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研究資料（Research record）

Stag beetles in Bukit Soeharto and Bukit Bangkirai Forests, East Kalimantan, Indonesia

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Abstract

The current report presents a list of stag beetles, with colored images collected from Bukit Soeharto and Bukit Bangkirai forests in East Kalimantan, Indonesia. The list includes 36 species and it shows the high stag beetle diversity concentrated in a small area of tropical rain forests in Indonesia. Because we hope to inform the Indonesian people about the high species diversity in their country's forests, we assigned a new Indonesian name along with both scientific and Japanese names to each species.

Key words : biodiversity, Bukit Bangkirai, Bukit Soeharto, East Kalimantan, stag beetles, typical forest insects

1. Introduction

Fujita (2010) described stag beetles worldwide, totaling approximately 100 genera and more than 1,400 species, with many distributed in the tropics. Therefore, one may expect that the tropical rain forests in Indonesia host many stag beetle species.

In Indonesia, stag beetles are generally referred to as "Kumbang Rusa;" however, people do not distinguish among species and there are no names for each species of stag beetles in the Indonesian language. The situation is similar for other insect groups such as butterflies (kupu-kupu) and long-horned beetles (Kumbang moncong panjang). Indonesian people believe that biodiversity is important for the world and that the biodiversity of their country is the highest in the world. However, most people have no evidence of the high biodiversity because they do not distinguish insect species.

The current report presents a list of stag beetles, with colored images collected from Bukit Soeharto and Bukit Bangkirai forests in East Kalimantan, Indonesia. The list includes 36 species, of which nine have not been identified at the species level because of their small sizes and difficulty in identification. Some of them may be new species. Considering the limited collection area (approximately 1,300 ha) and duration (approximately 3 years) of the study, more species may have been present, but were not found and recorded in the two forests. Compared with the total of 40 stag beetle species in Japan (approximately 370,000 km^2, with thousands of islands) (Fujioka 2001), we can understand the high stag beetle diversity concentrated in a small area of tropical rain forests in Indonesia. Because we hope to inform the Indonesian people about the high species diversity in their country's forests, we assigned a new Indonesian name along with both scientific and Japanese names to each species. We hope that this report contributes to future biodiversity studies.

The list is based on an interim report (Soeyamto et al. 2000) of the follow-up program of the Tropical Rain Forest Research Project by the government of Indonesia and Japan International Cooperation Agency (JICA). Most of the stag beetle samples collected in the present study are preserved in the Tropical Rain Forest Research Center (PUSREHUT) of Mulawarman University and in the Samboja office of Inhutani 1 in East Kalimantan. The same set is also maintained at Bidang Zoologi, Puslit Biologi-LIPI, Cibinong, West Java.

2. Study site and Methods

We collected stag beetles in Bukit Soeharto and Bukit Bangkirai forests in East Kalimantan, Indonesia (Fig. 1), which were originally covered with a lowland dipterocarp forest. These forests are remnants of a single large forest that covered the area until the late 20th century. However, they are now largely separated from each other by

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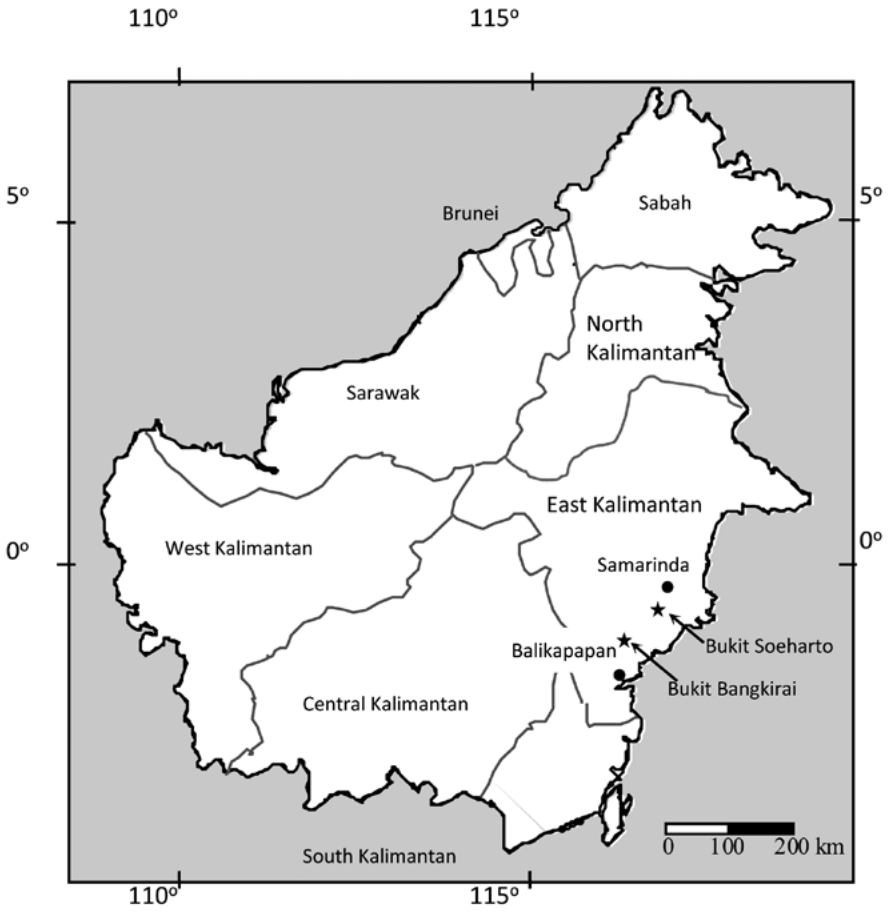

Fig. 1. Location of Bukit Soeharto and Bukit Bangkirai on the Kalimantan (Borneo) Island.

deforested areas and are also divided by roads connecting cities and villages (Rustam et al. 2012). In a typical year, the study area has no pronounced dry season. The mean annual rainfall is approximately 2,000 mm, and the annual mean daily maximum and minimum air temperatures are 29.9°C and 21.4°C, respectively (Toma et al. 2000).

Bukit Soeharto is located between Samarinda and Balikpapan. Approximately 20,000 ha of the forest are managed as Bukit Soeharto Education Forest (BSEF) of Mulawarman University. Because the BSEF had been selectively logged until 1979 and was affected by fires in 1982–83 and 1998, it is a mosaic of different vegetation types including near-primary forests, secondary forests, and grasslands. We surveyed the insect fauna in the core area (approximately 1,000 ha) of the BSEF where near-primary forests remained. The survey in the BSEF was conducted for 3 years from December 1997 to April 2001.

The Bukit Bangkirai forest is located approximately 20 km southwest from Bukit Soeharto and 58 km northwest of Balikpapan at an altitude of approximately 110 m. The total area of the Bukit Bangkirai forest is approximately 1,500 ha. Although majority of the area was affected by fires in 1982–83 and 1998, some areas (approximately 300 ha) escaped the fires and have been managed as a natural reserve by Inhutani I. The surveyed area in Bukit Bangkirai was in the natural forest that escaped the forest fires. The survey in Bukit Bangkirai was conducted for 3 years from March 1999 to February 2002.

Stag beetles were collected mainly by bait traps using a banana placed in shopping baskets (Photo 1), light traps (Photo 2), Malaise traps (Photo 3), and hanging traps (Photo 4). In Bukit Soeharto, one light trap was placed on the ground and two light traps were placed on a scaffolding tower at 20 m and 45 m above the ground. Four bait traps were hung from tree branches at 3 m above the ground. Four Malaise traps were placed on the ground and two were placed at 20 m and 45 m on the tower. Four black hanging traps with an attractant (75% ethanol) were placed 1.5 m above the ground.

In Bukit Bangkirai, one light trap was placed on the ground and two were placed on a canopy bridge 30 m above the ground. Four Malaise traps were placed on the ground. Four bait traps and four hanging traps were placed 1.5 m above the ground.

Photo 1. Bait trap. A shopping basket with banana hung from tree branches at 3 m above ground.

Photo 2. Light traps set on the ground (left) and 45 m above ground on a scaffolding tower (right).

Photo 3. A Malaise trap.

Photo 4. A hanging trap with black color.

3. Abbreviations

The following abbreviations are used to indicate the surveying area, traps, collecting methods, and stag beetle collectors in this investigation.

BS: Bukit Soeharto Education Forest
BB: Bukit Bangkirai Forest
LT: Light trap
BT: Bait (banana) trap
MT: Malaise trap
HT: Hanging trap
Bu: Budi
HM: Hiroshi Makihara
HK: Haruo Kinuura
Su: Sugiarto

4. A list of stag beetles from Bukit Soeharto and Bukit Bangkirai Forests

Family Lucanidae クワガタムシ科
(Suku Kumbang Rusa)

Subfamily Odontolabinae　ツヤハダクワガタ亜科
Tribe Odontolabini　ツヤハダクワガタ族
Genus *Odontolabis* Hope, 1842 ツヤハダクワガタ属
(Keluarga Kumbang Rusa Sayap Berkilau)

1. *Odontolabis striatus* Deyrolle, 1864 (Pl.1, figs. 1-a, b)
ストリアータツヤクワガタ
(Kumbang Rusa Sayap Bergaris)
BS: 1♂, Mar. 2000, HM & Su (LT).
BB: 1♂, Jan. 2000, HM & Su (LT); 7♂♂2♀♀, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra, Java, Kalimantan Is., Belitung Is. and Southern part of Malay Peninsula.
Not so common species in Borneo (Fujita 2010)
2. *Odontolabis cephalotes* Leuthner, 1885 (Pl. 1, fig. 2)
ケファロテスツヤクワガタ
(Kumbang Rusa Kecil Sayap Bergaris)
BB: 1♂, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra.
Not so common species in Borneo (Fujita 2010).
3. *Odontolabis gazella gazella* (Fabricius, 1787) (Pl. 1, figs. 3-a, b)
ガゼラツヤクワガタ
(Kumbang Rusa Sayap Coklat)
BS: 1♀, Oct. 1996, HM & HK (MT); 1♂, Nov. 1999, HM & Su (BT).
Distribution Borneo, Sumatra, Malay Peninsula, Kalimantan Is., Natuna Is., Southern part of Thailand and Philippines (Balabac Is.).
Common species in Borneo (Fujita 2010).
4. *Odontolabis brookeana* (Snellen van Vollenhoven, 1861) (Pl. 1, figs. 4-a, b)
ブルークツヤクワガタ
(Kumbang Rusa Prothorax Hitam)
BS: 1♂, Nov. 1998, HM & Su (LT); 1♂, Apr. 2000, HM & Su (LT).
BB: 1♂, Oct. 1999, HM & Su (BT); 1♂, Nov. 1999, HM & Su (LT); 1♂, Dec. 1999, HM & Su (LT); 2♂♂, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra, Tanahmasa Is. and Java.
Common species (Fujita 2010).
5. *Odontolabis dalmani dalmani* (Hope et Westwood, 1845) (Pl. 1, figs. 5-a, b)
ダールマンツヤクワガタ
(Kumbang Rusa Sayap Abu-abu)
BS: 2♂♂, Feb. 2000, HM & Su (LT).
BB: 1♂, Nov. 1999, HM & Su (LT); 1♂, Dec. 1999, HM & Su (LT); 1♂, Mar. 2000, HM & Su (LT); 2♂♂, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra, Malay Peninsula, Natuna Is., Laut Is., Tarempa Is., Kalimantan Is., Singkep Is., SE. Myanmar and SW. Thailand.
Common species in Borneo (Fujita 2010).
6. *Odontolabis latipennis* (Hope et Westwood, 1845) (Pl. 1, figs. 6-a, b)
ラテイペンニスツヤクワガタ
(Kumbang Rusa Sayap Lebar)
BS: 1♀, Oct. 1998, HM & Su (LT); 1♂, Apr. 2000, HM & Su (LT).
BB: 1♂, Jan. 2000, Su & Bu (LT); 1♀, Mar. 2000, HM & Su (LT); 1♀, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra, Malay Peninsula, Simeulue Is., Mentawai Isles. (Sibent Is., Pagai Is.), Nias Is., Bangka Is., Singkep Is., Kalimantan Is. and Philippines (Palawan Is., Mindanao Is., Dinagat Is., Samar Is., Leyte Is., Sibuyan Is. and Luzon Is.).
Not so common species in Borneo (Fujita 2010).

Subfamily Figulinae　チビクワガタ亜科
Tribe Figulini　チビクワガタ族
Genus *Figulus* MacLeay, 1819 チビクワガタ属
(Keluarga Kumbang Rusa Bertubuh Kecil)

7. *Figulus* sp. 1 (Pl. 2, fig. 7)
チビクワガタの 1 種
(Kumbang Rusa Prothorax Cekung sp.1)
BS: 1 ex., Feb. 1999, HM & Su (LT); 1 ex., Mar.1999, HM & Su (LT); 1 ex., Oct. 1999, HM & Su (LT); 1 ex.,

Nov. 1999, HM & Su (LT); 2 exs., Jan. 2000, Su & Bu (MT); 1 ex., Mar. 2000, HM & Su (LT).
BB: 1 ex., Feb. 2000, Su & Bu (LT).

8. *Figulus* sp. 2 (Pl. 2, fig. 8)
チビクワガタの 1 種
(Kumbang Rusa Prothorax Cekung sp. 2)
BS: 1 ex., Apr. 1998, HM (HT).

9. *Figulus* sp. 3 (Pl. 2, fig. 9).
チビクワガタの 1 種
(Kumbang Rusa Bertubuh Kecil sp. 3)
BS: 1 ex., Nov. 1999, HM & Su (LT); 1 ex., Jan 2000, Su & Bu (MT); 1 ex., Feb., 2000, Su & Bu (LT).

10. *Figulus* sp. 4 (Pl. 2, fig. 10)
マメクワガタの 1 種
(Kumbang Rusa Bertubuh Kecil sp.4)
BS: 8 exs., Mar. 2000, HM & Su (from under bark of dead tree, *Shorea smithiana*); 1 ex., Apr. 2000, HM & Su (from under bark of dead tree, *Shorea smithiana*).

11. *Figulus* sp. 5 (Pl. 2, fig. 11)
マメクワガタの 1 種
(Kumbang Rusa Bertubuh Kecil sp. 5)
BS: 1 ex., Oct. 1999, HM & Su (LT); 1 ex., Mar. 2000, HM & Su (from under bark of dead tree, *Shorea smithiana*).

12. *Figulus* sp. 6 (Pl. 2, fig. 12)
マメクワガタの 1 種
(Kumbang Rusa Bertubuh Kecil sp. 6)
BS: 1 ex., Oct. 1999, HM & Su (LT).
BB: 1 ex., Mar. 2000, HM & Su (LT).

13. *Figulus* sp. 7 (Pl. 2, fig. 12)
マメクワガタの 1 種
(Kumbang Rusa Bertubuh Kecil sp. 7)
BS: 1 ex., Jan. 1998, HM (MT); 1 ex., Oct. 1998, HM & Su (HT).

Genus *Cardanus* Westwood, 1834　サメハダチビクワガタ属
(Keluarga Kumbang Rusa Bertubuh Ramping)

14. *Cardanus sulcithorax* (Perty, 1831) (Pl. 2, fig. 14)
サメハダチビクワガタ
(Kumbang Rusa Prothorax Lubang Besar)
BS: 1 ex., Oct. 1996, HM & HK (from under bark of dead tree, *Macaranga gigantea*).
Distribution: Borneo, Sumatra, Java, Malay Peninsula, Thailand, Philippines (Leyte Is.).
Not so common species in Borneo (Fujita 2010).
Above 8 species are difficult to difference of sex, therefore without distinction of sex.

Tribe Nigidini　ツノヒョウタンクワガタ族

Genus *Novonigidius* Dudich, 1923 ニセツノヒョウタンクワガタ属
(Keluarga Kumbang Rusa Bertubuh Silindris)

15. *Novonigidius ornatifrons* Dudich, 1929 (Pl. 2, figs. 15-a, b)
ニセツノヒョウタンクワガタ
(Kumbang Rusa Bertubuh Silindris)
BS: 1♂, Oct. 1999, HM & Su (LT).
Distribution: Borneo.
Rare species in Borneo (Fujita 2010).

Subfamily Dorcinae　クワガタムシ亜科
Tribe Cladognathini　ノコギリクワガタ族

16. *Prosopocoilus mohnikei mohnikei* Perry, 1873 (Pl. 3, figs. 16-a, b, c)
モーニッケノコギリクワガタ
(Kumbang Rusa Rahang Gergaji Mohnike)
BS: 2♂♂, Oct. 1996, HM & HK (LT); 1♂, Oct. 1996, HM & HK (HT).
Distribution: Borneo, Sumatra, Java, Bali Is., Malay Peninsula.
Not so common species in Borneo (Fujita 2010).

17. *Prosopocoilus occipitalis astericus*　(J. Thomson, 1862) (Pl. 3, fig. 17-a, b, c, d, e)
オキシピタリスノコギリクワガタ
(Kumbang Rusa Rahang Gergaji Prothorax Bintik Hitam)
BS: 1♀, Feb. 1998, HM (MT); 1♂, Jul. 1998, HM & Su (LT); 1♂, Dec. 1998, HM & Su (LT); 1♂, Mar. 1999, HM & Su (LT); 1♂, Apr. 1999, HM & Su (LT); 1♂1♀, Jul. 1999, HM & Su (LT); 1♂, Sep. 1999, HM & Su (LT); 1♂, Nov. 1999, HM & Su (LT); 1♂, Dec. 1999, HM & Su (LT); 2♂♂1♀, Jan. 2000, Su & Bu (LT); 1♀, Jan. 2000, Su & Bu (BT); 1♂, Feb. 2000, Su & Bu (LT); 4♂♂1♀, Mar. 2000, HM & Bu (LT); 5♂♂, Apr. 2000, HM & Su (LT)
BB: 2♂♂, Apr. 1999, HM & Su (LT); 3♂1♀, Jun. 1999, HM & Su (LT); 1♂, Jul. 1999, HM & Su (LT); 2♂♂, Nov. 1999, HM & Su (LT); 1♂, Dec. 1999, HM & Su (LT); 1♂, Jan. 2000, Su & Bu (LT); 3♂♂2♀♀, Feb. 2000, Su & Bu (LT); 1♂, Mar. 2000, HM & Su (LT); 11♂♂9♀♀, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra, Java, Malay Peninsula, Andaman Isles. ?, Nias Is., Pagai Is. and Siberut Is.
Very common species in Borneo (Fujita 2010).

18. *Prosopocoilus attenuatus* (Parry, 1886) (Pl. 3, figs. 18-a, b, c)
アテヌアトウスノコギリクワガタ
(Kumbang Rusa Rahang Gergaji Berbulu Halus)
BS: 1♂, Jan. 1998, HM (LT); 1♂, Feb. 1998, HM (LT); 1♂, Aug. 1998, HM & Su (LT); 1♂, Nov. 1998, HM &

Su (LT); 1♂, Jun. 1999, HM & Su (LT).
BB: 1♂, Dec. 1999, HM & S (LT); 2♂♂, Feb. 2000, Su & Bu (LT); 1♂, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra.
Rare species in Borneo (Fujita 2010).

19. *Prosopocoilus buddha annae* Bomans, 1992 (Pl. 4, figs. 19-a, b, c)
ブッダノコギリクワガタ
(Kumbang Rusa Rahang Gergaji Prothorax Persegi)
BS: 1♀, Oct. 1996, HM & HK (LT); 5♂♂, Jan. 1998, HM (BT); Dec. 1998, HM & Su (BT); 1♀, Mar. 1999, HM & Su (LT); 1♂, Nov. 1999, HM & Su (LT); 1♂, Dec. 1999, HM & Su (LT); 1♂, Feb. 2000, Su & Bu (LT); 4♂♂1♀, Apr. 2000, HM & Su (LT).
BB: 1♂, Dec. 1999, HM & Su (LT); 1♂, Apr. 2000, HM & Su (LT).
Distribution: Borneo.
Not so common species (Fujita 2010).

20. *Prosopocoilus rubens* Didier, 1927 (Pl. 4, fig. 20)
ルベンスノコギリクワガタ
(Kumbang Rusa Bertubuh Coklat Tua)
BS: 1♂, Feb. 2000, Su & Bu (LT).
Distribution: Borneo, Sumatra and Malay Peninsula.
Not so common species in Borneo (Fujita 2010).

21. *Prosopocoilus forceps nakamotoi* Mizunuma, 1994 (Pl. 4, figs. 21-a, b)
フォルケプスノコギリクワガタ
(Kumbang Rusa Bertubuh Maron)
BS: 1♂1♀, Jan. 1998, HM (BT); 1♂, Nov. 1998< HM & Su (LT); 1♂, Jun. 1999, HM & Su (LT); 1♀, Apr. 1999, HM & Su (LT); 1♀, Oct. 1999, HM & Su (LT); 1♀, Dec. 1999, HM & Su (LT); 1♂, Mar. 2000, HM & Su (LT).
Distribution: Borneo, Laut Is. and Sebuku Is.
Not so common species in Borneo (Fujita 2010).

22. *Prosopocoilus passaloides* (Hope et Westwood, 1845) (Pl. 4, figs. 22-a, b, c)
パッサロイデスノコギリクワガタ
(Kumbang Rusa Rahang Gergaji Ramping)
BS: 1♂, Sep. 1998, HM & Su (LT); 1♂, Oct. 1998, HM & Su (LT); 1♀, Mar. 1999, HM & Su (LT); 1♀, Jun. 1999, HM & Su (LT); 1♀, Aug. 1999, HM & S (LT); 1♂, Nov. 1999, HM & Su (LT); 1♂, Nov. 1999, HM & Su (MT); 1♀, Jan. 2000, HM & Su (MT); 1♂, Jan. 2000, Su & Bu (LT); 2♂♂2♀♀, Mar. 2000, HM & Su (LT); 2♀♀, Apr. 2000, HM & Su (LT).
BB: 1♀, Jun. 1999, HM & Su (LT); 1♂, Aug. 1999, HM & Su (LT); 1♀, Sep. 1999, HM & Su (LT); 3♀♀, Nov. 1999, HM & Su (LT); 1♂2♀♀, Dec. 1999, HM & Su (LT); 2♂♂1♀, Jan. 2000, Su & Bu (LT); 4♀♀, Feb. 2000, Su & Bu (LT); 1♂3♀♀, Mar. 2000, HM & Su (LT); 1♂1♀, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra, Java, Malay Peninsula and Andaman Isles.
Common species in Borneo (Fujita 2010).

Tribe Cyclommatini ホソアカクワガタ族
Genus *Cyclommatus* Parry, 1863 ホソアカクワガタ属
(Keluarga Kumbang Rusa Bertubuh Rampinng)

23. *Cyclommatus canaliculatus ramlii* T. Wakatake et K. Sakamaki, 2002 (Pl. 4, figs. 23-a, b)
カナリクラトウスホソアカクワガタ
(Kumbang Rusa Kemerahan Rahang Bengkok)
BS: 2♀♀, Feb. 1998, HM (BT); 1♀, Nov. 1998, HM & Su (LT); 1♂3♀♀, Jun. 1999, HM & Su (LT); 1♂2♀♀, Aug. 1999, HM & Su (LT); 2♂♂, Sep. 1999, HM & Su (LT); 1♀, Oct. 1999, HM & Su (LT); 2♂♂1♀, Nov. 1999, HM & Su (LT);1♂ 1♀, Dec. 1999, HM & Su (LT); 1♂, Jan. 2000, Su & Bu (LT); 1♀, Feb. 2000, Su & Bu (LT); 2♀♀, Mar. 2000, HM & Su (LT); 5♂♂3♀♀, Apr. 2000, HM & Su (LT).
BB: 1♀, Dec. 1999, HM & Su; 1♂, Feb. 2000, Su & Bu (LT).
Distribution: Southern part of Borneo.
Common species in Borneo (Fujita 2010).

24. *Cyclommatus dehaani* (Westwood, 1842) (Pl. 4, figs. 24-a, b)
デハーンホソアカクワガタ
(Kumbang Rusa Rahan Bengkok Pendek)
BS: 1♂, Mar. 2000, HM & Su (LT).
BB: 1♂, Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra, Malay Peninsula, Mentawai Isles. (North Pagai Is.) and Siberut Is.
Not so common species in Borneo (Fujita 2010).

25. *Cyclommatus martinii yamamotoi* T. Wakatake, 2002 (Pl. 5, figs. 25-a, b, c)
マルテイニホソアカクワガタ
(Kumbang Rusa Coklat Kemerahan Martini)
BS: 1♂, Feb. 1998< HM (LT); 1♀, Dec. 1998, HM & Su (LT); 1♂1♀, May 1999, HM & Su (LT); 3♂♂1♀, Aug. 1999, HM & Su (LT); 2♂♂3♀♀, Mar. 2000, HM & Su (LT); 2♂♂2♀♀, Apr. 2000, HM & Su (LT).
BB: 1♀, Oct. 1999, HM & Su (LT); 2♂♂, Nov. 1999, HM & Su (LT); 1♀, Jan. 2000, Su & Bu (LT); 2♂♂1♀, Feb., 2000, Su & Bu (LT); 1♂, Mar. 2000, HM & Su (LT); 1♂1♀, Apr. 2000, HM & Su (LT).
Distribution: Southern part of Borneo.
Not so common species in Borneo (Fujita 2010).

Tribe Dorcini クワガタムシ族

Genus *Dorcus* MacLeay, 1819 オオクワガタ属
(Keluarga Kumbang Rusa Bertubuh Besar)

26. *Dorcus* sp. (Pl. 5, fig. 26)
ヒラタクワガタの 1 種
(Kumbang Rusa Bertubuh Besar Berbulu)
BS: 1♀, Aug. 1999, HM & Su (LT).

27. *Dorcus titanus titanus* (Boisduval, 1835) (Pl. 5, figs. 27-a, b)
マレーヒラタクワガタ
(Kumbang Rusa Bertubuh Besar)
BS: 1♀, Nov. 1998, HM & Su (LT); 1♂, Mar. 2000, HM & Su (LT).
Distribution: Borneo, Malay Peninsula and Nias Is.
Common species in Borneo (Fujita 2010).

28. *Dorcus mirabilis* (Parry et Westwood, 1864) （Pl. 5, figs. 28-a, b, c）
ミラビリスヒラタクワガタ
(Kumbang Rusa Bertubuh Besar Prothorax Berkilau)
BS: 5 exs., Oct. 1998, HM & Su (LT); 1 ex., Nov. 1998, HM & Su (LT); 2 exs., Dec. 1998, HM & Su (LT); 3 exs., Feb. 1999, HM & Su (LT); 2 exs., Mar. 1999, HM & Su (LT); 2 exs., Apr. 1999, HM & Su (LT); 1 ex., Jun. 1999, HM & Su (LT); 2 exs., Aug. 1999, HM & Su (LT); 2 exs., Sep. 1999, HM & Su (LT); 5 exs., Nov. 1999, HM & Su (LT); 3 exs., Dec. 1999, HM & Su (LT); 7 exs., Jan. 2000, Su & Bu (LT); 6 exs., Feb. 2000, Su & Bu (LT); 15 exs., Mar. 2000 HM & Su (LT); 3 exs., Apr. 2000, HM & Su (LT).
BB: 6 exs., Apr. 1999, HM & Su (LT); 2 exs., Apr. 1999, HM & Su (BT); 15 exs., May 1999, HM & Su (LT); 17 exs., Jun. 1999, HM & Su (LT); 20 exs., Jul. 1999, HM & Su (LT); 28 exs., Aug. 1999, HM & Su (LT); 23 exs., Sep. 1999, HM & Su (LT); 20 exs., Oct. 1999, HM & Su (LT); 50 exs., Nov. 1999, HM & Su; 22 exs., Dec. 1999, HM & Su (LT); 45 exs. Jan. 2000, Su & Bu (LT); 43 exs., Feb. 2000, Su & Bu (LT); 20 exs., Mar. 2000, HM & Su (LT); 20 exs., Apr. 2000, HM & Su (LT).
Distribution: Borneo, Sumatra and Malay Peninsula.
Not so common species in Borneo (Fujita 2010).
Very common species especially in Bukit Bangkirai. Numbers of specimens are so many, therefore without distinction of sex.

Genus *Gnaphaloryx* Burmeister, 1847 ソリアシサビクワガタ属
(Keluarga Kumbang Rusa Bertubuh Berbulu Karat)

29. *Gnaphaloryx opacus* Burmeister, 1847 (Pl. 5, figs. 29-a, b)
ソリアシサビクワガタ
(Kumbang Rusa Berbulu Karat Hitam)
BS: 1♂, Oct. 1996, HM & HK (from under bark of dead tree, *Macaranga gigantea*).
BB: 1♂, 1 ex., April 2000, HM & Su (from dead tree, *Shorea* sp.).
Distribution: Borneo, Sumatra, Java, Malay Peninsula, Sulawesi, Philippines, Northern part of Myanmar, Vietnam, Andaman Isles., Nicobar Isles., Sangir Isles. (Tahua Is.), PNG, Mandioli Is., Tidore Is., Ceram Is., New Britain Is., Bachan Is., Simelue Is., Kangean Is., Bali Is., Peleng Is., Yamdena Is., Kasiruta Is., Ceram Is., Yapen Is., Manipa Is. and Taiwan?.
Not so common species in Borneo (Fujita 2010).

30. *Gnaphaloryx capreolus* Boileau, 1903 (Pl. 5, fig. 30)
カプレオルスソリアシサビクワガタ
(Kumbang Rusa Berbulu Karat Coklat)
BB: 1♀, Aug. 1999, HM & Su (LT).
Distribution: Borneo, Sumatra, Malay Peninsula and Philippines (Palawan Is.).
Not so common species in Borneo (Fujita 2010).

Tribe Pseudodorcini ネブトクワガタ族
Genus *Aegus* MacLeay, 1819 ネブトクワガタ属
(Keluarga Kumbang Rusa Sayap Bergaris)

31. *Aegus acuminatus acuminatus* (Fabricius, 1801) (Pl. 6, figs. 30-a, b, c)
アクミナートウスネブトクワガタ
(Kumbang Rusa Sayap Prothorax Lebar Berkilau)
BS: 2♂♂, Jan. 1998, HM (from cutting palm tree trunk); 3♂♂3♀♀, Feb. 1998, HM (from cutting Palm tree trunk); 1♂, Apr. 1998, HM (from cutting palm tree trunk); 1♂, Apr. 1999, HM & Su (LT); 1♂1♀, Apr. 2000, HM & Su (LT).
BB: 1♂, May 1999, HM & Su (BT); 3♂♂3♀♀, May 1999, HM & Su (from cutting palm tree trunk); 3♂♂4♀♀, Jun. 1999, HM & Su (BT); 1♂, Jun. 1999, HM & Su (from cutting palm tree trunk); 1♀, Aug. 1999, HM & Su (BT); 1♂1♀, Aug. 1999, HM & Su (from cutting palm tree trunk); 1♀, Sep. 1999, HM & Su (BT); 11♂♂12♀♀, Oct. 1999, HM & Su (BT).
Distribution: Borneo, Sumatra, Malay Peninsula, Singkep Is. and Kalimantan Is.
Very common species in Borneo (Fujita 2010).

32. *Aegus parallelus* (Hope et Westwood, 1845) (Pl. 6, figs. 32-a, b, c, d)
パラレルスネブトクワガタ
(Kumbang Rusa Sayap Bergaris Sejajar)
BS: 3♂♂2♀♀, May 1998, HM & Su (from under bark of burned tree, *Shorea smithiana*).
BB: 1♂, Apr. 1999, HM & Su (BT).

Distribution: Borneo, Sumatra, Java, Malay Peninsula, Nias Is., Billiton Is., Singkep Is. and Myanmar.
Not so common species in Borneo (Fujita 2010).

33. *Aegus impressicollis lateliffei* Nagai, 1994 (Pl. 6, figs. 33-a, b, c)
インプレッシコリスネブトクワガタ
(Kumbang Rusa Prothorax Berlubang Kecil)
BS: 1♂, Jan. 1998, HM (BT); 1♂, Jul. 1999, HM & Su (LT).
BB: 1♂, Oct. 1999, HM & Su (from cutting palm tree trunk); 1♂1♀, Dec. 1999, HM & Su BT); 1♀, Feb. 2000 (BT).
Distribution: Borneo.
Not so common species in Borneo (Fujita 2010).

34. *Aegus* sp. (Pl. 6, fig. 34)
ネブトクワガタの 1 種
(Kumbang Rusa Prothorax Berbintok)
BB: 1♂, Oct. 1999, HM & Su (BT).

35. *Aegus punctatipennis* Parry, 1864 (Pl. 7, figs. 35-a, b, c)
プンクテイペンニスネブトクワガタ
(Kumbang Rusa Sayap Bergelombang)
BS: 1♂1♀, Feb. 1998, HM (BT); 1♂, Apr. 1998, HM (BT).
BB: 1♂, Jun. 1999, HM & Su (BT); 1♂, Jun. 1999, HM & Su (from cutting palm tree trunk); 1♂1♀, Oct. 1999, HM & Su (BT); 1♀, Jan. 2000, Su & Bu (BT); 1♀, Feb. 2000, Su & Bu (HT).
Distribution: Borneo.
Not so common species in Borneo (Fujita 2010).

36. *Aegus cherifer nitidus* Boileau, 1899 (Pl. 7, figs. 36-a, b. c)
チェリフェルネブトクワガタ
(Kumbang Rusa Prothorax Berkilau)
BS: 1♂, Apr. 1999, HM & Su (LT); 1♂, Nov. 1999, HM & Su (LT).
BB: 1♀, Jan. 2000, Su & Bu (HT); 1♂, Feb. 2000, Su & Bu (HT).
Distribution: Borneo, Sumatra, Malay Peninsula, Singapore Is., Sentosa Is., Natuna Is., Bawean Is., Mendanau Is. and Kalimantan Is.
Common species in Borneo (Fujita 2010).

Acknowledgements

Collecting stag beetles had been conducted as a part of the follow-up program of the Tropical Rain Forest Research Project by the government of Indonesia and Japan International Cooperation Agency (JICA). We thank the following colleagues for their valuable help: Dr. Djumali Mardji, Mr. F. Budi, Mr. Hata, Mr. Nandi, Ms. Neni, late Mr. Jamardin, late Mr. Sofian, and late Dr. Ch. Soeyamto.

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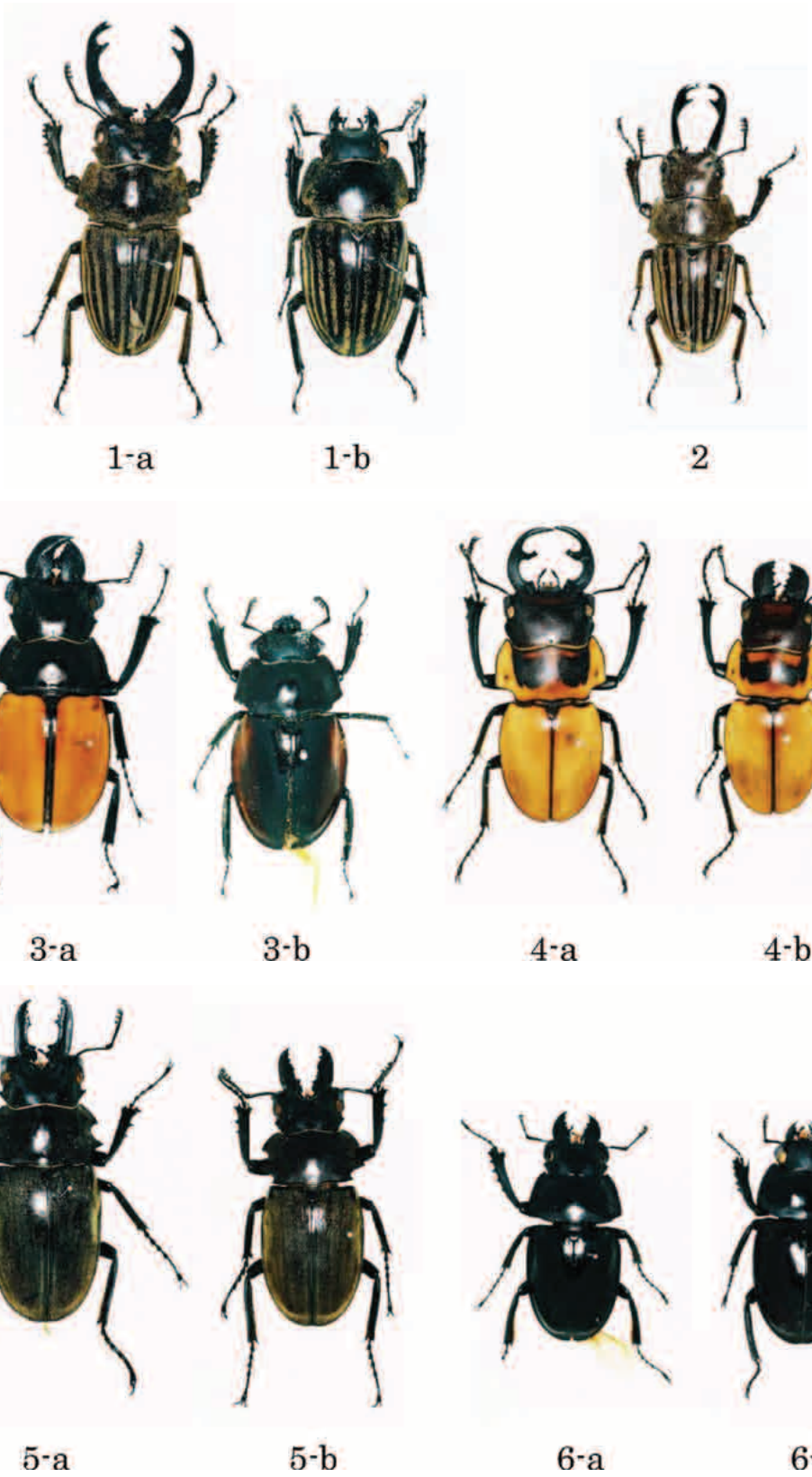
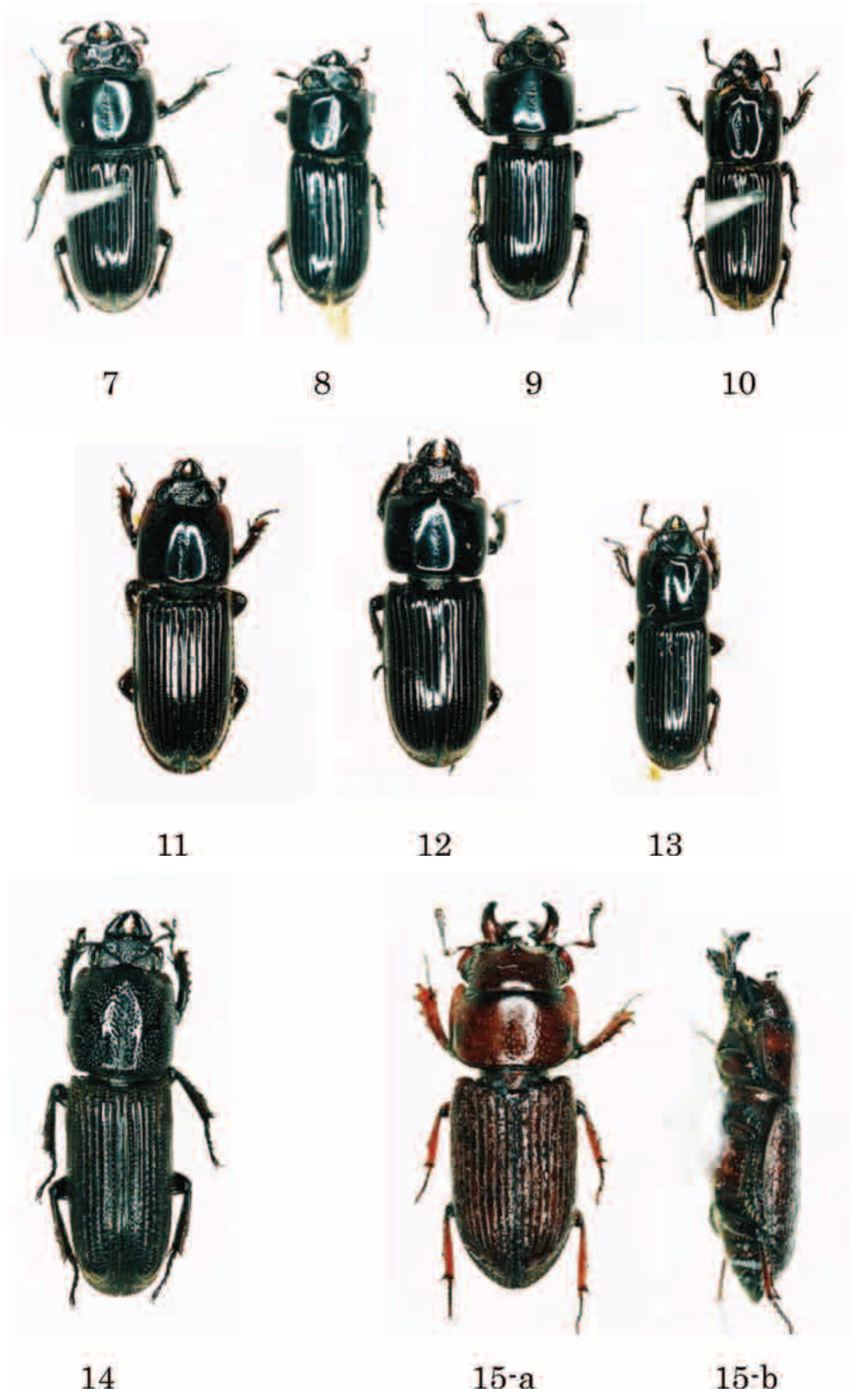
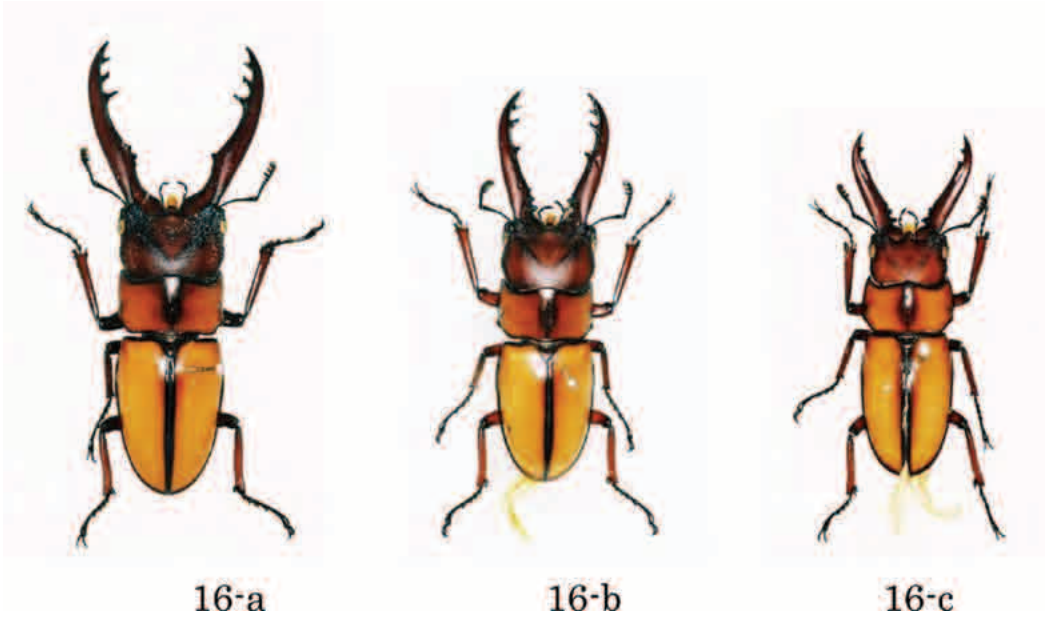
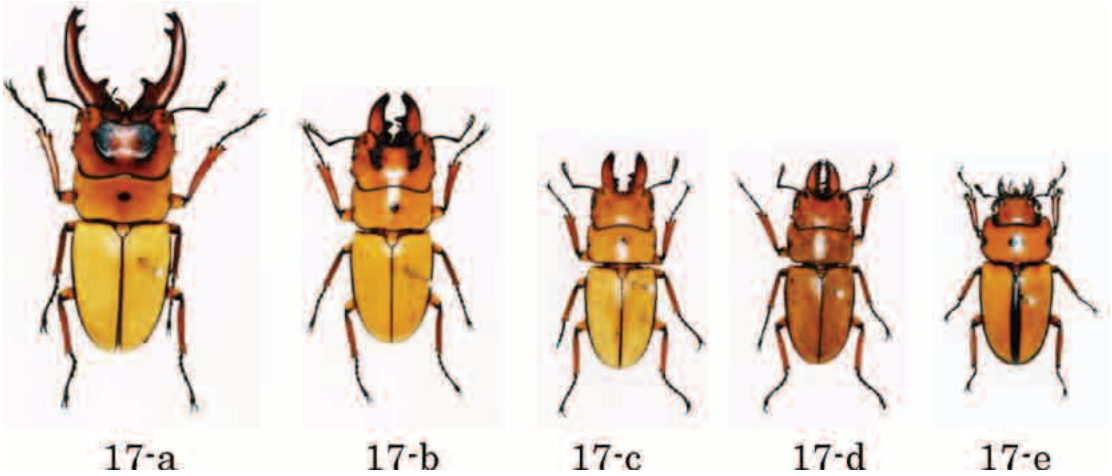


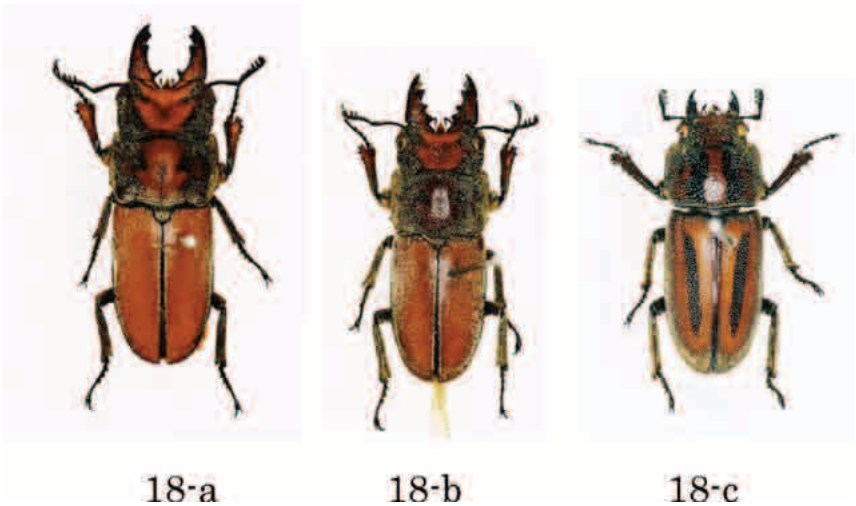
Pl. 1
1. *Odontolabis striatus* ストリアータツヤクワガタ (Kumbang Rusa Sayap Bergaris): a. ♂, 45 mm; b. ♀, 25 mm. 2. *Odontolabis cephalotus* ケファロテスツヤクワガタ (Kumbang Rusa Kecil Sayap Bergaris): ♂, 27 mm. 3. *Odontolabis gazella gazella* ガゼラツヤクワガタ (Kumbang Rusa Sayap Coklat): a. ♂, 50 mm; b. ♀, 35 mm. 4. *Odontolabis brookeana* ブルークツヤクワガタ (Kumbang Rusa Prothorax Hitam): a. ♂, 40 mm; b. ♂, 35 mm. 5. *Odontolabis dalmanni dalmanni* ダールマンツヤクワガタ (Kumbang Rusa Sayap Abu-abu): a. ♂, 60 mm; b. ♂, 52 mm. 6. *Odontolabis latipennis* ラテイペンニスツヤクワガタ (Kumbang Rusa Sayap Lebar): a. ♂, 42 mm; b. ♀, 42 mm.



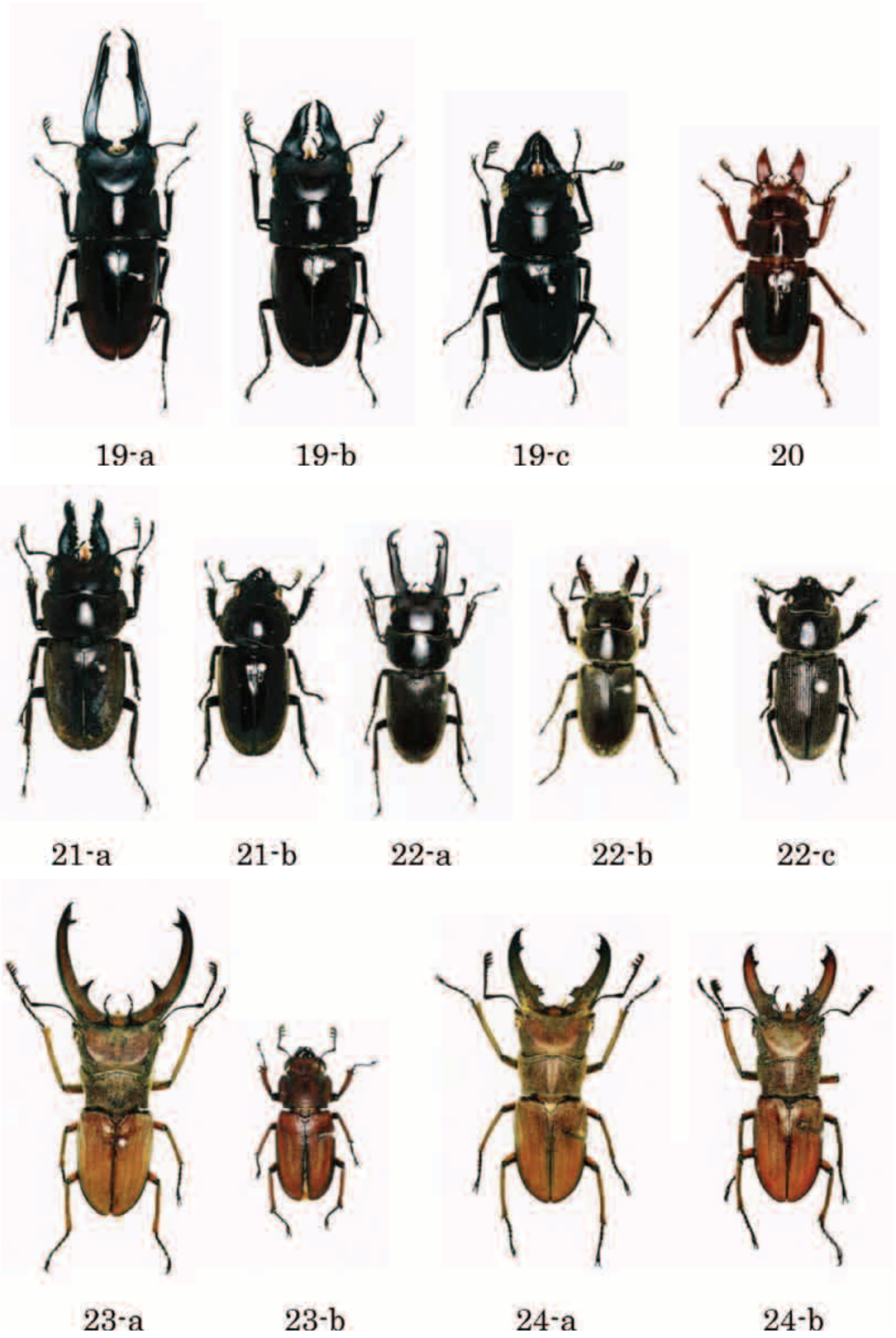
Pl. 2
7. *Figulus* sp. 1 チビクワガタの 1 種 (Kumbang Rusa Prothorax Cekung sp. 1); 11 mm. 8. *Figulus* sp. 2 チビクワガタの 1 種 (Kumbang Rusa Prothorax Cekung sp. 2); 10 mm. 9. *Figulus* sp. 3 チビクワガタの 1 種 (Kumbang Rusa Prothorax Cekung sp. 3); 11 mm. 10. *Figulus* sp. 4 マメクワガタの 1 種 (Kumbang Rusa Bertubuh Kecil sp. 4); 11 mm. 11. *Figulus* sp. 5 チビクワガタの 1 種 (Kumbang Rusa Bertubuh Kecil sp. 5); 9 mm. 12. *Figulus* sp. 6 マメクワガタの 1 種 (Kumbang Rusa Bertubuh Kecil sp. 6); 10 mm. 13. *Figulus* sp. 7 マメクワガタの 1 種 (Kumbang Rusa Bertubuh Kecil sp. 1); 11 mm. 14. *Cardanus sulcithorax* サメハダチビクワガタ (Kumbang Rusa Prothorax Lubang Besar); 10 mm. 15. *Novonigidius ornatifrons* ニセツノヒョウタンクワガタ (Kumbang Rusa Bertubuh Selindris); ♂, 14 mm. a. dorsal view; b. lateral view.



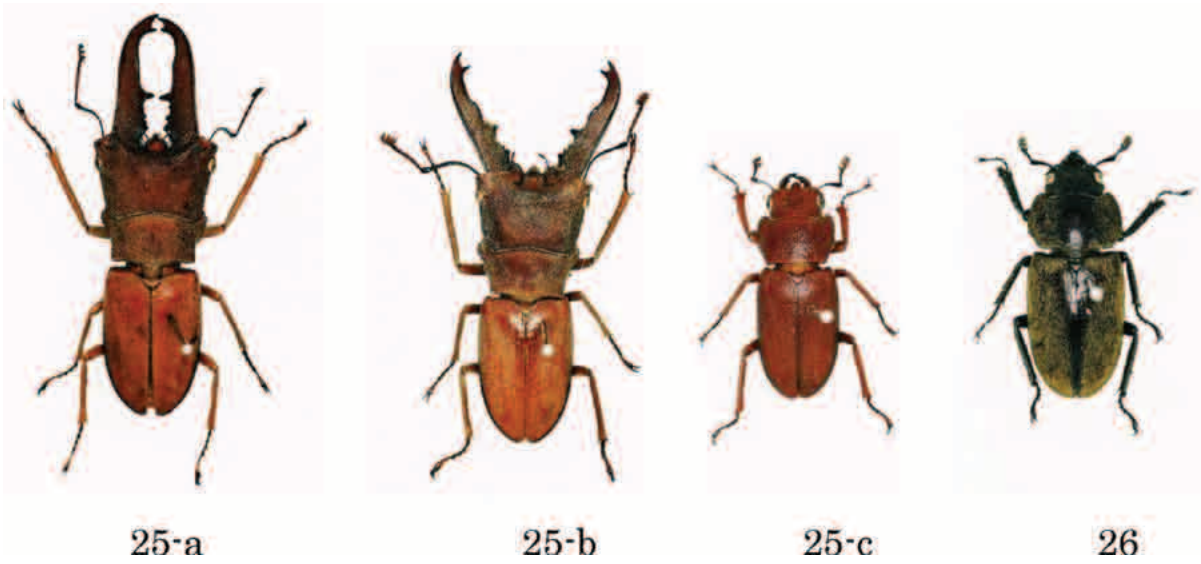


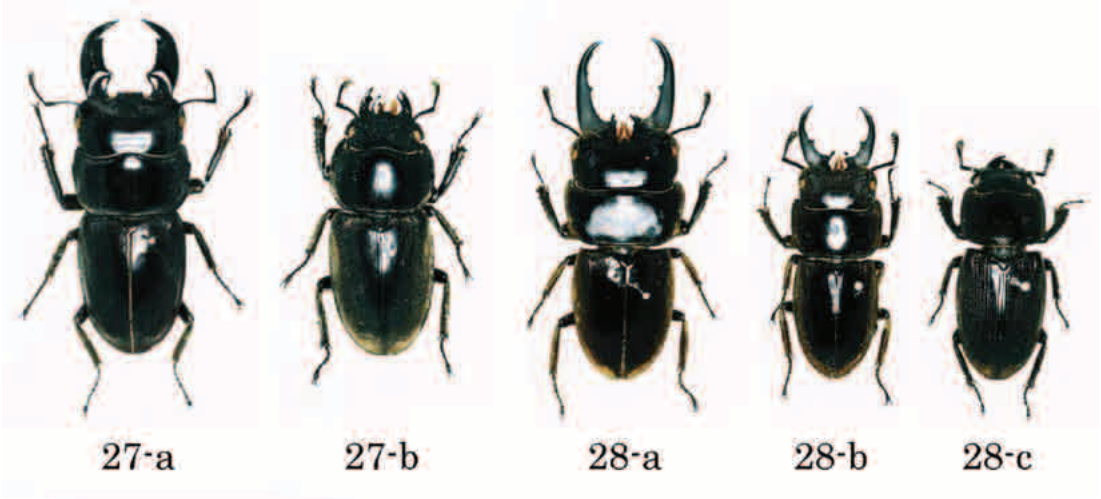


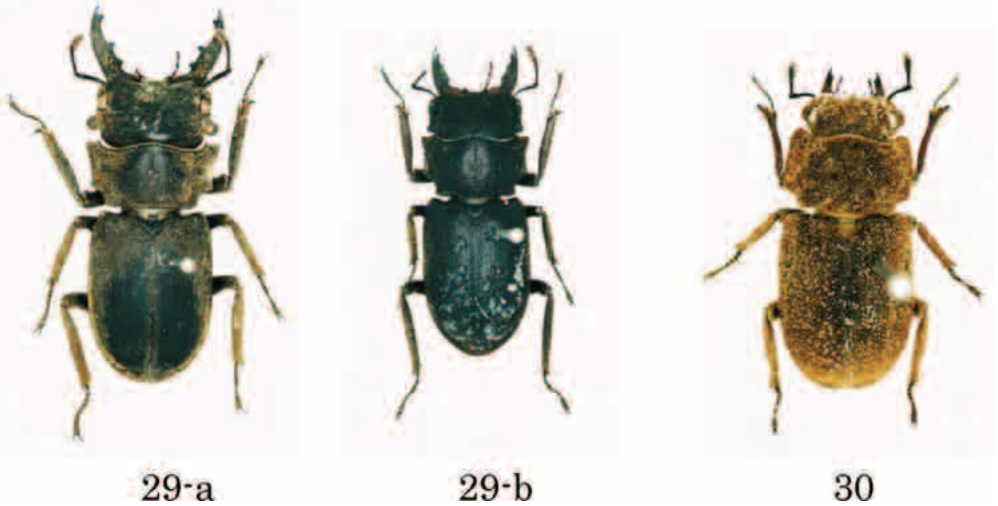
Pl. 3
16. *Prosopocoilus mohnikei mohnikei* モーニッケノコギリクワガタ (Kumbang Rusa Rahang Gergaji Mohnike): a. ♂, 41 mm; b. ♂, 35 mm; c. ♂, 26 mm. 17. *Prosopocoilus occipitalis astericus* オキシピタリスノコギリクワガタ (Kumbang Rusa Rahang Gergaji Prothorax Bintik Hitam): a. ♂, 40 mm; b. ♂, 32 mm; c. ♂, 25 mm; d. ♂, 22 mm; e. ♀, 21mm. 18. *Prosopocoilus attenuatus* アテヌアトウスノコギリクワガタ (Kumbang Rusa Rahang Gergaji Berbulu Halus): a. ♂, 26 mm; b. ♂, 21 mm; c. ♀, 15 mm.



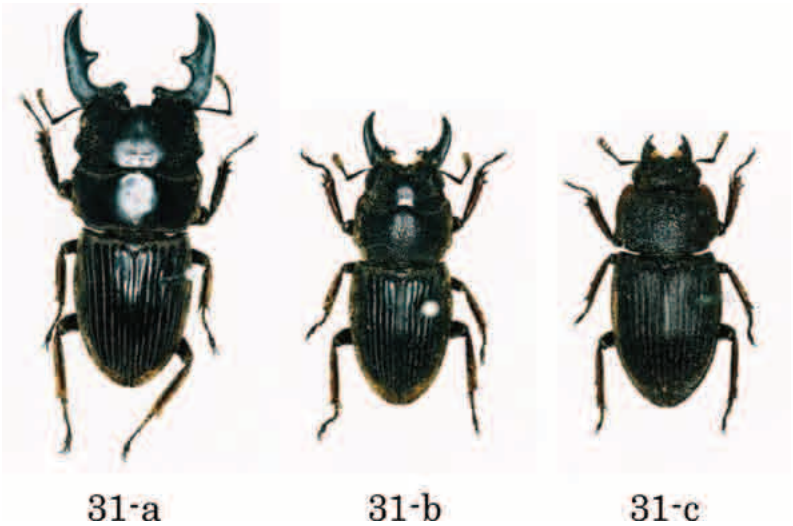
Pl. 4
19. *Prosopocoilus budah annae* ブッダノコギリクワガタ (Kumbang Rusa Rahang Gergaji Prothorax Persegi); a. ♂, 40 mm; b. ♂, 30 mm; c. ♂, 25 mm. 20. *Prosopocoilus rubens* ルベンスノコギリクワガタ (Kumbang Rusa Bertubuh Coklat Tua): ♂, 20mm. 21. *Prosopocoilus forceps nakamotoi* フォルケプスノコギリクワガタ (Kumbang Rusa Bertubuh Maron): a. ♂, 35 mm; b. ♀, 22mm. 22. *Prosopocoilus passaloides* パッサロイデスノコギリクワガタ (Kumbang Rusa Rahang Gergaji Ramping): a. ♂, 32 mm; b. ♂, 28 mm, c. ♀, 21 mm. 23. *Cyclommatus canaliculatus ramlii* カナリクラトウスホソアカクワガタ (Kumbang Rusa Kemerahan Rahang Bengkok): a. ♂, 40 mm; b. ♀, 20 mm. 24. *Cyclommatus dehaani* デハーンホソアカクワガタ (Kumbang Rusa Rahang Bengkok Pendek): a. ♂, 34 mm; b. ♂, 32 mm.

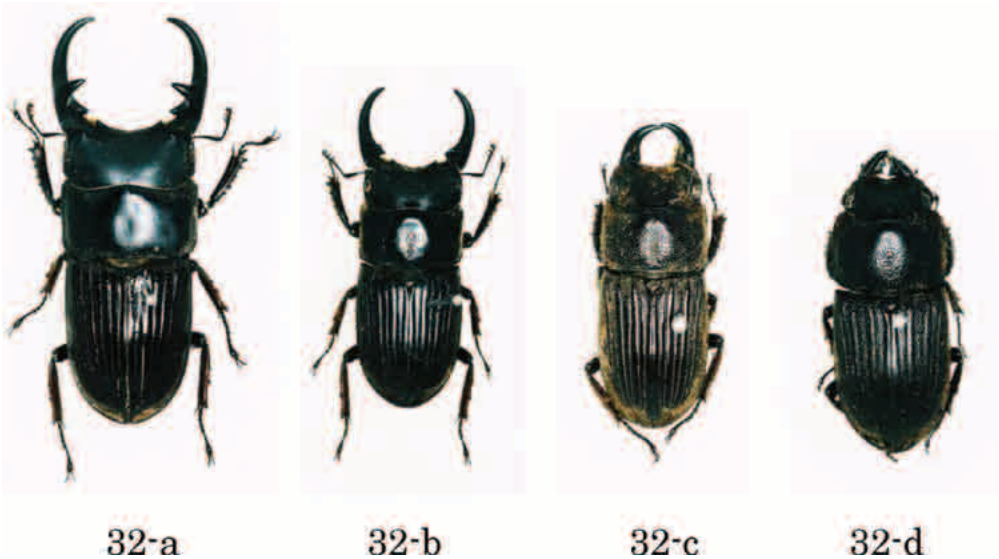


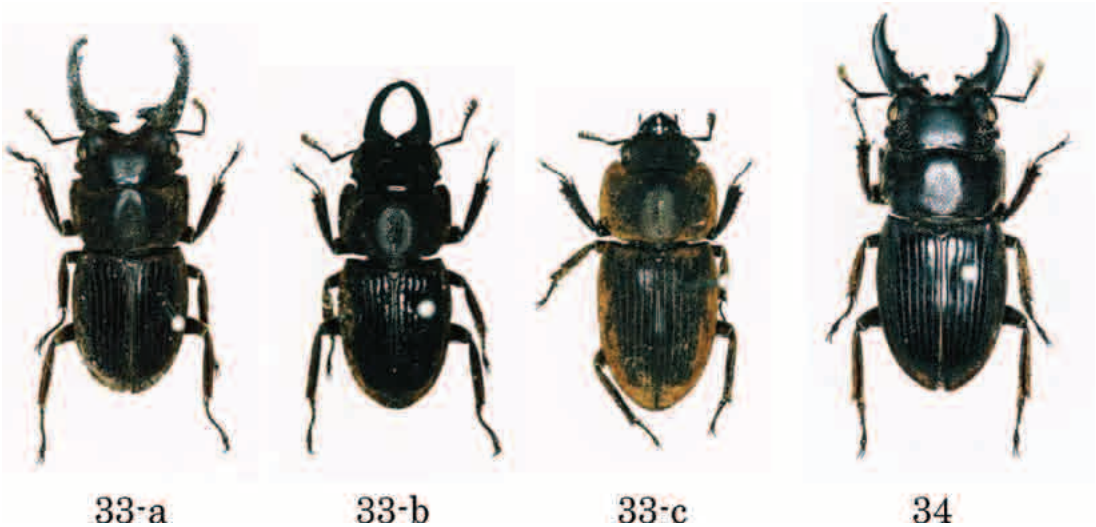




Pl. 5
25. *Cyclommatus martinii yamamotoi* マルテイニホソアカクワガタ (Kumbang Rusa Coklat Kemerahan Marrini): a. ♂, 35 mm; b. ♂, 34 mm; c. ♀, 22 mm. 26. *Dorcus* sp. ヒラタクワガタの 1 種 (Kumbang Rusa Bertubuh Besar Berbulu): ♀, 18 mm. 27. *Dorcus titanus titanus* マレーヒラタクワガタ (Kumbang Rusa Bertubuh Besar): a. ♂, 50 mm; b. ♀, 37 mm. 28. *Dorcus mirabilis* ミラビリスヒラタクワガタ (Kumbang Rusa Bertubuh Besar Prothorax Berkilau): a. ♂. 49 mm; b. ♂, 38 mm; c. ♀, 30 mm. 29. *Gnaphaloryx opacus* ソリアシサビクワガタ (Kumbang Rusa Berbulu Karat Hitam): a. ♂, 26 mm; b. ♂, 21 mm. 30. *Gnaphaloryx capreolus* カプレオルスソリアシサビクワガタ (Kumbang Rusa Berbulu Karat Coklat): ♀, 15 mm.

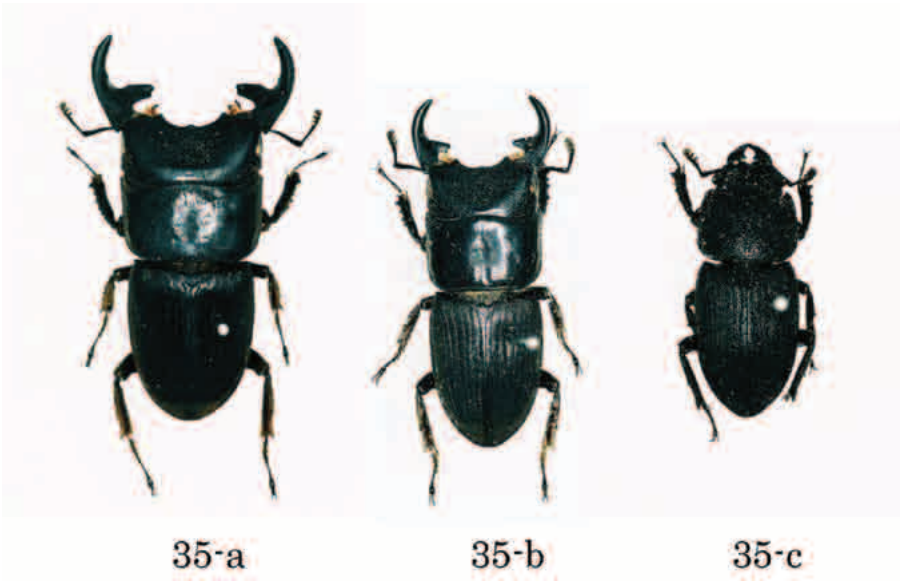






Pl. 6

31. *Aegus acuminatus acuminatus* アクミナートウスネブトクワガタ (Kumbang Rusa Prothorax Lebar Berkilau): a. ♂, 33 mm; b. ♂, 18 mm; c. ♀, 18 mm. 32. *Aegus parallelus* パラレルスネブトクワガタ (Kumbang Rusa Sayap Bergaris Sejajar): a. ♂, 39 mm; b. ♂, 31 mm; c. ♂, 30 mm; d. ♀, 28 mm. 33. *Aegus impressicollis lateliffei* インプレッシコリスネブトクワガタ (Kumbang Rusa Prothorax Berlubang Kecil): a. ♂, 28 mm; b. ♂, 20 mm; c. ♀, 20mm. 34. *Aegus* sp. ネブトクワガタの 1 種 (Kumbang Rusa Prothorax Berbintik sp.): ♂, 32 mm.



Pl. 7
35. *Aegus punctatipennis* プンクテイペンニスネブトクワガタ (Kumbang Rusa Sayap Bergelombang) a. ♂, 37 mm; b. ♂, 27 mm; c. ♀, 19mm. 36. *Aegus cherifer nitidus* チェリフェルネブトクワガタ (Kumbang Rusa Prathorax Berkilau): a. ♂, 24 mm; b. ♂, 18 mm; c. ♀, 20 mm.

インドネシア共和国東カリマンタン州 ブキットスハルトとブキットバンキライのクワガタムシ

槙原 寛[1)*]、スギアルト[2)]、藤間 剛[3)]

要旨

インドネシア共和国東カリマンタン州ブキットスハルト（ムラワルマン大学教育演習林）とブキットバンキライ（Inhutani I 社）の森林で採集したクワガタムシ 36 種のカラー写真付きの目録を作成した。ブキットスハルトで約 1000ha、ブキットバンキライで約 300ha の合計 1300ha の調査地から 36 種のクワガタムシが採集された。北海道から南西諸島までを含む日本列島全体（約 38 万 km^2）で記録されているクワガタムシは 40 種である。このことを考えるとブキットスハルトとブキットバンキライの生物多様性の高さが理解できるであろう。

インドネシア語にはクワガタムシを示す言葉はあるものの、個々の種類を示す言葉はない。現地の人々に自分たちの住んでいる地域の森林が、いかに多様な生物をはぐくんでいるかを知ってもらう必要がある。そこで、インドネシアの人々の生物多様性に対する理解の一助として、採集したクワガタムシ各種の学名、和名に加え、新たにインドネシア語名を命名した。

キーワード：クワガタムシ、森林昆虫の代表、ブキットスハルト、ブキットバンキライ、東カリマンタン、生物多様性

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