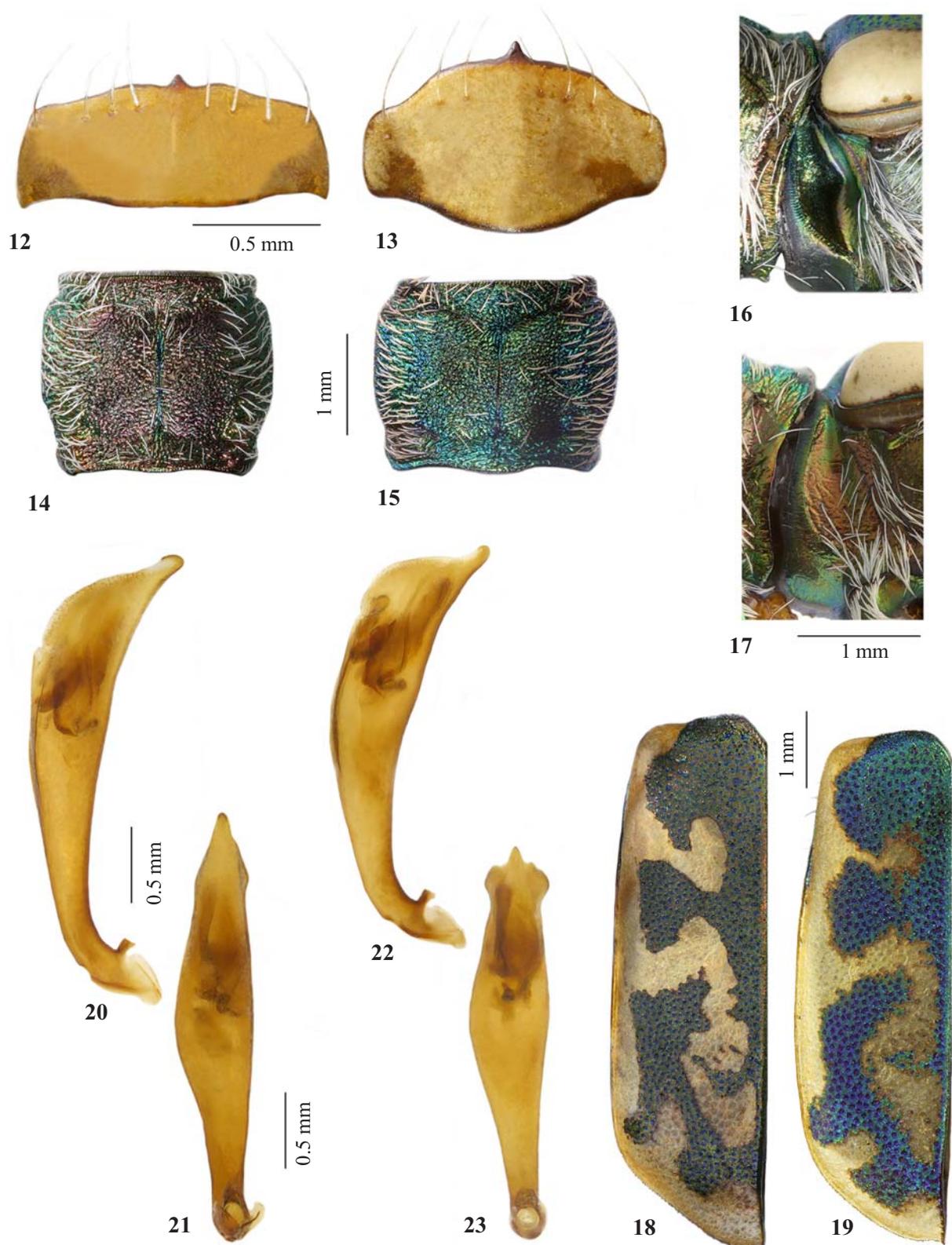
MATERIAL: 2♂♂4♀♀ — India, Gujarat, Narajan Sarovar, 23.673°N 68.532°E, 7–9.X.2012, leg. K. Tomkovich (IO, MPU).

NOTE: Until now this species was known only from the Pakistani states of Baluchistan and Sind [Maindron, 1899; Cassola, 1976; Acciavatti, Pearson, 1989; Puchkov, Matalin, 2003; Rafi et al., 2010]. It is thus the first record of *S. maindroni* for India, and the most eastern locality for its entire range.



Figs 2–11. Details of males of *Cylindera (Ifasina) somnuki* and *Cylindera (Ifasina) viridilabris*: 2–3 — labrum; 4–5 — pronotum; 6–7 — left elytra; 8–11 — aedeagus (8–9 — left lateral view; 10–11 — dorsal view); 2, 4, 6, 8–9 — *C. somnuki*; 3, 5, 7, 10–11 — *C. viridilabris*.

Рис. 2–11. Детали строения самцов *Cylindera (Ifasina) somnuki* и *Cylindera (Ifasina) viridilabris*: 2–3 — верхняя губа; 4–5 — переднеспинка; 6–7 — левое надкрылье; 8–11 — эдеагус (8–9 — слева; 10–11 — сверху); 2, 4, 6, 8–9 — *C. somnuki*; 3, 5, 7, 10–11 — *C. viridilabris*.



Figs 12–23. Details of *Cylindera (Eugrapha) inscripta* and *Cylindera (Eugrapha) mongolica*: 12–13 — labrum, 14–15 — pronotum, 16–17 — coupling sulcus; 18–19 — left elytra; 20–23 — aedeagus (20, 22 — left lateral view; 21, 23 — dorsal view); 12, 14, 16, 18, 20–21 — *C. inscripta*; 13, 15, 17, 19, 22–23 — *C. mongolica*; 12–15, 18–23 — males; 16–17 — females.

Рис. 12–23. Детали строения *Cylindera (Eugrapha) inscripta* и *Cylindera (Eugrapha) mongolica*: 12–13 — верхняя губа, 14–15 — переднеспинка, 16–17 — копулятивный шов; 18–19 — левое надкрылье; 20–23 — эдеагус (20, 22 — слева; 21, 23 — сверху); 12, 14, 16, 18, 20–21 — *C. inscripta*; 13, 15, 17, 19, 22–23 — *C. mongolica*; 12–15, 18–23 — самцы; 16–17 — самки.

*Dilatotarsa kinabaluensis* (Mandl, 1969)

MATERIAL: 1♂ — E Malaysia, Sabah, 52 km of road Kota-Kinabalu — Tambunan, h~1700 m, 04.07.2002, leg. S. Zimina & S. Kurbatov (MPU).

NOTE: This rare species was described based on two specimens (male and female) from western slopes of Kinabalu Mountain [Mandl, 1969]. Later *D. kinabaluensis* was collected in the same habitat with *D. loeffleri* (Mandl, 1969) [Cassola & Murrey, 1979]. The present new locality is also from the Mt. Kinabalu region. According to the personal report of Mrs. Svetlana Zimina and Dr. Sergey Kurbatov, *D. kinabaluensis* was collected together with *D. loeffleri* in openings with short sparse grass near a road.

*Therates fulvicollis* Thomson, 1860

MATERIAL: 1♂ — Gilolo [Western New Guinea] (ZISP).

NOTE: Until now *T. fulvicollis* was known only from Sulawesi (Utara and Selatan) and Molukken (Bacan, Ternate and Halmahera islands) [Wiesner, 1988]. This new locality (Gilolo, New Guinea) is far removed from the general distribution area. There is a possibility of mislabeling, or the actual distribution area of *T. fulvicollis* is much more widespread than previously thought. A single species of the similar 'fasciatus'-group — *T. chaudiroidi* Schaum, 1865 has been reported from the fauna of New Guinea. However these species are easily distinguished from each other by the pattern of elytra, as well as shape of labrum and aedeagus [see Wiesner, 1988].

*Therates caligatus* Bates, 1872

MATERIAL: 1♀ — Supiori Isl., southern coast (not far from N coast of W New Guinea), primary forest on hills near vill. Korido, 10–11.11.2011, leg. A. Gorochov (ZISP).

NOTE: Until recently this species was known from only two Indonesian islands: Waigeo and Misool [Brouerius van Nidek, 1959; Cassola, 1987; Wiesner, 1988, 1992], which are largest ones in Raja Ampat Islands Archipelago. This new locality is from Supiori Island — one of the Schouten Islands, located in the Cenderawasih Bay 50 km off the north-western coast of New Guinea. From related species *T. caligatus* is easily recognized by its sharp and distinctly tapered sutural tooth.

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