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# BEEETLES AND DIVERSITY



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No. 1

## [Beetles and Diversity]

This publication is dedicated to the commemoration of  
Dr. Tatsuya NIISATO for celebration of his 60th birthday.

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*Obrium obscuripenne takakuwai* NIISATO, 2006 (del. Tetsuto WAKEJIMA)

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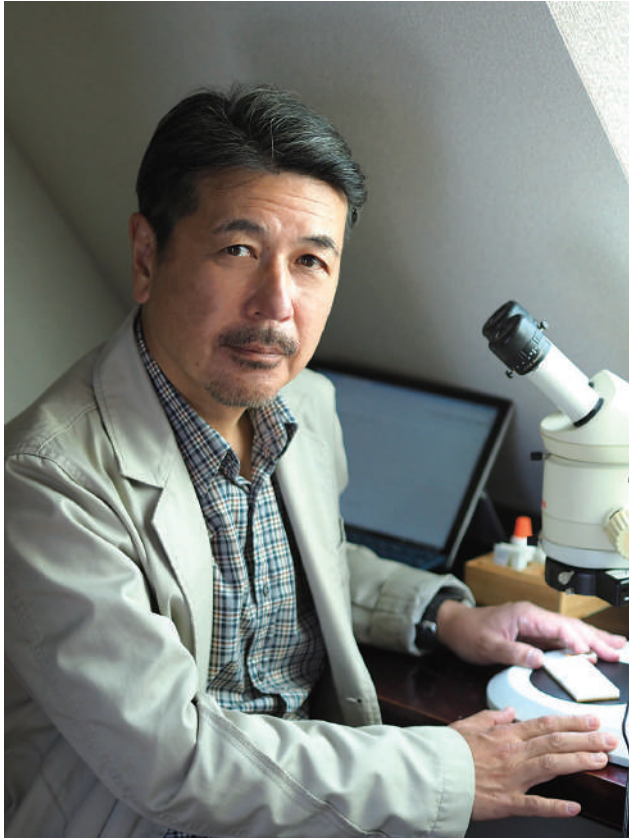
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(Photo Takehiko SATO)

## **My Brief Biography**

### **Tatsuya NIISATO**

Many famous natural scientists speak of their childhood with memory of collecting insects. Yet I am not of those famous natural scientists, but I was as well the kind of child running in the field to collect insects for hours. I was born on the 22nd of September, 1957. And I still recall that in my neighborhood of Tokiwadai, Itabashi City, Tokyo, there were still some remaining areas with rich nature to nurture various insects. In those areas, we could easily find ones like Migratory locust or *Damaster blaptoides oxuroides*, but of course even such tiny remaining of rich nature vanished after Tokyo Olympic in 1964.

In my childhood, I used to visit country side of my mother in Ashikaga, Tochigi Prefecture in

summer, and I still can recall my mother's brother, uncle Tomiichi taking me around places. One morning, we went in to coppice along riverside to collect dynastids and lucanids, by the time my bucket was about to be full, I found two *Batocera lineata* within. Its huge body and squeaking scream was nothing but astonishing to a 2nd grade student in elementary school. That astonishment and discovery of such insect, changed my interest from animals and plants as whole to just this special insect.

Even some years had passed, in university I was still collecting insects for days and nights, especially during March to August, the richest season for collecting insects. During those times, I did not much show up to the university besides when the exam was taking place. However, the university back in the time would had accepted it and granted credits without attending daily courses. So, I took advantage and used such privilege to further pursue my interests. In the beginning, I started with going all over the places in Japan, just as other students, but soon I extended my boundary a little further. Since the spring of my second year, I started going to Taiwan very often. In the end, I spent more than 160 days of my university days in Taiwan alone, so my enthusiasm then was something. During series of researches in Taiwan, I found many of new species, and two of those remain unrecorded until this day. I believe those experiences led to where I am now.

After graduating from university, I got a job just like any other adults. Although the feeling and enthusiasm for pursuing taxonomical study of longhorn beetles kept growing within myself. So, I kept issuing my own styled study report by using free times, but my senior researcher Dr. Masatoshi TAKAKUWA perhaps felt sympathy for me and kindly advised me to receive some lessons by Dr. Shun-Ichi UÉNO of the National Science Museum, Tokyo, to improve my writing, and for long I have received his lessons. Meanwhile at the age of 27, I had an opportunity to serve in a position of researcher in the Entomological Laboratory, Tokyo University of Agriculture, while maintaining the job that I had. At the Tokyo University of Agriculture, I studied in morphology of insects' course by Dr. Hiromasa SAWADA and seminar of Dr. Yasuaki WATANABE. Dr. Shuji OKAJIMA, who later mentored my doctoral dissertation was at position of assistant by then

After some years, 1987 became the year to remember as turning point of my life. I made a decision to exit the company after working for 7 years to start one of my own. So, by the age of 29, I established a consulting company of wildlife conservation, Bioindicator Co., Ltd. Starting up an own company had some concerns, but it seemed just right to have a company to pursue the study of longhorn beetle without any restrictions to me then. For many of us nowadays, pursuing own interests and study with the money made from the company and not joining a research institute does not sound like the most reasonable choice, but it was in the middle of economic bubbles and such choice of direction was still available for rich Japan. Since making that decision, I have been doing more research than others and the company itself is growing to be just fine, so I suppose the path I took was not wrong after all.

For nearly 30 years, ever since the establishment of my own company, I have dedicated half of my life to pile up all the works on three focuses. First of all is running a company, the other two aspects are as important as the first, those are of course research/study and support for the academic society who gave me all the opportunity to continue my activities, that's all. So for now, I would like to briefly look back my achievements in that two aspects.

First, in aspect of research and study, I had fortune to visit many places looking for theme of study such as Far East Russia, South Korea, Taiwan, China, Philippine, Vietnam, Laos, Malay Peninsula, Borneo, Indonesia and further to West coast of Canada, Costa Rica, French Guyana and even to South Africa. When for investigation of collected specimen, I have visited the Natural History Museum of London, the Muséum National d'Histoire Naturelle, Paris and the Bernice Pauahi Bishop Museum, Honolulu, each one of those are representative of Western countries museum. Although with all

those research and studies, I feel yet to be incomplete with my works. I have still so much to pursue with my research, but for now and a while I would like to concentrate on my origin, longhorn beetle of Taiwan.

Second, in aspect of my contribution to academic society, I have been working in editorial work of scientific journals for a while. Many of the works done, I have served as associate editor under Dr. Shun-Ichi UÉNO to help publishing the Entomological Society of Japan for two years and the Japanese Society of Coleopterology for quarter century. Well, of course with Dr. UÉNO being my mentor for years, I would not have step up for the editorial chair. In 2009, I had a privilege of serving as editorial chair for 7th issue of Special Bulletin of the Japanese Society of Coleopterology (Longicornists as subtitle) in commemoration of Dr. Nobuo OBAYASHI and Dr. Masatoshi TAKAKUWA's retirement, but that was the only academic publication I took such position until now.

In the Japanese Society of Coleopterology, I served as chairman during 2006–2010 for two consecutive terms in sum of 4 years, and after developmental merger of two major coleopterological societies headquartered in Tokyo and Osaka, I served as founding chairman in reformed Coleopterological Society of Japan throughout two consecutive term for 5 years. Since year 2015, I resigned from all position with practical affairs and keep supporting the society as a member of council.

I have always felt young, but as time flies by I am already turning age of 60, by 22nd of September in 2017. In commemoration for such remarkable event of life, the academic society that I have long served for offered me to issue a special publication with help of volunteers. I have always thought such event is something for old times, but when it comes to myself, I decided to accept such kind offer with little embarrassed feeling of myself.

By using this opportunity, I would like to express my gratitude for organizer of this commemoration issue and for those who supported such idea, also those senior / my beloved friends for supporting me for all those years. For little more time I have left to live in this life, please be around me to embrace all the things to come in our days.

*Tatsuya Niisato*

22 September 2017

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## List of New Cerambycid Taxa Described by Tatsuya NIISATO (1981–2017)

Tatsuya NIISATO

### Genera and Subgenera

Family Cerambycidae LATREILLE, 1802

Subfamily Lepturinae LATREILLE, 1802

Tribe Lepturini LATREILLE, 1802

1. *Pyrocorennys* N. OHBAYASHI et NIISATO, 2009

Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 160. Type species: *Pyrocalymma latipennis* PIC, 1927.

Subfamily Cerambycinae LATREILLE, 1802

Tribe Anaglyptini LACORDAIRE, 1868

2. *Yoshiakioclytus* NIISATO, 2007

Elytra, Tokyo, **35**: 577. Type species: *Epiclytus taiwanus* CHANG, 1960.

Tribe Callidiini KIRBY, 1837

3. *Paraxylocrius* NIISATO, 2009

Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 205. Type species: *Paraxylocrius testaceus* NIISATO, 2009.

Tribe Clytini MULSANT, 1839

4. *Chaetopsilomerus* NIISATO et HAN, 2017

Elytra, Tokyo, (n. ser.), **7**: 202. Type species: *Chaetopsilomerus hainanensis* NIISATO et HAN, 2017.

5. *Ootora* NIISATO et WAKEJIMA, 2008 (Subgenus of *Xylotrechus* CHEVROLAT, 1960)

Special Publication of the Japan Coleopterological Society, Osaka, (2): 442. Type species: *Xylotrechus villioni* VILLARD, 1892

Tribe Molorchini GISTEL, 1848

6. *Buddhapania* NIISATO, 2015

Elytra, Tokyo, (n. ser.), **5**: 486. Type species: *Buddhapania matsumotoi* NIISATO, 2015.

7. *Epanioglaphyra* NIISATO, 1986 (Subgenus of *Glaphyra* NEWMAN, 1840)

Entomological Papers Presented to Yoshihiko KUROSAWA on the occasion of his retirement: 303.  
Type species: *Glaphyra kurosawai* NIISATO, 1986.

8. *Yamatoglaphyra* NIISATO, 2006 (Subgenus of *Glaphyra* NEWMAN, 1840)

Elytra, Tokyo, **34**: 223. Type species: *Molorchus hattorii* OHBAYASHI, 1954.

Tribe Obriini MULSANT, 1839

9. *Uenobrium* NIISATO, 2006

Elytra, Tokyo, **34**: 207. Type species: *Obrium laosicum* GRESSITT et RONDON, 1970.



## Tribe Psebiini LACORDAIRE, 1868

10. *Malayopsebiium* NIISATO, 2016

Elytra, Tokyo, (n. ser.), **6**: 20. Type species: *Malayopsebiium coerulea* NIISATO, 2016

11. *Pectinocallimus* NIISATO, 1989

Japanese Journal of Entomology, **57**: 566. Type species: *Pectinocallimus sericeus* NIISATO, 1989.

## Tribe Rosaliini FAIRMAIRE, 1864

12. *Latecyrtidus* VIVES et NIISATO, 2011<sup>1)</sup>

Revue d'Entomologie, Paris, New Series, **4**: 359. Type species: *Latecyrtidus yamasakoi* VIVES et NIISATO, 2011.

13. *Platycyrtidus* VIVES et NIISATO, 2011

Revue d'Entomologie, Paris, New Series, **4**: 364. Type species: *Acrocyrtidus delicatulus* HOLZ-SCHUH, 2009.

## Species and Subspecies

## Family Cerambycidae LATREILLE, 1802

## Subfamily Prioninae LATREILLE, 1802

## Tribe Anacolini J. THOMSON, 1857

1. *Drumontiana costata* KOMIYA et NIISATO, 2007

Elytra, Tokyo, **35**: 568, figs. 10, 16, 29. Type locality: Phu Pan, 1,600–1,800 m in alt., Ban Saleui, Houaphan Prov., NE Laos.

2. *Drumontiana dentata* KOMIYA et NIISATO, 2007

Elytra, Tokyo, **35**: 569, figs. 11–12, 17, 26. Type locality: Buen Ma Thuet, Southern Vietnam. Other locality in type series: Dalat env.

3. *Drumontiana francottei* KOMIYA et NIISATO, 2007

Elytra, Tokyo, **35**: 562, figs. 4–7, 14, 20–24, 27. Type locality: Nanjian, Yunnan Prov., SW. China. Other localities in type series: Mt. Chang, 3,500 m in alt., Dali, W. Yunnan Prov.; Weibaoshan, Weishan, W. Yunnan Prov.; Ailaoding, Jingdong, C. Yunnan Prov.; Sui Yuanging, Maguan, 2,500 m, E. Yunnan Prov.

4. *Drumontiana nakamurai* KOMIYA et NIISATO, 2007

Elytra, Tokyo, **35**: 564, figs. 8, 9, 15, 25, 28. Type locality: Sapa, Vien Hue Prov., N. Vietnam.

## Subfamily Lepturinae LATREILLE, 1802

## Tribe Lepturini LATREILLE, 1802

5. *Corennys takakuwai* N. OHBAYASHI et NIISATO, 2009

Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 157, figs. 23, 32, 33. Type locality: Doi Suthep, N. Thailand.

6. *Formosopyrrhona wakaharai* N. OHBAYASHI et NIISATO, 2009

Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 146, figs. 7, 14, 15. Type locality: Mt. Phu Pan, alt. 1,500–1,800 m, N20°11'/E104°01', Houaphan Prov., north-eastern Laos.

## Subfamily Necydalinae LATREILLE, 1825

## Tribe Necydalini LATREILLE, 1825

7. *Necydalis (Necydalis) alpinicola* NIISATO et N. OHBAYASHI, 2003  
Elytra, Tokyo, **31**: 302, figs. 1, 2. Type locality: Mt. Phang Si Pang, 2,700 m in alt. (one of the peaks), Lai Chau Province of northern Vietnam.
8. *Necydalis (Necydalis) araii* NIISATO, 1998  
Gekkan-Mushi, Tokyo, (331): 7, figs. 3, 17, 18. Type locality: Mt. Tam Dao (Tam Dao Hai), Vinh Phu Prov., N. Vietnam.
9. *Necydalis (Necydalis) atricornis* NIISATO et N. OHBAYASHI, 2004  
Elytra, Tokyo, **32**: 202, figs. 1a, 2a, 3, 5a. Type locality: Phu Pagan (Mt.), 1,600 m in alt., Ban Saleui, Houaphan Province of NE. Laos. Other locality in type series: Phu Pan (Mt.), Ban Saleui, 2,000 m in alt.
10. *Necydalis (Necydalis) choui* NIISATO, 2004  
Elytra, Tokyo, **32**: 430, figs. 3, 4, 14, 15, 18, 20–26. Type locality: Mt. Dayao Shan, 1,200 m in alt., Jiaxin Yaozu Zizixian, Guangxi Zhuangzu Ziziqu.
11. *Necydalis (Necydalis) fujianensis* NIISATO et PU, 1998  
Elytra, Tokyo, **26**: 7, figs. 1a, b. Type locality: Shiba Tiao (十八跳), Fujian Province, South China.
12. *Necydalis (Necydalis) hirayamai flava* NIISATO, 2008  
Elytra, Tokyo, **36**: 261, figs. 2, 13–17. Type locality: Mt. Leigong'yan (雷公違岩), Mengla Co., Yunnan Prov., SW. China.
13. *Necydalis (Necydalis) hirayamai flemona* TAKAKUWA et NIISATO, 1996  
Bulletin of the Kanagawa Prefectural Museum Natural History, (25): 78, figs. 1, 8–12. Type locality: Mt. Tam Dao, Vinh Phu Prov., N. Vietnam.
14. *Necydalis (Necydalis) katsuraorum* NIISATO, 1998  
Elytra, Tokyo, **26**: 202, figs. 1, 2. Type locality: Mt. Tam Dao (Tam Dao Hai), Vinh Phu Prov., N. Vietnam.
15. *Necydalis (Necydalis) meridionalis* NIISATO, 2008  
Elytra, Tokyo, **36**: 19, figs. 1–7. Type locality: Mt. Brian, 1,600 m in alt., near Bao Loc, Lam Dong Prov., S. Vietnam.
16. *Necydalis (Necydalis) montipanus* NIISATO et N. OHBAYASHI, 2004  
Elytra, Tokyo, **32**: 206, figs. 1b, 2c, 4, 5c. Type locality: Phu Pan (Mt.), 1,500–1,700 m in alt., Ban Saleui, Houaphan Province of E. Laos.
17. *Necydalis (Necydalis) shinborii hainana* NIISATO et YAGI, 1996  
Elytra, Tokyo, **33**: 143, figs. 1, 2, 3d, 4d, 5d, 6d, 7d. Type locality: Mt. Jianfenling, San Ya City, Hainan Prov., S. China.
18. *Necydalis (Necydalis) shinborii shinborii* TAKAKUWA et NIISATO, 1996  
Bulletin of the Kanagawa Prefectural Museum Natural History, (25): 81, figs. 3, 4, 18–22. Type locality: Mt. Tam Dao, Vinh Phu Prov., N. Vietnam.
19. *Necydalis (Necydalis) uenoi* NIISATO, 2004  
Elytra, Tokyo, **32**: 425, figs. 1, 2, 5–11, 12, 13, 16. Type locality: Shangliang, northern Sichuan, SW. China.
20. *Necydalis (Necydalis) wakaharai* NIISATO et N. OHBAYASHI, 2004  
Elytra, Tokyo, **32**: 211, figs. 1c. Type locality: Phu Pan (Mt.), 1,700 m in alt., Ban Saleui, Houaphan Province of NE. Laos.

21. *Necydalis (Necydalisca) concolor* NIISATO et N. OHBAYASHI, 2004  
Elytra, Tokyo, **32**: 215, fig. 1d. Type locality: Phu Pan (Mt.), 1,500–1,700 m in alt., Ban Saleui, Houaphan Province of NE. Laos.
22. *Necydalis (Necydalisca) kucerai* NIISATO, 2007  
Gekkan-Mushi, Tokyo, (440): 23, figs. 5, 6, 9d, e, 10. Type locality: Mundoli-Lohajang, 2600 m in alt., Utranchal, N. India.
23. *Necydalis (Necydalisca) oblonga* NIISATO, 2008  
Elytra, Tokyo, **36**: 257, figs. 1, 8–12. Type locality: CHINA, Yunnan / HEISHUI env. / 35 km N of Lijang.
24. *Necydalis (Necydalisca) nepalense* NIISATO et WEIGEL, 2006  
Biodiversität Naturlausstatiung im Himalaya, **2**: 491, figs. 3, 5. Type locality: Nepal, Karnali zone, Rara Lake, 3000 m.

Subfamily Dorcasominae LACORDAIRE, 1868

Tribe Apatophyseini LACORDAIRE, 1869

25. *Formosotoxotus takaoui* NIISATO, 1996  
Japanese Journal of Systematic Entomology, Matsuyama, **2**: 101, figs. 1, 2. Type locality: near Sapa, Lao Cai Province of northern Vietnam.
26. *Formosotoxotus nobuoi* VIVES et NIISATO, 2006  
Lambillionea, Paris, **3CVI**: 273, figs. 1, 2. Type locality: Taplejung, ca. 2,000 m in alt., Nechi Province, Nepal.

Subfamily Cerambycinae LATREILLE, 1802

Tribe Achrysonini LACORDAIRE, 1868

27. *Nortia geniculata satsumana* NIISATO et N. OHBAYASHI, 2005  
Japanese Journal of Systematic Entomology, Matsuyama, **11**: 293, figs. 34, 35. Type locality: Mt. Inao-dake, Sata-chô, Kagoshima Pref., Kyushu, Japan. Other localities in type series: Uchidome, Sata-chô; Mt. Hoyoshi-dake, Kimotsuki-gun, Kagoshima Pref.

Tribe Callichromatini SWAINSON et SHUCKARD, 1840

28. *Pachyteria kurosawai* NIISATO, 2001  
Elytra, Tokyo, **29**: 291, figs. 1a, b, 2a, b, 3. Type locality: near Mamasa, South Sulawesi, Indonesia. Other localities in type series: near Pukak [sic: Puncak] Palopo, Central Sulawesi; Pulu-pulu, Central Sulawesi.
29. *Schmidtiana boudanti* VIVES et NIISATO, 2004  
Elytra, Tokyo, **32**: 444, figs. 1, 2a, b, 3. Type locality: Philippines, Negros Is. Other localities in type series: Mt. Canlaon, Negros Is.; Panay Is.
30. *Schmidtiana hayashii* NIISATO, 1999  
Entomological Review of Japan, Osaka, **54**: 152, figs. 1a, 2a, 3. Type locality: Lamphon, N. Thailand.
31. *Schmidtiana sasajii* NIISATO, 1999  
Entomological Review of Japan, Osaka, **62**: 21, figs. 1, 2a–g. Type locality: Marinduque Island, the Philippines.
32. *Schwarzerium hasuoi* NIISATO et BENTANACHS, 2012  
Elytra, Tokyo, (n. ser.), **2**: 7, figs. 1–11. Type locality: Tram Ton Pass, alt. 1,900 m, Mt. Fansipan, Hoang Lien Mts., Lao Cai Province, Vietnam.

## Tribe Callidiini KIRBY, 1837

33. *Paraxylocrius testaceus* NIISATO, 2006

Special Bulletin of the Japanese Society of Coleopterology, Tokyo. (7): 208. Type locality: “Sakhalin”.

## Tribe Cerambycini LATREILLE, 1802

34. *Massicus taiwanus* MAKIHARA et NIISATO, 2014

Elytra, Tokyo, (n. ser.), 4: 24, figs. 1, 6, 8–12, 18, 20. Type locality: Baibara. Other localities in type series: Hori, Formosa; Lishan, 2,000 m in alt., Heping Township, Taichung City, Taiwan; near Puli, Nantou County, Taiwan; Shihzihtou, Ren'ai Township, Nantou County; Benbushi, Ren'ai Township; Bilyushi, 2,200 m in alt., Ren'ai Township; Mt. Ali Shan, Alisihan Township, Chiayi County, Taiwan; Liouguei Township, Kaohsiung City, Taiwan; near Taitung City, Taitung County, Taiwan; Taiwan (no further data).

## Tribe Cleomenini PASCOE, 1868

35. *Diplothorax brevis* NIISATO, 2008

Japanese Journal of Systematic Entomology, Matsuyama, 14: 283, fig. 1. Type locality: Nanmuhe, 440 m in alt., Wufeng Pref., Hubei Prov., C. China.

36. *Diplothorax ishihamai* NIISATO, 1998

Elytra, Tokyo, 26: 208, fig. 1. Type locality: Cheng Ge, Nu Jiang Valley, Lu Shui Xian, NW Yunnan, SW China.

37. *Diplothorax kaiyuni* NIISATO et CHOU, 2014

Elytra, Tokyo, (n. ser.), 4: 159, figs. 1–2. Type locality: Lofu (羅浮), alt. 400 m, Fuxin Township, Taoyuan County, Taiwan.

38. *Diplothorax ohbayashii* NIISATO, 2008

Japanese Journal of Systematic Entomology, Matsuyama, 14: 288, fig. 3. Type locality: Nong Het, Xiengkhouang Prov., C. Laos.

39. *Diplothorax ohmmoi* NIISATO, 2008

Japanese Journal of Systematic Entomology, Matsuyama, 14: 285, figs. 2, 4–9. Type locality: Kasetsart Farm, Pak Chong, Nakhon Ratchassima Prov., NE. Thailand.

40. *Kurarua pallida* NIISATO, 1990

Elytra, Tokyo, 18: 124, figs. 12, 28–35. Type locality: Doi Suthep (ca. 600 m alt.).

41. *Paramimistena brevis* NIISATO et MAKIHARA, 1999

Elytra, Tokyo, 27: 331, fig. 2. Type locality: Bukit Soeharto, Kalimantan Timur, Indonesia, (Mt. Nat. 3).

42. *Paramimistena ikedai* NIISATO, 2009

Japanese Journal of Systematic Entomology, Matsuyama, 15: 355, figs. 1, 2, 7–10. Type locality: 40 km NE. of Ban Ban, Xien Khouang Prov., C. Laos. Other locality in type series: Root from Xieng Khouang to Sam Neua, NE. Laos.

43. *Paramimistena immaculicollis* NIISATO et MAKIHARA, 1999

Elytra, Tokyo, 27: 328, fig. 1. Type locality: Bukit Soeharto, Kalimantan Timur, Indonesia, (Mt. Nat. 3).

44. *Paramimistena tricolor* NIISATO, 2008

Elytra, Tokyo, 36: 265, fig. 1. Type locality: Ban Saleui, 1,200 m in alt., Houaphan Prov., NE. Laos. Other locality in type series: Phu Pan, 1,500 m in alt., Ban Saleui.

45. *Paramimistena watanabei* NIISATO, 2002  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (5): 393, fig. 1. Type locality: Kimanis Road, 10.5 miles from Keningau, Crocker Range, 1,100 m in alt., Sabah, Borneo, E. Malaysia.
46. *Procleomenes borneensis* NIISATO, 1986  
Kontyû, Tokyo, **54**: 100, figs. 1–6. Type locality: Kimanis Road (about 800 m alt.), Crocker Range, Sabah, Borneo, East Malaysia.
47. *Procleomenes cabigasi* NIISATO et VIVES, 2005  
Kontyû, Tokyo, **33**: 394, figs. 2, 5. Type locality: Bukidnon, Mindanao, Philippines.
48. *Procleomenes ebiharai* NIISATO et VIVES, 2005  
Kontyû, Tokyo, **33**: 392, figs. 1, 4. Type locality: Mt. Halcon, Mindoro Is., Philippines.
49. *Procleomenes glabrescens* NIISATO, 1982  
Elytra, Tokyo, **9**: 70, figs. 15. Type locality: Fraser's Hill, Pahang, Malaysia.
50. *Procleomenes humeralis* NIISATO, 2008  
Entomological Review of Japan, Osaka, **63**: 171, figs. 1–6. Type locality: Phou (= Mt.) Pan, 1,700–2,000 m in alt., Ban Saleui, Houaphan Province of Laos. Other locality in type series: Phou (= Mt.) Samsoun, 2,000 m in alt., Xiengkhouang Province of Laos.
51. *Procleomenes longicollis* NIISATO, 1986  
Kontyû, Tokyo, **54**: 103, figs. 7–12. Type locality: Head Quarter, SW. foot of Mt. Kinabaru, Sabah, Borneo, East Malaysia.
52. *Procleomenes malayanus* NIISATO, 1985  
Kontyû, Tokyo, **53**: 123, figs. 2, 4. Type locality: K. K. Baru, Selangor, West Malaysia.
53. *Procleomenes negulosus* NIISATO et TICHÝ, 2016  
Japanese Journal of Systematic Entomology, Matsuyama, **22**: 217, figs. 3, 4, 11–19. Type locality: Philippines / Dumaquete / Central Visayas / Negros.
54. *Procleomenes philippinensis* NIISATO et VIVES, 2005  
Kontyû, Tokyo, **33**: 396, figs. 3, 6. Type locality: Bukidnon, Mindanao, Philippines.
55. *Procleomenes robustior* NIISATO, 1982<sup>2)</sup>  
Elytra, Tokyo, **9**: 71, figs. 7, 8, 16, 17. Type locality: Lienhwachih, Yuchih, Nantou Hsien, Taiwan.
56. *Procleomenes shimomurai* NIISATO, 1982  
Elytra, Tokyo, **9**: 67, figs. 5, 6, 12–14. Type locality: Tanah-Rata, Cameron Highlands, Pahang, Malaysia.
57. *Procleomenes taoi* NIISATO, 1985  
Kontyû, Tokyo, **53**: 120, figs. 1, 3. Type locality: 32 km from Palpo [sic: Palopo], central Celebes, Indonesia.
58. *Procleomenes tenuiformis* NIISATO, 1986  
Kontyû, Tokyo, **54**: 106, figs. 13–22. Type locality: Kimanis Road (about 800 m alt.), Crocker Range, Sabah, Borneo, East Malaysia.

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59. *Amamiclytus juni* NIISATO et HAN, 2011  
ZooKeys, **118**: 40, figs. 17, 18, 38, 65–70. Type locality: Ronghua, Fuxing Township, alt. 500 m, Taoyuan County, N. Taiwan. Other localities in type series: Sule, Fuxing Township, Taoyuan County; Shihlei, Jianshi Township, Hsinchu County, N. Taiwan; Bilyu, Xiulin Township, Hualien County, E. C. Taiwan; Nanshansi, Ren'ai Township, Nantou County, C. Taiwan; Tseifong, Ren'ai Township; Mt. Guandao Shan, Ren'ai Township.

60. *Amamiclytus nobuoi akusekianus* NIISATO, 2005  
Elytra, Tokyo, **33**: 383, figs. 1a, b, 2b, d, f. Type locality: Akuseki-jima Is., Tokara Isls., N. Ryukyus, Kagoshima Pref., Japan.
61. *Amamiclytus nubilus* NIISATO et HAN, 2011  
ZooKeys, **118**: 37, figs. 15, 16, 37, 59–64. Type locality: Sinsian, Wulai Township, Taipei County, alt. 300 m, N. Taiwan. Other localities in type series: Wulai, Taipei City, N. Taiwan; Fushan, Wulai Township; Sule, Fuxing Township, Taoyuan County, N. Taiwan; Sihleng, Fuxing Township; Baling, Fuxing Township; Ronghua, Fuxing Township; Ronghua, Fuxing Township, alt. 500m; Gaoyi, Fuxing Township, alt. 500m; Dalu Forest Road, Wufeng Township, Hsinchu County, N. Taiwan; Dalu Forest Road (1,100–1,400m); Shihlei, Jianshi Township, Hsinchu County; Lianhuachih, Yuchi Township, Nantou County, C. Taiwan; Gaofeng, Ren'ai Township, alt., 1,300m, Nantou County; Bilyu, Xiulin Township, Hualien County, C. Taiwan; Wetuan, Liugui Township, Kaohsiung County, S. Taiwan; Mt. Dahan Shan, Chunri Township, Pingtung County, S. Taiwan.
62. *Amamiclytus setiger* NIISATO et HAN, 2011  
ZooKeys, **118**: 35, figs. 13, 14, 53–58. Type locality: Dalu Forest Road, Wufeng Township, alt. 1,400 m, Hsinchu County, N. Taiwan. Other localities in type series: Yufong, Jianshi Township, alt. 800m, Hsinchu County, N. Taiwan; Shan-Paling, Fuxing Township, N. Taiwan; Dalu Forest Road, Wufeng Township, alt. 1,100–1,400m, Hsinchu County, N. Taiwan; Mt. Dakeng, Beitun District, Taichung County, C. Taiwan; Gaofeng, alt. 1,300m, Ren'ai Township, Nantou County, C. Taiwan; Tseifong, Ren'ai Township; Mt. Guandao Shan, Ren'ai Township, alt. 1,500m; Nanshanshi, Ren'ai Township; Fengshan, Kaohsiung County, S. Taiwan; Formosa (no further data).
63. *Amamiclytus wenshuani* NIISATO et HAN, 2013  
Elytra, Tokyo, (n. ser.), **3**: 165, figs. 1, 4–9. Type locality: 1,500 m in alt., Lushui, Luzhabg [sic: Lushui] County, Yunnan Province, SW. China.
64. *Amamiclytus yulongi* NIISATO et HAN, 2011  
ZooKeys, **118**: 43, figs. 19–21, 39, 71–76. Type locality: Dalu Forest Road, Wufeng Township, alt. 1,400–1,100m, Hsinchu County, N. Taiwan. Other localities in type series: Ronghua, Fuxing Township, Taoyuan County, N. Taiwan; Sihleng, Fuxing Township; Mingchih, Datong Township, Yilan County, N. Taiwan; Bilyu, Xiulin Township, 2,200m, Hualien County, E. C. Taiwan; Nanshansi, Ren'ai Township, Nantou County, C. Taiwan; Mt. Guandao Shan, Ren'ai Township, alt. 1,500m; Lianhuachih, Yuchi Township; Mt. Dahan Shan, Chunri Township, alt. 1,200 m, Pingtung County, S. Taiwan; Siaoguei Lake, Wutai Township, alt. 1,500 m, Pingtung County.
65. *Chaetopsilomerus hainanensis* NIISATO et HAN, 2017  
Elytra, Tokyo, (n. ser.), **7**: 202, figs. 1–14. Type locality: 海南: 尖峰岭 (Hainan: Jianfengling). Other locality in type series: Mingfeng Valley, 991 m / 18°44'31.7"/108°50'32.1" / Mt. Jianfengling, Ledong / Hainan, SW. CHINA.
66. *Chlorophorus masatakai* NIISATO et KARUBE, 2006  
Elytra, Tokyo, **34**: 222. Type locality: Muko-jima Is., Ogasawara Isls. Other locality in type series: Nakôdo-jima Is., Muko-jima group.
67. *Chlorophorus minamiwo kitaiwo* NIISATO et KARUBE, 2002  
Elytra, Tokyo, **30**: 250, figs. 1d–I, 2. Type locality: Ishino-mura, Kitaiwo-jima Is. Kazan-rettô group of Ogasawara Isls., Tokyo, Japan.

68. *Chlorophorus yakitai* NIISATO, 2005  
Elytra, Tokyo, **33**: 384, figs. 1c, d, 3, 4. Type locality: Kita-kojima Is., Senkaku Isls., SW. Ryukyus, Okinawa Pref., Japan.
69. *Cyrtoclytus dalatensis* NIISATO et KUSAKABE, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 228, figs. 8, 21–23. Type locality: Dalat Highland, Bao Lac Province, S. Vietnam.
70. *Cyrtoclytus elegantissimus* NIISATO et CHOU, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 222, figs. 1, 9–11. Type locality: Fanjing Shan 1,500 m in alt., Jiangkou county, Guizhou Prov., SW. China.
71. *Cyrtoclytus keiichii* NIISATO, 1999<sup>3)</sup>  
Elytra, Tokyo, **27**: 24, figs. 1a, 2. Type locality: Wiang Papao, Chiang Rai, N. Thailand.
72. *Cyrtoclytus kusamai* NIISATO, 1989  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (3): 138, figs. 3, 4, 8–10. Type locality: Lushan (about 1,000 m in alt.) in Jenai County, Nantou Prefecture of Taiwan. Other locality in type series: Sulin (about 1,000 m in alt.) in Fushin County, Taoyuan Prefecture.
73. *Cyrtoclytus matsumotoi* NIISATO, 1989  
Elytra, Tokyo, **17**: 88, fig. 1. Type locality: Genting Highland, 1,800 m alt., Malay Peninsula, Pahang of West Malaysia.
74. *Cyrtoclytus ohbayashii* NIISATO et CHOU, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 226, figs. 3, 4, 12–14. Type locality: Mt. Dayao Shan, 900 m in alt., Jiaxin Yaozu Zixixian, Guangxi Zhuangzu Ziziqu.
75. *Cyrtoclytus takakuwai* NIISATO et KUSAKABE, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 228, figs. 5, 15–17. Type locality: Mt. Tamdao, Vinh Phu Province, N. Vietnam.
76. *Cyrtoclytus tazoei* NIISATO, 1987  
The Coleopterists Bulletin, Washington D.C., **41**: 297, figs. 1–4. Type locality: Near Doi Suthep in Chiang Mai City, northern Thailand.
77. *Demonax formosomontana* IKEDA et NIISATO 1984  
Elytra, Tokyo, **11**: 9, figs. 1, 5, 6. Type locality: Tohasu, at the northern side of the Jiuyuehtan lake, Yuchih, Nantou Hsien, C. Taiwan.
78. *Demonax kurokoi* NIISATO, 1990<sup>4)</sup>  
Elytra, Tokyo, **18**: 121, figs. 11, 23–27. Type locality: Doi Chang Khian (ca. 1,250 m alt.), Chiang Mai.
79. *Demonax masaoi* NIISATO, 1984  
Elytra, Tokyo, **11**: 13, figs. 4, 9. Type locality: Mt. Nanfengshan (about 1000 m alt.), near Liukuei, Kaohsiung Hsien, southern Taiwan.
80. *Demonax nishiyamai* NIISATO, 1984  
Elytra, Tokyo, **11**: 11, figs. 2, 7. Type locality: Lienhwachih (about 800 m alt.), Yuchih, Nantou Hsien, central Taiwan.
81. *Demonax sulinensis* NIISATO, 1984  
Elytra, Tokyo, **11**: 12, figs. 3, 8. Type locality: Sulin, Fushin, Taoyuan Hsien, northern Taiwan.
82. *Epicyltus itoi* NIISATO, 1981  
Elytra, Tokyo, **8**: 33, figs. 1a, b, 2A, 3a, b, a' b' c. Type locality: Lienhwachih, Yuchih, Nantou Hsien, Taiwan.

83. *Perissus wenroncheni* NIISATO, 1986  
Miscellaneous Reports of the Hiwa Museum for Natural History, (24): 4, figs. 4, 5. Type locality: Mt. Nanfengshan, about 1,000 m alt., near Liukuei, Kaohsiung Hsien, Taiwan. Other localities in type series: Shengping (near Mt. Nanfengshan), about 800 m alt., near Liukuei; Hongsuikong, near Liukuei.
84. *Sclethrus borneensis* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 254, figs. 5, 6, 35, 36, 46, 55, 56, 79–85, 137. Type locality: Papagaran, S. Kalimantan, Indonesia. Other localities in type series: Crocker Range, Sabah, Borneo, E. Malaysia (locality names in Crocker Range were written as “10.5 miles, Keningau, Kimanis Road”, “(alt. 900m), 10 miles, NW. of Keningau”, “16 miles, NW. of Keningau” and “Trus Madi” according to paratypes); Bukit Soeharto, Kalimantan, Timur, Indonesia.
85. *Sclethrus malayanus* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 260, figs. 10, 11, 48, 100–106, 139. Type locality: Cameron Highlands, Pahang, W. Malaysia.
86. *Sclethrus mirabilis* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 260, figs. 21, 44, 52, 64, 145. Type locality: Popayato, N. Sulawesi, Indonesia.
87. *Sclethrus ohbayashii mamasanus* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 262, figs. 14, 15, 39, 40, 50, 59, 60, 107–113, 141. Type locality: Salubassi, Sumarorong, Mamasa, S. Sulawesi, Indonesia. Other locality in type series: Mamasa, S. Sulawesi.
88. *Sclethrus ohbayashii ohbayashii* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 265, figs. 16, 41, 61, 142. Type locality: Mt. Lompobatang, Sulawesi Selatan, Sulawesi, Indonesia. Other localities in type series: Pulpul, S. Sulawesi; Puncak Palopo, Sulawesi.
89. *Sclethrus satoi masatakai* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 269, figs. 19, 20, 121–127, 144. Type locality: Sumarorong, Mamasa, S. Sulawesi (NW. district). Other locality in type series: Puncak Dingin, 2,400 m, Palu, C. Sulawesi.
90. *Sclethrus satoi satoi* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 267, figs. 17, 18, 42, 43, 51, 62, 63, 114–120, 143. Type locality: Puncak Dingin, C. Sulawesi, Indonesia. Other locality in type series: Puncak, Dingin, 2,400 m Palu, C. Sulawesi.
91. *Sclethrus sumatrensis siberutus* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 258, figs. 9, 93–99. Type locality: Bojakan, N. Siberut, Mentawai, Indonesia.
92. *Sclethrus sumatrensis sumatrensis* HAN et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 256, figs. 7, 8, 47, 86–92, 138. Type locality: Padang, W. Sumatra, Indonesia. Other localities in type series: Ache, N. Sumatra; Bandar Baru, N. Sumatra; Mt. Singgalang, W. Sumatra; P. D. Pariaman, W. Sumatra; Simantung, W. Sumatra; Harau Valley, W. Sumatra (locality names in Harau Valley were written as “(without altitude data)”, “(700 m in alt.)” and “(500–800 m in alt.)” according to paratypes); Sungai Gelam, 25 m in alt., Jambi, S. Sumatra; Riau Prov., Road to Dumai, Duri Env., (0–100 m in alt.) 20 km N of Payakumbuh, E. Sumatra; Belitung Is., W. Sumatra.



93. *Xylotrechus janbar* NIISATO et N. OHBAYASHI, 2002  
Japanese Journal of Systematic Entomology, Matsuyama, **8**: 118, figs. 1, 2. Type locality: Haneji, Nago City, Okinawa Is., Okinawa Pref., SW Japan. Other locality in type series: Mt. Yonaha-dake, Kunigami-son Village, Okinawa Is.
94. *Xylotrechus moriutii* NIISATO, 1990  
Elytra, Tokyo, **18**: 118, figs. 5, 14–22. Type locality: Khao Yai (ca. 800 m alt.), Nakhon Nayok.
95. *Xylotrechus wenii* HAN et NIISATO, 2010  
Japanese Journal of Systematic Entomology, Matsuyama, **14**: 249, figs. 1–11. Type locality: Lijia Logging Road (利嘉林道), 1,000 m in alt., Yanping Township, Taitung County, Taiwan. Other localities in type series: Liyuan (栗園), 1,900 m in alt., Haiduan Township, Taitung County; Mt. Dahan Shan (大漢山), ca. 1,100 m in alt., Chunri Township, Pingtung County.
96. *Xylotrechus (Ootora) khampaseuthi shibatai* NIISATO et WAKEJIMA, 2008  
Special Publication of the Japan Coleopterological Society, Osaka, (2): 457, figs. 9, 10, 20, 27 m, 57–61. Type locality: Longhu (ca 1,000 m in alt.), Wude Xiang, Longzhou Xian, Guangxi Zhongzu Ziziqu.
- Tribe Hesperophanini MULSANT, 1839
97. *Zoodes formosana* NIISATO, 1982  
Transaction of the Shikoku Entomological Society, **16**: 41, figs. 1, 2. Type locality: Near Liukuei, Kaohsiung Hsien, Taiwan. Other localities in type series: Tengchih (Fujieda), near Liukuei; Mt. Chuyunshan (Izumoyama), near Liukuei.
- Tribe Molorchini GISTEL, 1848
98. *Buddhapania matsumotoi* NIISATO, 2015  
Elytra, Tokyo, (n. ser.), **5**: 486, figs. 1–33. Type locality: Phra Buddha (Phuttha) Chai, N14°27'9"/E100°56'37", 50 m in alt., Saraburi Province, Thailand. Other locality in type series: Khao Hin Lek Fai, Hua Hin, Prachuap Khiri Khan Province, Thailand.
99. *Epania kasaharai* NIISATO, 2002  
Elytra, Tokyo, **30**: 348, figs. 1, 2, 4a. Type locality: Mt. Tam Dao, Vinh Phu Province of northern Vietnam.
100. *Epania paulloides* NIISATO, 2002  
Elytra, Tokyo, **30**: 352, figs. 3, 4b. Type locality: Mt. Tam Dao, Vinh Phu Province of northern Vietnam.
101. *Epania vietnamica* NIISATO et A. SATO, 1996  
Elytra, Tokyo, **24**: 152, figs. 1c–d, 3. Type locality: Mt. Tam Dao, 1,250 m in alt., Vinh Phu Province of northern Vietnam.
102. *Glaphyra (Epanioglaphyra) kurosawai* NIISATO, 1986  
Entomological Papers Presented to Yoshihiko KUROSAWA on the occasion of his retirement: 305, figs. 1–4. Type locality: Lienhwachih experimental forest (about 800 m alt.), approximately 8 km south of Puli, Yuchih County, Nantou Pref., central Taiwan.
103. *Glaphyra (Glaphyra) concolor* NIISATO, 1995  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (4): 444, figs. 2, 5, 6, 10–12. Type locality: Nanshanchi, ca. 1,000 m in alt., Jenai Hsien, Nantou Hsien, central Taiwan. Other localities in type series: near Liukuei, Kaohsiung Hsien, central Taiwan; near Shengping, ca. 1,000 m in alt., near Liukuei.

104. *Glaphyra* (*Glaphyra*) *ichikawai* NIISATO, 1988<sup>5)</sup>  
Elytra, Tokyo, **16**: 89, figs. 1–13. Type locality: U-I-Dong, Seoul City, South Korea.
105. *Glaphyra* (*Glaphyra*) *planicollis* NIISATO et N. OHBAYASHI, 2004  
Elytra, Tokyo, **32**: 467, fig. 18. Type locality: Houhe, Wufeng Tujianzu Zizhixian, Hubei Prov., China, ca 1,100 m alt.
106. *Glaphyra* (*Glaphyra*) *satoi* NIISATO, 2003  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (6): 376, fig. 1, 2, 3a. Type locality: near Chingjing Farm (清瀆農場), ca. 1,700 m alt., Jenai Hsiang, Nantou Hsien, C. Taiwan. Other localities in type series: Nanshan Shi (南山溪), 1,200 m alt., Jenai Hsiang; Tsei Feng (翠峰), Jenai Hsiang; Mt. Shinan Shan (溪南山), ca. 2,300 m, Touyuan Hsiang, Kaohsiung Hsien, S. Taiwan.
107. *Glaphyra* (*Glaphyra*) *uenoi* NIISATO, 1995  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (4): 441, figs. 1, 3, 4, 7–9. Type locality: Paichi, ca 300 m in alt., Tachi Shi, Taoyuan Hsien, northern Taiwan. Other locality in type series: Lienhwachih, about 800 m alt., Yuchih Hsiang, Nantou Hsien, central Taiwan.
108. *Glaphyra* (*Glaphyra*) *yui masatakai* NIISATO et A. SATO, 1996  
Elytra, Tokyo, **24**: 155, figs. 1e–f, 4. Type locality: Mt. Tam Dao, 1,250 m in alt., Vinh Phu Province of northern Vietnam.
109. *Molorchoepania albiventris* NIISATO, 2002  
Elytra, Tokyo, **30**: 241, figs. 3, 4c. Type locality: Kuranda, N. Queensland.
110. *Molorchus relictus* NIISATO, 1996  
Elytra, Tokyo, **24**: 376, figs. 1–12. Type locality: Wolong, 2,200 m in alt., Wenchuan Xian, Sichuan Province, Southwest China.
- Tribe Obriini MULSANT, 1839
111. *Comusia nagaii* NIISATO et CHOU, 2016  
Elytra, Tokyo, (n. ser.), **6**: 248, figs. 2, 13. Type locality: Palopo, South Sulawesi, Sulawesi Island, Indonesia.
112. *Comusia wui* NIISATO et CHOU, 2016  
Elytra, Tokyo, (n. ser.), **6**: 250, figs. 3, 4, 8, 10, 14, 16–19. Type locality: 蘭嶼燈塔 (Dengta, Lanyu Is., Taiwan).
113. *Comusia tokii* NIISATO et CHOU, 2016  
Elytra, Tokyo, (n. ser.), **6**: 255, figs. 5, 6, 9, 11, 15, 20–23. Type locality: Teienchih Trail, Lanyu Township, Taitung County, Lanyu Is. off southeastern Taiwan.
114. *Falsobrium nigrum* NIISATO, 1990  
Elytra, Tokyo, **18**: 114, figs. 5, 13. Type locality: Fang (ca. 450 m alt.), Chiang Mai.
115. *Longipalpus cottoni* DE KEYZER et NIISATO, 1989  
Japanese Journal of Entomology, **57**: 125, fig. 1. Type locality: Doi Pui, near Chiang Mai. Other locality in type series: Doi Suthep, near Chiang Mai.
116. *Longipalpus dilaw* NIISATO, 1989  
Kanagawa-Chûhû, Yokohama, (90): 237, fig. 1. Type locality: Quezon National Park, NE of Lucena City, Luzon Is., of the Philippines.
117. *Longipalpus visayanus* NIISATO, 1989  
Kanagawa-Chûhû, Yokohama, (90): 239, figs. 2–6. Type locality: Eagle Centre, 1,100 m alt, Baracata, N slope of Mt. Apo, Mindanao Island of the Philippines.

118. *Longipalpus wenhsini* NIISATO, 2013  
Memory of Mr. Wenhsin LIN: 66, figs. 1–7. Type locality: Mt. Dahanshan, Chunri Township, Pingtung County, Taiwan. Other locality in type series: Mt. Nanrenshan, Manzhou Township, Pingtung County.
119. *Obrium akikoeae* NIISATO, 1998  
Japanese Journal of Systematic Entomology, Matsuyama, **4**: 267, figs. 1, 2. Type locality: Truong Yen, alt. 950 m, Moc Chau La Prov., N. Vietnam.
120. *Obrium coreanum* NIISATO et OH, 2016  
Elytra, Tokyo, (n. ser.), **6**: 34, figs. 1–16. Type locality: Osaek-ri, N38°07'/E128°49', Yangyang-gun, Gangwon-do, Korea. Other locality in type series: Gajeong-ri, N37°76'/E127°60', Chuncheon-si, Gangwon-do.
121. *Obrium elongatum* NIISATO, 1998  
Japanese Journal of Systematic Entomology, Matsuyama, **4**: 270, figs. 3, 4. Type locality: Mt. Phang Si Pang, Lai Chau Prov., N. Vietnam.
122. *Obrium hainanum* NIISATO et HUA, 1998  
Elytra, Tokyo, **26**: 452, figs. 1, 2. Type locality: Hei-Feng on Mt. Jianfengling, Hainan, SW China.
123. *Obrium huae* NIISATO, 1998  
Japanese Journal of Systematic Entomology, Matsuyama, **4**: 273, figs. 5, 6. Type locality: Mt. Pia Oac, 1,400 m in alt., Cao Bang Province, N. Vietnam.
124. *Obrium miranda* NIISATO, 2009  
Elytra, Tokyo, **37**: 355, figs. 1–5. Type locality: Phou Pan (Mt.), Houaphan Prov. of NE. Laos.
125. *Obrium obscuripenne takakuwai* NIISATO, 2006  
Elytra, Tokyo, **34**: 383, figs. 6d–l, 7d–h, 8d–h, 9d–h. Type locality: Hirakura (600–700 m in alt.), Misugi-mura, Ichisi-gun, Mie Pref., Honshu. Other localities in type series: Mt. Shokanbetsu, Uryû-gun, Hokkaido; Kitamoshiri, Uryû-gun; Shôtoshibetsu, Hokkaido; Shari, Hokkaido; Mt. Maruyama, Sapporo C., Hokkaido; Hinoemata, Minamiaizu-gun, Fukushima Pref., Honshu; Mizubashôen, Tateiwa-mura, Minamiaizu-gun; Sugadaira, Sanda-chô, Nagano Pref., Honshu; Mt. Ôtaki-yama, Waki-machi, Tokushima Pref., Shikoku; Tsukahara, Yufu City, Ôita Pref., Kyushu.
126. *Obrium oculatum* NIISATO et HUA, 1998  
Elytra, Tokyo, **26**: 454, fig. 3. Type locality: Jing-Hong, Yunnan Prov., SW China.
127. *Obrium semiformosanum abirui* NIISATO et TAKAKUWA, 1996  
Elytra, Tokyo, **24**: 142, figs. 1, 2a–c. Type locality: Atagoyama Hill, 125 m in alt., Shiraki-chô, Nagasaki-shi, Kyushu, SW Japan.
128. *Stenhomalus (Stenhomalus) ater* NIISATO et KINUGASA, 1982  
Elytra, Tokyo, **10**: 12, fig. 1c. Type locality: Puping-Doi Pui, near Chiangmai, Thailand.
129. *Stenhomalus (Stenhomalus) incongruus parallelus* NIISATO, 1988<sup>6)</sup>  
Kontyû, Tokyo, **56**: 791, figs. 1, 4, 5. Type locality: Mine, 40 m alt., in Mine-chô (Nagasaki Prefecture) on the Island of Tsushima, off northern Kyushu, Southwest Japan. Other localities in type series: Mine-gawa Valley, southeastern foot of Mt. Takanoyama, 140 m alt., between Mine-chô and Kamiagata-chô on the Island of Tsushima; Mt. Ohboshiyama in Mine-chô; Nita-gawa Valley in Kamiagata-chô.
130. *Stenhomalus (Stenhomalus) komiyai* NIISATO et WEIGEL, 2005  
Veröffentlichungen Naturkundemuseum Erfurt, **24**: 104, figs. 2, 4, 6. Type locality: Wau, 1,200 m in alt., Morobe Pr., Papua New Guinea

131. *Stenhomalus (Stenhomalus) kumaso* NIISATO et MAKIHARA, 1991  
Elytra, Tokyo, **19**: 164, figs. 1, 4, 5, 7, 9, 10. Type locality: Obeno (about 550 m in altitude), northern slope of the Kirishima Mts., Ebino-shi, Miyazaki Pref., Kyushu, Japan.
132. *Stenhomalus (Stenhomalus) kusakabeorum* NIISATO, 1998  
Elytra, Tokyo, **26**: 164, fig. 1. Type locality: Lashio, about 1,000 m in alt. (northern part of the Shan Plateau), Shan States, Myanmar.
133. *Stenhomalus (Stenhomalus) liui* NIISATO, 2015  
Elytra, Tokyo, (n. ser.), **5**: 475, figs. 1–10. Type locality: Mingfeng Valley, 938 m in alt., 18°44'37.9"/108°50'41.7", Mt. Jianfengling, Ledong, Hainan, SW. China.
134. *Stenhomalus (Stenhomalus) odai* NIISATO et KINUGASA, 1982  
Elytra, Tokyo, **10**: 13, fig. 1b. Type locality: Dou Suthep, near Chiangmai, Thailand. Other localities in type series: Meo Village, near Chiangmai; Puping, near Chiangmai.
135. *Stenhomalus (Stenhomalus) ohmomoii* NIISATO, 2008  
Japanese Journal of Systematic Entomology, Matsuyama, **14**: 291, figs. 1–5. Type locality: Khao Hin Lek Phai, Hua Hin, Prachuap Khiri Khan Prov., C. Thailand.
136. *Stenhomalus (Stenhomalus) rajaampatensis* NIISATO et WEIGEL, 2005  
Veröffentlichungen Naturkundemuseum Erfurt, **24**: 101, figs. 1, 3, 5. Type locality: W-Papua, Raja Ampat Pr., Waywesar / Batanta bor., 0°45'26"S, 130°46'55"E.
137. *Stenhomalus (Stenhomalus) saleuicola* NIISATO, 2003  
Elytra, Tokyo, **31**: 37, figs. 1, 2. Type locality: foot of Phu Pakan, 1,555 m in alt., Ban Saleui (43 km W from Xamneua City), Houaphan Province, NE. Laos.
138. *Stenhomalus (Stenhomalus) satoi* NIISATO, 1989  
Japanese Journal of Entomology, **57**: 122, fig. 1. Type locality: Tagurano, 950 m in altitude, foot of Mt. Apo, Mindanao Island, the Philippines.
139. *Stenhomalus (Stenhomalus) taoi* NIISATO, 2007  
Elytra, Tokyo, **35**: 335, fig. 1. Type locality: 32km from Palu, Sulawesi, Indonesia.
140. *Stenhomalus (Stenhomalus) tomiichii* NIISATO, 2013  
Elytra, Tokyo, (n. ser.), **3**: 295, figs. 1–8. Type locality: Habu Power Station. 1,400 m in alt., Cameron Highlands, Pahang, West Malaysia.
141. *Stenhomalus (Stenhomalus) unicolor* NIISATO et HUA, 1998  
Elytra, Tokyo, **26**: 456, figs. 4. Type locality: Hang-Zhou Botanical Garden, Hang-Zhou City, Zhejiang Prov., E. China.
142. *Stenhomalus (Stenhomalus) wakejimaorum* NIISATO, 1989  
Japanese Journal of Entomology, **57**: 125. Type locality: Bunsit, 300 m in altitude, near Kenin-gau, Sabah, Borneo, East Malaysia.
143. *Uenobrium takeshitai* (NIISATO et OHMOTO, 1993)<sup>7)</sup>  
Elytra, Tokyo, **22**: 350, fig. 1a, b. Type locality: Nakamagawa Rindô, Iriomote Is., Yaeyama Isls. (Ryukyu Isls.), SW Japan.

## Tribe Oemini LACORDAIRE, 1868

144. *Entetraommatus trifasciatus* NIISATO et LIN, 2016  
Elytra, Tokyo, (n. ser.), **6**: 262, figs. 1, 2, 3, 4, 7, 9, 10, 12, 13–32. Type locality: CHINA Yunnan, / Lu Shui Xian, / Nu Jiang, / 姚家坪 (Yaojiaping) 2300 m. Other localities in type series: CHINA, Yunnan Prov. / Lushui Co., Liuku, / Laimao, corn field / 25.82766°N, 98.85199°E 875 m; Yunnan, CHINA / Yaojiaping, Lushui / 云南瀘水姚家坪 (Yunnan Lushui Yaojiaping); Yunnan Prov. Lushui Co. / Yaojiaping / 云南瀘水姚家坪; Yunnan Prov.

Lushui Co. / Yaojiaping / 云南瀘水姚家坪 ; Yunnan Prov. Lushui Co. / Yaojiaping leg. Zhu Jianqing” “云南瀘水姚家坪.

Tribe Pelossini TAVAKILIAN, 2013

145. *Pelossus maruyamai* NIISATO, 2017

Elytra, Tokyo, (n. ser.), **7**: 196, figs. 1–7, 9–18. Type locality: Kuah, Langkawi / MALAYSIA (alt. 20 m) / N06°109'.E99°51.478'.

Tribe Prothemini LACORDAIRE, 1868

146. *Euryarthrum assimile* YOSHITAKE et NIISATO, 2009

Elytra, Tokyo, **38**: 4, figs. 1–8. Type locality: [EAST MALAYSIA] Sabah/Mt. Trus Madi.

147. *Euryarthrum kalimantanense* YOSHITAKE et NIISATO, 2009

Elytra, Tokyo, **37**: 160, figs. 2, 10, 11. Type locality: West Kalimantan, Benkayang.

148. *Euryarthrum ohbayashii* YOSHITAKE et NIISATO, 2009

Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 194, figs. 1, 3–12. Type locality: [INDONESIA] / West Kalimantan / nr Benkayang.

149. *Euryarthrum takakuwai* YOSHITAKE et NIISATO, 2009

Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 194, figs. 2, 13–20. Type locality: [INDONESIA] / West Kalimantan / nr Benkayang.

Tribe Psebiini LACORDAIRE, 1868

150. *Malayopsebiium coerulea* NIISATO, 2016

Elytra, Tokyo, (n. ser.), **6**: 22. Type locality: Trus Madi, Crocker Range, northern Borneo, Sabah, East Malaysia.

151. *Pectinocallimus befui* NIISATO, 2012

Elytra, Tokyo, (n. ser.), **2**: 152, figs. 1, 2, 7, 8, 11, 12, 15–17, 19–29, 30. Type locality: Gunung Jasar, 1,500 m in alt., Pahang, West Malaysia, Malay Peninsula. Other locality in type series: Genting Highland, 1,300 m in alt., Pahang.

152. *Pectinocallimus malayanus* NIISATO, 2012

Elytra, Tokyo, (n. ser.), **2**: 159, figs. 3, 9, 15, 18, 31. Type locality: Gunung Jasar, 1,500 m in alt., Pahang, West Malaysia, Malay Peninsula.

153. *Pectinocallimus sericeus* NIISATO, 1989

Japanese Journal of Entomology, **57**: 569, figs. 1–13. Type locality: Crocker Range, (1,100–1,400 m alt.), on the Kimanis Road leading from Kimanis to Keningau, Sabah in East Malaysia, northern Borneo.

Tribe Rosaliini FAIRMAIRE, 1864

154. *Latecyrtidus yamasakoi* VIVES et NIISATO, 2011<sup>8)</sup>

Revue d'Entomologie, Paris, New Series, **4**: 361, figs. 1–12. Type locality: NE Laos, Houa Phan Prov., Mt. Phou Pan, Ban Saleui. Other localities in type series: NE Laos, Houa Phan Prov., Mt. Phou Pan, Ban Saleui, nr. Xam Neua, 1500–2000 m; N Laos, Ban Oa Tai, 2416 m; N Vietnam, Lai Chau Prov., near Sapa; SW China, Yunnan, Mt. Kabike, Meglian Country; SW China, Yunnan, Sendang, Gongshan Country.

## Tribe Stenopterini GISTEL, 1848

155. *Callimoxys orientalis* NIISATO et N. OHBAYASHI, 2004<sup>9)</sup>  
Elytra, Tokyo, **32**: 464, figs. 13, 14, 19. Type locality: Houhe, Wufeng Tujianzu Zizhixian, Hubei Prov., China, ca 1,100 m alt.
156. *Kunbir lombokiana ikuoi* YOKOI et NIISATO, 2008<sup>10)</sup>  
Elytra, Tokyo, **36**: 267, figs. 15. Type locality: Gunung Prada, Jembrana, Western Bali, Indonesia.
157. *Kunbir lombokiana lombokiana* NIISATO et YOKOI, 2008  
Elytra, Tokyo, **36**: 2, figs. 1, 5–8. Type locality: Puncak Pusk, Lombok Is., Indonesia.
158. *Merionoeda anulus atra* YOKOI et NIISATO, 2012  
Elytra, Tokyo, (n. ser.), **2**: 177, fig. 6. Type locality: Borneo (detail unknown).
159. *Merionoeda baliana* YOKOI et NIISATO, 2007  
Japanese Journal of Systematic Entomology, Matsuyama, **13**: 187, figs. 1–11. Type locality: Gunung Prada, about 500 m in alt., Jembrana, W. Bali, Indonesia.
160. *Merionoeda childersi* YOKOI et NIISATO, 2014  
Elytra, Tokyo, (n. ser.), **4**: 174, figs. 9, 10, 32–46. Type locality: Puncak Palopo, S. Sulawesi, Indonesia.
161. *Merionoeda clara* YOKOI et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 180, figs. 7, 8, 33–38.  
Type locality: Papagaran, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia.
162. *Merionoeda flavicollis* YOKOI et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 177, figs. 5, 6, 27–32.  
Type locality: Papagaran, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia.
163. *Merionoeda flavitarsis biakensis* YOKOI et NIISATO, 2008  
Japanese Journal of Systematic Entomology, Matsuyama, **14**: 63, figs. 2, 7–10. Type locality: Adadikam vic., alt 150 m, Biak Island, Indonesia. Other locality in type series: Wouna, alt. 220m, Biak Utra, Biak Numfor, Irian Jaya, Indonesia.
164. *Merionoeda glabra* YOKOI et NIISATO, 2012  
Elytra, Tokyo, (n. ser.), **2**: 168, fig. 2. Type locality: Papagaran, about 700 m in alt., Alat/Barabai, South Kalimantan, Indonesia.
165. *Merionoeda hendrai* YOKOI et NIISATO, 2012  
Elytra, Tokyo, (n. ser.), **2**: 174, figs. 5, 18–23. Type locality: Batu Kembar, near Alat/Barabai, South Kalimantan, Indonesia. Other localities in type series: Papagaran, about 700 m in alt., near Alat/Barabai; 10.5 miles from Keningau, Kimanis Road, Crocker Range, Sabah, East Malaysia; Bukit Soeharto, Kalimantan Timur, Indonesia.
166. *Merionoeda johki* YOKOI et NIISATO, 2012  
Elytra, Tokyo, (n. ser.), **2**: 171, figs. 3, 12. Type locality: Sepilok, Sabah, Borneo. Other locality in type series: Bukit Soeharto, Kalimantan Timur, Indonesia.
167. *Merionoeda karinae* YOKOI et NIISATO, 2012  
Elytra, Tokyo, (n. ser.), **2**: 165, figs. 1, 7–11. Type locality: Ubud, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia. Other locality in type series: Arang Anik, near Alat/Barabai.

168. *Merionoeda laticornis kalimantana* YOKOI et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 183, figs. 9, 10, 39–44.  
Type locality: Papagaran, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia.
169. *Merionoeda lombokiana* NIISATO et YOKOI, 2008  
Elytra, Tokyo, **36**: 9, figs. 3, 4, 13–21. Type locality: Puncak, Gn. (Mt.) Duduk, Pusuk, W. slope of Mt. Rinjani, W. Lombok, Indonesia. Other locality in type series: Lokasi Margsit, Lombok Is.
170. *Merionoeda makiharai* YOKOI et NIISATO, 2012  
Elytra, Tokyo, (n. ser.), **2**: 174, figs. 5, 18–23. Type locality: Sepilok, Sabah, Borneo. Other locality in type series: Bukit Soeharto, Kalimantan Timur, Indonesia.
171. *Merionoeda mehli* YOKOI et NIISATO, 2008  
Japanese Journal of Systematic Entomology, Matsuyama, **14**: 60, fig. 1, 3–6. Type locality: Unit 0.35km East of Pasahari, Seram Island, Indonesia.
172. *Merionoeda mutata* YOKOI et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 189, figs. 13, 14, 51–56.  
Type locality: Mamut, about 700 m in alt., Ranau, Sabah, Malaysia. Other locality in type series: Papagaran, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia.
173. *Merionoeda ohbayashii* YOKOI et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 170, figs. 1, 2, 15–20.  
Type locality: Papagaran, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia.
174. *Merionoeda planicollis* YOKOI et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 186, figs. 11, 12, 45–50.  
Type locality: Papagaran, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia.
175. *Merionoeda puella satorum* YOKOI et NIISATO, 2014  
Elytra, Tokyo, (n. ser.), **4**: 170, fig. 6. Type locality: Salakan, East Peleng, Peleng Is., C. Sulawesi. Other locality in type series: Mata, East Peleng, Peleng Is.
176. *Merionoeda takakuwai* YOKOI et NIISATO, 2009  
Special Bulletin of the Japanese Society of Coleopterology, Tokyo, (7): 174, figs. 3, 4, 21–26.  
Type locality: Papagaran, near Alat/Barabai, about 700 m in alt., South Kalimantan, Indonesia.
177. *Merionoeda wayani* NIISATO et YOKOI, 2008  
Elytra, Tokyo, **36**: 6, figs. 2, 9–12. Type locality: Margsit, Lombok Is., Indonesia.
178. *Microdebilissa postimeraena* NIISATO et YOKOI, 2015  
Elytra, Tokyo, (n. ser.), **5**: 207, figs. 1, 7–10. Type locality: Sangkareang, Belanting, Lombok Is., Indonesia.
- Tribe Thraniini GAHAN, 1906
179. *Elongatomerionoeda luzonica* VIVES et NIISATO, 2014  
Elytra, Tokyo, (n. ser.), **4**: 38, figs. 2–6. Type locality: Aurora, Sierra Madre, East Luzon, Philippines. Other locality in type series: Quirino, Sierra Madre, East Luzon.
180. *Psebena flavipennis* NIISATO et VIVES, 2014  
Elytra, Tokyo, (n. ser.), **4**: 35, fig. 1. Type locality: Cameron Highlands, Pahang, W. Malaysia.

## Subfamily Lamiinae LATREILLE, 1802

## Tribe Saperdini MULSANT, 1839

181. *Praolia mizutanii* NIISATO, 1989

Gekkan-Mushi, Tokyo, (225): 14, figs. 1, 5, 8, 11, 14, 17, 20, 23, 26, 27, 32, 35. Type locality: Side branch of Chuou-rindou Line in Amami-ohshima Is, Sumiyou-mura, Ohshima County of Kagoshima Prefecture, SW Japan.

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- 1) *Latecyrtidus* VIVES et NIISATO, 2011 was treated as a junior synonym of *Luteicenus* PIC, 1922 by HOLZSCHUH (2011).
- 2) *Procleomenes robustior* NIISATO, 1982 was spelled as *P. robustius* in the original description.
- 3) *Cyrtoclytus keiichii* NIISATO, 1999 was treated as a junior synonym of *Cyrtoclytus yunamensis* (PIC, 1906) by NIISATO, CHOU and KUSAKABE (2009).
- 4) *Demonax kurokoi* NIISATO, 1990 was treated as a junior synonym of *Demonax alcanor* GRESSITT et RONDON, 1970 by NIISATO (1998).
- 5) *Glaphyra ichikawai* NIISATO, 1988 was treated as a junior synonym of *Glaphyra starki* (SHABLIOSVSKY, 1936) by LÖBL and SMETANA (2010).
- 6) *Stenhomalus (Stenhomalus) incongruus parallelus* NIISATO, 1988 was originally described as an independent species, and later NIISATO (2001) treated as a subspecies of *S. incongruus* GRESSITT, 1939.
- 7) *Uenobrium takeshitai* (NIISATO et N. OHMOTO, 1993) was originally described under the genus *Oblium*, and later NIISATO (2006) transferred to the genus *Uenobrium*.
- 8) *Latecyrtidus yamasakoi* VIVES et NIISATO, 2011 was treated as a junior synonym of *Luteicenus atromaculatus* (PIC, 1922) by HOLZSCHUH (2011).
- 9) *Callimoxys orientalis* NIISATO et N. OHBAYASHI, 2004 was treated as a junior synonym of *Callimoxys rutusifer* HOLZSCHUH, 1999 by NIISATO and N. OHBAYASHI (2005).
- 10) *Kunbir ikuoi* YOKOI et NIISATO, 2008 was originally described as an independent species, and later NIISATO and YOKOI (2015) treated as a subspecies of *K. lombokiana*.



## Checklist of Writings by Tatsuya NISATO (1973–2017)

Tatsuya NISATO

### 1973

1. Account of a collecting trip to Ura-Nikkô. *Gekkan-Mushi, Tokyo*, (27): 24–28. (In Japanese.)  
裏日光採集記. 月刊むし, (27): 24–28.
2. Observation of lepturine beetle visited the sap. *Gekkan-Mushi, Tokyo*, (31): 54. (In Japanese.)  
樹液に来たハナカミキリ. 月刊むし, (31): 54.

### 1977

3. Account of a collecting trip of longicorn beetles to Taiwan (1). *Gekkan-Mushi, Tokyo*, (78): 15–18.  
(In Japanese.) [Coauthored with H. FUJITA.]  
在台湾找天牛–台湾カミキリ採集紀行–(1). 月刊むし, (78): 15–18. [藤田 宏と共著]
4. Account of a collecting trip of longicorn beetles to Taiwan (2). *Gekkan-Mushi, Tokyo*, (79): 17–21.  
(In Japanese.) [Coauthored with H. FUJITA.]  
在台湾找天牛–台湾カミキリ採集紀行–(2). 月刊むし, (79): 15–18. [藤田 宏と共著]
5. Account of a collecting trip of longicorn beetles to Taiwan (3). *Gekkan-Mushi, Tokyo*, (80): 15–18.  
(In Japanese.) [Coauthored with H. FUJITA.]  
在台湾找天牛–台湾カミキリ採集紀行–(3). 月刊むし, (80): 22–27. [藤田 宏と共著]
6. Account of a collecting trip of longicorn beetles to Taiwan (4). *Gekkan-Mushi, Tokyo*, (81): 20–24.  
(In Japanese.) [Coauthored with H. FUJITA.]  
在台湾找天牛–台湾カミキリ採集紀行–(4). 月刊むし, (81): 20–24. [藤田 宏と共著]

### 1979

7. Hibernation site of the adult of *Graphidessa venata* BATES. *Gekkan-Mushi, Tokyo*, (100): 42. (In Japanese.)  
クモノスモンサビカミキリの成虫越冬場所. 月刊むし, (100): 42.
8. Guide for insect collecting: Taiwan. *Gekkan-Mushi, Tokyo*, (105): 12–15, 32–44. (In Japanese.)  
[Coauthored with H. YUI and Y. KISHIDA.]  
採集地案内: 台湾. 月刊むし, (105): 12–15, 32–44. [由井秀臣・岸田泰則と共著]
9. Occurrence of *Poecilnota nipponensis* at Azusa-yama, Nagano Prefecture. *Gekkan-Mushi, Tokyo*, (106): 34. (In Japanese.)  
ハビロキンヘリタマムシ梓山に産す. 月刊むし, (106): 34.

### 1980

10. *Nothorhina punctata* (FABRICIUS) in Tokyo and its vicinities. *Gekkan-Mushi, Tokyo*, (107): 37. (In Japanese.)  
東京都およびその近傍のケブカヒラタカミキリ. 月刊むし, (107): 37.

11. Collecting guide for *Nothorhina punctata* (FABRICIUS). *Gekkan-Mushi, Tokyo*, (114): 24–26. (In Japanese.)  
ケブカヒラタカミキリの採集案内. 月刊むし, (114): 24–26.

## 1981

12. A new species of the genus *Epiclytus* GRESSITT from central Taiwan (Coleoptera, Cerambycidae). *Elytra, Tokyo*, **8**: 33–36
13. Two unrecorded longicorn beetles from Fukushima Prefecture. *Gekkan-Mushi, Tokyo*, (119): 36. (In Japanese.)  
福島県未記録のカミキリムシ2種. 月刊むし, (119): 36.
14. Collecting record of Chrysididae from Ibaraki Prefecture, Japan. *Gekkan-Mushi, Tokyo*, (124): 38. (In Japanese.)  
茨城県下のセイボウの記録. 月刊むし, (124): 38.
15. Collecting record of *Chrysis cyanea* LINNÉ from Honshu, Japan. *Gekkan-Mushi, Tokyo*, (127): 31. (In Japanese.)  
ミツバセイボウ本州の採集例. 月刊むし, (127): 31.
16. Host plant of *Udara dilecta* (MOORE) is *Castanopsis cuspidata* (THUNBERG). *Gekkan-Mushi, Tokyo*, (130): 6. (In Japanese.)  
タッパンルリシジミのホストはツブラジイ. 月刊むし, (130): 6.
17. Many adults of *Panelus ovatus* (NOMURA) captured by baited trap using chicken skin. *Gekkan-Mushi, Tokyo*, (130): 13. (In Japanese.)  
鶏皮トラップに多数来集したマメダルマコガネ. 月刊むし, (130): 13.

## 1982

18. Guide to the collecting site: from Mikoromo-Reien to Hatsusawa-yama. *Gekkan-Mushi, Tokyo*, (133): 13. (In Japanese.)  
採集地案内: 御衣霊園～初沢山. 月刊むし, (133): 13.
19. A note on the genus *Procleomenes* GRESSITT et RONDON (Cerambycinae, Cerambycidae). *Elytra, Tokyo*, **9**: 65–72.
20. A new cerambycid beetle of the genus *Zoodes* from Taiwan (Coleoptera: Cerambycidae). *Transaction of the Shikoku Entomological Society*, **16**: 41–43.
21. Cerambycid beetles of the genus *Stenhomalus* in northern Thailand (Cerambycidae). *Elytra, Tokyo*, **10**: 11–16. [Coauthored with K. KINUGASA.]
22. An observation of feeding behavior of *Syntelia histeroides* LEWIS. *Coleopterists' News, Tokyo*, (56): 7. (In Japanese.)  
エンマムシモドキの食性観察例. 甲虫ニュース, (56): 7.
23. Occurrence of *Merionoeda* (*Macromolorchus*) *hirsuta* (MITONO et NISHIMURA) in Taiwan. *Coleopterists' News, Tokyo*, (56): 7. (In Japanese.) [Coauthored with K. KAWADA.]  
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## Five New Species of the Selenophori Genus Group from Tropical Asia (Coleoptera, Carabidae, Harpalini)

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**Abstract** Five new species of the Selenophori genus group of the tribe Harpalini are described as follows: *Coleolissus (Coleolissus) niisatoi* from Ambon, *C. (Tenuistilus) fulvomarginatus* from Ambon, *Hyphaereon subdenticollis* from Ambon, *H. laeviventris* from Borneo, and *Oxycentrus (Oxycentropsis) ignotus* from Borneo. Of these, a species of the genus *Hyphaereon* MACLEAY, 1825 and a species of the subgenus *Tenuistilus* HABU, 1978 of *Coleolissus* are firstly recorded from Ambon, Indonesia. Biogeography of *Coleolissus (Coleolissus) niisatoi* is also discussed.

### Introduction

Recently species diversity of the Selenophori genus group (sense NOONAN, 1985 a) of the tribe Harpalini in tropical Asia has been gradually cleared (ITO, 2008, 2014, 2016), though little information is available on the species from Ambon Is., Molucca Islands of Indonesia. Fortunately, through the courtesy of Mr. Norio OHTANI, I obtained an opportunity to examine many materials from Ambon and other Asian tropics including Borneo, and found some undescribed species among them.

In this paper, I am going to describe three new species of the group (*i.e. Coleolissus (Coleolissus) niisatoi*, *C. (Tenuistilus) fulvomarginatus* and *Hyphaereon subdenticollis*) from Ambon and two new species (*i.e. H. laeviventris* and *Oxycentrus (Oxycentropsis) ignotus*) from Borneo, respectively. Of these, *Hyphaereon* and *Coleolissus (Tenuistilus)* are recorded from Ambon Is. for the first time. I will also discuss the biogeography of *Coleolissus niisatoi* together with *C. angulatus* DARLINGTON, 1963 from New Guinea.

I would like to dedicate this paper to Dr. Tatsuya NIISATO, naming a new species, *Coleolissus niisatoi*, after him. He has been vigorously working on Cerambycidae and greatly contributed to the development of Coleopterological Society of Japan.

### Material and Methods

*Observation of materials.* Specimens and aedeagi are observed by a microscope of Nikon under 10–80× magnifications.

*Preparation of aedeagi.* Body are softened in 60% ethyl alcohol and aedeagi are isolated from body. The aedeagi are immersed in 100% ethyl alcohol for several days, permuted in the alcohol by 100% xylene and then enclosed in Canada Balsam.

*Measurement of body parts.* Length of body: distance between apex of clypeus and apices of elytra; the width of body: maximal transverse distance of body; width of head: maximal transverse distance including compound eyes; eye length: longitudinal distance viewed in dorsal aspect; pronotal width: maximal transverse distance between sides; pronotal length: distance from apical edge to basal edge along the middle; elytral length: distance between the basal border and apices along suture; elytral width: maximal transverse distance between sides.

*Terminology.* Technical terms are referred to ARNDT *et al.* (2005), and to LAWRENCE and ŚLIPÍŃSKI (2013).

*Coleolissus (Coleolissus) niisatoi* N. ITO, sp. nov.

(Figs. 1, 6)

Body black, shiny, rather clearly iridescent on elytra; mandibles, appendixes of buccal part, and tarsi feebly brownish; apices and bases of tibiae and femora dark brown and the remaining areas of them yellowish brown.

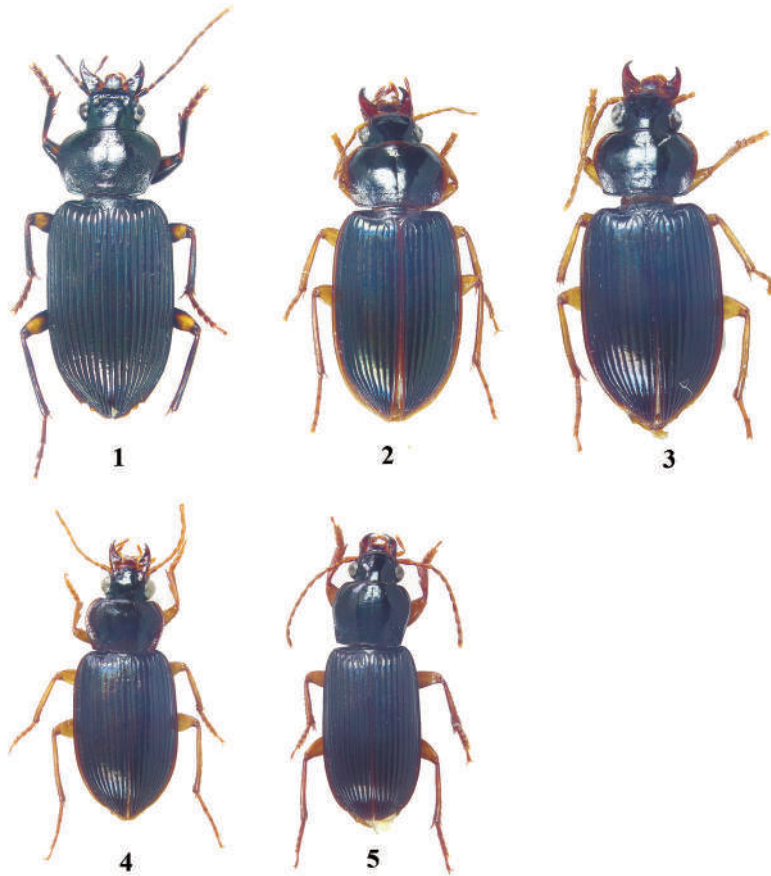
Head comparatively small in comparison with usual species of the subgenus *Coleolissus* BATES, 1892, two-thirds as wide as the pronotal width, gently convex, sparsely punctate, with innerocular space 0.64 times as wide as the width of head; labrum subsquare, shallowly emarginate at apex; clypeus uniformly and shallowly emarginate apically, depressed in apical half, weakly raised in basal half where surface is longitudinally rugose; clypeal suture deep and entire; frontal impressions deep, not shallowed even near supraorbital grooves, arcuately divergent from each other; eyes not large, hemispherically prominent; temples very short; space between buccal fissure and genuine ventral margins of eyes very narrow; mandibles stout and long, sharpened at tips; antennae slender, apical two segments surpassing pronotal base, 3rd segment pubescent in apical half, as long as the 4th and twice the 2nd; ligula mostly parallel-sided, apical corners produced laterad; paraglossae rather wide, isolated from ligula forwards from just before ligular apex, linearly oblique at inner isolated margins, arcuate at outer margins; labial palpi missing; mentum regular- triangularly toothed at bottom of apical emargination, narrowly rounded at tip, epilobes gradually widened apicad; microsculpture consisting of isodiametric meshes in apical part of clypeus, partly visible as mixtures with vague isodiametric and square meshes on frons.

Pronotum transversely quadrate, a half wider than long, rather steeply slant apico-laterad, wholly and coarsely covered with punctures which are rather minute and a little more sparse on disc than the surrounding areas; sides well rounded in apical half, rather steeply oblique in basal half, not sinuate before base; apex shallowly and uniformly emarginate, clearly bordered; base 1.14 times as wide as apex, hardly bisinuate, bordered only near sides; apical angles much larger than right, narrowly rounded; basal angles fairly larger than right, widely rounded; lateral furrows very shallow, gradually widened basad; basal foveae large, ill-defined, fused with lateral furrows; front transverse impression vague, the hind one short and somewhat deepened; median line thin, shallow, lying between the impressions; microsculpture partly and obscurely visible as transverse meshes.

Elytra widely oblong, 1.20 times as wide as pronotal width, about two-thirds longer than wide, gently convex, very sparsely and vaguely punctate here and there; sides clearly rounded in humeri, almost linear in middle, deeply concave preapically, sharply and short-toothed at front tips of the concaves like lebine genus *Pericalus* MACLEAY, 1825; apices narrowly rounded, not dentate but angulate at tips; striae deep throughout, impunctate, clearly and minutely crenulate in bottoms, scutellar striae long; intervals well convex, 3rd interval with a series of five setiferous pores; marginal series interrupted in middle, composed of (7–10)+(8–10) umbilicate pores; microsculpture composed of very sparse and vague lines. Hind wings entire.

Ventral surface densely and coarsely punctate on mesepisterna, lateral areas of metaventrite and of 2nd and 3rd abdominal sternites, sparsely so on metepisterna and propleura; metepisterna elongate, nearly a half longer than wide; 7th abdominal sternite in male rather deeply emarginate in apical third of outer margins, shallowly so at apex, unisetose at each side.

Legs rather long; mid tarsi each in male bisquamae ventrally in apical half of 1st segment and



Figs. 1–5. Habitus of the species described in the present paper. — 1, *Coleolissus (Cleolissus) niisatoi* sp. nov.; 2, *C. (Tenuistilus) fulvomarginatus* sp. nov.; 3, *Hyphaereon subdenticollis* sp. nov.; 4, *H. laeviventris* sp. nov.; 5, *Oxycentrus (Oxycentropsis) ignotus* sp. nov.

fully in 2nd to 4th segments; hind tarsi rather long, 1.11 times in male as long as the width of head, 1st segment as long as the 2nd and 3rd taken together, 2.3 times as long as the 3rd and 3.75 times as long as the 4th, claw segment bisetose along outer margin and trisetose along inner one.

Aedeagus (Fig. 6) somewhat robust, gently arcuate in apical part, gradually tapered apicad, thin at apex, not thickened at tip; apical lobe rounded and not bordered at distal margin; apical orifice rather widely open, inner sac without any sclerites.

Female unknown.

Body length: 11.0 mm. Body width: 4.4 mm.

*Type specimen.* Holotype: ♂, near Hatu, Ambon, Maluku, Indonesia, 28.XII.1990, N. OKUDA leg. (In future, preserved in the Osaka Museum of Natural History, Osaka).

*Remarks.* This new species is similar to *Coleolissus (Coleolissus) angulatus* DARLINGTON, 1963 from New Guinea, but the body is fairly larger (7.5–8.5 mm in *C. (C.) angulatus*.) and the 7th abdominal sternite is unisetose at each side instead of being bisetose.

The new species and *C. (C.) angulatus* are peculiar in preapical deep concave of elytra and point-

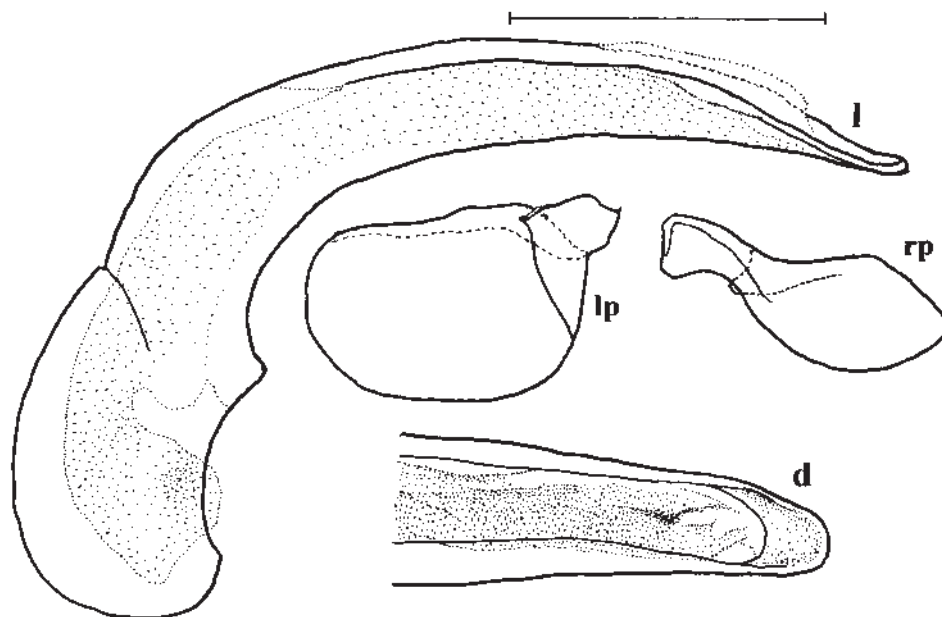


Fig. 6. Aedeagus of *Coleolissus (Cleolissus) niisatoi* sp. nov. — l, Lateral view; d, dorsal view; lp, left paramere; rp, right paramere. Scale: 1 mm.

ed front angles of the concavity among other species of the genus. I presume that they form a single species group, but due to the availability of only two species, their systematic position could not be confirmed.

Species of the Selenophori group are estimated as Gondwana origin (NOONAN, 1985 b). In early Cretaceous, the ancestors dispersed to the present South America and a part of North America, and then through middle India to south Eurasia Continent including South East Asia, where the current species diversity is distinct. Thence those species in Southeast Asia spread their distribution through the Sunda Archipelago to New Guinea and Northern Australia beyond WALLACE'S line. Therefore most of the Selenophori species of New Guinea and Australia are closely related to those of Southeast Asia. On the other hand, *C. (C.) angulatus* and *C. (C.) niisatoi* are clearly distinguished from all other species of the genus by the peculiar elytral apices as mentioned above. These distinct species are exceptionally distributed only in the eastern regions of WALLACE'S line.

*Etymology.* The specific name is dedicated to Dr. Tatsuya NIISATO.

***Coleolissus (Tenuistilus) fulvomarginatus* N. ITO, sp. nov.**

(Figs. 2, 7)

Body black, flattened, strongly shiny, clearly iridescent on elytra; appendixes of buccal parts, antennae, mandibles, lateral margins of pronotum and elytra, sutural intervals, and legs light brown; mandibles reddish brown except for blackish margins.

Head rather small, 0.60 times as wide as pronotal width, weakly convex, very sparsely and minutely punctate, with interocular space wide and 0.68 times as wide as the width of head; labrum almost square, shallowly emarginate apically; clypeus almost flat, weakly triangularly produced for-



wards at apical corners, with two or three vague longitudinal rugoses near each side; clypeal suture clearly and not deeply engraved; frontal impressions equal in depth to clypeal suture, arcuately running outwards, reaching supraorbital grooves; eyes well prominent, but not hemispherical; temples not developed, very short, 0.21 times as long as eye length; genuine ventral margins of eyes adjoining buccal fissure; mandibles stout, long, pointed at apices; both antennae missing in 7th to apical segments, 3rd segment pubescent in apical half, equal in length to the 4th and three-fourths longer than the 2nd; labial palpi long and slender, 3rd segment as long as the 2nd; ligula abruptly produced laterad preapically, apex straight; mentum with median tooth regular triangular, blunt at tip, epilobes gently widened apicad; microsculpture partly observable as vague transverse meshes.

Pronotum transversely quadrate, 1.48 times as wide as long, rounded at sides, more strongly convergent apicad from apical two-fifths than basad, gently declivous apico-laterad, largely impunctate, rather sparsely and moderately punctate in lateral furrows and a little more densely so in basal foveae; apex fairly deeply and obtrapezoidally emarginate, clearly bordered throughout; base 1.29 times as wide as apex, very weakly arcuate at sides, straight in middle, wholly and clearly bordered; apical angles protruding forwards, widely rounded; basal angles much larger than a right angle, rather narrowly rounded; lateral furrows engraved in a line in apical fourth, thence abruptly widened basad; basal foveae each wide, quadrate, adjoining lateral furrows, brief and longitudinal grooved at inner side; front transverse impression very shallow, the hind one very short and thin; median line running from front transverse impression to base; microsculpture somewhat clear, composed of mixture with transverse and isodiametric meshes.

Elytra suboval, 1.54 times as long as wide, one-fourth wider than the pronotal width, flat on disc, gently sloped laterally, with very sparse and minute punctures; sides gently curved in humeri, slightly arcuate in middle, shallowly sinuate preapically; apices somewhat produced backwards, narrowly rounded at tips; bases each shallowly emarginate, humeral angles much larger than right and acute; striae moderate in depth, wide, clearly crenulated in bottoms, scutellar striole not long; intervals flat on disc, becoming a little convex towards apicad and basad, 3rd interval with a series of five setiferous pores along 2nd stria; marginal series narrowly interrupted medially, consisting of (8–10)+(9–10) umbilicate pores. Hind wings fully developed.

Ventral surface almost impunctate, with several obscure punctures on lateral parts of metaventricle; metepisterna long, three-fifths longer than wide; 7th abdominal sternite feebly sinuate at preapical margins, shallowly emarginate at apex, bisetose at each side.

Tarsi long; 1st segment of mid tarsus with adhesive squamae only at apex, hind tarsi 1.13 times in male as wide as the width of head, 1st segment 1.07 times as long as the 2nd and 3rd taken together, nearly three times as long as the 3rd and sixths times as long as the 4th, claw segment bisetose along each ventral margin.

Aedeagus (Fig. 7) gently arcuate, rather thick; dorsal orifice widely open, inner sac with two groups of short spinous sclerites, one situated near apex and another near apical third; apical lobe clearly rounded at distal margin.

Female unknown.

Length: 9.6 mm. Width: 4.2 mm.

*Type specimen.* Holotype: ♂, near Hatu, Ambon, Maluku, Indonesia, 28.XII.1990, N. OKUDA leg. (In future, preserved in the Osaka Museum of Natural History, Osaka).

*Remarks.* This new species resembles *Coleolissus (Tenuistilus) shibatai* N. ITO, 1987 from Taiwan, but the colour is black and only iridescent rather than bearing greenish lustre, the pronotum and elytra are light brown at margins, etc.

*Etymology.* The specific name is derived from yellowish margins of pronotum and elytra in Latin.

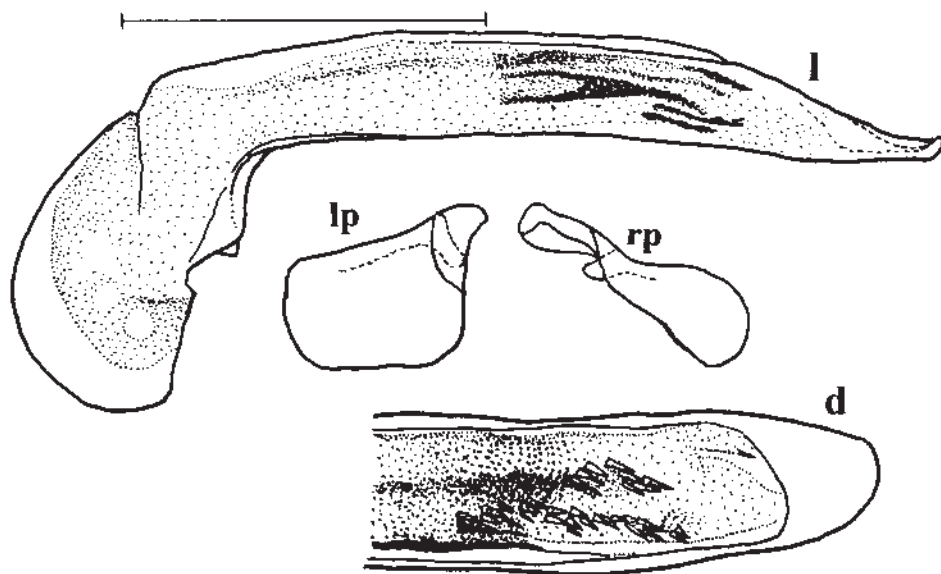


Fig. 7. Aedeagus of *Coleolissus (Tenuistilus) fulvomarginatus* sp. nov. — l. Lateral view; d, dorsal view; lp, left paramere; rp, right paramere. Scale: 1 mm.

*Hyphaereon subdenticollis* N. ITO, sp. nov.

(Figs. 3, 8)

Body narrowly oval, black, shiny, with iridescent lustre on elytra; legs yellowish brown; antennae light brown; appendixes of buccal part and lateral areas of pronotum brown; labrum and mandibles dark reddish brown.

Head not large, 0.67 times as wide as the pronotal width, gently convex, very sparsely and minutely punctate, interocular space somewhat narrow, 0.57 times as wide as the width of head; labrum transversely quadrate, almost straight at apex; clypeal suture straight and shallow; frontal impressions clearly carved, arcuately divergent to each other; eyes hemispherically prominent; temples very short, continuing along prolongations of curvatures of eyes; genuine ventral margins of eyes adjoining buccal fissure; antennae slender, apical two segments reaching elytra, 3rd segment pubescent in apical half, almost equal in length to the 4th and a half longer than the 2nd; mandibles elongate, thick in bases, equal in length in both right and left segments; clearly arcuate inwards, acute at tips; labial palpi short, tumid, 3rd segment 1.16 times as long as the 2nd; ligula wedge-shaped, very shallowly emarginate at apex; mentum weakly and roundly toothed at apex, epilobes abruptly expanded apicad; microsculpture more or less clear, composed of square meshes in apical half of clypeus and of transverse meshes in remaining areas.

Pronotum transversely quadrate, 1.45 times as wide as long, arcuate in apical half and obliquely linear in basal half of sides, gently convex, widely impunctate on disc, sparsely and minutely punctate on apico-medially, sparsely and moderately (partly rather coarsely) so in lateral furrows and basal foveae; apex shallowly emarginate, clearly bordered throughout; base 1.18 times as wide as apex, very weakly arcuate at sides, feebly emarginate insides the arc, entirely bordered but somewhat not clear near median line; apical angles widely rounded; basal angles a little larger than a right angle, with a

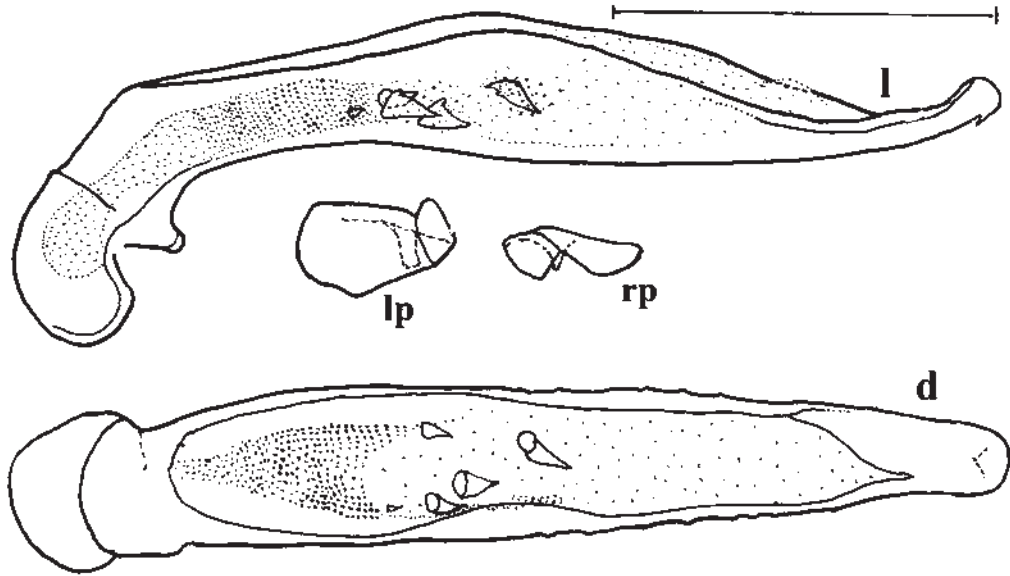


Fig. 8. Aedeagus of *Hyphaereon subdentecollis* sp. nov. — l, Lateral view; d, dorsal view; lp, left paramere; rp, right paramere. Scale: 1 mm.

small tooth at each tip; front transverse impression widely V-shaped, rather deep and wide, the hind one almost unobservable; median line reduced just before apex and reaching base; lateral furrows narrow in apical third, thence gradually widened basad, basal foveae more or less deep and elongate-quadrangle, without grooves at inner sides; microsculpture more or less clear, visible as square meshes.

Elytra one-third wider than pronotal width, a half longer than wide, flat on disc, fairly slant in lateral area, very sparsely and minutely punctate; sides widely rounded in humeri, very weakly widened backwards in middle, shallowly sinuate preapically; apices not strongly produced backwards, very narrowly rounded at distal margins, acute at sutural angles; bases shallowly emarginate, blunt at humeral angles; striae wide, moderate in depth, clearly crenulate in bottoms, scutellar striole long; intervals hardly convex on disc, becoming a little more convex both apicad and basad, 3rd interval bearing a series of 6–8 setiferous pores along 2nd stria; marginal series composed of 21 umbilicate pores; microsculpture a little clearer than usual species of the genus, consisting of transverse lines. Hind wings fully developed.

Ventral surface mostly smooth, very obscurely and sparsely punctate near apico-internal corners of metepisterna, very sparsely short-pubescent along the middle of 4th to 7th abdominal sternites; metepisterna elongate, nearly a half longer than wide; 7th abdominal sternite in male blunt-triangularly prominent preapically, shallowly notched at apex, bisetose at each side, in female not notched but clearly arcuate at apex and unisetose at each side.

Hind tarsi in both sexes as long as the width of head, 1st segment equal in length to the 2nd and 3rd taken together, 2.5 times as long as the 3rd and four times as long as the 4th, claw segment bisetose along each ventral margin.

Aedeagus (Fig. 8) elongate, a little widened in middle, thick and not hooked at apex; dorsal orifice widely open, inner sac with five conical sclerites near middle; apical lobe concave, rounded at

distal margin.

*Type series.* Holotype: ♂, near Hatu, Ambon, Maluku, Indonesia, 28.XII.1990, N. OKUDA leg. (In future, preserved in the Osaka Museum of Natural History, Osaka). Paratypes: 3 ♀♀, same data as the holotype. (Preserved in N. ITO collection).

*Remarks.* This new species resembles *Hyphaereon laosensis* N. ITO, 2004, but the head has more distinctly prominent eyes as hemispherical and the interocular space is wider, the pronotum is more sparsely and minutely punctate, the impunctate area is much wider, and the lateral furrows are narrower, with tooth at each basal angle.

*Etymology.* The specific name means each basal angle of pronotum with small tooth in Latin.

***Hyphaereon laeviventris* N. ITO, sp. nov.**

(Figs. 4, 9)

Body suboval, black, shiny, iridescent on elytra; pronotum very slightly brownish with brown margins; appendixes of buccal part, margins of labrum, antennae and legs light yellowish brown; mandibles dark reddish brown.

Head gently convex, rather large, 0.72 times as wide as pronotal width, very sparsely and minutely punctate, with interocular space narrow and 0.56 times as wide as the width of head; labrum a little transversely quadrate, very shallowly emarginate at apex; clypeus gently slant forwards, almost linear apically; clypeal suture clear, moderate in depth; frontal impressions rather deep, gently arcuately running outwards; eyes hemispherically prominent; temples very small, one-eighth as long as the length of eye; genuine ventral margins of eyes adjoining buccal fissure; mandibles long, stout, sharpened at apices, terebral tooth of left mandible and retinacular tooth of right mandible acute; antennae slender, apical two segments surpassing beyond pronotal base; ligula wedge-shape, feebly emarginate at apex; labial palpi slender, 3rd segment 1.17 times as long as the 2nd; mentum roundly toothed at apex, epilobes abruptly widened apicad; microsculpture mostly invisible, observed as obscure isodiametric meshes near clypeal apex.

Pronotum transverse, 1.43 times as wide as long, more or less steeply declivous apico-laterad, mostly impunctate, sparsely and rather coarsely punctate in frontal transverse impression and lateral furrows, more densely so in basal foveae whose punctures are not confluent; sides arcuate in apical half, linearly oblique in basal half; apex shallowly emarginate, clearly bordered throughout; base 1.10 times as wide as apex, with border obscure in middle half; apical angles weakly protruding, widely rounded; basal angles fairly larger than right, feebly blunt-toothed at tips; lateral furrows wide even near apex, abruptly widened in basal half; basal foveae large, longitudinally occupied in basal half, rather deep, fused with lateral furrows; front transverse impression vague, ill-defined, the hind one also vague; median line thin, shallow, reaching both apex and base; microsculpture rather clear, consisting of mixtures with transverse and square meshes on disc and in lateral furrows, of isodiametric meshes in basal area.

Elytra widely oblong, 1.30 times as wide as pronotal width, fairly convex, impunctate; sides parallel to each other, not divergent backwards in middle, gently arcuate in humeri, almost linearly oblique preapically; apices produced backwards, not rounded at apex, angulate at tips which are closed to each other; bases each weakly oblique in outer half, forming a very obtuse and almost blunt angle with lateral margin; striae wide, clearly crenulate in bottoms, scutellar striae more or less long; intervals flat on disc, somewhat convex at basal and apical areas, 3rd interval bearing a series of 6–7 setiferous pores along 2nd stria; marginal series divided into two groups, (8–10)+11 umbilicate pores; microsculpture composed of thin transverse lines. Hind wings entirely developed.

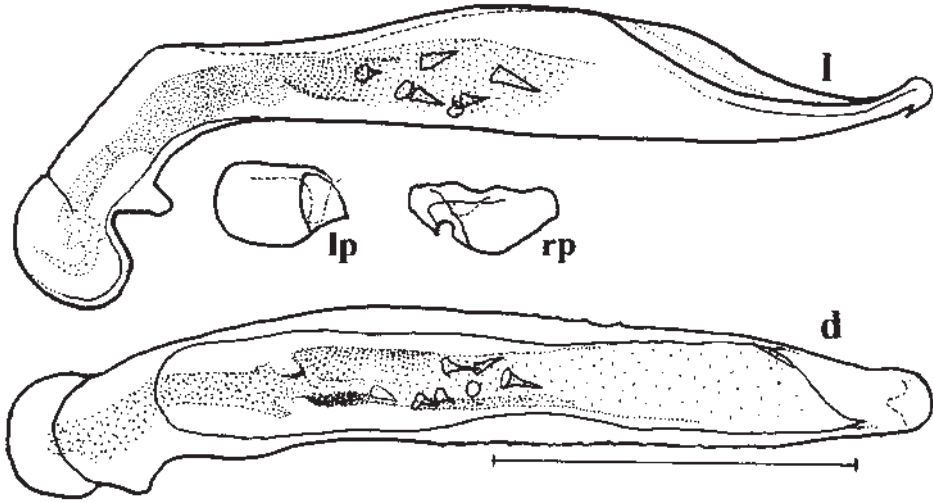


Fig. 9. Aedeagus of *Hyphaereon laeviventris* sp. nov. — l, Lateral view; d, dorsal view; lp, left paramere; rp, right paramere. Scale: 1 mm.

Ventral surface smooth, without any punctures and clear rugosities; metepisterna fairly convergent backwards, about two-thirds longer than wide; 7th abdominal sternite in male shallowly and sharply notched at apex, unisetose at each side.

Legs long; mid tarsus armed with biseriata squamae in apical third, hind tarsus 1.06 times in male as long as the width of head, 1st segment as long as the 2nd and 3rd taken together, 2.23 times as long as the 3rd and four times as long as the 4th, claw segment bisetose along each ventral side.

Aedeagus (Fig. 9) elongate, weakly widened in middle, with small granulations in apical half of both lateral surface, ventrally hooked at apex; dorsal orifice widely open, inner sac armed with seven small peg-shaped sclerites; apical lobe almost as long as wide, subquadrate, widely rounded at distal margin.

Length: 7.8 mm. Width: 4.4 mm.

Female unknown.

*Type specimen.* Holotype: ♂, Kimanis road, alt. 1,000–1,400 m, Saba, Borneo, Malaysia, 6–10. IV.1991, Minoru SAWAI leg. (In future, preserved in the Osaka Museum of Natural History, Osaka).

*Remarks.* This new species is related to *Hyphaereon borneensis* N. ITO, 1990 (N. ITO, 2008) from Sapulut, Borneo, but the body is larger in size (6.2 mm in body length, 3.0 mm in body width in *H. borneensis*), the pronotum is not cordiform but transversely subquadrate, purely black, a little brownish on disc, wider in lateral furrows and larger basal foveae; the 7th abdominal sternite is unisetose at each side instead of being bisetose; and the aedeagus bears larger sclerites in inner sac and is different in arrangement (N. ITO, 1991, 2008).

*Etymology.* The specific name is delivered from smooth (impunctate and not rugose) ventral surface in Latin.

*Oxycentrus (Oxycentropsis) ignotus* N. ITO, sp. nov.

(Figs. 5, 10)

Body elongate, black, shiny, rather strongly iridescent on elytra; appendixes of buccal part, antennae and legs light brown; mandibles dark reddish brown.

Head fairly convex, more or less large, 0.71 times as wide as pronotal width, microscopically and very sparsely punctate, with narrow interocular space 0.61 times as wide as the width of head; labrum subtransversely quadrate, with a shallow semicircular concave; clypeus very shallowly emarginate at apex, at each side with a large setiferous pore, a wide and shallow groove present behind the pore and reaching clypeal suture; clypeal suture straight, clearly engraved throughout; frontal impressions deep, sublinearly divergent to each other; eyes more or less large, hemispherical; temples very short; genuine ventral margins of eyes very narrowly isolated from buccal fissure; antennae slender, apical three segments surpassing beyond the base of pronotum, 3rd segment pubescent in apical three-fifths, almost equal in length to the 4th and twice the 2nd; mandibles long, clearly incurved, acute at tips; ligula gradually widened forwards behind apex, thence narrowed, truncate at apex; paraglossae isolated from ligula forwards a little behind its apex, arcuate in outer margins, narrow in the isolated part; labial palpi tumid, 3rd segment as long as the 2nd; mentum with large median tooth attaining to apical level of epilobes which are weakly widened forwards; microsculpture largely invisible, detectable as vague isodiametric meshes near clypeal apex and partly so as vague transverse meshes on vertex.

Pronotum quadrate, one-fifth wider than long, fairly raised, gently arcuate in apical half, thence weakly oblique basad, hardly sinuate, widely smooth on disc, microscopically and very sparsely punctate in apical area, seriatly and coarsely so in lateral furrows, and moderately and coarsely so in basal foveae; apex shallowly and uniformly emarginate, wholly clearly bordered; base 1.14 times as wide as apex, slightly arcuate at side, hardly emarginate in middle where the border is broken; apical angles weakly protruding forwards, widely rounded; basal angles a little larger than right, blunt at tips; lateral furrows narrow, weakly expanded backwards, fused with basal foveae; basal foveae longitudinally elliptical, occupied in basal half, widely flat in bottoms; front transverse impression scarcely visible, the hind one obsolete; median line thin but clear, obliterated near apex and base; microsculpture somewhat clear, mostly composed of transverse meshes and of mixture with isodiametric and square meshes in basal area.

Elytra elongate, almost parallel-sided, 1.70 times as long as wide, 1.27 times as wide as pronotal width, fairly convex, with very sparse and microscopic punctures; humeri gently curved; preapical sinus shallow; apices widely rounded, acute at sutural angles; bases each shallowly emarginate, forming a wide and acute angle with lateral margin; striae deep and clearly crenulate in bottoms, scutellar striole short; intervals fairly convex even on disc, 3rd interval not bearing setiferous pore; marginal series widely interrupted medially, composed of (7–8)+(8–10) umbilicate pores; microsculpture vague and sparse, visible as transverse lines. Hind wings entirely developed.

Ventral surface mostly smooth, coarsely punctate in mesepisterna; metepisterna abruptly narrowed backwards, 1.45 times as long as wide; 7th abdominal sternite in male widely and weakly rounded at apical margin, unisetose at each side.

Legs short; fore tibiae clearly sulcate just behind apices, tarsi glabrous dorsally, 1st segment of mid tarsus not squamous, hind tarsus comparatively short, 0.85 times as long as the width of head, 1st segment equal in length to the 2nd and 3rd taken together, 2.2 times as long as the 3rd and 2.6 times as long as the 4th, claw segment bisetose along each ventral margin.

Adeagus (Fig. 10) gently arcuate, thinned apicad from middle, acutely hooked at apex; dorsal orifice widely open; inner sac with four groups of elongate sclerites, of which 1st group is composed of

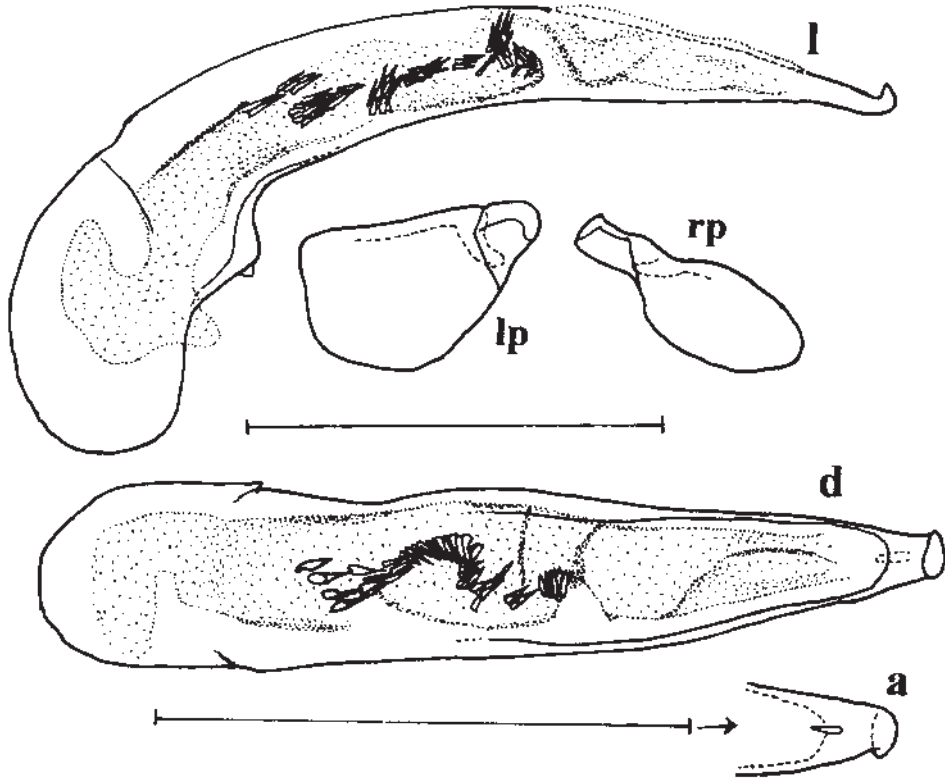


Fig. 10. Aedeagus of *Oxycentrus (Oxycentropsis) ignotus* sp. nov. — l, Lateral view; d, dorsal view; lp, left paramere; rp, right paramere; a, ventral surface of apical lobe. Scale: 1 mm.

perpendicular sclerites, 2nd one of shorter sclerites, 3rd one of long horizontal sclerites, and 4th one of several thin sclerites and situated along dorsal side of the sac; apical lobe trapezoidal, weakly rounded at apex.

Female unknown.

Length: 8.2 mm. Width: 3.1 mm.

*Type specimen.* Holotype: ♂, near Keningau, Sabah, Borneo, E. Malaysia, IV.1980. (In future, preserved in the Osaka Museum of Natural History, Osaka).

*Remarks.* This new species is easily distinguished from all the known species by the lacking of setiferous pore on 3rd elytral interval. The new species resembles *Oxycentrus (Oxycentropsis) smetanai* N. ITO, 1996 from Kinabalu in Borneo, but in addition to the elytral character mentioned above, the head is larger and with more prominent eyes, the pronotum is more coarsely punctate and wider in basal foveae, the aedeagus is hooked dorsad at apex and so on.

*Etymology.* The specific name is derived from species lacking elytral setiferous pore not known in the genus in Latin.

### Acknowledgement

I would like to express my hearty thanks to Professor Dr. Kunio ARAYA of Kyushu University for his kindly and critically reading manuscript. Also my thanks is to Mr. Norio OHTANI, Hiroshima due to his kindly offering many invaluable material and Mr. Yasuhiko HAYASHI, Kawanishi due to taking a pictures.

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## A New Species of *Enochrus* THOMSON from Laos (Coleoptera, Hydrophilidae)

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**Abstract** A new species of water scavenger beetle, *Enochrus* (*Holcophilydrus*) *niisatoi* sp. nov., is described from a mountain area in central Laos. In addition, a probable larva of the species, which was collected together with adults, is briefly described. This species is very similar to the other Laotian species, *E. (H.) laoticus* HEBAUER, 2005, but can be distinguished by the morphology of male genitalia and elytral punctures. Photographs of both *E. niisatoi* and *E. laoticus* and a key to the species of Laotian *Holcophilydrus* are provided.

### Introduction

With more than 220 described species, *Enochrus* THOMSON, 1859 of the subfamily Enochrinae represents one of the largest genera of the Hydrophilidae (SHORT & FIKÁČEK, 2011, 2013). They occur worldwide and are divided into six subgenera (HANSEN, 1999). One of them, *Holcophilydrus* KNIŽ, 1912 was established for *E. ussuriensis* KNIŽ, 1912, which was later synonymised with *E. (H.) simulans* (SHARP, 1873) (JIA & WANG, 2010). At the moment, the subgenus contains six species occurring in Asia, Madagascar, and Mauritius (HANSEN, 1999; SHORT & HEBAUER, 2006; JIA & WANG, 2010; FIKÁČEK *et al.*, 2015 a).

In 2008, large-sized *Holcophilydrus* specimens were collected from small pools on trails in a mountain area in Xieng Khouang Province, Laos. The specimens were found to be most similar to the other Laotian species *E. (H.) laoticus* HEBAUER, 2005, however the morphology of its aedeagus was clearly different from the latter. I considered the species undescribed, and am going to describe it here.

### Material and methods

Specimens were examined using an Olympus SZX12 binocular microscope and a Nikon E600 compound light microscope. Genital segments were cleared in solution of 10% potassium hydroxide (KOH) at ca. 50°C in 50 minute, then they were rinsed and dissected in 80% ethanol. Some parts were slide-mounted in lactic acid for examination. After dehydration, they were mounted in Euparal (Waldeck GmbH & Co. KG, Germany) on a slide glass card, which was pinned under the specimen (MARUYAMA, 2004). Some parts were glued on a paper card with the specimen. Larval specimen was not cleared by KOH and was examined in 80% ethanol.

Photographs were taken with an Olympus OM-D E-M5 Mark II digital camera attached to the SZX12 or attached with a MeCan NY-1S digital SLR microscope adapter to the E600. Multiple images were taken for focus stacking. Composite images were created using an image stacking software Helicon Focus (Helicon Soft Ltd., Kharkov). Photographs were retouched by Adobe Photoshop Lightroom (2015) and Photoshop CC (2015.5) (Adobe Systems Inc., USA) in needed cases.

I examined following specimens of *E. laoticus* in order to compare their morphology with *E. niisatoi*: Laos, Houaphanh Prov.: 1ex. (NMPC), Ban Saluei, Mt. Phou Pan, 20°13'N 103°59'E, 1,300–

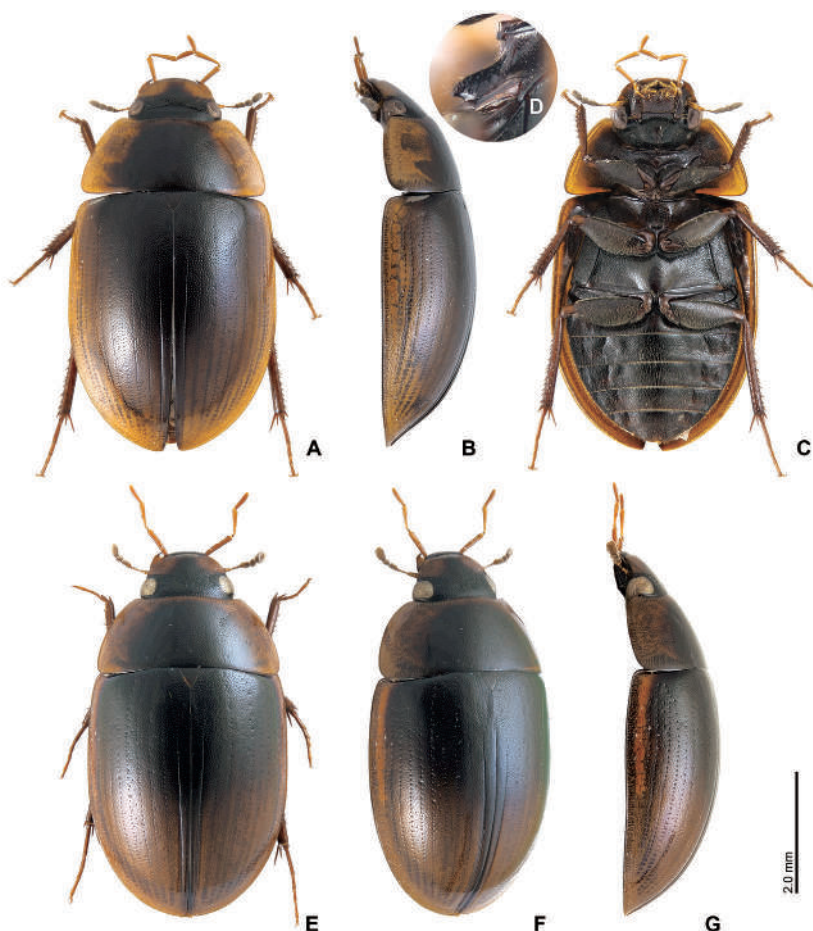


Fig. 1. Adult specimens. — A–D, *Enochrus niisatoi* sp. nov., paratype; E–G, *E. laoticus* HEBAUER. — A, E, Dorsal view; B, G, lateral view; C, ventral view; D, detail of mesoventral carina, lateral view; F, dorsolateral view.

2,000 m, 6–18.IV.2004, J. BEZDĚK leg.; 3 male, 2 exs. (KMNH, NMPC), Mt. Phou Pan, 20°12'01–30''N 104°00'34–55''E, 1,750–1,850 m, 8.V.2008, V. KUBÁŇ leg.; 1 female (KMNH), Mt. Phou Pan, 8–11.V.2007, T. MIZUSAWA leg.

The materials examined are deposited in the following collections: Kitakyushu Museum of Natural History and Human History, Kitakyushu, Japan (Y. MINOSHIMA) (KMNH); National Museum, Praha, Czech Republic (M. FIKÁČEK, J. HÁJEK) (NMPC); University of Kansas, Lawrence, USA (A.E.Z. SHORT) (SEMC).

Morphological terminology largely follows HANSEN (1991), KOMAREK (2004), and ARCHANGELSKY *et al.* (2016) for adult, FIKÁČEK *et al.* (2008) and MINOSHIMA and HAYASHI (2011) for larva.

## Taxonomy

### *Enochrus (Holcophilydrus) niisatoi* sp. nov.

(Figs. 1A–D, 2A–E, 3, 4)

*Type locality.* Laos, Xieng Khouang Province, Mt. Phou Samsoun, N19°09.27', E103°47.46', alt. 2120 m. (Fig. 4 A)

*Type Material.* Holotype (KMNH): “LAOS: Xieng Khouang Prov.,” / “N Mt. Phou Samsoun, N19°” / “09.27', E103°47.46', 2120m;” / “small pool on trail; 17.V.2008;” / “Minoshima Y. (L-08-023)” // “H O L O T Y P E” / “ENOCHRUS” / “niisatoi” / “des. YN Minoshima 2017”. Paratypes (KMNH, NMPC, SEMC): 12 exs., same data as the holotype; 1 ex., “LAOS: Xieng Khouang Prov., N Mt. Phou Samsoun, N19°08.43', E103°46.89', 2060m; water-filled ruts; 13.V.2008; Minoshima Y. (L-08-009)”; 1 male, 1 female, 1 ex., “LAOS: Xieng Khouang prov.; NW Mt. Phou Samsoun, 19°08.36'N, 103°47.15'E, 2020 m; water-filled tire ruts; 16.V.2008; MINOSHIMA Yūsuke; L-08-017”.

*Additional material examined.* 1 third instar larva probably conspecific with syntopically collected adults of *E. niisatoi* sp. nov. (KMNH), Laos, Xieng Khouang Prov., NW Mt. Phou Samsoun, 19°08.36'N, 103°47.15'E, alt. 2,020 m, 16.V.2008, Y. MINOSHIMA leg. (08-17).

*Diagnosis.* *Enochrus niisatoi* is distinguishable from other species of *Holcophilydrus* by the morphology of aedeagus. This species is very similar to the other Laotian *Holcophilydrus*, *E. (H.) laoticus*. They can be distinguished by the following key, which separates the Laotian species of *Holcophilydrus*.

1. Serial punctures on elytra densely arranged (Fig. 1A–B); median lobe of male genitalia enlarged towards apex (Fig. 2A, C); apex of median lobe distinctly bifurcated (Fig. 2A, C); lateral face of parameres sinuate in dorsal view (Fig. 2A, C); apex of parameres narrow and projecting diagonally outwards (Fig. 2A, C). ..... *Enochrus niisatoi* sp. nov.
- Serial punctures on elytra sparsely arranged (Fig. 1E–G); median lobe of male genitalia not enlarged towards apex (Fig. 2F); apex of median lobe truncated, very weakly bifurcated (Fig. 2F); lateral face of parameres straight in dorsal view (Fig. 2F); apex of parameres stout and truncate (Fig. 2F) ..... *Enochrus laoticus* HEBAUER, 2005

*Description.* Body length 5.6–7.0 mm, maximum width 2.9–3.5 mm. Body (Fig. 1A, B) oblong oval, widest medially, rather convex.

Dorsum (Fig. 1A, B) moderately shining. Clypeus yellowish brown with black central subtriangular spot; frons black. Pronotum broadly yellow to yellowish brown laterally, black medially. Elytra broadly light yellowish brown to brown laterally and posteriorly; anteromedian to median parts of elytra black to brown. Colouration of elytra somewhat variable. Palpi and antennae light yellowish brown, only antennal club infuscate. Ventral surface and legs (Fig. 1C) dark reddish brown with light reddish brown tarsi.

Head transverse, with coarse and dense ground punctures on dorsal surface; systematic punctures bearing fine setae present on frons close to eyes. Frontoclypeal sulcus very indistinct. Labrum with fine and dense ground punctures, bearing a transverse row of setiferous punctures medially. Mentum subrectangular but anterior margin rounded, ca. 1.7 times as wide as long; anteromedian part concave; ground punctures on mentum coarse, densely arranged; lateral margin of mentum bearing short setae densely arranged.

Antenna with nine antennomeres; scape moderately short; pedicel rather short, conical; antenno-

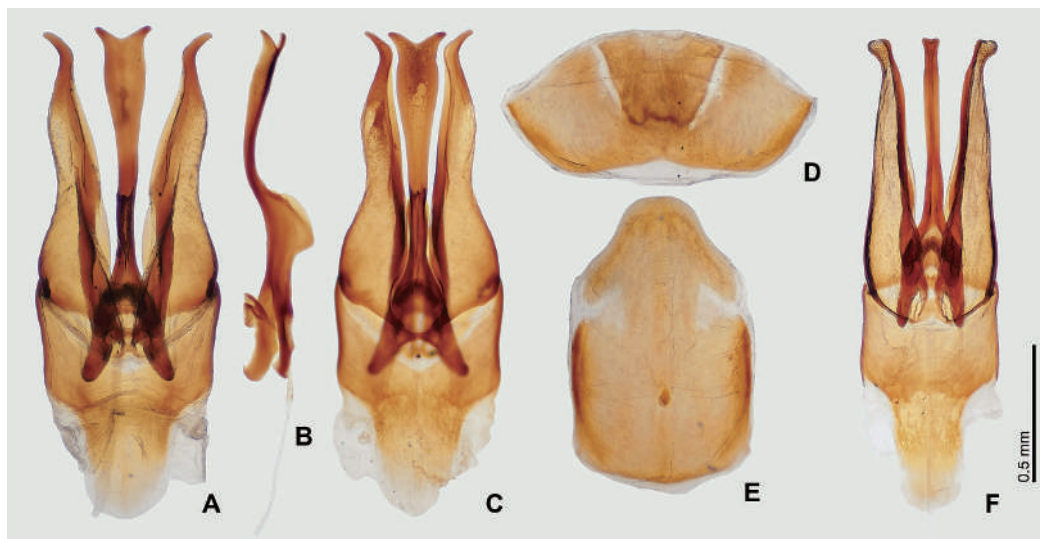


Fig. 2. Male genital segments. — A–E, *Enochrus niisatoi* sp. nov. (A, holotype, B–E, paratype.); F, *E. laoticus* HEBAUER. — A, F, Aedeagus, dorsal view; B, median lobe, lateral view; C, aedeagus, ventral view; D, abdominal tergite 9, dorsal view; E, abdominal sternite 9, ventral view.

meres 3–5 narrow; antennomere 3 longer than antennomeres 4 and 5; antennomere 5 as long as antennomere 4 but wider than antennomere 4; antennomere 6 as wide as antennal club (antennomeres 7–9); antennal club loosely segmented; antennomere 7 and 8 similar in size; antennomere 9 larger than antennomere 7 and 8. Maxillary palpus rather short, ca. 0.9 times as width of head. Maxillary palpomere 1 small; palpomere 3 slightly shorter than palpomere 2, 0.95 times as long as palpomere 2; palpomere 4 short, two-thirds of palpomere 2. Labial palpus short, slender.

Pronotum evenly convex, with coarse, densely arranged ground punctures; systematic punctures on pronotum present on lateral part, bearing fine setae. Prosternum weakly convex, without distinct median carina. Elytra with ten longitudinal rows composed by densely arranged punctures; sutural stria present on posterior two-thirds. Ground punctures on elytra coarse, densely arranged. Systematic punctures on elytra present, bearing fine setae. Metaventricle with median carina; mesoventral carina (Fig. 1 D) beak-shaped in sagittal plane. Mesal portion of anterior collar with one pair of small, oval whitish patches. Mesoventrite covered with fine pubescence, with mesal elevated portion, with oblong glabrous mesal area. Pro-, meso-, and metafemora densely covered with fine pubescence excluding apex.

Abdominal ventrites (Fig. 1C) densely covered with fine pubescence, with weakly concave portions laterally. Apex of ventrite 5 with small apical emargination bearing stout setae. Tergite 9 trilobed, sternite 9 with subquadrate basal part and very stout arrow-shaped apical part (Fig. 2D, E).

Aedeagus (Fig. 2A–C). Median lobe slender, enlarged towards apex, constricted at subapical part, distinctly bifurcated at apex, curved ventrally in median part, subbasal part with large lamina dorsally (Fig. 2B). Apophyses short, stout. Corona situated ventrally at junction of apophyses (Fig. 2B); ventral disc present, covers corona (Fig. 2B, C). Parameres slender, attenuate towards apex; lateral face strongly sinuate laterally in coronal plane, strongly concave at median and subapical parts; apex narrow, projecting diagonally outwards. Phallobase wide and short, anterior margin widely V-shaped; manubrium stout, short.

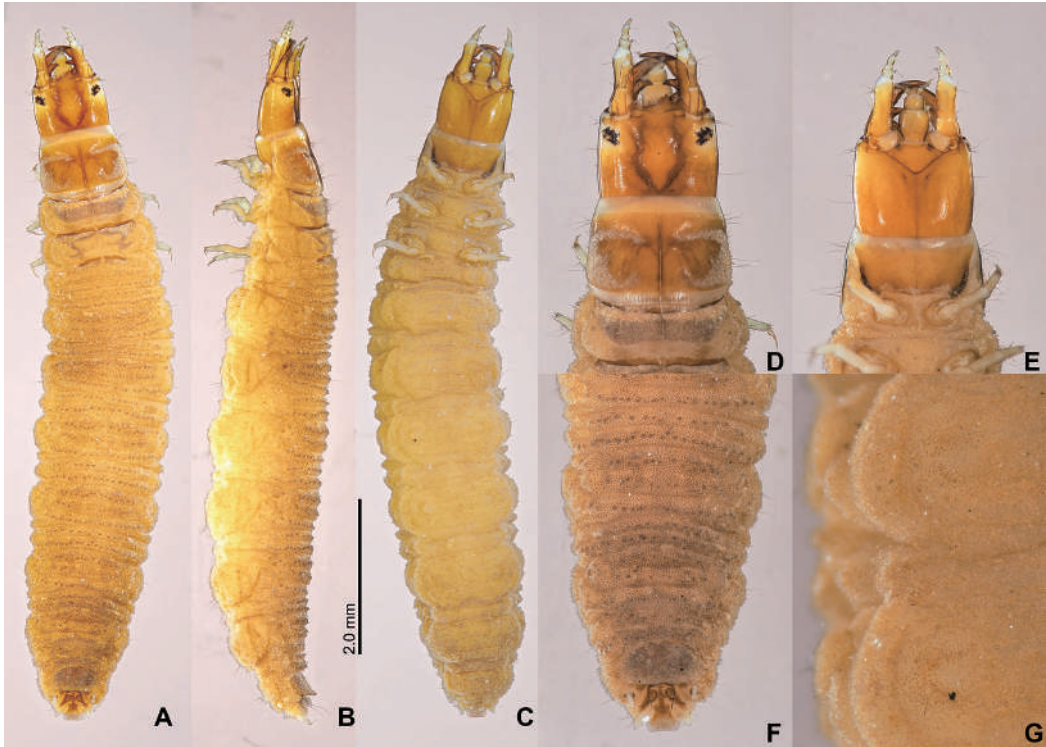


Fig. 3. Presumable larva of *Enochrus niisatoi* sp. nov. — A, Dorsal view; B, lateral view; C, ventral view; D, head and thorax, dorsal view; E, ditto, ventral view; F, apex of abdominal segments, dorsal view; G, abdominal segments, ventral view.

**Larva.** A probable larva of *Enochrus niisatoi* (Figs. 3, 4C) was collected together with adults. The larva is third instar according to the number of secondary setae on labium (BYTTEBIER & TORRES, 2009; MINOSHIMA & HAYASHI, 2011). Diagnosis of the larva is as follows: Body (Fig. 3A–C) slender, ca. 9.1 mm long. Colour whitish yellow, sclerites yellowish brown. Head (Fig. 3D) subquadrate, slightly wider than long; surface of head capsule smooth, bearing long setae laterally. Nasale serrate with two teeth on right, small one on left. Frontal lines weakly lyriform, fused at base of head capsule, coronal line short. Clypeolabrum asymmetrical; nasale serrate. Mandibles asymmetrical; right mandible with two inner teeth, left one with one inner tooth. Antenna slender, moderately long. Maxilla (Fig. 3E) distinctly longer than antenna; stipes bearing 7–9 stout setae on inner face (MX7–11 and secondary sensilla; due to the possibly missing setae, the number is vague). Labium well developed; mentum with six short, stout secondary setae on lateral face. Prothorax wider than head capsule. Proscutum formed by large plate; prosternal plate transverse, rectangular. Legs short but visible in dorsal view. Abdomen (Fig. 3A–C) parallel-sided in segments 1–4, then tapering posteriad. Ventral face of abdominal segments (Fig. 3G) with spinose prolegs; spines slender, weakly curved towards apex. Spiracular atrium well developed (Fig. 3F).

**Biology.** Aquatic species. All adult specimens were collected from a small pool (Fig. 4A, type locality) and water filled ruts (Fig. 4B) on a trail in a mountain area (ca. alt. 2,000–2,100 m) of northern Laos. Furthermore, a presumable larva of this species (Fig. 4C) was collected with adults at the latter. Both habitats seem to be temporal, but these facts indicate the possibility that this species pre-



Fig. 4. Habitats of *Enochrus niisatoi* sp. nov., Laos, Xieng Khouang Prov., Mt. Phou Samsoun. — A, 19°09.27' N, 103°47.46' E, alt. 2,120 m, 17.V.2008 (08-023); B, 19°08.36' N, 103°47.15' E, alt. 2,020 m, 16.V.2008 (08-17); C, presumable larva of *E. niisatoi*, same data as B.

fers such habitats. In addition, *Anacaena* sp. (Hydrophilidae), Dytiscidae spp., and Gyrinidae sp. were collected together in the habitats.

*Distribution.* Laos (Mt. Phou Samsoun, Xieng Khouang Province).

*Etymology.* This new species is named in honour of Dr. Tatsuya NIISATO, president at an environmental assessment company, Bioindicator, Co., Ltd., and an enthusiastic cerambycid specialist, who was the president of Coleopterological Society of Japan.

*Remarks.* Monophyly of the subgenera of *Enochrus* have never been tested, and the classification of subgenera of the genus is still problematic (SCHÖDL, 1998; HEBAUER, 2005; JIA & SHORT, 2013). In addition, the character which delimits *Holcophilydrus*, multiple longitudinal striae on elytra, seems to be variable and plastic in *Enochrus* as well as other aquatic hydrophilids (e.g. HEBAUER, 2005; JIA & SHORT, 2013; MINOSHIMA *et al.*, 2015). On the basis of multiple longitudinal striae on elytra and similarity with *E. laoticus*, however, I proposed tentatively *E. niisatoi* as a member of the subgenus *Holcophilydrus* in this paper. The placement of the species therefore should be reconfirmed in the future.

A larva collected with the adults of *E. niisatoi* shared all diagnostic characters of *Enochrus*, for example, (1) surface of head capsule smooth, (2) head capsule without long paddle-shaped setae, (3) nasale serrate, (4) mandibles asymmetrical, (5) abdominal segments with spinose prolegs. The body size of the larva (ca. 9 mm) well corresponds body size of *E. niisatoi*. With these reasons, I presumed it as a probable larva of this new species. However, the hydrophilid fauna of the locality is not well

known, thus I cannot rule out the possibility that the larva belongs to a different *Enochrus* species. MINOSHIMA and HAYASHI (2011) described larva of *E. (H.) simulans* (all instars) and *E. (H.) umbratus* (SHARP, 1884) (third instar). JIA and WANG (2010) synonymised *E. (H.) kishidai* KAMIYA, 1935, *E. umbratus*, and *E. ussuriensis*, which is the type species of *Holcophilydrus*, with *E. simulans* (see also FIKÁČEK *et al.*, 2015 c). The presumable larva of *E. niisatoi* clearly differs from those of *E. simulans* in the following two morphological characters. (1) Stout setae on inner face of stipes are at least seven (i.e., primary setae MX7–11 and secondary setae; see description) in the presumable larva, whereas those are five (i.e., only MX7–11) in all instars of *E. simulans*. Within *Enochrus*, second and third instar larvae of *E. (Methydrus) japonicus* SHARP, 1873 bearing secondary setae on inner face of stipes (MINOSHIMA & HAYASHI, 2011). (2) Cuticular spines of abdominal prolegs are slender and weakly curved in the larva, whereas those are stout and strongly curved in *E. simulans*. Setiferous prolegs were evolved independently in several clades of Hydrophilidae (e.g. ARCHANGELSKY, 1997; MINOSHIMA & HAYASHI, 2011; MINOSHIMA *et al.*, 2013; FIKÁČEK *et al.*, 2015 b), and this character seems to be variable within respective subgenera of *Enochrus* (WATTS, 2002; BYTTEBIER & TORRES, 2009).

### Acknowledgements

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## A New *Lathrobium* (Coleoptera, Staphylinidae) from Hyôgo Prefecture in Western Honshu, Japan

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**Abstract** A new brachypterous species of the genus *Lathrobium* (Staphylinidae, Paederinae) is described under the name of *L. niisatoi*. It was obtained from under dead leaves accumulated in the deciduous broadleaved forest on Mt. Mayasan, Hyôgo Prefecture in western Honshu, Japan.

So far as I know, five staphylinid species belonging to the group of *Lathrobium pollens / shingon* (Staphylinidae, Paederinae) have hitherto been known from Hyôgo Prefecture, excluding Awaji-shima Island, in western Honshu, Japan (HAYASHI, 1996; WATANABE, 1992, 2008, 2013).

As the examining the specimens obtained from Hyôgo Prefecture, I have found an interesting species belonging to the group of *Lathrobium pollens / shingon*. After a careful examination, it became clear that this species is new to science for reason of disagreement in external features and male genital organ from the previously known species of the genus. I am, therefore, going to describe it as a new species in the present paper which is dedicated to Dr. Tatsuya NIISATO, in celebration of his 60th birthday.

Before going to further, I wish to express my hearty thanks to Mr. Naoki KANEKO, Laboratory of Entomology, Tokyo University of Agriculture, for taking the photographs inserted in this paper, and also to the members of TADA's family for their kind help for the cooperative work on Mt. Mayasan.

*Lathrobium (Lathrobium) niisatoi* Y. WATANABE, sp. nov.

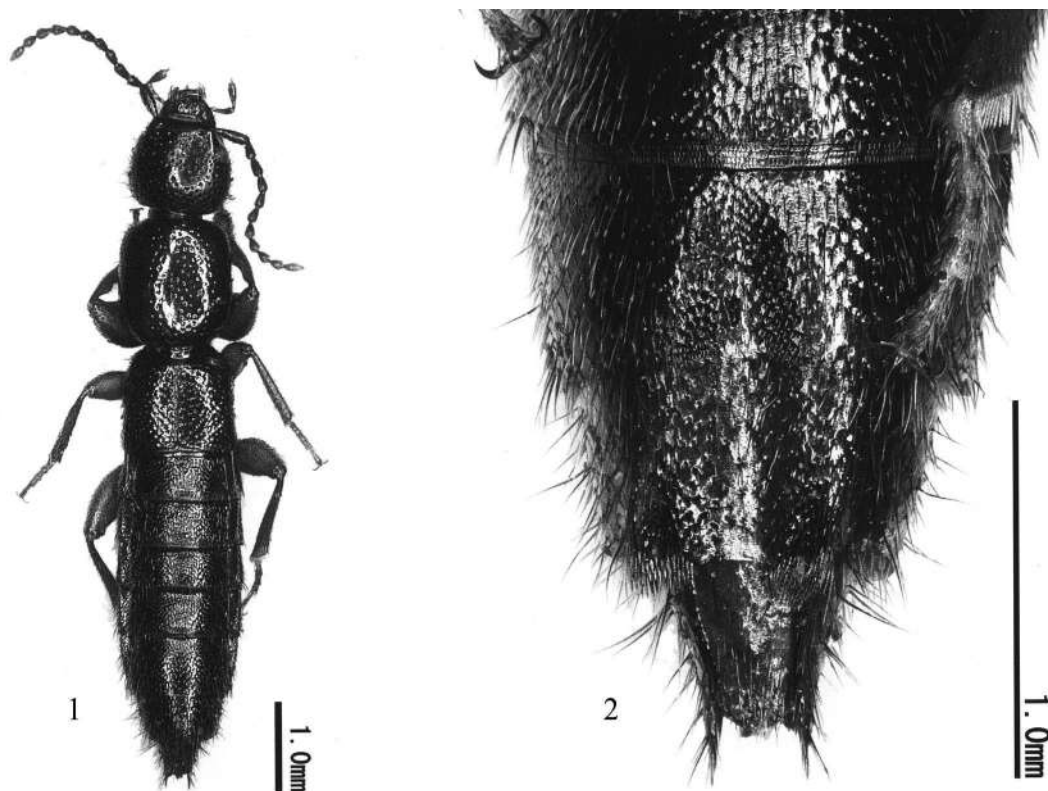
[Japanese name: Niisato-kobanenagahanekakushi]

(Figs. 1–5)

Body length: 6.4–7.6 mm (from front margin of head to anal end); 3.2–3.7 mm (from front margin of head to elytral apices).

Body elongate, nearly parallel-sided and subdepressed above. Colour black to blackish brown and moderately shining, with mandibles and antennae reddish except for apical two or three yellowish brown segments, labrum, maxillary palpi and legs brownish yellow, apical margins of elytra brownish red, sometimes so in the sutural areas.

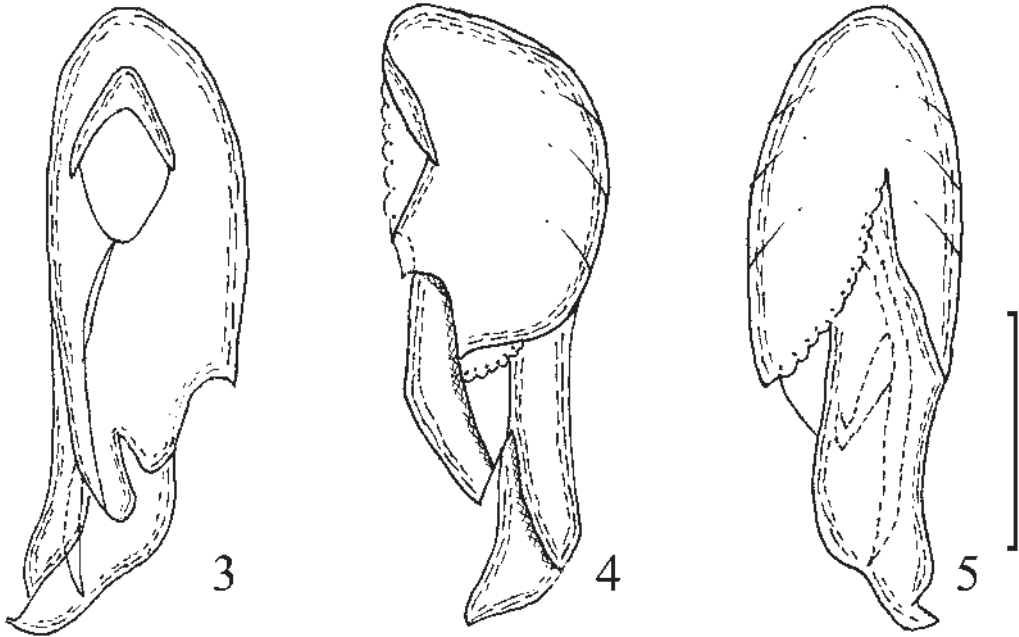
Male: Head subquadrate and slightly narrowed anteriorly, and gently elevated medially, somewhat transverse (width/length = 1.15); post ocular part feebly arcuate and about three times as long as the longitudinal diameter of each eye which is almost flat; frontal area between antennal tubercles flattened and glabrous along frons; surface sparingly, coarsely punctured except for impunctate vertexal area and covered with extremely microscopic coriaceous ground sculpture only visible under high magnification. Antennae elongate, but not extending to the posterior margin of pronotum and not thickened towards the apical segment, basal two segments polished and remainings opaque, 1st segment robust and dilated apically, about four times as long as wide, 2nd about 1.5 times as long as wide, much shorter than (2nd/1st = 0.25) and distinctly narrower (2nd/1st = 0.67) than 1st, 3rd a little longer than wide (length/width = 1.33), a little longer (3rd/2nd = 1.33) than and 1.5 times as wide as 2nd, 4th distinctly longer than wide (length/width = 1.40), distinctly shorter (4th/3rd = 0.88) and narrower



Figs. 1–2. *Lathrobium (Lathrobium) niisatoi* sp. nov., ♂, from Mt. Mayasan, Hyōgo Pref., Japan. — 1, Habitus; 2, secondary sexual characters of abdominal sternites in the male.

(4th/3rd = 0.83) than 3rd, 5th as long as though somewhat narrower (5th/4th = 0.80) than 4th, 6th to 10th equal in length and width to one another, each distinctly longer than wide (length/width = 1.50), a little shorter (each of 6th to 10th/5th = 0.86) and narrower (each of 6th to 10th/5th = 0.86) than 5th, 11th fusiform, apparently longer than wide (length / width = 2.25) though as wide as 10th, subacuminate at the apex.

Pronotum subtrapezoidal and elevated medially, feebly narrowed posteriad, distinctly longer than wide (length/width = 1.20), clearly longer (pronotum/head = 1.50) and slightly wider (pronotum/head = 1.09) than head, lateral sides nearly straight except near anterior and posterior angles, anterior margin gently arcuate, posterior margin subtruncate, anterior angles obtuse and not visible from dorsal side, posterior ones rounded; surface more numerous and slightly less coarsely punctured than in medio-frontal area of head except for a narrow smooth median space through the length of pronotum. Scutellum subtriangular, provided with a few shallow setiferous punctures on the surface. Elytra subtrapezoidal and somewhat dilated posteriad, a little transverse (width/length = 1.18), distinctly shorter (elytra/pronotum = 0.73) but slightly wider (elytra/pronotum = 1.04) than pronotum; lateral sides feebly arcuate, posterior margin emarginate at the middle and posterior angles broadly rounded; surface somewhat more numerous punctured and not coarsely punctured than in pronotum and covered with fine brownish pubescence. Hind wings degenerated to minute lobes which are about one-fifth as long as elytra. Legs moderately long, profemora remarkably thickened, provided with a subtriangular blunt



Figs. 3–5. Male genital organ of *Lathrobium (Lathrobium) niisatoi* sp. nov. — 3, Dorsal view; 4, lateral view; 5, ventral view. Scale: 0.5 mm.

tooth near apical third on the inner face; protibia hollowed in basal half on the inner face and armed with five comb-like transverse rows of yellowish setae within the hollow; meso- and metatibiae normal; 1st to 4th protarsal segments dilated.

Abdomen elongate and nearly parallel-sided, 3rd to 7th tergites each covered with somewhat close and superficial punctures, and somewhat long brownish pubescence, 8th and 9th tergites each more sparingly, more finely punctured and pubescent than in the preceding tergites; 8th sternite shallowly, semicircularly emarginate at the middle of posterior margin and shallowly longitudinally depressed in front of the emargination, surface of the depression much more sparingly covered with setiferous punctures than in other parts, each side of the emargination almost symmetrically and relatively broadly projected posteriorly, surface of the projection covered with short rigid blackish cilia, interspace between these projections relatively broadly and longitudinally depressed, surface of the depression much more sparingly covered with more fine brownish pubescence than those of other areas; 7th sternite shallowly emarginate at the middle of posterior margin and U-shapedly depressed before the emargination, surface of the depression more closely and more finely pubescent than in other parts; 6th sternite simple.

Genital organ elliptical. Median lobe symmetrical; ventral sclerite much more longer than fused paramere, gently emarginate in front of the apical part which is curved to the right, and the apex takes the form of a small thorn as seen from ventral side. Fused paramere asymmetrical; apical part deeply excised into two parts, of which the left part is distinctly longer than the right part; surface divided into two parts by fine longitudinal line, right part distinctly expanded dorsad near the middle in profile.

Female: Similar in facies to male, but different from it in the structure conformation of 8th ab-

dominal sternite which is broadly produced posteriad at the median part of posterior margin and broadly rounded at the apex; 7th sternite simple.

*Type series.* Holotype: ♂, Mt. Mayasan, Hyôgo Pref., Honshu, Japan, 16.X.1988, Y. WATANABE leg. Paratypes: 7 ♂♂, 5 ♀♀, same data as for the holotype.

*Type depository.* All the type specimens are deposited in the collection of the Laboratory of Entomology, Tokyo University of Agriculture.

*Distribution.* Japan (Hyôgo Prefecture in western Honshu).

*Remarks.* The present new species is similar in facies to *Lathrobium (Lathrobium) shingon* Y. WATANABE, 1992 from Mt. Kôyasan, Wakayama Prefecture, but differs from it in the following points: body relatively smaller, both head and pronotum more strongly, more coarsely punctured; elytra slightly more closely and more strongly punctured; abdomen more closely and more coarsely punctured; 8th abdominal sternite in male with posterior margin almost symmetrically projected at each side of the middle, surface of these projections depressed and covered with more densely and rigid blackish cilia, interspace between these projection longitudinally and broadly depressed; 7th sternite slightly emarginate at the middle of posterior margin and more strongly U-shapedly depressed before the emargination than in *L. (L.) shingon*, surface of the depression somewhat more closely and slightly more coarsely pubescent than other part. Similar also in facies to *L. (L.) tadaorum* Y. WATANABE, 2008 which was described from the same mountain of this new species, but can be distinguished from it by the different configuration of genital organ in the male.

*Bionomics.* All the type specimens of this new species were obtained by sifting the dead leaves accumulated in a broadleaved forest on Mt. Mayasan at an altitude of about 620 m.

*Etymology.* This new species is dedicated to Dr. Tatsuya NIISATO, who contributed to the coleopterology in particular of the Asian Cerambycidae.

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**Notes on the Species of Staphylinidae from Japan XXI.**  
The Descriptions of Two Additional Species of *Lobrathium* MULSANT et REY  
from Shikoku (Coleoptera)

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**Abstract** Two additional species belonging to the genus *Lobrathium*, *L. niisatoi* T. ITO, sp. nov. and *L. shikokense* T. ITO, sp. nov., are described from Shikoku District in Japan.

As far as the Japanese fauna is taken into consideration, *Lobrathium* species are widely distributed from Hokkaido to Ryukyus (SHIBATA *et al.*, 2013). So far more than 20 species and a few subspecies at least are listed from Japan (LÖBL & LÖBL, 2015), and there are a lot of undescribed and/or unrecorded species from Japan. In the present paper, I describe two new species from Shikoku District, Japan. They are similar to *Lobrathium yoshidai*, which are characterized by the body depressed above, the pronotum wholly with a distinct smooth line, the elytra with apical reddish brown area and the aedeagus symmetrical in shape (ADACHI, 1955; WATANABE & BABA, 1973).

The present paper is dedicated to Dr. Tatsuya NIISATO to celebrate his 60th birthday. He has been contributing vigorously to the knowledge on coleopterology, especially to the taxonomic studies of Cerambycidae.

Before going further, I would like to express my cordial thanks to Mr. Masataka YOSHIDA (Tokushima City) for his kindly offering me all of the valuable materials used in the present study.

***Lobrathium niisatoi* T. ITO, sp. nov.**

(Figs. 1a–d)

Body slender and moderate-sized, subdepressed above, dark brown, moderately shiny; elytra with apical two-fifths, anal end, mouth part and legs reddish brown, mandibles and antennae a little darkened; pubescence on body dark brownish black to black, yellowish brown to dark brown on appendices. Length: 6.8–7.5 mm.

Head subquadrate, slightly longer than wide, coarsely, closely and deeply punctate except that frons is sparsely so and clypeus is impunctate, the punctures apparently coarser and sparser on vertex than on postgenae and basal third area where those are more or less reticulated in arrangement; eyes moderate-sized, the longitudinal diameter shorter than a half length of postgena; postgenae scarcely expanded laterally and roundly narrowed toward neck; antennae somewhat slender, rather long and passing over the base of pronotum, all segments distinctly longer than wide, 1st segment the largest, very robust but less than twice as long as 2nd which is clearly shorter than 3rd, segment of 4th to 6th sub-equal in length to each other, each of 7th to 10th hardly shortened distally in length, 11th conical and distinctly longer than 10th. Ventral surface of head coarsely, rather sparsely and uniformly punctate, with a perceptible microsculpture; mentum clearly depressed on both sides; submentum coarsened; gular plate smooth, gular sutures widely separated and subparallel to each other.

Pronotum ovate (length/width = 1.33), longer (1.17 : 1) and a little narrower than head, subparal-

lateral-sided, feebly narrowed behind, coarsely, closely and somewhat irregularly punctate in arrangement, the punctures evidently coarser and sparser than on head; disc with a clear median smooth line from apical to basal margins; lateral margins invisible when viewed from above, but thick throughout as well as both apical and basal margins.

Elytra longitudinally oblong, subparallel at sides, wider (1.19 : 1) and distinctly longer than pronotum, ratio of length at shoulders to width at the widest point near middle about 1.25; surface with punctures much coarser than on pronotum, arranged in somewhat irregular rows, especially disarranged by rugosities near suture and becoming a little finer in size laterad; pleural margins fairly thick, pleural keels moderately observable except basal extremity. Wings well developed and probably functional. Scutellum scarcely rough and punctate. Prosternum wholly rugose; mesosternum also uneven and metasternum finely and sparsely punctate.

Abdomen slightly expanded laterad, increasing in width gently toward 7th segment, then decreasing in width rather rapidly toward the 8th segment; each tergite scarcely microsculptured and with extremely fine and obsolete punctures, 7th tergite provided with a white thin membrane at apical margin. Punctures on each sternite coarser than on the opposite tergite. In male, 5th to 8th sternites depressed along the middle respectively as follows: 5th- and 6th-sternal depressions very weak, 7th-sternal depression moderately deep, wide, U-shaped and with finer punctures than on outsides, apical margin of 7th sternite faintly emarginate in middle, 8th-sternal depression divided into basal and apical parts, in which basal one is wide and almost impunctate, the apical one distinctly deep, triangular in outline, with fine black granules except a narrow apico-marginal area; 8th sternite with apical margin widely and roundly excised (Fig. 1b).

Legs with profemora very robust and protarsi usually dilated in both sexes.

Aedeagus moderately sclerotized except dorsal side, moderately bent ventrally behind the widest point and rather weakly curved dorsally, with a ventral projection heavily sclerotized, lanceolate in shape, widest at the middle, thence nearly straightly and gradually narrowed apically, though the lateral sides subparallel on the way but without a constricted point, the apex not pointed at tip (Fig. 1c-d).

*Type series.* Holotype: ♂, Nakatani, Shishikui, Kaifu, Tokushima Pref., 24.IX.1973, M. YOSHIDA leg. (the holotype is deposited in the Osaka Museum of Natural History). Paratypes: 2 ♂♂, 2 ♀♀, same data as for the holotype.

*Distribution.* Japan (Shikoku District).

*Notes.* Although this new species is closely allied to *Lobrathium yoshidai* ADACHI (*L. yoshidai yoshidai* ADACHI and *L. y. sadoensis* WATANABE et BABA) in having the sub-depressed body, the pronotum with a distinct smooth line wholly along the middle, the elytra apically with reddish brown area and the aedeagus symmetrical in shape. It is easily distinguishable from the latter species by the eyes much larger in size, the hind wings being functional, the aedeagus quite different in shape, such as the ventral projection without a constriction and the different secondary sexual features described above.

*Etymology.* The specific name of this new species is dedicated in honor of Dr. Tatsuya NIISATO.

***Lobrathium shikokense* T. ITO, sp. nov.**

(Figs. 1e-h)

Body relatively large and robust, subdepressed above, a little shiny; elytra with apical two-fifths, anal end, mouth parts and legs reddish brown, mandibles and antennae slightly darkened; pubescence on body dark brownish black to black, yellowish brown on appendices. Length 7.3–8.2 mm.

Head subquadrate, a little longer than wide, coarsely, closely and deeply punctate except that frons apparently sparsely so and clypeus impunctate; the punctures similar to the preceding species;

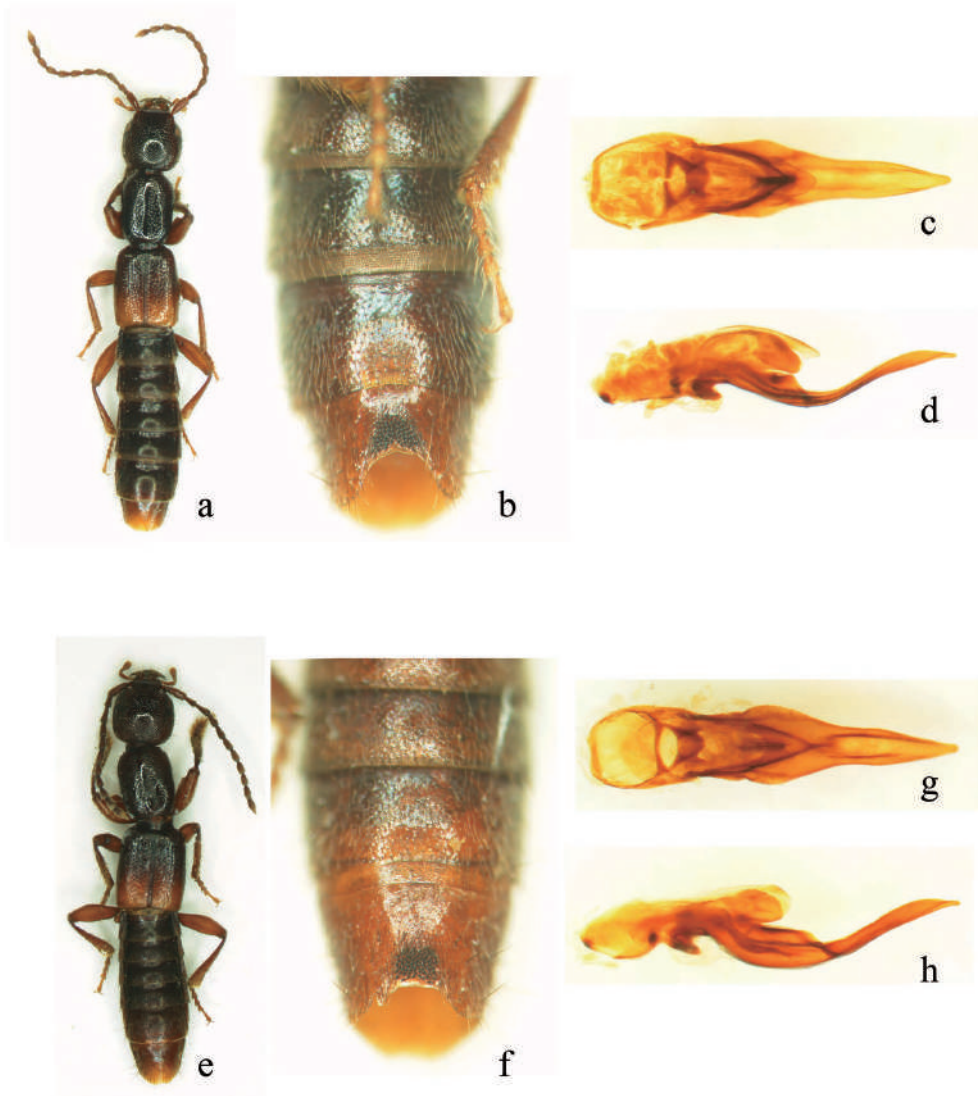


Fig. 1. Habitus and male genitalia of *Lobrathium* spp. — a–d, *L. niisatoi* T. ITO, sp. nov.; e–h, *L. shikokense* T. ITO, sp. nov. — a, e, Habitus; b, f, the 7th and 8th sternites in male; c, g, aedeagus in ventral view; d, h, ditto in lateral view.

eyes moderate-sized, the longitudinal diameter shorter than a half length of postgena (diameter of eye to postgena = 1 : 2.5); antennae somewhat slender, rather long and passing over the base of pronotum, all segments distinctly longer than wide, 1st segment the largest, very robust but less than twice as long as 2nd which is clearly shorter than 3rd, segment of 4th to 6th sub-equal in length to each other, each of 7th to 10th hardly shortened distally in length, 11th conical and distinctly longer than 10th.

Pronotum longitudinally ovate, clearly longer (1.2 : 1) and slightly narrower (0.92 : 1) than head, subparallel-sided, coarsely, closely and somewhat irregularly punctate in arrangement; the punctures apparently coarser and a little sparser than on head; a clear median smooth line being from apical to basal margins; lateral margins invisible when viewed from above, but thick throughout as well as both

apical and basal margins.

Elytra longitudinally oblong, sub-parallel at sides, widest at apical third, wider (1.24 : 1) and longer (1.07 : 1) than pronotum, ratio of length at shoulders to width at the widest point about 1.18; surface with punctures much coarser than on pronotum, arranged in somewhat irregular rows, especially disarranged by rugosities near suture and becoming a little finer in size laterad; pleural margins fairly thick, pleural keels clearly observable except near basal extremity. Wings well developed and functional. Scutellum distinctly and rather finely punctate. Prosternum wholly coarsened; mesosternum also uneven and metasternum finely and sparsely punctate.

Abdomen slightly expanded laterad, increasing in width gently toward 7th segment, then decreasing in width rather rapidly toward the 8th segment; all segments scarcely microsculptured; each tergite with extremely fine and obsolete punctures, 7th tergite provided with a white thin membrane at apical margin. In male, 5th to 8th sternites depressed along the middle respectively as follows: 5th- and 6th-sternal depressions hardly discernible, 7th-sternal depression rather deep, wide, U-shaped and with finer punctures than on outsides, apical margin of 7th sternite fairly and widely emarginated in middle, 8th-sternal depression divided on the base and a part apical, in which basal one is wide and almost impunctate, the apical one distinctly deep, nearly oblong in outline, with fine black granules except a narrow apico-marginal area; 8th sternite with apical margin widely excised, the excision trapezoid in shape and its bottom almost straight. (Fig. 1f).

Legs with profemora very robust and protarsi usually dilated in both sexes.

Aedeagus moderately sclerotized except dorsal side, somewhat strongly bent ventrally behind the widest point and more weakly curved dorsally toward apex, with a ventral projection heavily sclerotized, lanceolate in shape, widest in middle, thence almost straightly and gradually narrowed apically, though the lateral sides sub-parallel on the way but without a constricted point, the apex not pointed at tip (Fig. 1g, h).

*Type series.* Holotype: ♂, Riv. Yoshino-gawa, Kanazawa-cho, Tokushima City, Tokushima Pref., 23.IX.1965, M. YOSHIDA leg. (the holotype is deposited in the Osaka Museum of Natural History). Paratypes: 4 ♂♂, 11 ♀♀, same data as for the holotype.

*Distribution.* Japan (Shikoku District).

*Notes.* This species has a closer relationship to *Lobrathium niisatoi* than to *L. yoshidai*. It is distinguishable from *L. niisatoi* by the body larger and robuster, the male 8th sternite with apical depression oblong, and apico-marginal excision trapezoidal in shape, the ventral projection of aedeagus quite different in shape (e.g., the ventral plate more strongly curved ventrally in lateral view).

*Etymology.* The specific name of this new species is derived from the District's name of the type locality of the present species.

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## A New Species of the Genus *Quedius* from Chûbu District, Japan (Coleoptera, Staphylinidae, Staphylininae, Quediina)

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**Abstract** *Quedius (Microsaurus) niisatoi* sp. nov. is described from high mountain area of Chûbu district of Japan. The new species has close relationship with *Q. tenellus* and *Q. nireus* because of having four punctures in each dorsal row of pronotum.

The subgenus *Microsaurus* DEJEAN, 1833, is one of the large subgenera in the genus *Quedius* STEPHENS, 1829, and 40 species are known from Japan (SHIBATA *et al.*, 2013). Recently, I found some specimens of an unknown Japanese species belonging to this subgenus in my cabinet. It is similar in the general appearances to *Quedius (Microsaurus) tenellus* (GRAVENHORST, 1806) and *Q. (M.) nireus* SMETANA, 1995. The former species is distributed from Europe to East Siberia, and the latter is distributed in China. These three species have a common peculiar character, *viz.* four punctures in each dorsal row on pronotum. After close examination, however, I concluded that the Japanese species in question is new to science.

I am very glad to write a paper for commemoration of “Kanreki”, the sixty birthday of Dr. Tatsuya NIISATO.

Before going to further detail, I wish to express cordial thanks to Messrs. K. TOYOSHIMA and K. HIRAI for their kindly offering interesting materials, and Dr. K. ANDO, Faculty of Agriculture, Ehime University, for critically reading the manuscript of this paper.

The main terminology and abbreviations used herein are as follows: HW = head width (maximal head width, including eyes); HL = head length (from apex of clypeus to neck constriction); PW = pronotal width (maximal pronotal width); PL = pronotal length (length of midline of pronotum); EW = elytral width (maximal elytral width); EL = elytral length (maximal elytral length).

### *Quedius (Microsaurus) niisatoi* sp. nov.

(Figs. 1–8)

Body slender, black to blackish brown, moderately shiny; mandibles pitchy; palpi brown; antennae with basal three antennomeres pitchy and the rest dark brown; elytra dark brown, with apical margin narrowly pale; abdomen with hind margin of each segment narrowly reddish brown, and 10th tergite and 9th ventrite yellowish brown; legs yellowish brown in ventral sides but blackish brown in dorsal sides. Length: 7.0–8.3 mm.

Head subhexagonal, widest at anterior third, gently convergent anteriorly and posteriorly from the widest point, weakly emarginate at anterior and posterior margins, and slightly wider than long (HW/HL = 1.03), a little narrower and shorter than pronotum (HW/PW = 0.79 and HL/PL = 0.76); upper surface weakly convex, flattened in front clypeal region, faintly depressed inside of antennal tubercles, very sparsely and minutely punctured all over, only one large puncture situated inside of postgenal socket except original seven sockets, and sparsely scattered with small punctures in temples; microsculpture finely transversely strigulate though coriaceous in clypeo-frontal area. Eyes large and



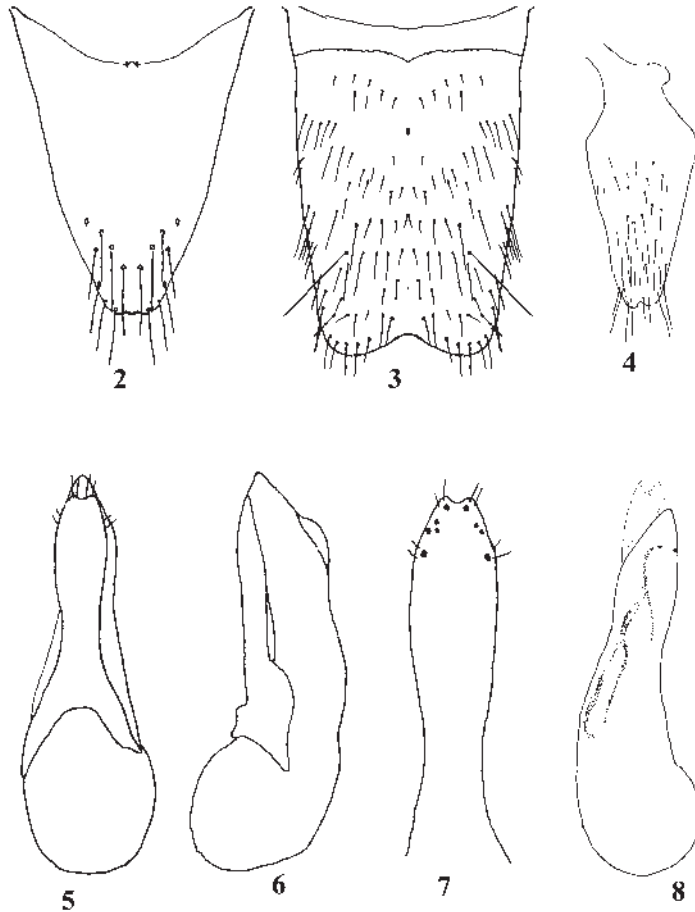
Fig. 1. Habitus of *Quedius (Microsaurus) niisatoi* sp. nov.

moderately convex, a little longer than temples ( $EL/PG = 1.25$ ). Antennae slender, moderately long, extending to the middle of pronotum; basal five and 11th antennomeres longer than wide; 6th as long as wide; 7th to 10th transverse; and each antennomeres with the following relative length from base to apex: 45 : 24 : 35 : 20 : 20 : 18 : 18 : 18 : 18 : 37.

Pronotum widely rounded posteriorly, nearly straight at anterior margin, widest at about the middle, slightly wider than long ( $PW/PL = 1.06$ ), a little narrower and shorter than elytra ( $PW/EW = 0.85$ ;  $PL/EL = 0.84$ ); disc strongly convex, not deplanate laterally, with fine oblique strigulate microsculpture; dorsal rows each consisting of four moderately large punctures, sublateral rows and lateral ones each consisting of two punctures, and the other punctures small, sparsely scattered along anterior and lateral margins.

Scutellum flat and impunctate.

Elytra subquadrate, weakly dilated posteriad, nearly straight at sides, weakly emarginate at hind margin, and widely rounded at postero-lateral angles, slightly wider than long ( $EW/ELL = 1.05$ ); upper surface somewhat convex, moderately coarsely and densely punctured, without microsculpture. Hind wings well developed, functional.



Figs. 2–8. *Quedius (Microsaurus) niisatoi* sp. nov. — 2, Tenth tergite; 3, 8th ventrite; 4, 9th ventrite; 5, male genitalia, ventral view; 6, ditto, lateral view; 7, parameres, inner face; 8, penis, inner face.

Abdomen subparallel-sided; tergites each finely and sparsely punctured, the punctures becoming sparser toward posterior margin, but those on ventrites are much larger and sparser than those on tergites; 7th tergite with apical seam of palisade whitish setae; 8th weakly arcuate at posterior margin; 10th (Fig. 2) triangulate, and subtruncate at apex, sparsely pubescent in apical portion; 7th ventrite slightly emarginate in middle of posterior margin; 8th (Fig. 3) ventrite weakly and widely emarginate in middle of posterior margin, shallowly depressed and glabrous before the emargination; 9th (Fig. 4) elongate subhexagonal, rounded at apex, and finely sparsely pubescent.

Legs slender and long; tibiae rather sparsely pubescent; protarsi markedly dilated in basal four tarsomeres, and 1st protarsomere a little wider than apex of protibia.

Male genitalia (Figs. 5–8) almost symmetrical; penis, in ventral view, strongly tumid in basal bulb, sinuously narrowed apicad in middle, then weakly dilated in apical third and rapidly convergent to subacute apex, and in lateral view, weakly curved ventrad, with a pair of sharp small hooks a little before the apex in ventral side, and dorsum membranous medially; parameres unilobed, spatulate, not extending beyond the top of penis, shallowly emarginate at apex, and inner face with about four fine

setae and four or five peg-setae at each margin of apical portion.

Female: Protarsi less dilated than in male, 1st protarsomere slightly narrower than apex of protibia; 8th ventrite only weakly arcuate at posterior margin.

*Type series.* Holotype: ♂, Ise-daki, Mt. Kisokomagatake (ca. 1,900 m), Komagane-shi, Nagano Pref., Japan, 24.VIII.1962, Y. HAYASHI leg. The holotype is preserved in the collection of the Osaka Museum of Natural History. Paratypes: 5 ♂♂, 2 ♀♀, same data as the holotype; 2 ♂♂, Senmai-rindo camp, Mt. Senmaidake, Shizuoka-shi, Shizuoka Pref., Japan, 18.VIII.2013, K. HIRAI leg.; 3 ♀♀, Kurumijima (FIT), Asahi-machi, Takayama-shi, Gifu Pref., 3.VIII.2012, K. TOYOSHIMA leg.; 1 ♂, Mt. Houou, S-Alps, Yamanashi Pref., 27.VII.2008, H. NOMURA leg.

*Remarks.* The chaetotaxy of macrosetae on head, pronotum and elytra of this new species are almost equal to the ones of typical *Quedius* species (sensu HAYASHI, 2012).

The present new species is well similar to *Q. (Microsaurus) tenellus* (GRAVENHORST) in general appearances and having four punctures in each dorsal row of pronotum, but it is easily distinguishable from the latter by the following points: Head emarginate at base, basal three antennomeres pitchy, 3rd antennomere much longer than 2nd (III/II = 1.48), pronotum slightly wider than long, and penis subacute at the apex; while in the latter species, head not emarginate at base, basal some antennomeres yellowish brown, 3rd antennomere only slightly longer than 2nd, pronotum longer than wide, and penis rounded at apex. In *Q. (M.) nireus* SMETANA, eyes relatively smaller, EL/PG = 1.08, and penis nearly rounded at apex, a little wider than parameres which are subparallel-sided and rounded at apex; while in the new species eyes larger, EL/PG = 1.25, and penis subacute at apex, slightly narrower than parameres in apical third which are spatulate and emarginate at apex.

Prior to this study, the character, four punctures in each dorsal row on pronotum, had been found only in two species, *Q. (M.) tenellus* and *Q. (M.) nireus*, among the species of *Quedius (Microsaurus)* (COIFFAIT, 1978; SMETANA, 1995; HAYASHI, priv. comm.), and thus is considerably peculiar in the subgenus. This new species however has this character as described above. It is the first species from Japan having this peculiar character in the subgenus. With this character, this new species, *Q. (M.) tenellus* and *Q. (M.) nireus* would have close relationship each other and be unique within the subgenus.

*Etymology.* The specific name is dedicated to Dr. Tatsuya NIISATO for commemorating his “Kanreki”, the 60th birthday. He is one of the most excellent longicornist in Japan and contributed tremendously to development of the Coleopterological Society of Japan.

*Bionomics.* The specimens were captured by a flying intercept trap (TOYOSHIMA, priv. comm.).

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## A New Species of the Genus *Petaloscapus* JEANNEL (Coleoptera, Staphylinidae, Pselaphinae) from Hokuriku District, Honshu, Japan

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**Abstract** A new species of the genus *Petaloscapus* JEANNEL of the tribe Batrisini, *P. niisatoi*, is described from Niigata and Fukui Prefectures in Hokuriku District, Honshu, Japan.

### Introduction

The genus *Petaloscapus* is an endemic genus of the subfamily Pselaphinae, belonging to the supertribe Batrisitae, the tribe Batrisini. The species are medium-sized and stout. Seven species and two subspecies have been known only from the Japanese mainland after SHIBATA *et al.* (2013). This genus was strikingly diversified within the Japanese mainland. Many undescribed species are remained in Japan.

In the definition of this genus by JEANNEL (1958), five species and a subspecies were included. After that, TANOKUCHI (1986) described a new species, *P. hirsutus* from Shizuoka Prefecture. Later, NOMURA (2001) added *P. sasajii* from Fukui and Osaka Prefectures, and *P. temporalis yoshidai* from Tokushima Prefecture.

In the course of my study, a new species was discovered from Hokuriku District including Niigata and Fukui Prefectures. The species is described herein together with the figures of important characters.

### Materials and Methods

For detailed examination and dissection, specimens were washed and dissected in 70 % ethanol or cleared in 10 % KOH water solution. Male genitalia were mounted in Canada balsam on a small glass slide on the same pin with the specimen as described by MARUYAMA (2004). Measurements of the body and its parts were made with a stereo microscope (Leica MZ Apo). For the SEM observation, all specimens were air dried, uncoated, and illustrated with an SEM fit with a digital microscope system (KEYENCE VHX-2000 + VHX-D510) under AV 0.9–2.0 kv. The holotype and paratypes of this new species are deposited in the National Museum of Nature and Science, Tokyo (NMNS).

### Taxonomy

Genus *Petaloscapus* JEANNEL

[Japanese name: Higebuto-munetoge-arizukamushi Zoku]

*Petaloscapus* JEANNEL, 1958: 33. Type species by original designation: *Batrisus ornatus* SHARP.

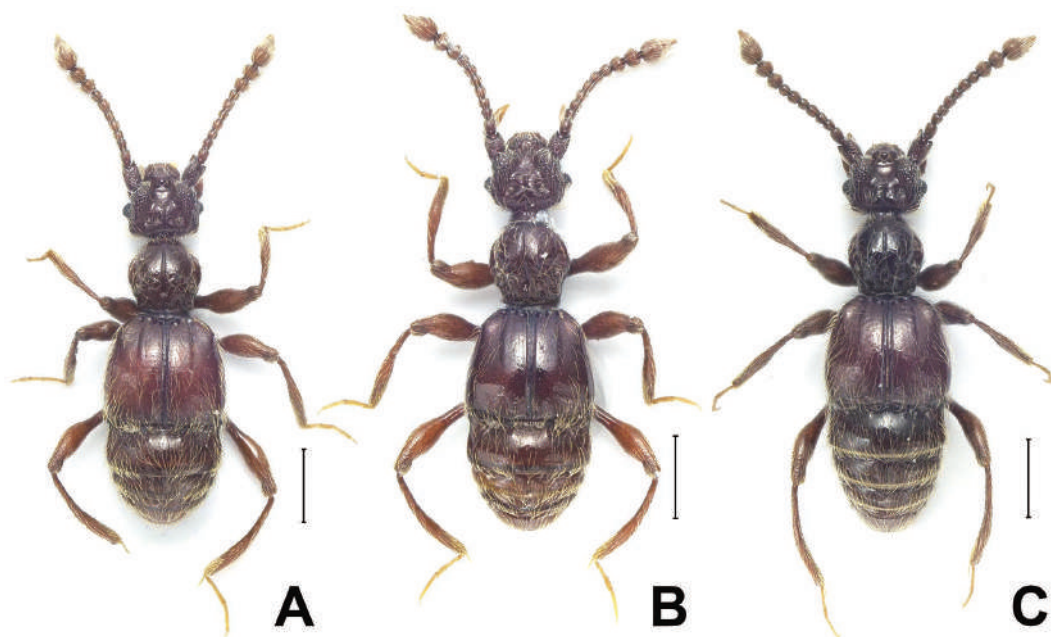


Fig. 1. Habitus of *Petaloscapus niisatoi* sp. nov. — A, Male from Tainai, Niigata Pref.; B, female from Tainai; C, male from Karikomi-ike, Fukui Pref. Scale: 0.5 mm.

*Remarks.* The genus *Petaloscapus* is distinct by the following characters: The body is medium-sized and stout; the scape bears a flat projection on the internal side of the apex in the male; the male genitalia is asymmetrical and nearly rectangular, it bears the large and triangular projection at the apex of median lobe; the endophallus is asymmetrical and clearly sclerotized (Fig. 4), it is formed by two to four sclerites surrounded by the median lobe. This genus is similar to the genus group of *Tribasodes* defined by NOMURA and IDRIS (2003) in the asymmetrical male genitalia. However, it is classified into the genus group of *Batrisus* by the capsule-like median lobe and the well defined endophallus of the male genitalia, and lacking the asymmetrical projection on the last antennal segment and long spine on the hind trochanter in the male.

***Petaloscapus niisatoi* sp. nov.**

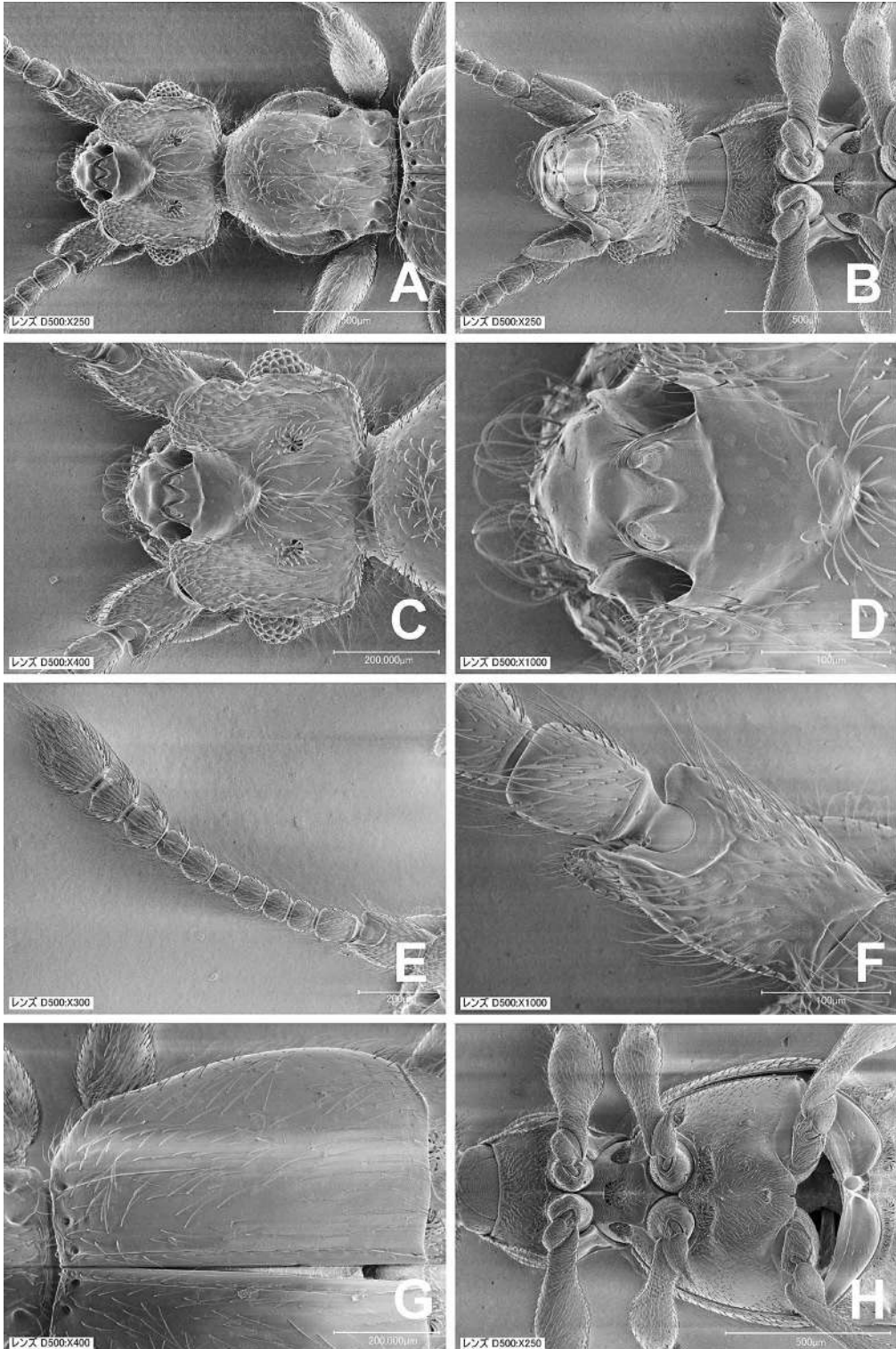
[Japanese name: Niisato-munetoge-arizukamushi]

(Figs. 1–4)

*Etymology.* The new species is dedicated to Dr. Tatsuya NIISATO, who is an excellent amateur coleopterologist studying longhorn beetles.

Holotype (Fig. 1A): Male, Tainai, Kurokawa-mura, Niigata Pref., 3.VII.1985, S. NOMURA leg. Paratypes: 2 males, 3 females (Fig. 1B), same data as the holotype; 5 males (Fig. 1C), 2 females, Karikomi-ike Lakeside, Ohno-shi, Fukui Pref., 17.VI.2001, Hideto HOSHINA leg.

Fig. 2. *Petaloscapus niisatoi* sp. nov., male. — A, Head and pronotum in dorsal view; B, ditto in ventral view; C, head in dorsal view enlarged; D, frontal nodule enlarged; E, antenna; F, antennal segment I enlarged; G, elytra; H, thorax in ventral view.



*Description.* Male (Figs. 1A, 1C, 2, 3A–D, 4): Body length 2.54–2.68 mm, width 0.82–0.90 mm, middle-sized, stout, weakly broadened in elytra and abdomen; color reddish brown, partly shiny on dorsal surface.

Head (Figs. 2A–C) about as long as wide, nearly pentagonal, coarsely punctate on both lateral sides, with a nodule on frons (Fig. 2D), a pair of antennal tubercles on both anterolateral sides, a large excavation between antennal tubercles, a pair of dorsal tentorial pits, a short longitudinal carina between dorsal tentorial pits; frontal nodule convex, weakly constricted near middle, flattened, glabrous on anterior side, with M-shaped sculpture at middle. postgenae weakly angulate, densely punctate, haired. Eyes well developed, ovoid, each composed of about 40 facets. Antennae (Fig. 2E) 1.12–1.20 mm in length, elongate, stout; segment I (Fig. 2F) twice as long as wide, subcylindrical, coarsely punctate, largely excavated on apical part with a short, flat projection on internal apex; relative length (width) of each segment from II to XI to length of segment II: 1.0 (0.7): 0.7 (0.7); 0.7 (0.7); 0.8 (0.7); 0.7 (0.7): 0.8 (0.8); 0.7 (0.7); 1.0 (1.0): 1.0 (1.1): 2.3 (1.3). Maxillary palpi each elongate, short; segment IV largest, fusiform.

Pronotum (Fig. 2A) slightly larger than head, about as long as wide, subglobose, weakly punctate, densely haired, with three longitudinal sulci, three large basal foveae, a pair of large, acute dorsal hooks, five small antebasal foveae. Meso-metasternum (Fig. 2H) broad, moderately convex, with a small fovea at center. Legs (Fig. 2H) each elongate, stout; mesotrochanters each short, narrowed distally, with a conical spine at apex. Elytra (Fig. 2G) slightly wider than long, trapezoidal, broadened posteriorly, lightly convex, sparsely haired, each with three basal foveae, long adsutural carina, a short basal sulcus in basal 2/5.

Abdomen (Figs. 3A, B) slightly smaller than elytra, slightly wider than long, weakly narrowed posteriorly, segments IV to VIII successively shortened posteriorly; segment IV (Fig. 3A) largest, about twice as wide as long, with a pair of narrow, triangular paratergites, two pairs of basal foveae, a pair of very short longitudinal carinae in basal part; tergite VIII (Fig. 3C) small, transverse, sparsely haired in posterior part; sternite VIII (Fig. 3D) semicircular, flattened, sparsely haired on ventral surface. Male genitalia (Fig. 4) strongly sclerotized; median lobe (Fig. 4A-a) large, stout, nearly rectangular, with a large, flat, asymmetrical projection in ventroapical part, a short, trapezoid process at basal end of basal foramen (Fig. 4A-d); endophallus formed by two sclerites, left sclerite (Fig. 4A-b) acutely bent rightward, with a short denticle at left apex, right sclerite (Fig. 4A-c) bent rightward, coarsely serrate in apical part.

Female (Figs. 1B, 3E–H). Body length 2.52–2.60 mm. Antennae 1.08–1.16 mm in length. Similar to the male, however it differs in the following characters: head (Fig. 3F) rounded, without frontal nodule, with a pair of less convex antennal tubercles than in male; antennae (Fig. 3G) slightly shorter than in male; antennal segment I (Fig. 3H) shorter than in male, without projection on inner apex; mid trochanter short, without apical spine.

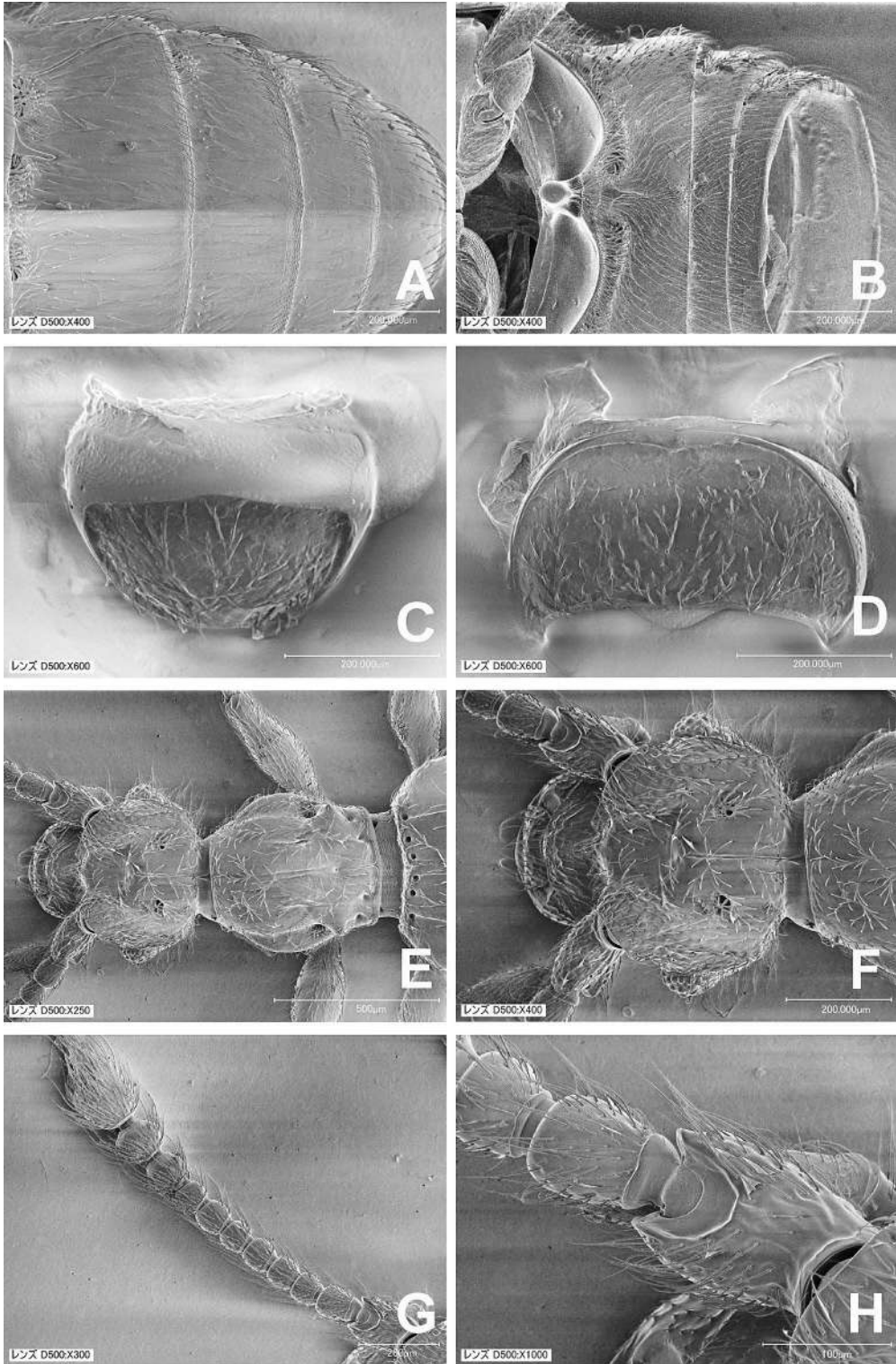
*Distribution.* Honshu (Hokuriku District).

*Remarks.* This new species is very similar to its congeneric species. However, it is separable from them by the very short projection on the inner apex of the antennal segment I in the male, and by the special shape of the endophallus of the male genitalia.

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Fig. 3. *Petaloscopus niisatoi* sp. nov. — A–D, Male; E–H, female. — A, Abdomen in dorsal view; B, ditto, in ventral view; C, abdominal tergite VIII in dorsal view; D, abdominal sternite VIII in ventral view; E, head and pronotum in dorsal view; F, head enlarged; G, antenna; H, antennal segment I enlarged.





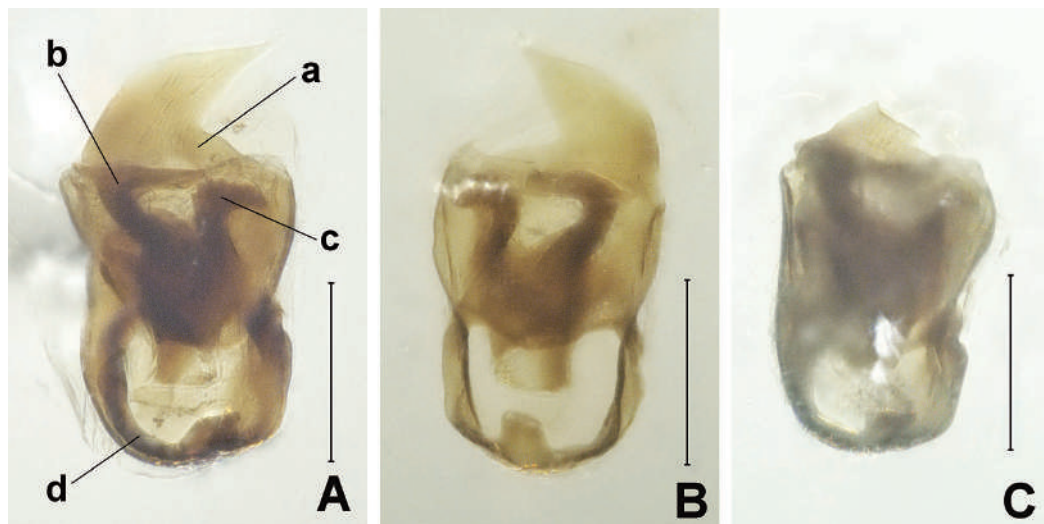


Fig. 4. *Petaloscapus niisatoi* sp. nov. — A, Male genitalia from Karikomi-ike, Fukui Pref. in dorsal view (a, median lobe; b, left sclerite of endophallus; c, right sclerite of endophallus; d, basal foramen); B, ditto from Karikomi-ike in ventral view; C, ditto from Tainai, Niigata Pref. in dorsal view (apical projection is lacked). Scale: 0.2 mm.

#### Acknowledgements

I wish to express my hearty thanks to Dr. Shun-Ichiro NAOMI for his critical reading of the manuscript. My cordial thanks are due to Dr. Hideto HOSHINA (University of Fukui) for his kind offer of type specimens.

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## Hybrid Zones between Closely Related Lucanid Species Belonging to the Genus *Platycerus* (Coleoptera, Lucanidae)

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**Abstract** Using specimens collected around the distribution border between *Platycerus albisomni* and *P. takakuwai* in Utsukushigahara — the Yatsugatake Mountains, and in the area around Mt. Kumotoriyama, we examined male endophallic morphologies and mitochondrial genes. In both species, the geographical borders of morphology and mitochondrial genes were nearly coincident. We inferred that gene flow between the two species was strongly restricted, although hybrids were found. The observed hybrid zone between *P. albisomni* and *P. takakuwai* may be the first recorded tension hybrid zone in Lucanidae.

### Introduction

The genus *Platycerus* GEOFFROY (Coleoptera, Lucanidae) is composed of small stag beetles, and includes more than 40 species in the Northern Hemisphere (IMURA, 2010). In Japan, 10 species are known, which have been mainly adapted to cool–temperate broadleaf deciduous forests (KUBOTA *et al.*, 2011). Within *Platycerus*, the *acuticollis* species group comprises four parapatric species inhabiting most of the mountain ranges on the islands of Honshu, Shikoku, Kyushu, and Okinoshima; these species are mainly distinguished by male endophallic features (KUBOTA *et al.*, 2008; Fig. 1). The distribution borders of these parapatric species have often been inferred along watersheds (KUBOTA *et al.*, 2008). KUBOTA and KUBOTA (2011) examined male endophallic morphology and the mitochondrial cytochrome oxidase subunit I (*COI*) gene of *P. acuticollis* and *P. albisomni* at the border between these species in Gunma Prefecture. They found a very narrow sympatric zone, no morphologically inferred hybrids, and a significant link between endophallic features and mitochondrial types. Hence, reproductive isolation between these species appears to be effective, although rare introgressive hybridization does occur (KUBOTA & KUBOTA, 2011). No other detailed studies of the status of the parapatric *acuticollis* species group have been performed around the distribution border.

We found that *P. albisomni chichibuensis* K. KUBOTA, N. KUBOTA *et* OTOBE, 2008 and *P. takakuwai takakuwai* FUJITA, 1987 are closely distributed in Nagano Prefecture and around the border between Tokyo and Saitama Prefectures. In this study, we examined morphological and mitochondrial gene variation in these beetles to estimate the status and gene flow among species in these regions. This study is dedicated to Dr. Tatsuya NIISATO, the first president of Coleopterological Society of Japan, on the celebration of his 60th birthday.

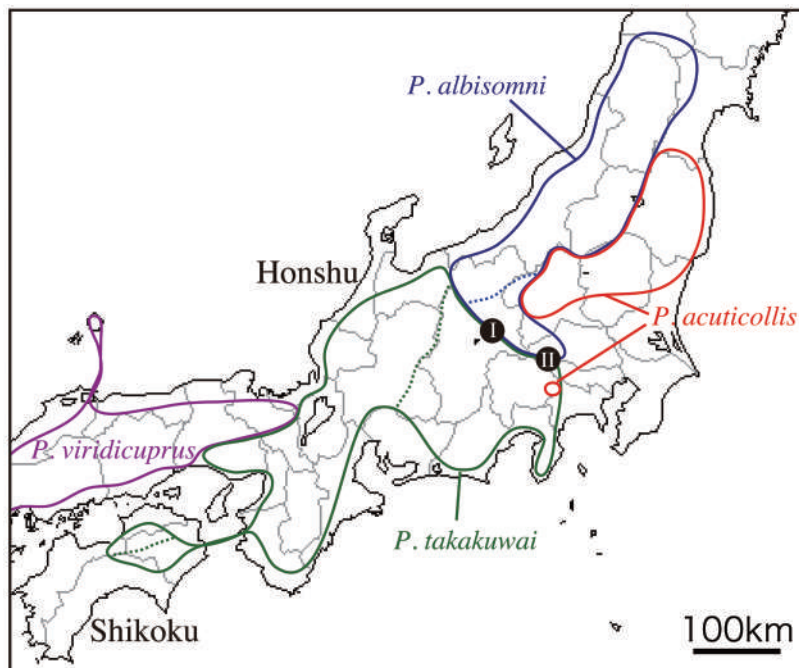


Fig. 1. Distribution ranges of species within the *acuticollis* species group and study are as: I, Area I; II, Area II. Grey lines indicate borders between prefectures. Broken lines indicate borders between subspecies.

## Materials and Methods

### *Study sites and sample collection*

The main study sites for this study were within the region surrounding the Utsukushigahara – Yatsugatake Mountains in Nagano Prefecture (Area I), and supplementary analyses were conducted using specimens collected in the area around Mt. Kumotoriyama in Tokyo and Saitama Prefectures (Area II) (Figs. 1, 2, Tables 1, 2).

We collected adult beetles and larvae of the *acuticollis* species group at 22 collection sites in Area I and at 3 sites in Area II during 2010–2012 (Tables 1, 2). Larvae were reared, and emerged adults were used for analyses. Some of the specimens and genetic data from KUBOTA *et al.* (2011) were also used again for this study.

### *Morphological analysis*

We observed the fully inflated endophalli of adult males under a stereoscopic microscope, and took video images (dorsal view and right lateral view) with a charge-coupled device CCD camera attached to the microscope. The width ratio of medial part of the endophallus to the subapical part from the dorsal view (MW/SW), and the length ratio of the medial part to the subapical part from the right lateral view (ML/SL) distinctly differ between *P. albisomni* and *P. takakuwai* (Fig. 3). We measured these parts using the software Photoshop CS4 Extended 11.0.2 (Adobe, San Francisco, CA, USA).

With the exception of our study sites and other areas near the distribution border, we measured and calculated the MW/SW and ML/SL based on *P. albisomni* (56 males) and *P. takakuwai* (54 males) specimens from the KUBOTA collection, which included most parts of the species ranges (Table

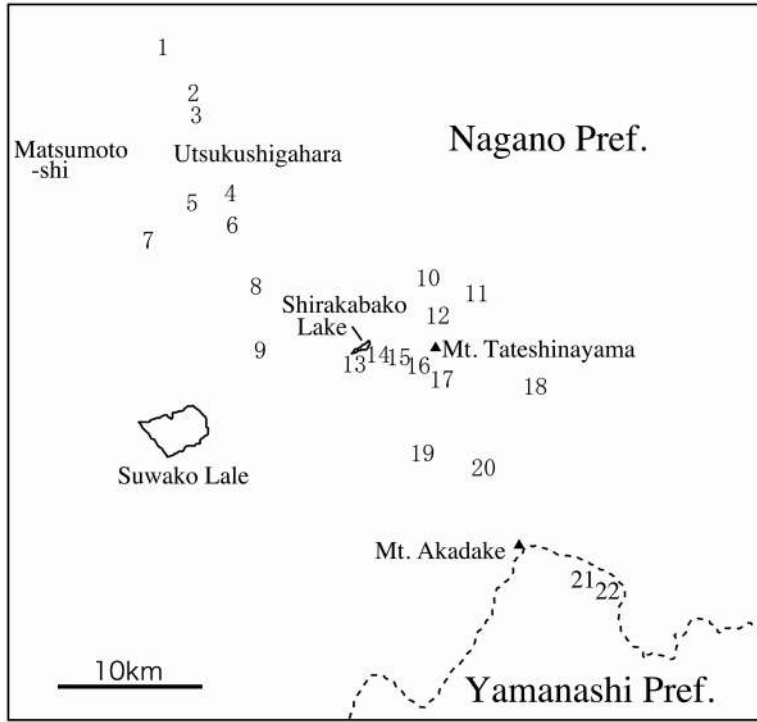


Fig. 2. Study sites (1–22) in Area I.

3). For both species and both ratios, we calculated mean ranges  $\pm 2\sigma$  (ca. 95% confidence interval), where  $\sigma$  is the standard deviation.

Then we measured and calculated the same two ratios based on male specimens collected at Sites 1–22 in Area I (Table 1) and three sites in Area II (Table 2). For MW/SW and ML/SL, we classified individual specimens into the *albisomni* type (within the confidence interval of *P. albisomni*), the *takakuwai* type (within the confidence interval of *P. takakuwai*), and the intermediate type (intermediate ratio between the confidence intervals of both species).

Finally, the specimens with intermediate type MW/SW or ML/SL ratios and specimens for which MW/SW and ML/SL ratios resulted in different species types were classified as hybrids in terms of morphology. Other specimens were classified into either the *albisomni* or *takakuwai* morphological type.

#### Genetic analysis

Using the testes or muscle tissues extracted from specimens listed in Tables 1 and 2, the *COI* gene (831 base pair [bp] fragment; primers C1-J-2183 and L2-N-3014: LOXDALE & LUSHAI, 1998) was amplified using the polymerase chain reaction (PCR) under standard conditions. We decided on a sequence 753–784 bp in length from this region, following the methods described in KUBOTA and KUBOTA (2011), and confirmed whether each sequence belonged to Group I-a-6 or Group I-a-7 as described in KUBOTA *et al.* (2011). Groups I-a-6 and I-a-7 were distinctly identified as *P. albisomni* (sspp. *albisomni* and *chichibuensis*) and *P. takakuwai takakuwai*, respectively (KUBOTA *et al.*, 2011). Therefore we classified the sequences that belonged to Groups I-a-6 and I-a-7 into the *albisomni* and *takakuwai* types, respectively. We also added sequences from KUBOTA *et al.* (2011), as listed in Table 2.

Table 1. Specimens examined from Area I.

Site	Locality	Endophallic feature	COI	Both
1	east of Hofukuji-toge Pass, Ueda-shi, Nagano Pref.	4	6	2
2	east of Takeshi-toge Pass, Ueda-shi, Nagano Pref.	6	6	6
3	east of Takeshi-toge Pass, Ueda-shi, Nagano Pref.	5	3*	3
4	east of Mt. Chausuyama, Nagawa-machi, Nagano Pref.	2	7	1
5	Sanjiro, Matsumoto-shi, Nagano Pref.	2	4	2
6	Tobira-toge Pass, Nagawa-machi, Pref.	3	7	3
7	Mt. Miyairiyama, Matsumoto-shi, Pref.	5	6	4
8	south of Wada-toge Pass, Shimosuwa-machi, Nagano Pref.	1	3	1
9	west of Mt. Kirigamine, Shimosuwa-machi, Nagano Pref.	2	4	2
10	Manidasawa Valley, Saku-shi, Nagano Pref.	1	3	1
11	between Misasa and Fukinotaira, Saku-shi, Nagano Pref.	2	9	2
12	Mt. Ryugamine, Tateshina-machi, Nagano Pref.	2	4	2
13	south of Shirakabako Lake, Chino-shi, Nagano Pref.	1	1	1
14	Hakkano, Tateshina-machi, Nagano Pref.	3	3	2
15	Minamidaira, Tateshina-machi, Nagano Pref.	3	3	2
16	Suzuran-toge Pass, Chino-shi, Nagano Pref.	1	3	1
17	near Ryugen-bashi Bridge, Chino-shi, Nagano Pref.	1	0	0
18	Yachiho-kogen, Sakuho-machi, Nagano Pref.	3	3 + 3*	1
19	Tateshina Village, Chino-shi, Nagano Pref.	1	0	0
20	Karasawa Valley, Chino-shi, Nagano Pref.	9	10	7
21	near Sun Meadows Kiyosato, Hokuto-shi, Yamanashi Pref.	2	0	0
22	Kiyosato, Hokuto-shi, Hokuto-shi, Yamanashi Pref.	5	6	1
Total		64	94	44

\*: data from KUBOTA *et al.* (2011).

#### *Equilibrium between morphological types and mitochondrial types*

When plural morphological or mitochondrial types are found, and when morphological hybrid types are found, hybridization may have occurred. Using the male specimens that we used for both morphological and genetic analyses in this study, we examined equilibrium between morphological types (*albisomni*, *takakuwai*, and hybrid) and mitochondrial types (*albisomni* and *takakuwai*) using a  $\chi^2$  test.

Table 2. Specimens examined from Area II.

Locality	Endophallic feature	COI	Both
west of Mt. Mitsuminesan, Chichibu-shi, Saitama Pref.	9	16	2
Mt. Sobatsubuyama, Okutama-cho, Tokyo Met.	2	1	1
Nojin-one, Okutama-cho, Tokyo Met.	1	1	1
Total	12	18	4

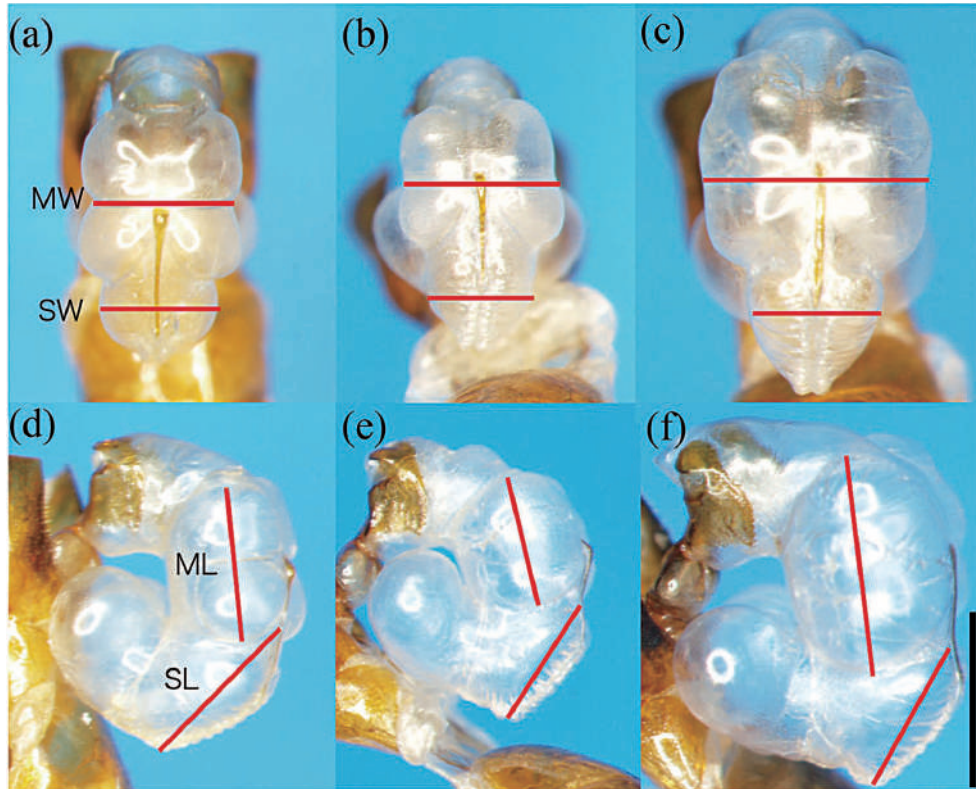


Fig. 3. Endophalli of male genitalia. — (a), (b), (c), Dorsal view; (d), (e), (f), right lateral view. — (a), (d), *Albisomni* type from Site 2; (b), (e), hybrid type from Site 6; (c), (f), *takakuwai* type from Site 20. MW, medial part width; SW, subapical part width; ML, medial part length; SL, subapical part length. Scale indicates 1 mm.

## Results

### *Morphological analysis*

Representative photographs of the endophalli of *P. albisomni*, *P. takakuwai* and hybrid-like specimens from Area I are shown in Fig. 3.

The range of the MW/SW confidence interval for *P. albisomni* was 0.8606–1.1674, and that for *P. takakuwai* was 1.2874–1.7845. The range of the ML/SL confidence interval for *P. albisomni* was 0.6722–0.9726, and that for *P. takakuwai* was 0.9774–1.4423. The specimens that exhibited intermediate ratios between the confidence intervals of the two species were classified as the intermediate type.

Based on the MW/SW and ML/SL types, the specimens from Area I and II were classified into *albisomni*, *takakuwai*, and hybrid morphological types.

The ratio of morphological types for each site in Area I is shown in Fig. 4. Hybrid types were distributed in Site 2–9, 12, 14, and 15. Only the *albisomni* type was found in Site 1, and only the *takakuwai* type was found in all other sites.

Among the Area II samples, the hybrid type and both species types were found at Mt. Mitsuminesan, and only the *takakuwai* type was found at Mt. Sobatsubuyama and Nojin-one (Fig. 5(a)).

Table 3. Specimens used to calculate confidence intervals of the MW/SW and ML/SL.

Species	Subspecies	Locality	No.		
<i>Platycerus albisomni</i>	<i>albisomni</i>	Yumiharidaira, Nishikawa-machi, Yamagata Pref.	5		
		Miike, Hinoemata-mura, Fukushima Pref.	2		
		Mt. Kenashiyama, Nozawaonsen-mura, Nagano Pref.	14		
		Mt. Kurokurayama, Joetsu-shi, Niigata Pref.	8		
		Shiraike, Itoigawa-shi, Niigata Pref.	7		
	<i>chichibuensis</i>	Jurokumagari-toge Pass, An'naka-shi, Gunma Pref.	1		
		Mt. Akagunayama, Fujioka-shi, Gunma Pref.	6		
		Mt. Odokeyama, Fujioka-shi, Gunma Pref.	2		
		Irikawa, Otaki, Chichibu-shi, Saitama Pref.	2		
		Minenohara, Suzaka-shi, Nagano Pref.	4		
		Jikkoku-toge Pass, Sakuho-machi, Nagano Pref.	5		
		<i>P. takakuwai</i>	<i>takakuwai</i>	Mt. Mitosan, Okutama-machi, Tokyo Met.	2
				Mt. Kanyudoyama, Yamakita-machi, Kanagawa Pref.	4
				Bogasawa, Hakone-machi, Kanagawa Pref.	1
Hacchoike Pond, Izu-shi, Shizuoka Pref.	3				
Mt. Noborio, Kawazu-cho, Shizuoka Pref.	3				
Fuji-rindo, Narusawa-mura, Yamanashi Pref.	1				
Nakafusa valley, Azumino-shi, Nagano Pref.	1				
Mt. Torikurayama, Oshika-mura, Nagano Pref.	7				
<i>akitai</i>	Mt. Funayama, Takayama-shi, Gifu Pref.		4		
	Mt. Shishigatake, Watarai-cho, Mie Pref.		2		
	Mt. Oborasan, Tsu-shi, Mie Pref.		2		
	Mt. Myojindake, Matsusaka-shi, Mie Pref.		6		
	Mt. Funataniyama, Shinoyama-shi, Hyogo Pref.		2		
	Mt. Mataniyama, Taka-cho, Hyogo Pref.		1		
	Mt. Kasagatayama, Taka-cho, Hyogo Pref.		3		
	Mt. Kasasugiyama, Shiso-shi, Hyogo Pref.		2		
	Mt. Tochioyama, Shikokuchuo-shi, Ehime Pref.		5		
	<i>namedai</i>		Mt. Kumosoyama, Kamiyama-cho, Tokushima Pref.	1	
			Dosu-toge Pass, Kamiyama-cho, Tokushima Pref.	1	
			Mt. Tasukeyama, Aki-shi, Kochi Pref.	3	
Total			110		



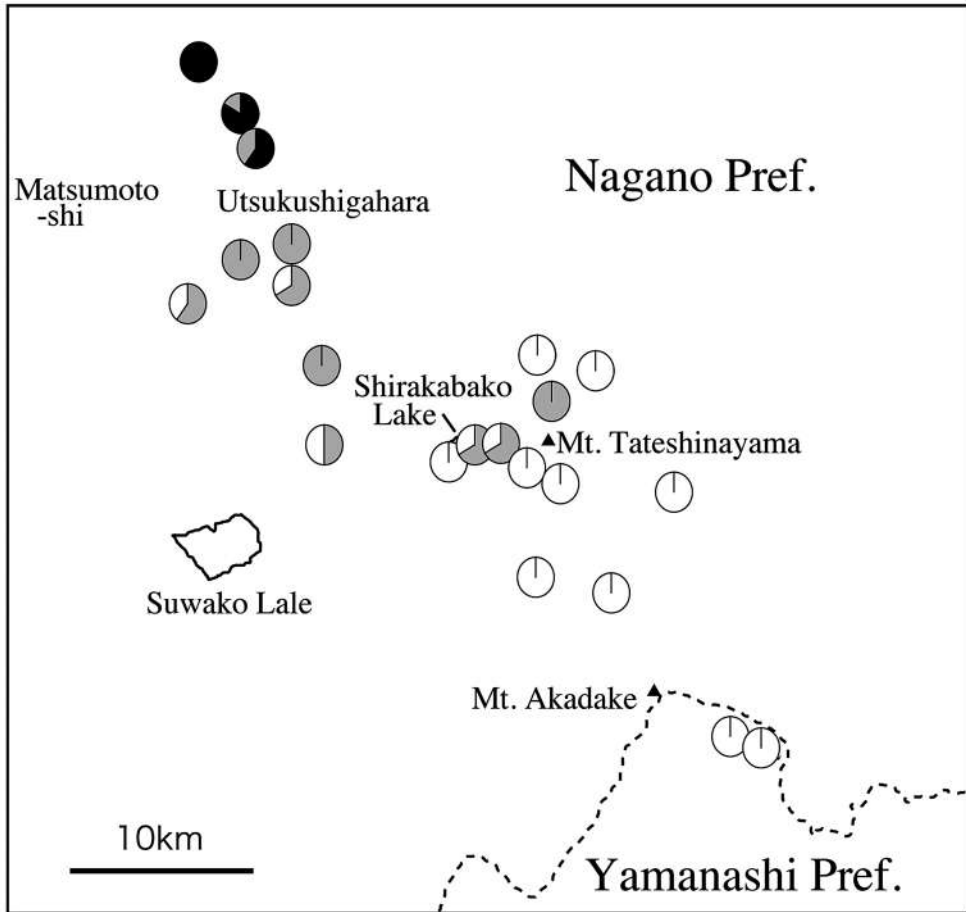


Fig. 4. Male endophallus morphological types at each site in Area I. Pie chart represents type ratios. Black indicates *albisomni* type; grey indicates hybrid type; white indicates *takakuwai* type.

#### Genetic analysis

Among the Area I samples, both species types were sympatrically found in Sites 4 and 6. Only one of the two types was found in the other sites (Fig. 6). Among the Area II samples, only the *albisomni* type was found at Mt. Mitsuminesan, and only the *takakuwai* type was found at Mt. Sobat-subuyama, and Nojin-one (Fig. 5(b)).

#### Equilibrium between morphological types and mitochondrial types

We examined the equilibrium between Area I morphological and mitochondrial types using samples with both data from Site 2–9, 12, 14, and 15. We observed significant non-equilibrium ( $P < 0.01$ ,  $\chi^2$  test,  $n = 28$ ). We did not perform the same analysis on Area II due to insufficient sample size.

### Discussion

In the range extending from the Takeshi-toge Pass (Sites 2 & 3) to the northwestern foot of Mt.

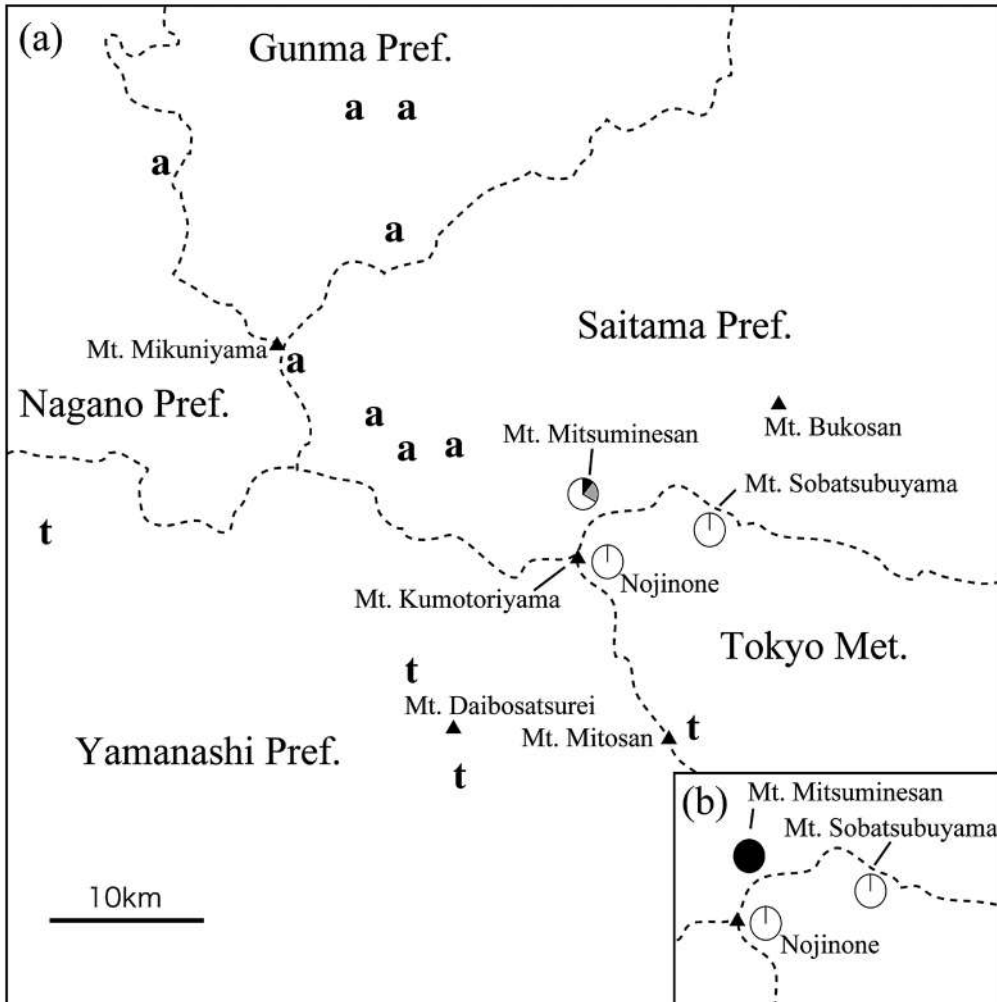


Fig. 5. Morphological and genetic types at each site in Area II. — (a) Male endophallus morphological type; (b) genetic types of mitochondrial genes. Pie chart represents type ratios. Black indicates *albisomni* type; grey indicates hybrid type; white indicates *takakuwai* type. a and b indicate *Platycerus albisomni* and *P. takakuwai* collecting sites, respectively, from KUBOTA *et al.* (2008), KUBOTA *et al.* (2011), and additional records by the authors of this study.

Tateshinayama (Sites 12 & 15) in Area I, we found males with endophalli representing intermediate morphologies between *P. albisomni* and *P. takakuwai*. These were inferred to have originated from hybridization (Fig. 4). The *albisomni* and *takakuwai* types of mitochondrial gene were sympatric around the Tobira-toge Pass (Sites 4 & 6) (Fig. 6). The borders of morphological type and mitochondrial genetic type were nearly coincident. Where hybridization may have occurred, significant non-equilibrium was recognized. These phenomena indicate strongly restricted gene flow between *P. albisomni* and *P. takakuwai*, although hybrids were produced. Therefore, there should be a tension hybrid zone (ARNOLD, 1997) in Area I, and probably also in Area II (around Mt. Mitsuminesan: Fig. 5). The width of a hybrid zone is positively correlated with the dispersal ability (BARTON & HEWITT,

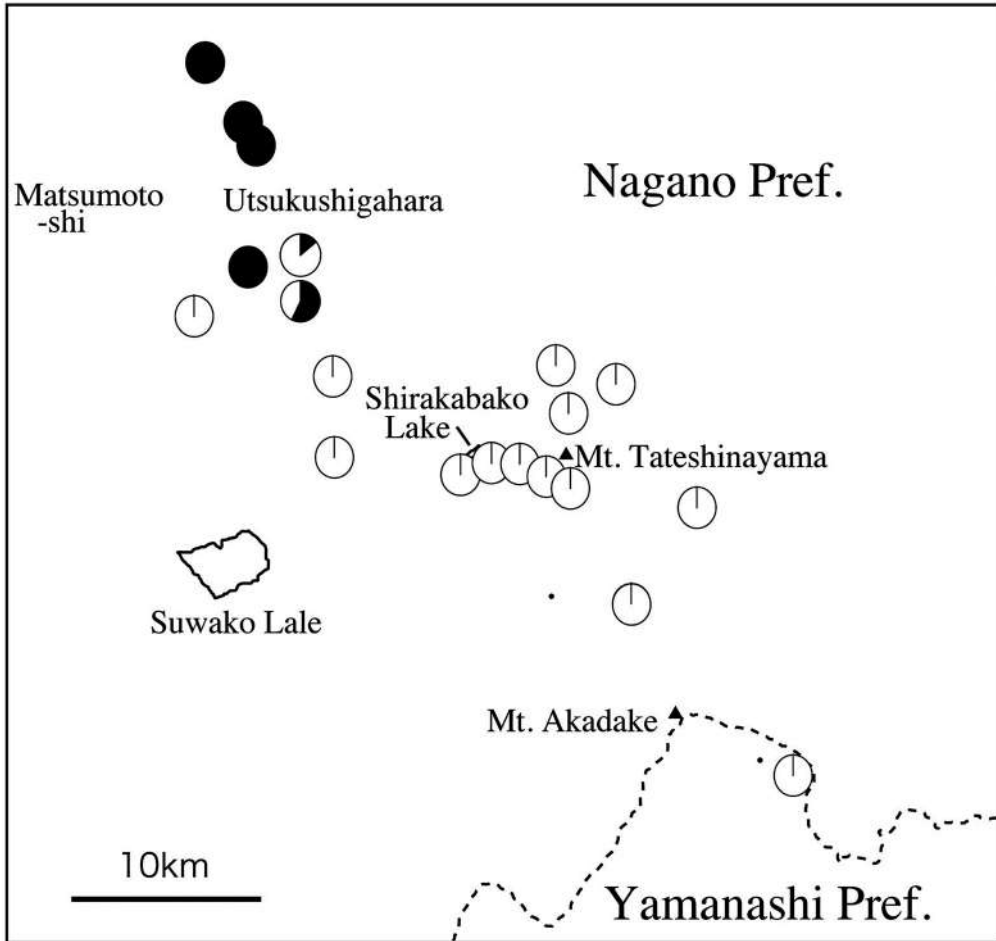


Fig. 6. Genetic types of mitochondrial genes at each site in Area II. Pie chart represents type ratios. Black indicates *albisomni* type; white indicates *takakuwai* type.

1985). Because *Platycerus* species appear to disperse easily in the plateau-like Area I, the hybrid zone in Area I may be wider than that in Area II. These hybrid zones must have been formed by secondary contact between the two species.

The distribution range of *P. albisomni* extends from the northern to central part of Honshu. By contrast, the range of *P. takakuwai* covers the large area of central Honshu, and extends over part of Shikoku (Fig. 1). The hybrid zone is approximately 20–30 km wide in Area I, but very narrowly restricted compared to the total area of the distribution ranges of both species.

In a sympatric zone around the distribution border of *P. acuticollis* and *P. albisomni* in Gunma Prefecture, no hybrid-like intermediate individuals were found, although introgressive hybridization may rarely occur (KUBOTA & KUBOTA, 2011). In other Lucanidae genera, natural hybrids have been found (e.g., between *Dorcus hopei* and *D. rectus*, KUROSAWA, 1985; between *Lucanus cervus* and *L. tetraodon*, SOLANO *et al.*, 2016). However, hybrids are rarely found between widely sympatric species. Those observations between *P. albisomni* and *P. takakuwai* in this study may represent the first record of a tension hybrid zone in Lucanidae.

### Acknowledgments

We thank the following persons for their sample collections: K. WATANABE, H. OTOBE, and K. YOSHIDA. This study was partly supported by Grants-in-Aid (20248015, 25292082) to K. KUBOTA from the Japan Society for the Promotion of Science.

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## A New Species of the Genus *Leptaulax* (Passalidae, Coleoptera) from Vietnam

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**Abstract** A new species of the genus *Leptaulax* is described from Vietnam, under the name of *L. niisatoi* sp. nov. A key to the *Leptaulax* species from Vietnam is provided.

Passalidae are a family of Scarabaeoidea, which have often been cited as subsocial beetles in entomological literature (e.g., REYES-CASTILLO & HALFTER, 1983, 1984; COSTA, 2006). Many species of Passalidae have been known to occur in the decayed wood in family groups consisting of individuals of various developmental stages (KON & JOHKI, 1992; SCHUSTER & SCHUSTER, 1997; ENTO *et al.*, 2003). The distribution of Passalidae is mainly pantropical, although a few species occur in the Palearctic and Nearctic regions (BOUCHER, 2005). Up to the present, 16 species as listed below have been known from Vietnam (HINCKS & DIBB, 1935; BOUCHER, 1993; IWASE, 1998; KON *et al.*, 2001). Recently, we have found some specimens of an undescribed species of *Leptaulax* from Vietnam in the first author's collection. Herewith, we describe a new species of *Leptaulax* from Vietnam, and provide a key to the Vietnamese species of *Leptaulax*.

We follow GRAVELY (1914), LINDOROTH (1957) and NEUMANN *et al.* (2013) for the terms used in the following description.

### *Leptaulax niisatoi* sp. nov.

(Figs. 1, 2)

*Description of holotype.* Male: Length from apical margin of head to apices of elytra 21.2 mm. Body relatively convex for this genus, ratio of prothorax thickness to pronotum width 0.57; dorsal and ventral surfaces jet black.

Outer margin of mandible obtusely angulate at basal 1/4, almost straight in middle portion, curved inwards in distal portion; anterior lower tooth triangular, with apex obtusely angled; lowest terminal tooth triangular, with apex somewhat rounded; upper tooth distinct, with apex obtusely angled; upper margin of mandible slightly swollen just prior to upper tooth. Labrum punctate and hairy, almost symmetrical, with anterior margin weakly emarginate. Outer margin of head with five marginal tubercles; inner marginal tubercles strongly produced forwards, with apex rounded, much larger than the outer ones; distance between inner marginal tubercles slightly larger than the double of that between inner and outer ones; outer marginal tubercles triangular, with apex pointed; median tubercle small but distinct. Canthus polished on upper surface, with anterior angle obtusely angled. Eye not large, not projecting laterally beyond canthus. Frontal area polished and hairless, median keel indis-

tinct, shallowly punctate in posterior portion; frontal ridge reaching to the base of inner tubercle, and fading at distal end; depressed area between frontal and parietal ridges polished, with coarse punctures; parietal ridge extending to supraorbital ridge; area behind parietal ridge with setiferous punctures; areas posterior to eye and supraorbital ridge with punctures. Mentum polished, with setiferous punctures in lateral portion, which is slightly curved inwards and weakly pointed at distal end; anterior margin weakly convex forwards in central portion; posterior margin slightly emarginate; scar of mentum U-shaped. Hypostomal process smooth, polished and hairless, without longitudinal groove.

Pronotum almost rectangular, strongly and coarsely punctate in lateral portion, with median sulcus distinct; lateral margin slightly rounded; anterior angle distinctly pointed forwards; posterior angle rounded; lateral scar densely punctate, hairless, opaque in the punctures. Posterior plate of prosternum pentagonal, polished in anterior portion, rugose in posterior portion. Mesothoracic episternum finely microgranulose; mesosternum impunctate, polished in central portion, rough and opaque in lateral scar and antero-lateral portion. Metasternum entirely hairless; central area polished and impunctate; anterior intermediate area matte; posterior intermediate area polished, with strong and large punctures, the punctures sparser in outer portion; lateral area narrow, well defined, slightly widened posteriorly and matte.

Elytron flat on dorsal surface, slightly widened posteriorly, hairless at humerus; dorsal elytral striae of 1st to 4th finely punctate; lateral elytral striae of 5th to 10th with large and somewhat oblong punctures. Meso- and metatibiae polished on upper surface.

First visible abdominal sternite small, triangular, hairless, matte; 2nd to 5th sternites hairless, with a small rugose area in lateral portion; posterior margin of 5th sternite gently emarginate; 6th sternite almost impunctate and hairless excepting posterior margin, not distinctly bordered on posterior margin.

Male genitalia robust; basal piece longer than parameres in ventral view, with lateral margins divergent distally, with a triangular membranous incision at the middle of distal margin in ventral view; paramere projected obliquely in latero-distal end in ventral view; penis bimodal at apex in ventral view.

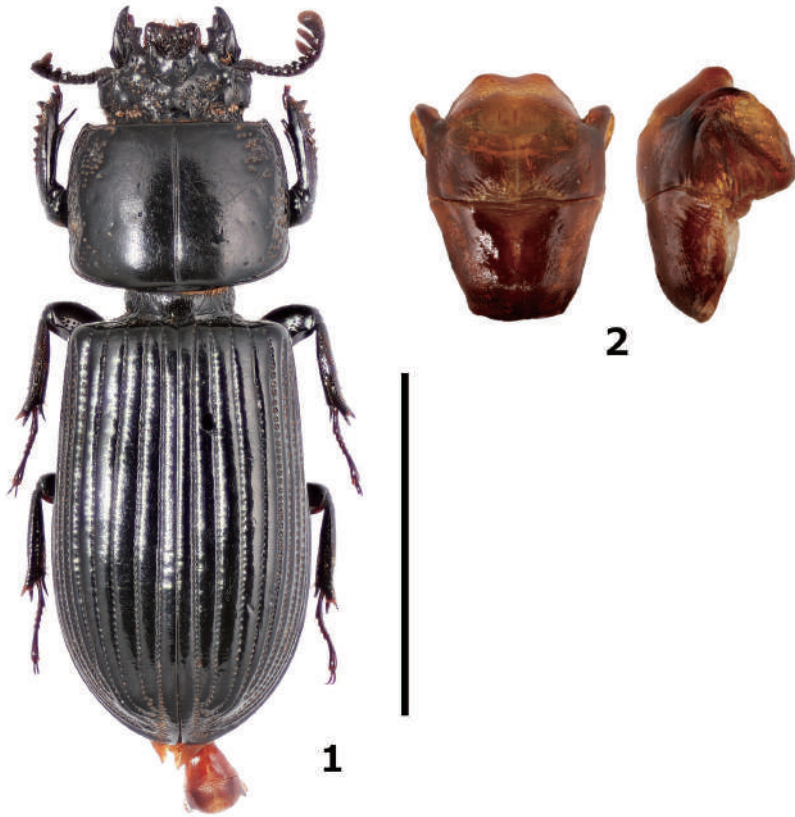
*Variation.* Body length of the paratypes ranges from 21.6 to 22.1 mm ( $n = 3$ ). Sexual dimorphism is evident in the 6th visible abdominal sternite: *i.e.*, in the female, it is densely punctate and hairy in the central portion whereas in the male, it is almost hairless excepting on the posterior margin.

*Type series.* Holotype: ♂, Conia, Mt. Pia Oac, Cao Bang Province, Vietnam, 24.V.1992. Paratypes: 1 ♂, 2 ♀♀, the same as the holotype.

*Type depository.* The holotype is deposited in the collection of Vietnam National Museum of Nature, Hanoi.

*Etymology.* The specific name is dedicated to Dr. T. NIISATO, one of the most dominant figures of the coleopterology in Japan.

*Notes.* The present new species appears similar to *Leptaulax pacholatko* IWASE, 1998 in the body size and the pattern of sexual dimorphism, but can be distinguished from the latter by the following characteristics: Pronotum strongly and densely punctate in lateral portion whereas weakly and sparsely punctate in *L. pacholatko*; lateral striae of elytron with large and somewhat oblong punctures whereas finely punctate in *L. pacholatko*; male genitalia differently shaped (see also IWASE, 1998).



Figs. 1–2. *Leptaulax niisatoi* sp. nov. — 1, Habitus of male (holotype); 2, male genitalia (holotype), ventral view (left), right lateral view (right). Scale: 10 mm for Fig. 1; 1 mm for Fig. 2.

**Key to the Vietnamese Species of *Leptaulax***

- 1 (2) Hypostomal process with distinct longitudinal groove on ventral surface; body length 17–19 mm ..... *L. cyclotaenius* KUWERT
- 2 (1) Hypostomal process without longitudinal groove on ventral surface. .... 3
- 3 (4) Parietal ridge not extending to supraorbital ridge, terminated abruptly at distal end; body length 21–30 mm ..... *L. dentatus* (FABRICIUS)
- 4 (3) Parietal ridge extending to supraorbital ridge ..... 5
- 5 (6) Lateral striae of elytron with large punctures; body length 21–22 mm. .... *L. niisatoi* sp. nov.
- 6 (5) Lateral striae of elytron finely punctate ..... 7
- 7 (8) Posterior margin of 5th visible abdominal sternite strongly emarginate; body length 20–23 mm ..... *L. pacholatkoii* IWASE
- 8 (7) Posterior margin of 5th visible abdominal sternite almost straight; body length 18–21 mm ..... *L. bicolor* (FABRICIUS)

## List of the Passalidae Species Recorded from Vietnam

### Subfamily *Aulacocyclinae* KAUP, 1868

#### Genus *Ceracupes* KAUP, 1871

- Ceracupes arrowi* HELLER, 1911  
*Ceracupes chingkini* OKANO, 1988  
*Ceracupes fronticornis* (WESTWOOD, 1842)

### Subfamily *Passalinae* LEACH, 1815

#### Genus *Macrolinus* KAUP, 1868

- Macrolinus sikkimensis* (STOLICZKA, 1873)

#### Genus *Episphenus* KAUP, 1871

- Episphenus annamensis* GRAVELY, 1919

#### Genus *Ophrygonius* ZANG, 1904

- Ophrygonius birmanicus* GRAVELY, 1914  
*Ophrygonius convexifrons* (ZANG, 1904)  
*Ophrygonius griveaui* BOUCHER, 1993  
*Ophrygonius tanae* BOUCHER, 1993

#### Genus *Aceraius* KAUP, 1868

- Aceraius aequalis* (GRAVELY, 1918)  
*Aceraius grandis* (BURMEISTER, 1847)  
*Aceraius helferi* KUWERT, 1891

#### Genus *Leptaulax* KAUP, 1868

- Leptaulax bicolor* (FABRICIUS, 1801)  
*Leptaulax dentatus* (FABRICIUS, 1792)  
*Leptaulax cyclotaenius* KUWERT, 1891  
*Leptaulax niisatoi* sp. nov.  
*Leptaulax pacholatkoii* IWASE, 1998

## Acknowledgments

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## A New Species of the Genus *Ochicanthon* (Coleoptera, Scarabaeidae) from Thailand

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**Abstract** A new species of *Ochicanthon* is described from Ko Samui, Thailand under the name of *O. niisatoi* sp. nov.

*Ochicanthon* VAZ-DE-MELLO is a genus of Deltophilini (see also TARASOV & DIMITROV, 2016), including about 50 known species distributed widely in the Oriental region (SCHOOLMEESTERS, 2016). This genus diversifies especially in Borneo and India (KRIKKEN & HUIJBREGTS, 2007; OCHI *et al.*, 2008; LATHA *et al.*, 2011).

Up to the present, four species of *Ochicanthon* have been recorded from Thailand: *O. obscurus* (BOUCOMONT, 1920), *O. ochii* (HANBOONSONG *et MASUMOTO*, 2001), *O. thai* (PAULIAN, 1987) and *O. thailandicum* (MASUMOTO, 1989). Recently, we have examined many specimens of an *Ochicanthon* species collected from Ko Samui (Samui Island) located in the gulf of Thailand. The present form from Ko Samui appears to closely resemble *O. niinoi* OCHI *et KON*, 2014 from the Malay Peninsula. However, after a close comparison, we concluded that the present form from Ko Samui is specifically distinct from *O. niinoi* in several external and male genital characters. Thus, we describe it as a new species of *Ochicanthon* from Ko Samui, Thailand.

The abbreviations for measurements are as follows: Bl, body length from anterior margin of head to apices of elytra; Hl, head length along midline; Hw, head width at the widest place; Pl, pronotal length along midline; Pw, pronotal width at the widest place; El, elytral length from level of humeri to apices; Ew, elytral width at the widest place.

### *Ochicanthon niisatoi* sp. nov.

(Figs. 1–8)

*Description of holotype.* Bl: 4.2 mm.

Male: Body small-sized for this genus, oblong-oval, weakly convex. Dorsal and ventral sides shining and almost glabrous, the latter clothed with inconspicuous short hairs in part. Color unicolor brown though marginal portions of head and sides of pronotum paler; mouth parts, palpi and legs pale brown; antennae with foot-stalk brown, club segments dark brown.

Head 1.4 times as wide as long (Hl : Hw = 1.0 : 1.4); clypeus strongly produced forward, with two strong median clypeal teeth; interspace between two teeth broadly and deeply notched; anterior margin except for median two teeth almost even though very obtusely angled at clypeo-genal junction; frontoclypeal suture finely defined laterad and entirely effaced in middle; genae moderately produced laterad, with genal corner distinctly and obtusely angled at middle; surface densely covered with strong and a little coarse punctures, which become distinctly smaller anteriorly except for impunctate apico-median portion. Eyes large, with interspace between them ca. 3.9 times as wide as the



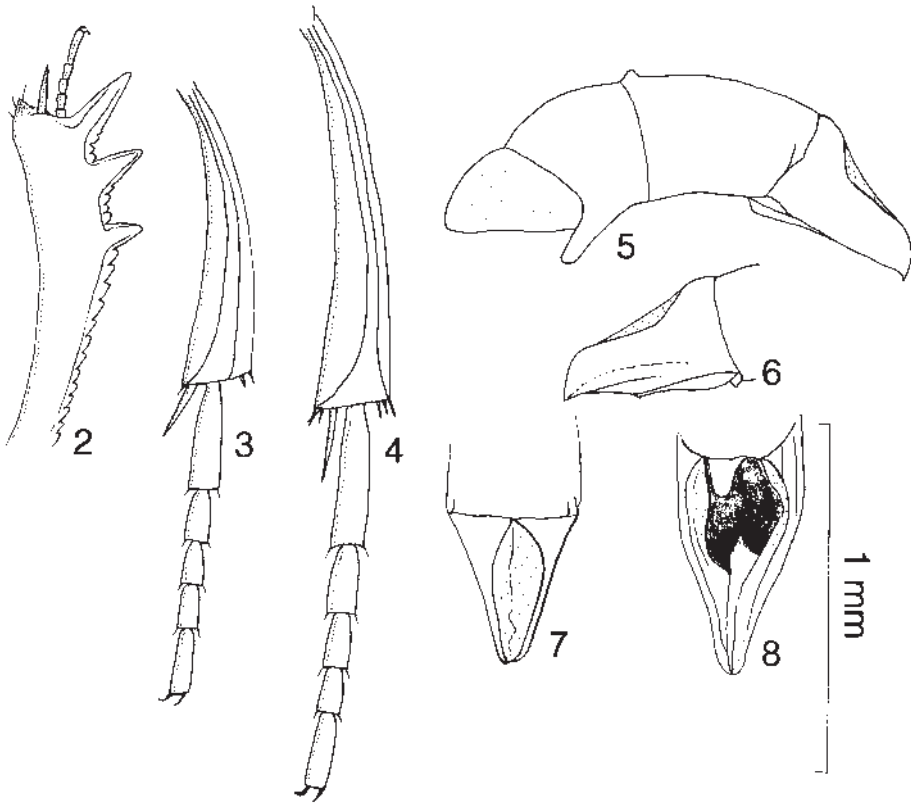
Fig. 1. Habitus of *Ochicanthon niisatoi* sp. nov., holotype male, dorsal view. Scale: 2 mm.

width of an eye.

Pronotum weakly convex above, simply formed, 1.7 times as wide as long ( $Pl : Pw = 1.3 : 2.2$ ), widest at base; anterior margin emarginate, finely bordered though marginal border forming a small, triangular and smooth area at middle; lateral margins even and narrowed toward apex in basal three-fourths, then rounded apicad in apical fourth, finely bordered; anterior angles obtuse; posterior ones very obtuse, though distinct in lateral view; basal margin widely rounded, unbordered; disc with a short weak longitudinal carina which is parallel with lateral margin, extending to basal two-fifths; surface densely covered with strong punctures in middle, which become denser and slightly smaller anteriorly and laterally.

Elytra 1.2 times as wide as long ( $El : Ew = 2.2 : 2.7$ ), widest at basal two-fifths; striae a little broadly grooved, with 7th stria wider and deeper than the other striae; striae punctures transverse, obviously invading either margin of intervals; 1st to 4th intervals almost flat, the remaining intervals slightly convex, somewhat sparsely covered with small but distinct punctures.

Pygidium fairly strongly convex near apex, densely covered with small punctures. Metaventricle with a weak median longitudinal groove in basal two-fifths; surface slightly densely covered with small but strong punctures, which become sparser and finer toward median portion. First to fourth visible abdominal ventrites weakly shining, arranged with two or three irregular transverse rows of small punctures along basal margin, and impunctate on the remaining apical portions; fifth to sixth ones shining, wholly covered with similar punctures as those on the preceding ventrites. Pro- and metafemora with simple inner edge. Protibiae broad, weakly incurved, clearly expanded apicad, with three sharp external teeth, and finely denticulate between the teeth and on the remaining external margin; inner distal end slightly produced and rounded; terminal spur sharp. Mesotibiae short, incurved and



Figs. 2–8. Various parts of *Ochicanthon niisatoi* sp. nov., male. — 2, Right protibia, dorsal view; 3, right mesotibia; 4, right metatibia; 5, aedeagus, left lateral view; 6, right paramere, right lateral view; 7, parameres, dorsal view; 8, ditto, ventral view. Scale: 1 mm.

gradually broadened apicad; mesotarsus with basal segment short, 0.26 mm in length, 0.08 mm in breadth, and 3.2 times as long as wide; upper terminal spur slightly shorter than basal segment. Metatibiae slender, simply prolonged and incurved; metatarsus with basal segment 0.38 mm in length, 0.09 mm in breadth, and 4.2 times as long as wide; terminal spur short, a little longer than a half of basal segment of metatarsus.

Aedeagus large, distinctly curved in lateral view, with phallobase 1.08 mm in length in lateral view. Parameres relatively small, 0.48 mm in length in lateral view, slightly asymmetrical; both parameres broad at base, and suddenly constricted apicad in lateral view; ventral side with an asymmetrical lobe which is defined by darkened color basally.

*Variation.* Bl: 3.9–4.4 mm; Bw: 2.6–2.8 mm ( $n = 54$ ). Color often darker.

Female: Dorsal surface more strongly shining. Eyes only slightly larger than those of male, interspace between eyes 3.1–3.7 times as wide as an eye ( $n = 10$ ). Pronotum more sparsely and more finely punctate on antero-median portion. Protibiae with three external teeth slightly stronger than those of male.

*Type series.* Holotype: ♂, S. Thailand, Ko Samui Is., near Namuang, V.1989, native collector. Paratypes: 30 ♂♂, 21 ♀♀, same data as the holotype.

*Type depository.* The holotype is deposited in the collection of the National Museum of Nature and Science, Tsukuba.

*Distribution.* S. Thailand (Ko Samui).

*Etymology.* The present new species is dedicated to Dr. T. NIISATO, one of the most dominant figures of the coleopterology in Japan.

*Notes.* The present new species is closely related to *Ochicanthon niinoi* OCHI et KON, 2014 from the Malay Peninsula, but can be distinguished from the latter by the following characteristics: 1) eyes distinctly large and the interspace between them narrow, ca. 3.1–3.9 times as wide as an eye ( $n = 11$ ), whereas the eyes smaller and the interspace between them broad, ca. 6.4 times as wide as an eye ( $n = 1$ ) in *O. niinoi*; 2) head with genal corner distinctly and obtusely angled, whereas genal corner obviously rounded in *O. niinoi*; 3) head distinctly relatively large comparing with pronotum, whereas relatively small comparing with pronotum in *O. niinoi*; 4) aedeagus with parameres quite differently shaped and almost symmetrical in dorsal view, whereas parameres asymmetrical in dorsal view in *O. niinoi*.

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We express our hearty thanks to Dr. T. NIISATO for taking the photograph.

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## Notes on Buprestid Beetles from the Philippines

### Part III. Description of a New Species and the Upgrade Rank of a Subspecies of the Genus *Epidelus* (Coleoptera, Buprestidae, Chrysochroini)

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**Abstract** *Epidelus niisatoi* sp. nov. is described from the Philippines. *Epidelus wallacei philippinensis* (SAUNDERS, 1874) is raised up to an independent species.

### Introduction

The genus *Epidelus* DEYROLLE, 1865 was described based on the type species of *Chalcophora wallacei* THOMSON, 1857 from Borneo. According to the world catalogue (BELLAMY, 2008), this genus included two species with a subspecies, *E. wallacei wallacei* THOMSON, 1857 from Indonesia and Malaysia, *E. w. philippinensis* SAUNDERS, 1874 from the Philippines, and *E. seramensis* THERY, 1934 from Indonesia. Further one species, *E. borneensis* (THERY, 1925), was added to the member of genus by reason of that the genus *Epidelomorphus* was treated as a junior synonym of *Epidelus* by HOLYŃSKI (2009). In this paper, the genus *Epidelus* from the Philippines is studied following my previous paper (OHMOMO, 2002). According to a careful examination based on a lot of the specimens of this genus, it is concluded that *E. w. philippinensis* from the Philippines should be an independent species, and not a subspecies of *E. wallacei*. Further, one new species from Luzon Is., Mindanao Is., Samar Is., and Leyte Is. is recognized.

The holotype and allotype designated in this study is deposited in the National Museum of Nature and Science, Tsukuba (NMNS), and the other materials used in this study are in S. OHMOMO collection, Tsukuba, Japan (COTJ). I wish to express my heartfelt thanks to Dr. Tatsuya NIISATO for taking photographs inserted in this paper.

The body size is expressed as the minimum–maximum length and the minimum–maximum width. The proportional rate between maximal length (L) and maximal width (W) are expressed as the abbreviation L/W.

***Epidelus philippinensis*** SAUNDERS, 1874

[Japanese name: Hime-chairo-ruritamamushi]

(Figs. 1–3)

*Epidelus wallacei* var. *philippinensis* SAUNDERS, 1874: 314.

*Epidelus wallacei philippinensis*: KERREMANS, 1892: 48; OBENBERGER, 1926: 135; FISHER, 1926: 236; BELLAMY, 2008: 478; HOLYŃSKI, 2009: 206.

*Ephidelus* (sic!) *wallacei philippinensis*: AKIYAMA & OHMOMO, 2000: 155, fig. 34-3.

**Redescription.** Length: 14.4–18.6 mm; width: 5.3–7.5 mm. Body shape rather robust. Body centrally golden green; head, antennae and legs shining golden green with blue tinge; frons shining golden green with orange tinge at center; pronotum golden brown with greenish tinge; elytra shining gold-

en brown with feeble greenish tinge. Head obviously narrower than the anterior margin of pronotum; eyes convergent above at inner margins, moderately convex, elliptical; vertex with a moderate median groove connecting to a deep median groove of frons, sparsely punctate; frons finely and sparsely punctate, with two shallow transverse depressions at both sides of the median groove and just upon clypeus; antennae serrate from 5th segment, stout in 1st and 3rd segments, subglobular in 2nd, triangular from 4th to 11th, 1st segment about 1.2 times longer segment than that of 3rd, 1st > 3rd > 4th = 5th = 6th. Pronotum widest at base ( $L/W = 0.59$ ); anterior margin almost straight; sides straightly convergent from base to anterior angle; posterior margin distinctly bisinuate; anterior angle obtuse and posterior angle acute; disc with two transverse narrow depressions along anterior margin, two longitudinal shallow depressions along both sides and two small hollows at central area; surface moderately punctate, scattered with ivory-white short hairs along sides. Scutellum small and trapezoidal. Prosternal process subparallel between coxal cavities with a small median lobe at top (Fig. 2), clothed sparsely with long brown hairs, distinctly marginate at sides, wrinkled and coarsely punctate, with a longitudinal median ridge which is roughly and densely punctate. Elytra more robust than length ( $L/W = 1.79$ ), with shoulders weakly prominent; sides regularly convergent from just beyond the prominences to apex, finely denticulate in apical one-seventh; disc with several obsolete longitudinal ridges, not formed striae; surface finely punctate, clothed with inconspicuous brown hairs along sides; suture not marginate. Male genitalia small and slender as shown in Fig. 3.

*Sexual dimorphism.* Female is very similar to male except for rounded abdominal apex, instead of triangularly incised in male.

*Materials examined.* 1 ♂ (COTJ), V-VI.2009, 2 ♂♂, 1 ♀ (COTJ), IX.2009, Mt. Parker, NE-Mindanao, the Philippines, D. MOHAGAN leg.; 1 ♂ (COTJ), VI.2002, 3 ♂♂, 1 ♀ (COTJ), VI.2006, 1 ♂ (COTJ), VI.2002, Mt. Balocae, Leyte, the Philippines, D. MOHAGAN leg.; 1 ♂ (COTJ), V.2005, Mt. Kadohaan, Leyte, the Philippines, D. MOHAGAN leg.

*Distribution.* The Philippines (Leyte Is., Luzon Is., Mindanao Is., Palawan Is., Samar Is. and Sibuyan Is.).

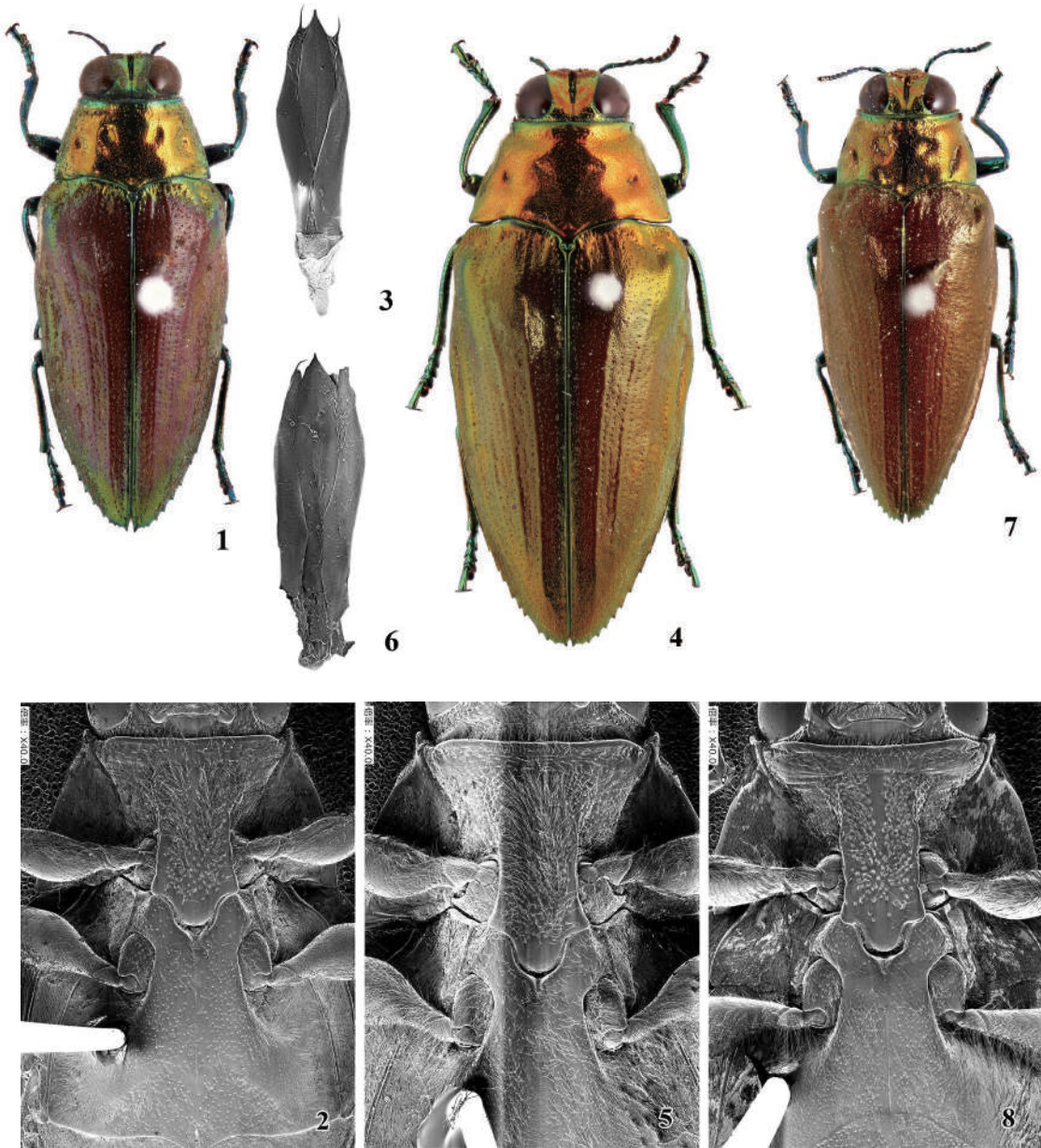
*Remarks.* This species closely allied to *Epidelus wallacei* (THOMSON, 1857) from Malaysia (Sabah and Sarawak) and Indonesia (Kalimantan and Sulawesi), but distinguished from the latter by the following points: 1) pronotum yellowish brown with golden-orange tinge, whereas in the latter, it is yellowish brown with reddish-orange tinge (Fig. 7); 2) prosternal process covered with long brown hairs, wrinkled and coarsely punctate, with a longitudinal median ridge which is roughly punctate and ridged at both sides (Fig. 2), whereas in the latter, it is rather glabrous sometimes sparsely covered with long brown hairs, finely and sparsely punctate, with a longitudinal median ridge which is obsolete ridged at both sides (Fig. 8); 3) 1st segment of antennae 1.2 times longer than 3rd one, whereas in the latter, it is 2.0 times longer; 4) scutellum small trapezoid, whereas in the latter, it is small cordiform; 5) elytra shining golden brown, sometimes with greenish tinge, whereas in the latter, it is shining yellowish brown; 6) elytra finely punctate and without stria, whereas in the latter, it is moderately punctate and weakly punctato-striate; 7) elytral suture not marginate, whereas in the latter, it is distinctly ridged; 8) male genitalia rather slender than that of the latter. From these characteristics, this species is raised to an independent species.

***Epidelus niisatoi* sp. nov.**

[Japanese name: Niisato-chairo-ruritamamushi]

(Figs. 4–6)

*Epidelus* sp.: AKIYAMA & OHMOMO, 2000: 155 (Satou-chairo-ruritamamushi).



Figs. 1–8. *Epidelus* species from the Philippines. — 1–3, *E. philippinensis* SAUNDERS, 1874; 4–6, *E. niisatoi* sp. nov. (holotype); 7, 8, *E. wallacei* (THOMSON, 1857). — 1, 4, 7, Dorsal habitus; 2, 5, 8; prosternal process; 3, 6; male genitalia.



*Description.* Length: 22.4–26.8 mm; width: 8.7–11.2 mm (holotype: 22.8 mm in length and 9.9 mm in width). Body rather stout. Body ventrally darker than elytra with blue tinge; head, pronotum and elytra shining golden green with yellowish brown tinge; legs shining golden green with blue tinge; frons golden orange widely at the center. Head obviously narrower than the anterior margin of pronotum; vertex densely and finely punctate, with a longitudinal median groove connecting to deep median groove of frons; frons finely punctate, with two shallow transverse depressions at both sides of median groove just upon antennal cavities; eyes oblong-ovate, inner margins of eyes distinctly convergent above; antennae serrate from 5th segment, 1st and 3rd segments stout, 2nd segment subglobular,  $1st \cong 3rd > 4th > 5th = 6th$ . Pronotum widest at base ( $L/W = 0.47$ ), with a transverse row of four small hollows at anterior third; anterior margin obsolete bisinuate; side straightly convergent from base to anterior angle; posterior margin distinctly bisinuate; anterior and posterior angles obtuse; surface finely punctate sparsely with middle size punctures, scattered with ivory-white short hairs along sides. Scutellum small, cordiform. Prosternal process roughly punctate, with a longitudinal median ridge coarsely punctate, both sides emarginated, subparallel between coxal cavities with a small median lobe at top (Fig. 5). Elytra stout ( $L/W = 1.87$ ); shoulders prominent; sides regularly convergent from just beyond the prominence to apex, finely denticulate at apical seventh, disc punctato-striate, with three weak longitudinal ridges and twelve lines of small punctures. Male genitalia similar to that of *Epidelus philippinensis* SAUNDERS (Fig. 3), however more robust than that as in Fig. 6.

*Sexual dimorphism.* Female is very similar to male except for the abdominal apex rounded with obsolete incurve, whereas in male, it is obviously triangular-incised.

*Type series.* Holotype: ♂ (NMNS), 5.V.1976, Catman, Leyte, the Philippines. Allotype: ♀ (NMNS), 16.V.1983, Samar, the Philippines, T. BORROMOE leg. Paratypes: 1 ♀ (COTJ), 21.VIII.1996, E-Visaya, Samar, the Philippines; 1 ♂, 3 ♀♀ (COTJ), IV.2006, 1 ♀ (COTJ), VI–VIII.2006, Mt. Balocau, Leyte, the Philippines, 1 ♀ (COTJ), V–VI.2007, Mt. Parker, SE-Mindanao, the Philippines, D. MOHAGAN leg.; 2 ♀♀ (COTJ), 6.VIII.1981, Bicol, Camarines, SE-Luzon, the Philippines, Y. TAKANAMI leg.

*Etymology.* The name of this new species is dedicated to Dr. Tatsuya NIISATO for his great contribution to Asian Coleoptera including the Philippine fauna.

*Distribution.* The Philippines (Luzon Is., Mindanao Is., Samar Is. and Leyte Is.).

*Remarks.* This species was already introduced as *Epidelus* sp. (AKIYAMA & OHMOMO, 2000), and is similar to *E. philippinensis* (SAUNDERS, 1874) very well. However, it can be easily distinguished from the latter as follows: 1) body rather large and stout; 2) body surface golden green, whereas golden yellowish brown with greenish tinge in the latter; 3) pronotum with a transverse row of four small hollows at anterior one third, whereas in the latter, outer two hollows shifting to the posterior angle; 4) prosternal process with a longitudinal median ridge coarsely punctate, whereas in the latter, median ridge wrinkled and densely and roughly punctate; 5) scutellum small and cordiform, whereas in the latter, it is trapezoidal.

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## A New Species of the Genus *Dilophotes* (Coleoptera, Lycidae) from Taiwan

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**Abstract** A new species, *Dilophotes niisatoi* MATSUDA et LAN, sp. nov., is described from central Taiwan. *Dilophotes atricollis* PIC, 1923, endemic to Taiwan, is redescribed and illustrated. A key to the Taiwanese species of the genus *Dilophotes* WATERHOUSE, 1979 is provided.

### Introduction

The lycid genus *Dilophotes* was established by WATERHOUSE, 1879 based on the type species, *Lycus exilis* WATERHOUSE, 1878 from Sarawak. This genus has a wide distribution in the Oriental Region and in the eastern part of the Eurasian Continent including its neighboring islands. Up to the present, it has contained 81 species from these regions. *Dilophotes* is well characterized by the following morphological features such as the elongate body, long antenna, a short longitudinal carina on pronotum, silky pubescent elytron, bifid claw and asymmetric phallobase of aedeagus. Until now, only three species of the genus *Dilophotes* have been recorded from Taiwan (BOCÁKOVÁ & BOCÁK, 2007). They have a different color pattern with each other.

Recently we have an opportunity for the inspection of the lycid specimens on *Dilophotes* collected in Taiwan. After close examinations, we found one different species having the same color pattern with *D. atricollis* PIC, 1926. These two species are similar in appearance, but distinctly different in the shape of aedeagus. Accordingly, we would like to describe the former species as a new species, *Dilophotes niisatoi* MATSUDA et LAN, sp. nov., based on the specimens collected from central Taiwan. The holotype and some paratypes will be deposited in the National Museum of Natural Science, Taichung, Taiwan (NMNT). The other paratypes will be deposited in the University of Kang Ning, Tainan, Taiwan and the MATSUDA collection, Hyōgo, Japan. This paper is dedicated to Dr. Tatsuya NIISATO in commemoration of his 60th birthday.

### Materials and Methods

The total 228 materials belonging to the genus *Dilophotes* from Taiwan were used for our taxonomic study. They were observed and measured through a stereomicroscope (Nikon SMZ1270) with the aid of a micrometer attached to the right ocular lens. Aedeagus was extracted from abdomens and boiled in 5.0 % KOH solution for three to five minutes and then washed by water and preserved in 75 % ethyl alcohol. Magnifying photographs of the habitus and aedeagus were taken by using a digital camera (Canon EOS kiss X4) attached to the top of the stereomicroscope. Figures of aedeagus were illustrated from these photographs.

### Taxonomy

Subfamily **Ateliinae** KLEINE, 1928

Tribe **Dilophotini** KLEINE, 1928

*Dilophotes niisatoi* MATSUDA et LAN, sp. nov.

(Figs. 1, 3–5)

*Description.* Male (Fig. 1): Body black to blackish brown, shining, with mandibles and claws yellowish brown; head, antennae, pronotum, scutellum and legs black to blackish brown; elytra unicolor yellowish brown. Body surface closely furnished with short reddish brown pubescence; head, scutellum and legs densely covered with short yellowish brown pubescence; antennae densely covered with very short, recumbent yellowish brown hairs; pronotum moderately covered with short reddish yellow pubescence; elytra densely covered with short, recumbent red pubescence, seemingly red.

Head small, transverse, minutely and densely punctured; frons short, rugosely and densely punctured, strongly deflexed, slightly rounded in front, with a short deep longitudinal groove between frontal tubercles, which are moderately swollen just behind antennal insertions; vertex with a median shallow longitudinal depression in central portion. Eyes small, lateral, hemispherically prominent; distance between eyes 1.38 times as wide as eye diameter. Antennae long, fully exceeding the middle of elytra; antennomere I relatively long, moderately swollen at apex; II short, cylindrical; III 1.93 times as long as the apical width; III to X weakly serrate, dorso-ventrally depressed; II to V gradually increasing in width; VII to XI gradually decreasing in width; XI fusiform; relative lengths of antennomeres I to XI = 0.74 : 0.20 : 1.00 : 1.00 : 1.02 : 1.08 : 1.05 : 1.06 : 1.03 : 0.99 : 1.16. Maxillary palpi with palpomere IV securiform, 2.09 times as long as the maximum width. Labial palpi with palpomere III securiform, 1.90 times as long as the maximum width.

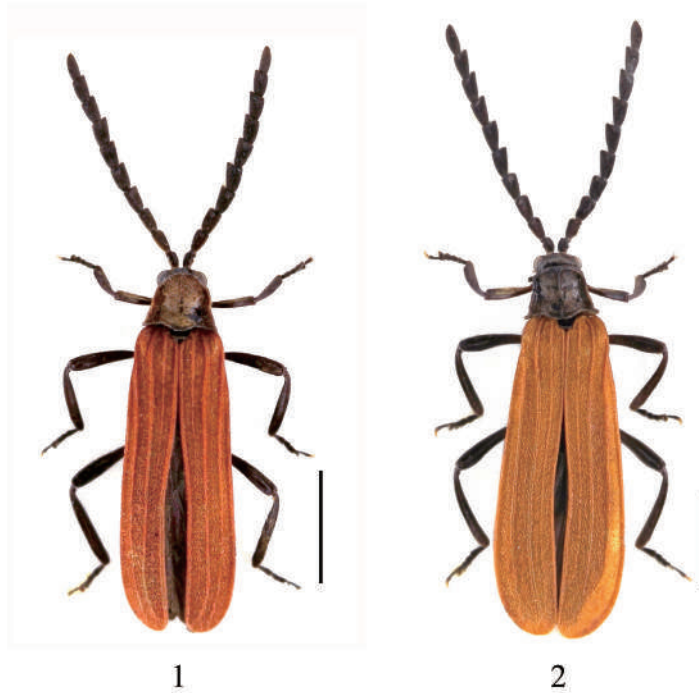
Pronotum transverse, 0.77 times as long as the basal width, 1.46 times as wide as head, slightly diverging posteriad in basal 1/2; anterior margin roundly produced anteriad; anterior angles widely rounded; posterior angles triangularly and moderately projecting latero-posteriad; basal margin bisinuate; lateral sides widely reflexed; disc convex, obliquely grooved from each anterior corner to the middle of posterior margin, deeply impressed on the insides of anterior and posterior corners, finely and closely punctured on central portion, coarsely punctured on the inside of antero-lateral margins, provided with a long distinct longitudinal carina just behind the middle of anterior margin. Scutellum trapezoidal, feebly emarginate at apex; surface minutely and densely punctured.

Elytra long, subparallel-sided or slightly diverging posteriad, dehiscent just behind basal 1/4 and separately rounded at apices, 3.93 times as long as the humeral width, 5.63 times as long as pronotum; each elytron bearing three longitudinal costae; 1st costa obsolete in posterior 1/2; 2nd and 3rd costae distinct to near apex; intervals between costae coarsely and densely punctured.

Ventral surface rugose, finely and closely punctured; abdominal sternite VIII widely and deeply emarginate at apex; sternite IX wide, widely rounded at apex.

Legs elongate and long; femora long, slightly clavate; hind tibiae slender, about 1.10 times as long as hind femora; hind tarsi with tarsomere I distinctly longer than V; II to IV subequal in length, each shorter than I or V; claws bifid at apices.

Aedeagus (Figs. 3–5) long, without parameres; median lobe moderate in length, simple, not divided into two parts near apex, which bears a large round internal sac in the opening portion; phallobase long and wide, asymmetrical.



Figs. 1–2. Habitus of *Dilophotes* spp. — 1, *D. niisatoi* sp. nov.; 2, *D. atricollis* Pic. Scales: 2.0 mm.

Female: Eyes small, weakly prominent, distance between eyes 1.69 times as long as eye diameter. Antennae feebly serrate, dorso-ventrally depressed, not reaching the middle of elytra; relative lengths of antennomeres I to XI = 0.59 : 0.18 : 1.00 : 1.00 : 1.00 : 0.97 : 0.94 : 0.92 : 0.91 : 0.91 : 1.07. Pronotum 0.73 times as long as the basal width, 1.68 times as wide as head. Elytra 3.91 times as long as wide, 6.15 times as long as pronotum.

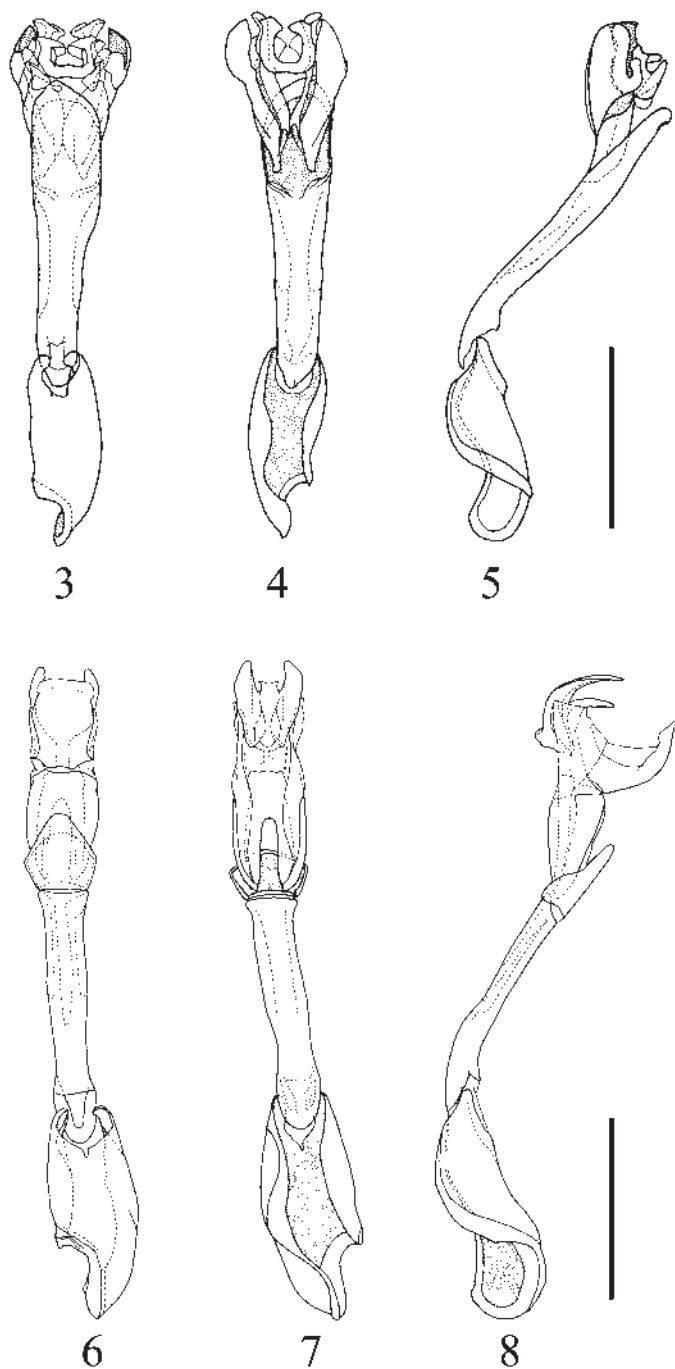
Body length: 5.73–7.50 mm in male; 7.50–9.07 mm in female.

*Type series.* Holotype: ♂, Nanshanchi, Nantou Hsien, 10.VI.1975, K. MATSUDA leg. (NMNT). Paratypes: 1 ♂, Nanshanchi, 21.IV.1971, S. TAKEDA leg.; 1 ♂, Nanshanchi, 17.IV.1974, K. SUGINO leg.; 1 ♂, 2 ♀♀, Nanshanchi, 1.V.1974, T. KAMAKARI leg.; 6 ♂♂, Nanshanchi, 1–2.V.1975, S. IMASAKA leg.; 1 ♀, Nanshanchi, 18.V.1977, S. IMASAKA leg.; 1 ♂, Nanshanchi, 2.VII.1978, T. MIKAGE leg.; 1 ♀, Nanshanchi, 27.III.1980, T. NIISATO leg.; 11 ♂♂, 1 ♀, Sungkang, Nantou Hsien, 29–30.VI.1971, Y. MAEDA leg.; 1 ♂, Sungkang, 13.V.1973, K. MATSUDA leg.; 1 ♀, Sungkang, 30.VI.1974, T. OCHI leg.; 16 ♂♂, 4 ♀♀, Meifeng, Nantou Hsien, 17–18.V.1974, K. MATSUDA leg.; 3 ♂♂, 1 ♀, Meifeng, 12–14.VII.1974, T. OCHI leg.; 1 ♂, Meifeng, 26.VI.1976, S. IMASAKA leg.; 3 ♂♂, Meifeng, 19.V.1977, S. IMASAKA leg.; 5 ♂♂, Meifeng, 16.V.1978, S. IMASAKA leg.

*Distribution.* Taiwan: Nantou Hsien.

*Notes.* This new species is similar to *Dilophotes pacholatkoii* BIC, 2002 which was recorded from Thailand, China, Vietnam and Laos in having the short aedeagus and the same coloration, but it differs from the latter species in the shape of the internal sac, which is long in *D. niisatoi* MATSUDA et LAN, sp. nov. and short in *D. pacholatkoii* BIC.

*Etymology.* The specific name is given in honor of Dr. Tatsuya NIISATO who is an excellent specialist on cerambycid beetles of Japan and Southeast Asia.



Figs. 3–8. Aedeagus of *Dilophotes* spp. — 3–5, *D. niisatoi* sp. nov.; 6–8, *D. atricollis* Pic. — 3, 6, Ventral view; 4, 7, dorsal view; 5, 8, lateral view. Scales: 0.5 mm.

***Dilophotes atricollis* PIC, 1926**

(Figs. 2, 6–8)

*Dilophotes atricollis* PIC, 1926: 68; BOČÁK & BOČÁKOVÁ, 1987: 274, figs. 11, 12; BIC, 2002: 8, fig. 5; BOČÁKOVÁ & BOČÁK, 2007: 212.

**Redescription.** Male (Fig. 2): Head, antennae, pronotum, scutellum and legs black to blackish brown; elytra unicolor yellowish brown. Head, pronotum, scutellum and legs densely or moderately covered with short yellowish brown pubescence; antennae densely covered with short, recumbent or suberect yellowish brown hairs; elytra closely covered with short, recumbent orange red pubescence.

Head small, transverse, minutely and densely punctured; frons slightly projecting anteriorly, slightly rounded in front, with a short deep longitudinal groove between frontal tubercles; vertex with a shallow depression in central portion. Eyes relatively small, lateral, hemispherically prominent; distance between eyes 1.33 times as wide as eye diameter. Antennae elongate, weakly serrate, fully exceeding the middle of elytra; relative lengths of antennomeres I to XI = 0.69 : 0.19 : 1.00 : 1.09 : 1.14 : 1.20 : 1.22 : 1.20 : 1.19 : 1.10 : 1.20. Maxillary palpi with palpomere IV securiform, 2.16 times as long as the maximum width. Labial palpi with palpomere III securiform, 2.36 times as long as the maximum width.

Pronotum transverse, 0.75 times as long as the basal width, 1.49 times as wide as head, strongly diverging posteriorly; anterior margin roundly produced anteriorly; anterior angles weakly angular; posterior angles strongly projecting latero-posteriorly; basal margin bisinuate; disc convex, minutely and closely punctured on central portion, coarsely punctured inside of antero-lateral margins, provided with a long narrow longitudinal carina just behind the middle of anterior margin. Scutellum rotundate; surface minutely and closely punctured.

Elytra long, slightly diverging posteriorly, dehiscent just behind basal 1/3 and separately rounded at apices, 4.05 times as long as the humeral width, 6.23 times as long as pronotum; each elytron bearing three longitudinal costae; 1st costa obsolete in posterior 1/2; 2nd and 3rd costae distinct, gradually weakened to apex; intervals between costae finely and densely punctured.

Ventral surface, rugose, finely and closely punctured; abdominal sternite VIII widely and deeply emarginate at apex; sternite IX wide and long, widely rounded at apex.

Legs elongate and long; femora long, slightly clavate; hind femora slender, 1.09 times as long as hind tibiae; hind tarsi with tarsomere I about as long as V; II to IV subequal in length, much shorter than I or V; claws bifid at apices.

Aedeagus (Figs. 6–8) very long, without parameres; median lobe long, straight in lateral view, with pentagonal apex separated from the basal part, which bears large developing inner sac in opening portion; phallobase long and wide, asymmetrical.

Female: Eyes small, weakly prominent, distance between eyes 1.58 times as long as eye diameter. Antennae feebly serrate, dorso-ventrally depressed, not reaching the middle of elytra; relative lengths of antennomeres I to XI = 0.63 : 0.18 : 1.00 : 1.06 : 1.02 : 1.04 : 1.09 : 1.10 : 1.06 : 0.94 : 1.02. Pronotum 0.77 times as long as the basal width, 1.55 times as wide as head. Elytra 4.02 times as long as wide, 6.13 times as long as pronotum.

Length: 9.10–10.00 mm in male; 8.27–10.13 mm in female.

**Specimens examined.** 1 ♂, [Taihorin, X.10, Formosa, H. Sauter S. G.], [*Dilophotes atricollis* PIC, R. KLEINE det. 1934], [ex coll. R. KLEINE, Mus. Zool. Polonicum Warszawa 12/45] (Dr. KLEINE's lycid collection in Polish Academy of Sciences); 1 ♂, Liukuei, Kaohsiung Hsien, 4.V.1978, W. CHENG leg.; 3 ♂♂, Xiangyang, Hiduan, Taitung Hsien, 1.VII.2012, N. OHBAYASHI leg.; 2 ♂♂, 1 ♀, Fenchifu, Chia Hsien, 3–5.V.1970, Y. KIYOYAMA leg.; 2 ♂♂, Fenchifu, 31.V–1.VI.1970, Y. KIYOYAMA leg.; 1 ♂,

Fenchifu, 24.V.1975, K. MATSUDA leg.; 1 ♂, 1 ♀, Fenchifu, 8.V.1982, F. KIMURA leg.; 1 ♀, Fenchifu, 1.V.1983, T. ITO leg.; 1 ♂, Mt. Alishan, Chiai Hsien, 23.VII.1970, T. KOBAYASHI leg.; 1 ♂, Nanshanchi, Nantou Hsien, 30.III.1970, T. KOBAYASHI leg.; 1 ♂, Nanshanchi, 21.IV.1971, S. TAKEDA leg.; 1 ♂, Nanshanchi, 25.IV.1973, K. MATSUDA leg.; 1 ♂, Nanshanchi, 3.V.1973, K. MATSUDA leg.; 4 ♂♂, Nanshanchi, 17.IV.1974, K. SUGINO leg.; 1 ♂, Nanshanchi, 10.V.1974, S. IMASAKA leg.; 1 ♂, 1 ♀, Nanshanchi, 29.IV.1975, T. KAMAKARI leg.; 1 ♂, Nanshanchi, 1.V.1975, S. TAKEDA leg.; 1 ♂, 1 ♀, Nanshanchi, 26.V.1975, K. MATSUDA leg.; 1 ♀, Nanshanchi, 14.V.1978, S. IMASAKA leg.; 1 ♂, 1 ♀, Nanshanchi, 27.III.1980, T. NIISATO leg.; 1 ♂, Mt. Kuantaoshan, Nantou Hsien, 10.IV.1973, K. MATSUDA leg.; 9 ♂♂, 1 ♀, Lushan, Nantou Hsien, 25.VI.1975, S. IMASAKA leg.; 1 ♂, 1 ♀, Sungkang, Nantou Hsien, 29.VI–2.VII.1971, Y. MAEDA leg.; 1 ♀, Sungkang, 21.VII.1976, K. MATSUDA leg.; 1 ♀, Sungkang, 19.VI.1979, T. MIKAGE leg.; 2 ♂♂, Meifeng, Nantou Hsien, 18–22.V.1974, K. MATSUDA leg.; 2 ♂♂, Meifeng, 1.VII.1974, T. OCHI leg.; 1 ♂, Meifeng, 20.VII.1976, M. KUBOKI leg.; 5 ♂♂, Meifeng, 19.V.1977, S. IMASAKA leg.; 2 ♂♂, Meifeng, 16.V.1978, S. IMASAKA leg.; 1 ♂, Meifeng, 27.VII.1978, Y. SHIBATA leg.; 3 ♂♂, Tiefeng, Nantou Hsien, 20.VII.1976, K. MATSUDA leg.; 2 ♂♂, 1 ♀, Tiefeng, 5.VII.1978, T. MIKAGE leg.; 11 ♂♂, 1 ♀, Chiayan, Taichung Hsien, 21–22.VI.1979, T. MIKAGE leg.; 1 ♀, Tachien, Taichung Hsien, 7.VII.1978, H. AKIYAMA leg.; 1 ♀, Mt. Lalashan, Taipei Hsien, 24.VII.1978, Y. SHIBATA leg.; 1 ♂, Urai, Taipei Hsien, 3.IV.1981, T. OCHI leg.

*Distribution.* Taiwan: Taipei City, Taichung County, Nantou County, Chiai County and Kaohsiung City.

*Notes.* This species is similar to *Dilophotes berezowskii* KAZANTSEV, 2000 from China and *D. atrorufus* (KIESENWETTER, 1879) from Japan in the form of aedeagus, but it differs from the latter two species in the shape of the median lobe, which is curved in *D. atrorufus* and straight in *D. berezowskii* and *D. atricollis*, however, the small apical fragment of the median lobe bended in *D. berezowskii* and also straight in *D. atricollis*.

### A Key to the Taiwanese Species of the Genus *Dilophotes* WATERHOUSE, 1879

- 1 (6) Body bicolor, black and red ..... 2  
 2 (3) Antennae flabellate in male, serrate in female ..... *D. ohirai* (OHBAYASHI, 1956)  
 3 (2) Antennae serrate in both sexes ..... 4  
 4 (5) Aedeagus with median lobe moderate in length, simple, not divided into two parts near apex ..  
 ..... *D. niisatoi* MATSUDA et LAN, sp. nov.  
 5 (4) Aedeagus with median lobe long, with a small fragment separated from basal portion near apex  
 ..... *D. atricollis* PIC, 1926  
 6 (1) Body unicolor, black ..... *D. libnetoides* NAKANE, 1971

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Mr. Syoichi IMASAKA, Fukuoka, Mr. Takashi KOBAYASHI, Osaka, Mr. Tetsuji KAMAKARI, Kanagawa, Mr. Yoshimi KIYOYAMA, Osaka, Mr. Yoichi MAEDA, Osaka, Mr. Tomoji MIKAGE, Ishikawa, Mr. Yasutoshi SHIBATA, Tokyo, Mr. Koichi SUGINO, Hyôgo, Mr. Shigeo TSUYUKI, Kanagawa, Mr. Kenichi UEDA, Hyôgo, Japan and the late Mr. Wenron CHENG, Kaohsiung, Taiwan for providing us the important materials for our taxonomic study.

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## Revision of the *Lycocerus fainanus* Group (Coleoptera, Cantharidae), with Description of a New Species from Taiwan

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**Abstract** The previous *Lycocerus fainanus* Subgroup which had been placed under the *L. vitellinus* Group is proposed as an independent species-group. The following members of *Lycocerus* are added into the upgraded *L. fainanus* Group: *L. metallescens metallescens* (GORHAM, 1889) (China and Taiwan), *L. m. fukienensis* (WITTMER, 1954) (China), *L. rufomandiburalis* (PIC, 1914) (Vietnam) and *L. niisatoi* sp. nov. (Taiwan). A key to the *L. fainanus* Group for Taiwanese members is provided.

### Introduction

OKUSHIMA (2005) revised Japanese members of the genus *Lycocerus* GORHAM, 1889, and recognised nine species-groups based mainly on the structure of genitalia in both sexes. The *L. vitellinus* Group was a diverse group within the genus, originally contained four subgroups, and was characterised by aedeagal median lobe provided with a process at apex; short spermathecal duct; basal part of spermatheca gradually narrowed apically; spermatheca provided with a spiral tube (OKUSHIMA, 2005). After that, OKUSHIMA (2007 a) proposed the *L. fainanus* Subgroup in the *L. vitellinus* Group for five Taiwanese species, *L. fainanus* (PIC, 1910), *L. flavimarginalis* OKUSHIMA, 2007, *L. masatakai* OKUSHIMA, 2007, *L. satoi* OKUSHIMA, 2007, and *L. taoyuanus* (WITTMER, 1983). Additionally, *L. michiakii* Group (OKUSHIMA & BRANCUCCI, 2008), *L. hickeri* Group (YANG *et al.*, 2014) and *L. rhagonychiformis* Group (HSIAO & OKUSHIMA, 2016) were proposed. In total, twelve groups including twenty-one subgroups have been recognised at the present time.

Up to the present, thirty-seven species of the genus *Lycocerus* including all five species of the previous *L. fainanus* Subgroup of the *L. vitellinus* Group have been known from Taiwan (SATÔ *et al.*, 2015; HSIAO & OKUSHIMA, 2015, 2016; HSIAO *et al.*, 2016). However, the species of Taiwanese *Lycocerus* would be continuously increased judging from our unidentified materials.

Recently, during our study on the Taiwanese fauna of Cantharidae, we found a beautiful unidentified *Lycocerus* species. It closely resembles *L. rufomandiburalis* (PIC, 1914) from Vietnam in appearance though some slight differences were recognised in the morphological characters of antennae and claws. After a careful examination, it became clear that the interesting species is new to science, and therefore it will be described in the present paper. Furthermore, *L. metallescens metallescens* (GORHAM, 1889) from China and Taiwan and its subspecies, *L. m. fukienensis* (WITTMER, 1954), from China also seem to be in the same group, though they do not agree perfectly the conventional characteristics of it. In the present study, we will propose revised common characteristics for the *L. fainanus* species-complex, and upgrade it to an independent species-group.

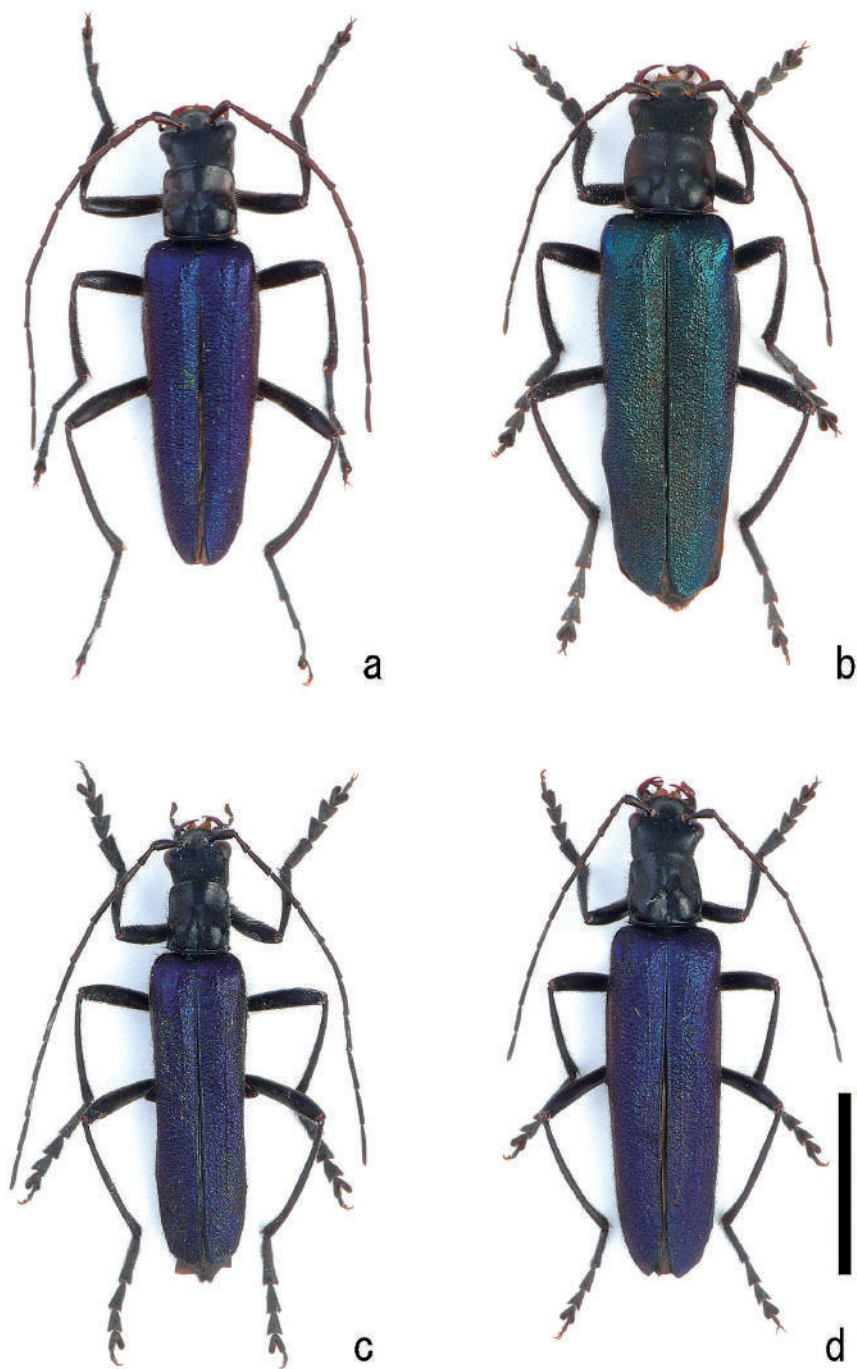


Fig. 1. Dorsal habitus of *Lycocerus* spp. — a, b, *L. rufomandibularis* (Pic), from N. Vietnam (a, ♂; b, ♀); c, d, *L. niisatoi* sp. nov., from Taiwan (c, holotype, ♂; d, paratype, ♀). Scale: 5.0 mm.

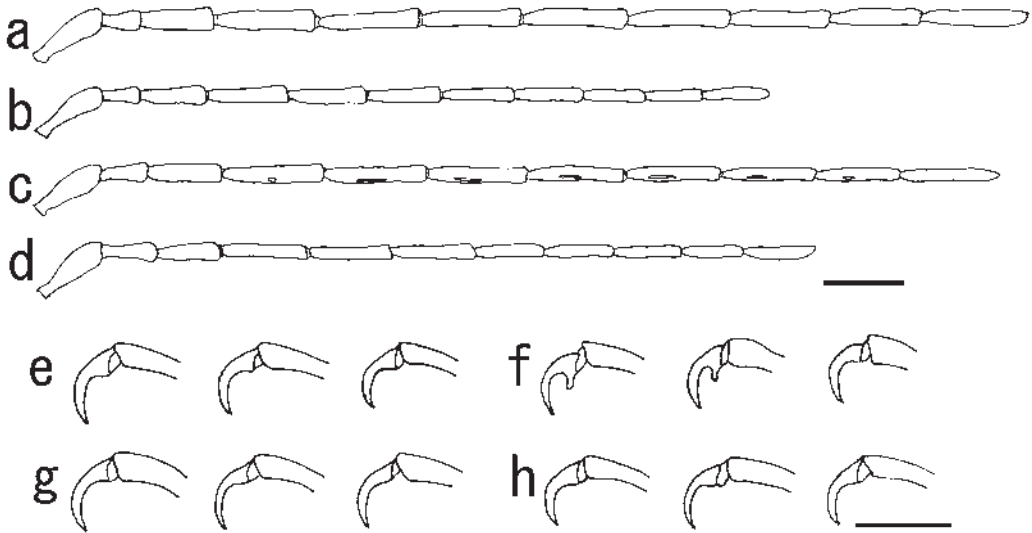


Fig. 2. Antennae and claws of *Lycocerus* spp. — a, b, e, f, *L. rufomandibularis* (PIC) (a, e, ♂; b, f, ♀); c, d, g, h, *L. niisatoi* sp. nov. (c, g, ♂; d, h, ♀). — a–d, Dorsal view of right antennae; e–h, outer claws of right legs (from left, fore leg, middle leg, hind leg). Scales: 1.0 mm for a–d and 0.5 mm for e–h.

### Materials and Methods

The holotype and a part of paratypes will be deposited in the National Museum of Natural Science, Taichung City, Taiwan (NMNS). Apart from NMNS, paratypes and other specimens are also preserved in the Kurashiki Museum of Natural History, Kurashiki, Japan (KURA), Taiwan Forestry Research Institute, Taipei, Taiwan (TFRI) and Y. HSIAO's private collection, Taichung, Taiwan (YHC).

The terminology used in the descriptions and the methods follow that of OKUSHIMA (2005), but methyl blue was used for staining female genitalia.

Body length was measured from the anterior margin of clypeus to the apices of elytra and width was measured at the widest part of conjoint elytra. The abbreviations used in the text are as follows: HW — width of head; PW — width of pronotum; PL — length of pronotum; EW — maximum width of conjoint elytra; EL — length of elytra. The abbreviations in the figures for aedeagus are as follows: dp — dorsal plate; is — inner sac; lp — laterophyse; ml — median lobe; te — tegmen; vp — ventral process; for female genitalia: ag — accessory gland; di — diverticulum; sd — spermathecal duct; sp — spermatheca; va — vagina.

### Results

#### The *Lycocerus fainanus* Group

In this paper, we additionally place the following three species with a subspecies together with previously known five Taiwanese species as members of this group: *Lycocerus metallescens metallescens* (GORHAM, 1889), *L. m. fukienensis* (WITTMER, 1954), *L. rufomandibularis* (PIC, 1914) and *L. nii-*

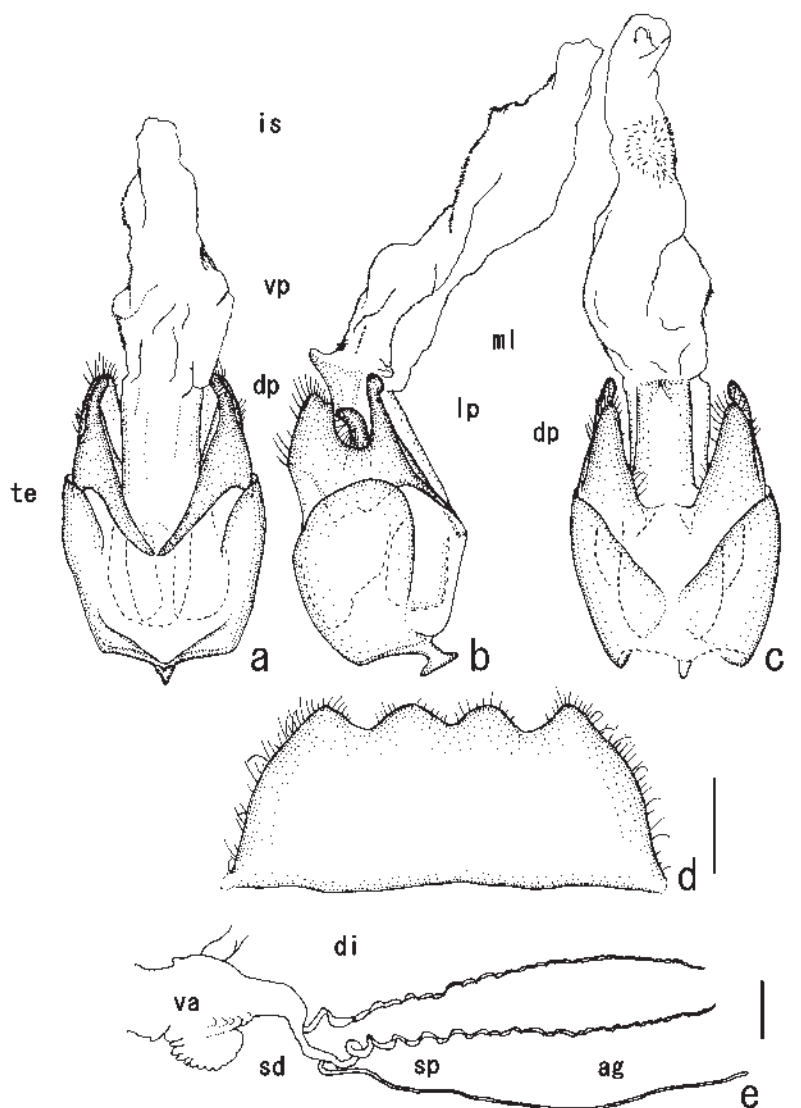


Fig. 3. Genital organs of *Lycocerus rufomandibularis* (Pic). — a–c, Aedeagus (a, ventral view; b, lateral view; c, dorsal view); d, female abdominal sternite VIII; e, female genitalia, lateral view. Scales: 0.5 mm.

*satoi* OKUSHIMA et HSIAO, sp. nov. They are characterised especially by large sized body (more than 12 mm length), metallic elytra, and median lobe bearing conspicuous process which are regarded synapomorphy of them and well distinguishable from the *L. vitellinus* Group and the other groups/sub-groups of the genus by a combination of those characteristics. Therefore, we herein redefine the upgraded *L. fainanus* Group. Revised common characteristics of the group are listed here.

*Common characteristics.* Body large-sized and moderately elongate. Eyes globular and prominent. Terminal maxillary palpomeres broadened cultellate. Antennae filiform and slender, extending to

apical third of elytral length in males and elytral midlength in females at least, provided with a groove on each of several middle antennomeres in male, but the groove sometimes reduced or disappeared. Pronotum subquadrate, nearly as wide as or narrower than head, faintly dilated posteriorly. Elytra provided with metallic lustre. Each outer claw of fore and middle legs provided with a digitiform tooth at the base only in female, but sometimes all claws simple. Median lobe of aedeagus provided with a conspicuous process directed dorsad at apex; inner sac lengthened behind and ventrad. Diverticulum and spermatheca relatively long; spermathecal duct short; spermatheca provided with a spiral tube, with basal portion gradually narrowed apically.

***Lycocerus metallescens metallescens* (GORHAM, 1889)**

*Telephorus metallescens* GORHAM, 1889: 107 (type locality: “Kiukiang”, Jiangxi).

*Cantharis metallescens*: JACOBSON, 1911: 679.

*Themus metallescens*: WITTMER, 1954: 109.

*Athemellus metallescens*: WITTMER, 1983: 165.

*Lycocerus metallescens metallescens*: KAZANTSEV & BRANCUCCI, 2007: 251; OKUSHIMA, 2007 b: 261–263, figs. 3, 7–9; SATÔ *et al.*, 2015: 50.

*Distribution.* China (Jiangxi); Taiwan.

*Notes.* OKUSHIMA (2007 b) designated the lectotype for *Telephorus metallescens* and redescribed it. He excluded this species from the previous *L. fainanus* Subgroup by its simple claws of both sexes while suggested the relation with the subgroup. We regarded that this species belongs to the *L. fainanus* Group based on the revised definition.

Although KAZANTSEV and BRANCUCCI (2007) recorded “FUJ (Kiukiang)” as the distribution area of this subspecies, it should be a mistake and correctly spelt “JIX (Kiukiang)” (FUJ = Fujian; JIX = Jiangxi).

***Lycocerus metallescens fukienensis* (WITTMER, 1954)**

*Themus metallescens fukienensis* WITTMER, 1954: 109 (type locality: “Südchina, Fukien, vor: Shaowo, Tschulan”).

*Lycocerus metallescens fukienensis*: KAZANTSEV & BRANCUCCI, 2007: 251; LI *et al.*, 2015: 8, fig. 3B.

*Distribution.* China (Zhejiang, Fujian).

*Notes.* LI *et al.* (2015) described and figured the female genitalia of this subspecies, and suggested its female genital morphology is similar to that of the *L. suturellus* Group. However, its overall characteristics such as the metallic elytra supported that this species should belong to the *L. fainanus* Group.

***Lycocerus rufomandibularis* (PIC, 1914)**

(Figs. 1a–b, 2a–b, 2e–f, 3)

*Cantharis rufomandibularis* PIC, 1914: 6 (type locality: “Chapa, près Lao Kay” = Sa Pa, Lao Cai).

*Athemus* (s. str.) *rufomandibularis*: WITTMER, 1995: 193–194, figs. 13, 14, 157.

*Cantharis atridens* PIC, 1917: 5 (type locality: “Chapa”). Syn. by WITTMER (1995).

*Specimens examined.* Vietnam: 4 ♂♂, 7 ♀♀, Sa Pa, Lao Cai Prov., V.1993, native collector leg. (KURA; 1 ♂, 1 ♀, YHC); 2 ♀♀, Sa Pa, Lao Cai Prov., 27.V.1997, Y. OKUSHIMA leg. (KURA); 1 ♀, Deo O Quy Ho, 1,750 m alt., Sa Pa, Lao Cai Prov., 14–16.V.2000, M. OWADA leg. (KURA).

*Distribution.* Northern Vietnam.

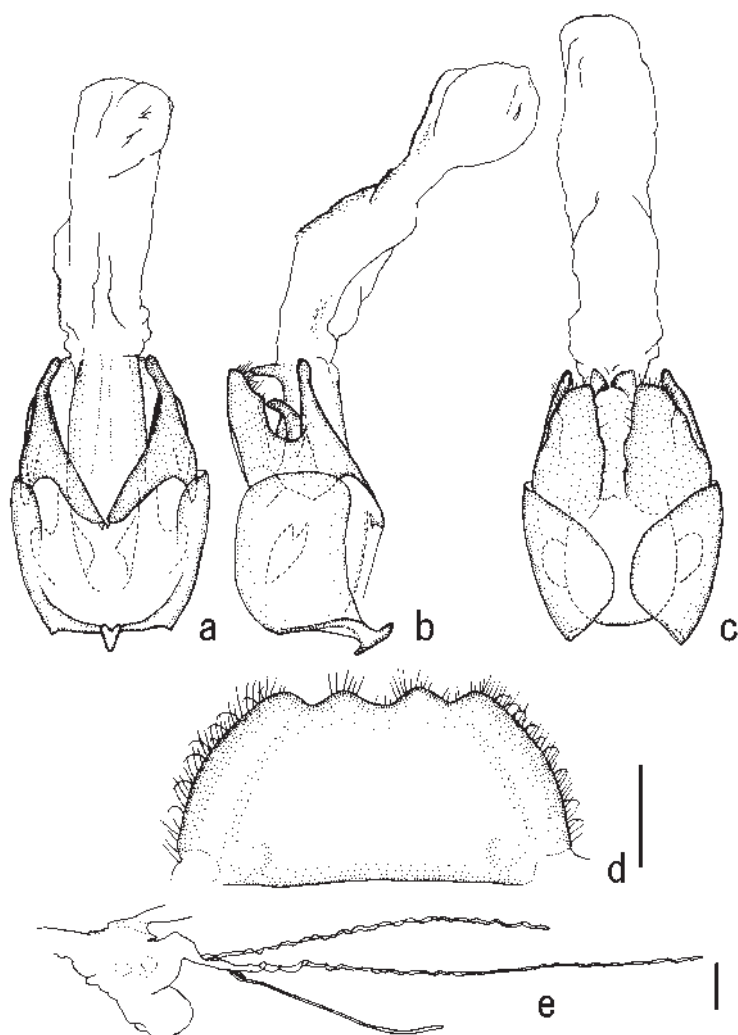


Fig. 4. Genital organs of *Lycocerus niisatoi* sp. nov. — a–c, Aedeagus (a, ventral view; b, lateral view; c, dorsal view); d, female abdominal sternite VIII; e, female genitalia, lateral view. Scales: 0.5 mm.

*Notes.* OKUSHIMA (2005) regarded *Athemus* LEWIS, 1895 and its subgenera, *Athemellus* WITTMER, 1972, *Andrathemus* WITTMER, 1978, *Mikadocantharis* WITTMER et MAGIS, 1978, and *Isathemus* WITTMER, 1995, as junior synonyms of *Lycocerus* GORHAM, 1889, and proposed to transfer all the species previously placed in the genus *Athemus* to the genus *Lycocerus* without specific list. Although the new combination of this species with *Lycocerus* was not explicitly indicated in OKUSHIMA (2005), it should be included in *Lycocerus* as well as the other congeners. Therefore, we herein treated it as a member of *Lycocerus* as proposed by OKUSHIMA (2005).

It is proper that the present species is placed in the *Lycocerus fainanus* Group judging from the most morphological characters though is lacking groove on male antennomeres which are variable in the related species as shown in OKUSHIMA (2007 a).

***Lycocerus niisatoi* OKUSHIMA et HSIAO, sp. nov.**

(Figs. 1c–d, 2c–d, 2g–h, 4)

*Type series.* Holotype: ♂, Guangfu-Lindao, 250–650 m alt., Wanrong Township, Hualien Hsien, Taiwan, 2.V.2011, T. NIISATO leg. (NMNS). Paratypes: Taiwan: 1 ♀, Matailinshan, Taitung Hsien, 26.IV.2016, I.-L. LEE leg. (TFRI); 1 ♂, Chituan, Mingchi, Yilan Hsien, 23.IV.1983, B.-S. CHANG leg. (NMNS, Coll. No. 1282-26262); 1 ♀, Tuchang, Yilan Hsien, 17.IV.2016, F.-S. HU leg. (NMNS); 1 ♂, same data as for the holotype (KURA); 1 ♂, Taroko, Hualien Hsien, N24°12.498', E121°25.688', 1,286 m alt., 4.IV.2012, J.-F. HSIEH leg. (YHC); 1 ♂, 1 ♀, Dahan Shan, 1,100 m alt., Chunri Township, Pingtung Hsien, 4.V.2011, T. NIISATO leg. (KURA); 1 ♀, Dahanshan Forest Trail, Pingtung Hsien, 6.IV.2013, W.-R. LIANG leg. (YHC); 1 ♀, Southern Taiwan, no date, Y.-H. HSIEH leg. (NMNS).

*Distribution.* Taiwan.

*Description.* Male (Fig. 1c): Body almost black; eyes, ventral side of basal some antennomeres, and abdominal sternites except terminal segment dark brown; marginal area of each sternite yellowish brown except for terminal segment; mandibles and claws reddish dark brown; elytra metallic indigo blue. Body closely covered with dark brown pubescence; ventral surface of thorax, abdomen and femora covered with fine yellowish pubescence; apical margin of clypeus and lateral margins of pronotum fringed with dark brown bristles.

Body slender. Head as long as wide; dorsum well depressed along the anterior margin of clypeus and lateral areas before eyes, and faintly depressed along the median line in cephalic area. Cephalic surface smooth and somewhat polished. Anterior margin of clypeus arcuate and faintly indented in middle. Eyes moderately large, globular and prominent, ratio of an eye diameter to interocular space 1.0 : 1.8. Terminal labial palpomeres rounded axe-shaped. Terminal maxillary palpomeres broadened cullellate. Antennae (Fig. 2c) filiform and slender, extending to apical seventh of elytra; antennomeres I clavate; II short and expanded apicad; III–XI subcylindrical; IV–X with a longitudinal groove on external side though it is short in IV and X. Ratio of the lengths of antennomeres from base to apex as follows: 1.5 : 1.0 : 1.3 : 1.8 : 1.8 : 1.9 : 1.8 : 1.8 : 1.7 : 1.5 : 1.7.

Pronotum subquadrate, PW/HW 0.91 (in the holotype; range 0.88–0.93), PW/PL 0.85 (0.84–0.94). Anterior and posterior margins weakly arcuate; lateral margins feebly sinuate, faintly hollowed at anterior parts; anterior angles rounded; posterior angles obtuse. Pronotal dorsum convex, particularly elevated in postero-lateral areas, forming a pair of rounded elevations which become narrower anteriorly and strongly depressed along posterior margin; antero-lateral areas hollowed along lateral sides. Medio-longitudinal groove recognisable only in posterior half. Pronotal surface smooth and somewhat polished. Scutellum triangular with rounded apex.

Elytra elongate, subparallel-sided though slightly dilated in basal fourth and apically narrowed in apical fourth; EW/PW 1.60 (1.46–1.68), EL/EW 3.09 (3.00–3.15); dorsum densely and rugosely punctate; each elytron provided with two obscure costae.

Legs very slender. Femora mostly straight. Tibiae weakly arcuate. All claws simple (Fig. 2g).

Aedeagus (Fig. 4a–c): Ventral process of each paramere apically tapered, faintly expanded at apical portion, and somewhat bent inwards; dorsal plate approximately same as long as ventral process in lateral view, somewhat rounded at apical margin, angulated at the middle of outer side, a little enlarged and somewhat irregularly sinuate at inner margin; laterophyse approximately a half long of ventral process in lateral view, strongly curved towards the angulation of dorsal plate, somewhat pointed at apex; median lobe apically provided with a conspicuous process extended towards the gap between apices of dorsal plates of paramere; lengthened inner sac longer than tegmen, elongated ventro-posteriorly. Some variations are recognised in form and length or width of each aedeagal part.



Body length: 12.50 mm (in the holotype; range 12.10–13.35 mm); body width: 2.80 mm (2.75–3.10 mm).

Female (Fig. 1d): Colour and pubescence resemble male. Body wider than in male. Eyes considerably smaller than in male, ratio of an eye diameter to interocular space 1.0 : 2.3. Antennae (Fig. 2d) shorter than in male, extending to the middle of elytra; each of antennomeres III–XI distinctly shorter than in male and lacking groove. Ratio of the lengths of antennomeres from base to apex as follows: 1.5 : 1.0 : 1.2 : 1.5 : 1.5 : 1.6 : 1.3 : 1.3 : 1.3 : 1.1 : 1.3. PW/HW 0.95–1.00, PW/PL 0.96–1.04, EW/PW 1.49–1.56, EL/EW 2.97–3.06. Abdominal sternite VIII shallowly and roundly emarginated on each side, forming low rounded lateral lobes and a broad median lobe, the latter of which is not so developed, roundly and slightly projected on both sides, and roundly emarginated at middle (Fig. 4d).

Female genitalia (Fig. 4e): Vagina expanded dorso-apicad; diverticulum and spermathecal duct arising from ventro-apical portion of vagina; diverticulum moderately thin and spiral; spermathecal duct short and somewhat stout; spermatheca provided with a thin spiral tube, which is longer than diverticulum; accessory gland thin, shorter than diverticulum.

Body length: 13.43–14.40 mm; body width: 3.20–3.35 mm.

*Diagnosis.* This new species closely resembles *Lycocerus rufomandibularis* (PIC, 1914) from northern Vietnam in colouration and body size, but differs from the latter by somewhat slender body, presence of longitudinal grooves on antennomeres IV–X (Fig. 2c), absence of digitiform teeth in female claws (Fig. 2h), well developed dorsal pate of aedeagus (Fig. 4b, c), and shorter accessory gland of female genitalia (Fig. 4e).

*Notes.* HSIAO's field observation reveals that the elytra of this species are metallic indigo green when alive.

*Etymology.* The specific name is given in honor of Dr. Tatsuya NIISATO who greatly contributed to the development of coleopterology in Asia, and is also one of good entomological advisers of the first author.

### Key to the Species of the *Lycocerus fainanus* Group from Taiwan

1. Pronotum entirely black; elytra metallic indigo blue or indigo green when alive .....  
..... *L. niisatoi* OKUSHIMA et HSIAO, sp. nov.
- Pronotum yellow, with dark marking in most cases; elytra metallic green or bright blue ..... 2
2. Body relatively massive; head mostly black, but apical half yellowish brown in rare cases; abdominal sternites II–VII provided with a round blackish spot on each side, but it is disappeared and entirely yellow in rare cases ..... 3
- Body relatively slender; head yellowish brown at least in apical half; abdominal sternites entirely yellow or mostly dark brown, without round spots ..... 4
3. Pronotum mostly orange yellow or sometimes provided with a pair of small spots at centre; round blackish spots on abdominal sternites relatively small; each laterophyse of aedeagus well developed and extended towards the apex of dorsal plate ..... *L. fainanus* (PIC)
- Pronotum mostly orange yellow, provided with a pair of transformed rectangular black markings which are sometimes conjoint; round blackish spots on abdominal sternites relatively large; each laterophyse of aedeagus not developed, barely visible in lateral view .....  
..... *L. taoyuanus* (WITTMER)
4. Basal part of head yellowish brown; pronotum widely dark brown in anterior half .....  
..... *L. satoi* OKUSHIMA
- Basal part of head dark brown to black; pronotum mostly yellow, with dark brown marking in

- central area ..... 5
5. Pronotum with a suboval blackish marking ..... *L. metallescens metallescens* (GORHAM)
- Pronotum with a pair of blackish markings, which are sometimes reduced and rarely evanescent, or enlarged to connect with each other and forming an inverse W-shaped marking ..... 6
6. Elytra entirely metallic green; dorsal plate of aedeagus much longer than ventral process; laterophyse of aedeagus tapered and not so developed, the tip barely visible in lateral view .....  
..... *L. masatakai* OKUSHIMA
- Elytra mostly metallic green except narrow marginal areas at lateral to posterior sides which are yellowish brown with metallic lustre; dorsal plate of aedeagus a little longer than ventral process; laterophyse of aedeagus stout and well developed, the apical part well visible in lateral view ..... *L. flavimarginalis* OKUSHIMA

### Biogeographical Note of the *Lycocerus fainanus* Group

As the result, the *L. fainanus* Group composes of eight species with two subspecies in total, and is most diverse in Taiwan. Of them, six species are endemic to Taiwan, besides one species with another subspecies is common to Taiwan and mainland China, and one species is from Vietnam. By judging their distribution, the speciation process of this species-group is possibly connected with the paleogeographic history of Taiwan and its neighbour areas. At least three species, *L. flavimarginalis*, *L. masatakai* and *L. satoi*, possibly diversified within Taiwan Island from the common ancestor, because they are particularly closely related to each other and share common characters, larger and more globular eyes and narrower vertex. On the other hand, the mainland China–Taiwan distributed species, *L. metallescens*, suggests the dispersion through a larger continental land which was formed during the Quaternary glaciation as assumed in other taxa (BURRIDGE, 2012; CHIANG *et al.*, 2012). However, the study of this group is still primitive and additional species are expected to be discovered in the future especially from the continent. Further studies will give insight into the evolutionary and biogeographic history of this species-group.

### Acknowledgements

We wish to express our deep gratitude to Dr. Tatsuya NIISATO (Bioindicator Co., Ltd., Tokyo) for his kind support in providing us with the good new species, to Dr. Naoki TAKAHASHI (Kyushu University Museum) for his critical reading of the original draft of this paper, and to reviewers who gave us important comments and appropriate suggestions. The second author is indebted to Prof. Chin-Cheng KO (National Taiwan University, Taipei) for permitting him to use the equipment in his laboratories and the funding. Our thanks are also due to Dr. Mamoru OWADA (National Museum of Nature and Science, Tsukuba), Dr. Ming-Luen JENG (NMNS), Dr. Jui-Fan HSIEH (National Taiwan University, Taipei), Mr. Wei-Ren LIANG (National Chung Hsing University, Taichung), Mr. I-Lung LEE (TFRI), Mr. Fan-Shou HU (Yilan) and Ms. Yi-Hsuan HSIEH (Kaohsiung), who kindly offered invariable specimens to us.

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## A New Species of the Genus *Fissocantharis* PIC (Coleoptera, Cantharidae) from Iriomote Is., Southwestern Japan

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**Abstract** A new cantharid beetle of the genus *Fissocantharis* PIC is described from Iriomote Is., southwestern Japan under the name of *F. niisatoi* sp. nov. A rearranged list of the Japanese *Fissocantharis* is given. Five Japanese species which had been included in the genus *Micropodabrus* are transferred to the genus *Fissocantharis*: *F. longipes* (WITTMER, 1953), comb. nov., *F. maculivertex* (ISHIDA, 1989), comb. nov., *F. shinborii* (TAKAHASHI, 1992), comb. nov., *F. viatica* (LEWIS, 1895), comb. nov., and *F. yayeyamana* (M. SATŌ, 1986), comb. nov.

### Introduction

According to the examination of YANG *et al.* (2009), most species of the genus *Micropodabrus* PIC, 1920 would be transferred to the genus *Fissocantharis* PIC, 1921, and the Japanese members of *Micropodabrus*, of which five species had been hitherto known and all of them lack the laterophyse of male genitalia, should also be transferred to *Fissocantharis*. During a study of mine to the family Cantharidae, I had an opportunity to examine a specimen collected from Iriomote Is. by Mr. Y. HIRANO in 1995, which was closely similar to *F. maculivertex* (ISHIDA, 1989) comb. nov. described from Okinawa Is. However, there was only one specimen, and I had waited for the chance to examine more materials. Recently, I was able to examine several additional specimens also collected from Iriomote Is. through the kindness of Dr. T. TSUCHIDA and several private surveys of mine. After a careful examination, it becomes clear that specimens from Iriomote are apparently different from *F. maculivertex*, and they are judged as new to science. Thereby I am going to describe it in the present paper. In this opportunity, I propose new combinations for five Japanese species which have been included in *Micropodabrus* according to the suggestion of YANG *et al.* (2009) based on the male genital character, lacking the laterophyse.

Before going further, I wish to express my cordial thanks to Dr. Takashi TSUCHIDA of the Hamamatsu University School of Medicine and Mr. Yukihiro HIRANO of Odawara for providing me valuable materials.

This short paper is dedicated to Dr. Tatsuya NIISATO of Bioindicator Co., Ltd., Tokyo for his contribution to the Coleopterological Society of Japan for a long time.

### Material and Method

The method of examining the male genitalia follows TAKAHASHI (2012).

The abbreviations used in the text are as follows: HW: width of head; PW: width of pronotum; PL: length of pronotum; EW: width of elytra; EL: length of elytra.

The holotype designated in this paper is deposited in the collection of the Kanagawa Prefectural Museum of Natural History, Odawara, and the paratypes are preserved in my private collection.

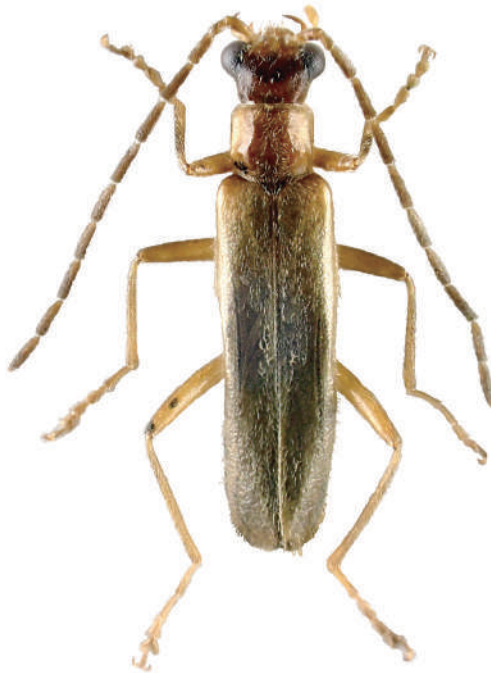


Fig. 1. Habitus of *Fissocantharis niisatoi* sp. nov., holotype, ♂.

### Description

#### *Fissocantharis niisatoi* sp. nov.

[Japanese name: Niisato-higenaga-jōkai]

(Figs. 1, 2)

Male: Body small, elongate and flat; head behind eyes, apical half of mandible, scutellum, meso- and metasternum and 2nd to 8th sternites excepting lateral and posterior margins dark testaceous; head before eyes and ventral side, pronotum excepting lateral sides, prosternum, elytra, lateral and posterior margins of 2nd to 8th sternites testaceous; prosternal process blackish brown; lateral sides of pronotum and legs yellowish brown; antennae dark testaceous though 1st, 10th and 11th segments somewhat paler.

Head almost flattened, weakly depressed on vertex and between eyes, closely covered with fine hairs, densely covered with fine punctures; clypeus covered with somewhat long hairs. Eyes prominent, with inter-ocular distance 2.34 (holotype; range 2.23–2.58) times as wide as eye diameter. Antennae filiform, reaching basal three-fifths of elytra; relative lengths of segments of the holotype as follows: 2.29 : 1.00 : 2.05 : 2.53 : 2.64 : 2.60 : 2.52 : 2.52 : 2.52 : 2.33 : 2.67.

Pronotum nearly square, with lateral margin almost straight though the posterior portion very slightly sinuate, anterior angle rounded, posterior one weakly prominent, PW/HW: 0.80 (0.79–0.84), PW/PL: 1.00 (0.95–1.04); disc well elevated except for lateral sides, densely covered with fine punctures. Elytra slender, EW/PW 1.47 (1.42–1.50), EL/EW 3.06 (3.06–3.28), densely punctate and cov-

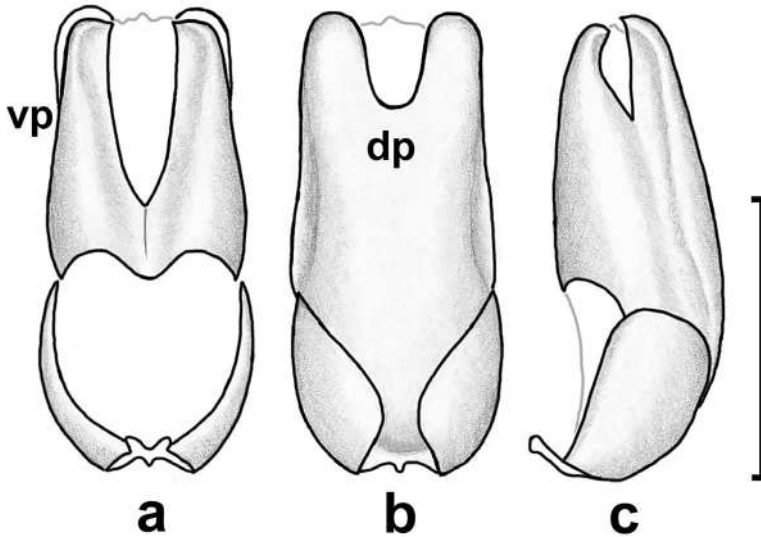


Fig. 2. Male genitalia of *Fissocantharis niisatoi* sp. nov. — a, Ventral view; b, dorsal view; c, lateral view. — dp, Dorsal plate of paramere; vp, ventral process of paramere. Scale: 0.5 mm.

ered with somewhat long hairs. Legs slender, with all claws bifurcated.

Male genitalia elongate. Ventral process of paramere rather broad; apex nearly truncated, with inner angle rather angular and outer one rounded. Dorsal plate of paramere entirely sclerotized; apical margin deeply and roundly emarginate. Laterophyse absent (Fig. 2).

Length: 4.5 (4.5–5.4) mm; breadth: 1.0 (1.0–1.2) mm.

Female: Eye relatively small; inter-ocular distance 3.42–3.62 times as wide as an eye diameter. Antennae relatively short, reaching basal third of elytra. Body relatively larger and broader than in male; PW/HW: 0.86–0.88, PW/PL: 1.01–1.05, EW/PW: 1.42–1.46, EL/EW: 3.19–3.24.

Length: 5.7–5.9 mm; breadth: 1.2–1.3 mm.

*Type series.* Holotype: ♂, Ôtomi-rindô, Iriomote Is., Okinawa Pref., 22.II.2014, K. TAKAHASHI leg. Paratypes: 1 ♂, Ôtomi, Iriomote Is., Okinawa Pref., 17.III.1995, Y. HIRANO leg.; 1 ♀, 13.III.2014, 1 ♂, 18.III.2016, same place as for the holotype, T. TSUCHIDA leg.; 2 ♂♂, 2 ♀♀, Entrance of Ôtomi-rindô, Iriomote Is., Okinawa Pref., 6.II.2016, K. TAKAHASHI leg.

*Distribution.* Southwestern Japan (Iriomote Is.).

*Remarks.* The present new species closely resembles *F. maculivertex* (ISHIDA, 1989), comb. nov., but can be differentiated from the latter by the square pronotum and paramere with rounded outer angle of ventral process and roundly emarginate dorsal plate.

### The List of the Genus *Fissocantharis* PIC from Japan

#### 1. *Fissocantharis longipes* (WITTMER, 1953), comb. nov.

*Rhagonycha longipes* WITTMER, 1953: 36.

2. *Fissocantharis maculivertex* (ISHIDA, 1989), comb. nov.

*Micropodabrus maculivertex* ISHIDA, 1989: 82.

3. *Fissocantharis mucronata* (WITTMER, 1979)

*Kandyosilis mucronata* WITTMER, 1979: 333.

4. *Fissocantharis niisatoi* TAKAHASHI, sp. nov.

5. *Fissocantharis shinborii* (TAKAHASHI, 1992), comb. nov.

*Micropodabrus shinborii* TAKAHASHI, 1992: 104.

6. *Fissocantharis viatica* (LEWIS, 1895), comb. nov.

*Telephorus viaticus* LEWIS, 1895: 111.

7. *Fissocantharis yayeyamana* (M. SATÔ, 1986), comb. nov.

*Micropodabrus yayeyamanus* M. SATÔ: 256.

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## A New Species of the Genus *Dialexia* (Coleoptera, Anamorphidae) from Japan

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**Abstract** A new anamorphid species, *Dialexia niisatoi* NARUKAWA, sp. nov., is described from Japan.

The genus *Dialexia* was established by GORHAM (1887–1899) based on a single species from Guatemala. In addition to the Guatemalan type species, four species were described from Tanzania, Sumatra and Japan (WEISE, 1903; ARROW, 1926; SASAJI, 1978; SHOCKLEY *et al.*, 2009). The Japanese representative, *Dialexia hisanoi* SASAJI, 1978, was described from Fukui Prefecture, Honshu (SASAJI, 1978).

Recently, I had an opportunity to examine several specimens of *Dialexia* having an unusual appearance collected in Honshu, Japan. All of them were sent from Mr. Jun ITO of Tokyo Met. for inspection to me. My careful examination revealed that they belong to a new species having a close relationship to *D. hisanoi*, and I would like to describe it as the second representative of *Dialexia* from Japan in the following lines.

Before going further, I wish to express my hearty thanks to Mr. Jun ITO of Tokyo for providing materials, and to the former Prof. Masahiro SAKAI of Ehime University Museum for his critically reading the manuscript of this paper. I also thank Mr. Masashi INAGAKI for his kind help in taking the photograph.

### *Dialexia niisatoi* sp. nov.

[Japanese name: Chairo-marugata-tentôdamashi]

(Figs. 1–9)

Male: Body subhemispherical, strongly convex on dorsum, about 1.3 times as long as wide, densely pubescent; general color dark brown; 1st to 6th segments of antennae and legs yellowish brown, 7th to 9th (club-segments) brown.

Head (Fig. 2) about 0.6 times as wide as pronotum; punctures sparse, and relatively small; fronto-clypeal suture nearly straight, distinctly detectable; clypeus transversely rectangular, about 0.4 times as wide as the width of head across eyes; front margin of clypeus straight; eyes moderate in size; interocular distance 0.5 times as wide as the width of head across eyes; maxillary palpus with terminal segment (Fig. 3) elongated conical, about 1.8 times as long as wide. Antennae (Fig. 4) 9-segmented, with three terminal segments forming a loose club; 1st segment large; 2nd roundish, about 1.4 times as long as wide; 3rd clavate, gradually dilated apically, about 1.5 times as long as wide, and about 2.0 times as long as 4th; 4th about 1.4 times as wide as long; 5th about 1.8 times as wide as long; 6th as wide as long; 7th enlarged, as wide as long; 8th strongly dilated apicad, nearly obtrapezoidal, about 1.1 times as wide as long; 9th elongate-oval, about 1.4 times as long as wide.

Pronotum (Fig. 5) about 2.1 times as wide as long, widest at base; sides narrowing toward front angles, strongly arcuate in anterior half, and nearly straight in basal half; lateral marginations distinctly widening anteriorly; disc coarsely and sparsely punctured, with punctures same in manner to those





Fig. 1. *Dialexia niisatoi* sp. nov., holotype, male, dorsal habitus.

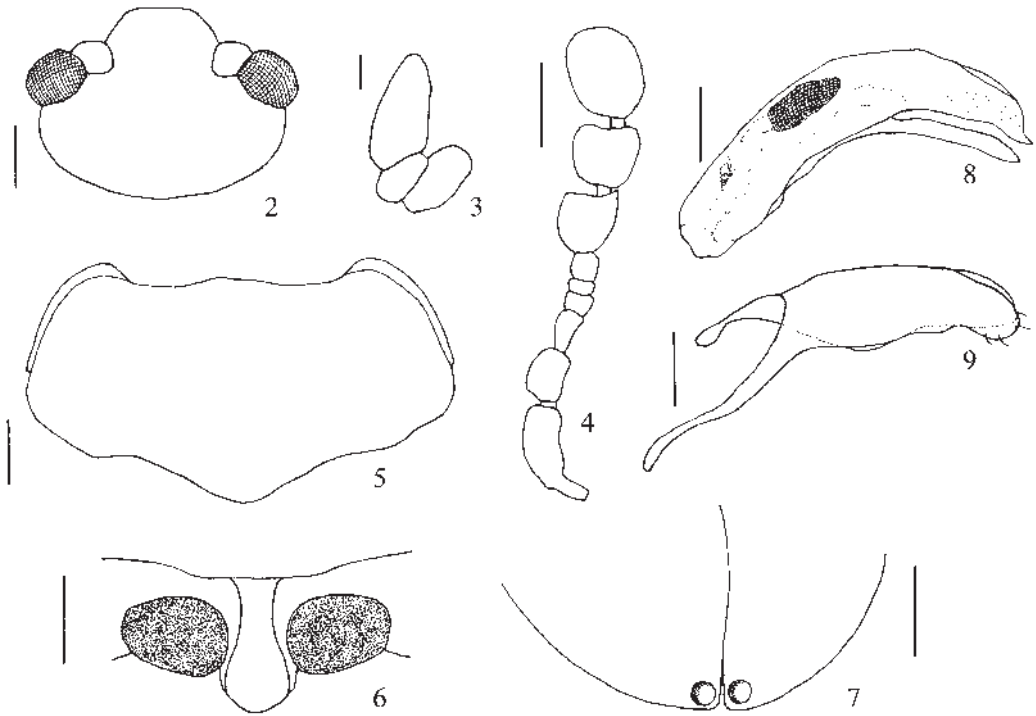
on head; anterior margin bi-emarginated and feebly produced at middle; anterior corners roundly projected and posterior corners obtusely rounded.

Scutellum transverse-pentagonal, about 1.7 times as wide as long.

Elytra strongly convex, conjointly as wide as long, widest at basal fourth, and distinctly wider than pronotum; humeral calli distinct; sides uniformly arcuate, with margin reflexed except for sub-apical portion, then sharply narrowing toward apices; a small, round and deep fovea (Fig. 7) located at just inside of each apex near suture; punctures on elytra much larger and somewhat denser than those on pronotum; pubescence very long, about 1.2 times as long as the length of scutellum.

Prosternum sparsely punctured; prosternal process (Fig. 6) about 1.8 times as wide as long, distinctly carinate at sides, weakly and straightly broadened posteriad, with posterior tip gently rounded, much exceeding fore coxae. Metaventricle with small and rough punctures, and short and sparse hairs. Median lobe of male genitalia (Fig. 8) falcate, subequal in thickness except for basal and apical portions in lateral aspects, divided into dorsal lobe and ventral lobe from basal 2/3 in lateral view; dorsal lobe subparallel-side in basal 4/5, then narrowing toward pointed apex; ventral lobe as long as dorsal lobe, subparallel-sided in basal 4/5, then strongly narrowing toward apex which is pointed in lateral view; internal structure composed of a thin tube and lanceolate flagellum in basal 2/5. Tegmen (Fig. 9) narrowly rounded at apex, with long setae; lateral lobes bilaterally asymmetrical, viz. rod-like one having rounded apex and clavate one.

Female: The external sexual dimorphism indistinct except for elytral fovea at apex which is wanting in female.



Figs. 2–9. *Dialexia niisatoi* sp. nov. — 2, Head; 3, maxillary palpus; 4, antenna; 5, pronotum; 6, prosternal process; 7, apex of elytra, dorsal view; 8, median lobe of male genitalia, lateral view; 9, tegmen, lateral view. Scales: 0.2 mm for Fig. 7; 0.1 mm for Figs. 2, 4, 5, 6, 8, 9; 0.02 mm for Fig. 3.

Body length: 1.3–1.4 mm; width: 0.9–1.0 mm.

*Type series.* Holotype (Fig. 1): ♂, Minamiyama, Momura, Inagi-shi, Tokyo, 22.X.2015, J. Ito, leg. (preserved in the collection of the Osaka Museum of Natural History, Type No. OMNM-TI-503). Paratypes: 2 ♀♀, same data as the holotype; 1 ♂, same locality and collector as the holotype, 13. X.2015; 1 ♂ (Figs. 2–9), ditto, 15.X.2015; 1 ♂, ditto, 19.X.2015; 1 ♂, 1 ♀, ditto, 30.X.2015; 1 ♂, 1 ♀, ditto, 6.XI.2015. The paratypes are preserved in my collection except for two males and two females which are in the collection of the Osaka Museum of Natural History and Ehime University Museum.

*Distribution.* Japan (Honshu).

*Remarks.* This new species resembles *Dialexia hisanoi*, but is easily distinguished from the latter by the following features: punctures of head, pronotum and elytra are distinctly smaller and denser; elytra conjointly as wide as long (instead of wider than long in *D. hisanoi*); coloration dark brown (instead of dark brownish black); elytra immaculate (instead of having a longitudinal reddish brown marking).

*Etymology.* The specific name is dedicated to Dr. Tatsuya NIISATO, the first president of the Coleopterological Society of Japan.

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## Additional Study of Some Little Known Species of the Genus *Phaedis* PASCOE (Coleoptera, Tenebrionidae), with Descriptions of Five New Species

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**Abstract** *Phaedis magniceps* (PIC, 1927) and *P. semiviolaceus* (PIC, 1921) are redescribed. *Phaedis indicus* BLAIR, 1931 is synonymised with *P. magniceps* (PIC, 1927). Five new species, *P. andamanus* sp. nov. (Andaman Isls.), *P. australis* sp. nov. (New Guinea), *P. chalceus* sp. nov. (Mindoro Is.), *P. leyteanus* sp. nov. (Leyte Is.), and *P. niisatoi* sp. nov. (Mindanao Is.), are described. This genus is first recorded from Andaman Isls. and New Guinea.

### Introduction

The genus *Phaedis* PASCOE is widely distributed from East to Southeast Asia (China, Japan, Taiwan, Vietnam, Laos, Thailand, Myanmar, India, Sri Lanka, the Philippines, the Malay Peninsula, Borneo, Sumatra, Java, and Sulawesi), except for a doubtful record from Zanzibar. In spite of my faunal studies on the genus (ANDO, 2000, 2007, 2008, 2011, 2016, 2017; ANDO & SCHAWALLER, 2015), some uncertain records and undescribed species are still retained. In the present paper, I would like to redescribe little known two species, *Phaedis magniceps* (PIC, 1927) from India and *P. semiviolaceus* (PIC, 1921) from Myanmar with a new synonym based on a comparison of the type specimens. Also five new species from New Guinea, Andaman and the Philippines are described.

The present paper is dedicated to Dr. Tatsuya NIISATO in commemoration of his 60th anniversary.

### Materials and Methods

The specimens used in this study belong to the following institutes or private collections (acronyms are in parentheses): Ehime University Museum, Matsuyama, Japan (EUMJ); Muséum National d'Histoire Naturelle, Paris, France (MNHN); Staatliches Museum für Naturkunde, Stuttgart (SMNS); Natural History Museum, London (BMNH); and the collection of Kiyoshi ANDO, Osaka, Japan (CKAO).

Of the examined types, the attached labels are separated by double slash (//), line brakes of the same label are demarcated by a slash (/).

In order to stabilize the species concepts of *Gauromaia magniceps* and *Pseudeumolpus semiviolaceus*, the lectotype for each species and paralectotypes for the latter are designated from PIC's syntypes deposited in MNHN.

Specimens were observed by a Leica MZ16 stereomicroscope. Male and female terminalia were dissected from specimens relaxed in hot water for about one hour, then cleared in hot KOH solution, neutralised with weak acetic acid, and rinsed with water. The illustrations of genitalia, ventral parts, and legs were drawn with a Leica drawing tube attached to the microscope. The terminalia were glued on a paper sheet by “Colle de poisson”. Photographs of specimens were taken by a Canon EOS 7D reflex camera with macro lens (Canon macro photo lens MP-E 65 mm or EF 100 mm), and combined

using a digital auto-montage software (Helicon Focus, v. 6.2.2 Lite).

Body length refers to the median length from the apex of labrum to the apices of elytra. Abbreviations of body parts in the descriptions are as follows: mCG — anterior margin of head between clypeus and genae; EL — length of elytra along midline, from anterior margin of scutellum to elytral apices; EW — maximum width of elytra; IE — distance between eyes; PL — length of pronotum along midline; PW — maximum width of pronotum; TD — transverse diameter of an eye in dorsal view.

### Redescription, with a New Synonym

#### *Phaedis magniceps* (PIC, 1927)

(Figs. 1–7)

*Gauromaia magniceps* PIC, 1927: 17.

*Phaedis magniceps*: KASZAB, 1983: 132.

*Phaedis indicus* BLAIR, 1931: 199. Syn. nov.

*Type materials examined.* Lectotype of *Phaedis magniceps* (PIC, 1927): ♀ (MNHN), Wallardi // *magniceps* / n sp // TYPE // Muséum Paris / Coll. M. PIC. // *Phaedis / magniceps* (PIC) / Dr.Z.KASZAB det., 19 // LECTOTYPE / *Gauromaia / magniceps* PIC, 1927 / Design. K. ANDO, 2017 // *Phaedis / magniceps* (PIC, 1927) / Design. K. ANDO, 2017.

Holotype of *Phaedis indicus* BLAIR, 1931: 1 ♀ (BMNH), Madura / E. Stritt // *Psydrus* [sic] / *indicus* BLAIR / Type / det. K.G. BLAIR // Type // Andrewes / Bequest. / B.M.1922–221.

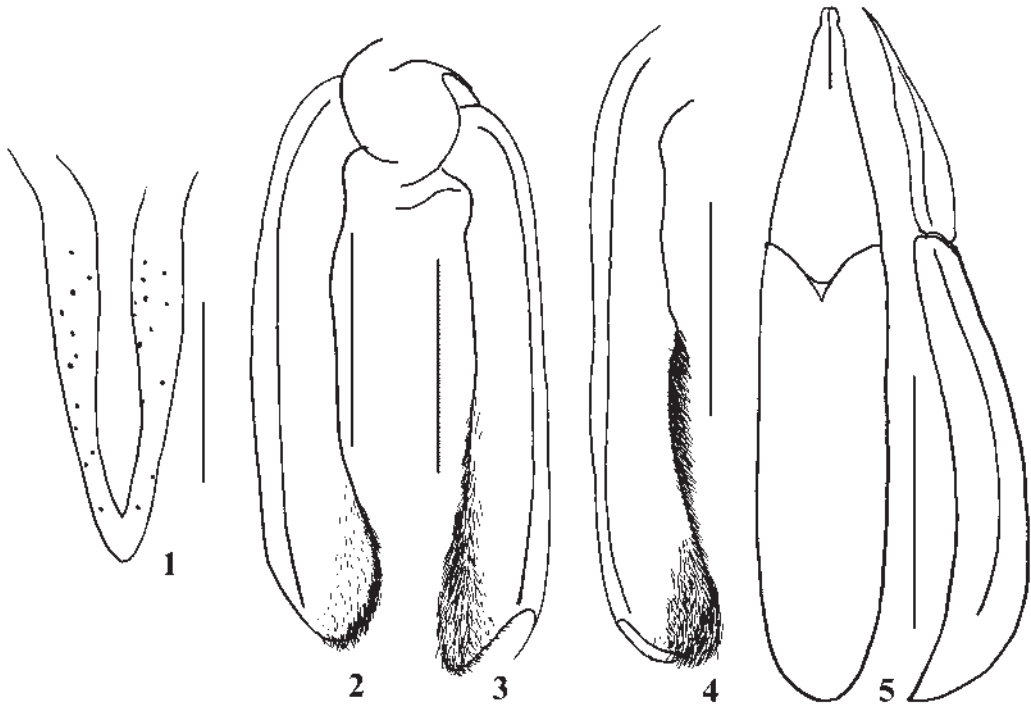
*Specimens examined.* 1 ♂ (CKAO), Cinchona, 1,200 m, Anamala Hills [sic], South India, V.1965, P. S. NATHAN leg.; 1 ♂ (CKAO), ditto, V.1966; 1 ♂ (CKAO), IV.1970, Chembra, Peak Area, Calicut District, Kerala St., India; 1 ♀ (CKAO), V.1965, Cinchona, Anamala Hills [sic], South India, P. S. NATHAN leg.; 1 ♀ (CKAO), V.1972, Kerala, Poonmudi Range, Trivandrum Distr., South India, RS NATHAN leg.; 1 ♂ (EUMJ), Cinchona, 3,500 ft., Anamalai Hills, South India, V.1966, P. S. NATHAN leg. (Collection of S. HISAMATSU); 2 ♂♂ (SMNS), 11 km SE Kotagiri, 1,100 ±100 m, 11°24' N 76°56' E, KUNCHAPPANAI, Tamil Nadu, Nilgiri Hills, S India, 3–15.V.2002, P. PACHOLÁTKO leg.; 1 ♀ (SMNS), Cardamom Hills, Pamba env., ca 50 km NW of Pathanamthitta, valley of Pambaiyar river, Kerala state, South India, 77°05' E 9°25' N, ca 300 m, 15–18.V.1999, KEJVAL & M. TRÝŽNA leg.

*New synonymy.* *Phaedis indicus* BLAIR, 1931 is considered as a junior synonym of *P. magniceps* (PIC, 1927), because the types of both taxa have no distinct specific differences except body colour, and especially coincide each other on the diagnostic character of head, foveolate punctures of elytral striae, and structure of tibiae.

*Measurements.* ♂ (n = 6): Body length: 9.5–11.4 mm; IE/TD 3.20–3.81; PW/PL 1.43–1.51; EL/EW 1.65–1.71; ♀ (n = 5): Body length: 9.0–11.6 mm (type: 11.3 mm in both types); IE/TD 3.33–4.00 (type: 4.00 in both types); PW/PL 1.38–1.47 (types: 1.38 in *P. magniceps* or 1.44 in *P. indicus*); EL/EW 1.63–1.73 (type: 1.63 in *P. magniceps* or 1.68 in *P. indicus*).

*Redescription.* Body elongate, robust, moderately convex dorsally, shiny. Colour dark reddish brown; head, pronotum and elytra dark metallic green, with slight aeneous sheen; mouthparts and coxae lighter in colour.

Male: Head transversely trapezoidal, distinctly sloping forwards, with setiferous punctures, fine and rather dense; mCG not sinuate; clypeus nearly flat, steeply sloping forwards in anterior fourth, roundly and distinctly emarginate at apex in middle third; fronto-clypeal suture distinctly engraved, angulate postero-laterally; genae narrow, longer than wide, weakly convex, rounded and gently narrowed forwards at sides; frons very broadened, slightly convex, distinctly sloping forwards, not raised



Figs. 1–5. *Phaedis magniceps* (Pic, 1927), ♂. — 1, Prosteral process; 2, protibia; 3, mesotibia; 4, metatibia; 5, male genitalia (right: lateral; left: dorsal). Scale bars: 0.5 mm for Fig. 1; 1.0 mm for Figs. 2–5.

laterally along inner ocular-sulci; tempora rounded, not produced, very coarsely and densely punctate; eyes small, weakly convex, with inner ocular-sulci distinct, almost straight. Antennae rather slender, reaching middle of pronotum; five distal antennomeres dilated, forming a weak club. Ultimate maxillary palpomere weakly securiform, sparsely setiferous, with acute apical angles. Mentum transversely hexagonal, truncate at apex, broadly and unevenly carinate in middle, and excavate at sides.

Pronotum transversely quadrate, widest at middle, very finely microsculptured; disc distinctly convex, very steeply sloping laterally, and subvertical in each lateral fifth, not sulcate along lateral margins, with dense punctures irregular in size, larger on median area, smaller on lateral areas, as large as and/or larger than on head, smaller ones of those being setiferous; anterior margin slightly emarginate, moderately beaded except for middle third; lateral margins weakly narrowed forwards and gently so backwards from the widest point, very slightly sinuate before base, narrowly and distinctly beaded; anterior angles obtuse, gently rounded; posterior angles rectangular; both angles not produced. Scutellum semicircular, strongly depressed, impunctate.

Elytra oblong, distinctly convex above, weakly divergent posteriad, widest at apical third; striae fine and almost vestigial; strial punctures large and sparse, becoming fovea-like laterally and in apical declivity; intervals sparsely and very finely punctate, flat on first and second intervals, slightly convex from third to fifth, weakly so from sixth to ninth, and also weakly convex in all apical portions; humeral calli large, distinctly humped; epipleuron oblique and narrow, flat and/or depressed in part, sparsely punctate.

Pronotal hypomeron finely and longitudinally rugulose, with dense microsculpture. Prosternum

densely microsculptured and rugulose, not beaded at apex; prosternal process (Fig. 1) strong and narrow cuneiform, horizontal, acute at apex, sparsely punctate, with elongate excavation in middle. Mesoventrite densely covered with small tubercles and short setae, with smooth longitudinal median carina; V-shaped ridge horizontal, with two rounded rectangular anterior angles weakly produced forwards in lateral view. Metaventrite rather short, convex forwards in middle, finely punctate and weakly rugulose, the punctures becoming larger and denser laterally. Abdomen moderately convex, rather short and wide in basal four ventrites, long and produced in fifth, finely microsculptured, with punctures extremely dense and coarse in three basal ventrites, fine and minute in fourth and fifth.

Male genitalia (Fig. 5) small, weakly curved ventrally; basale subparallel-sided; parameres narrow triangular, evenly tapering towards rounded apices.

Legs robust; profemoral teeth directed a little outwards at apex; anterior margin of profemora apical, of which lower edge is decorated with long dense pubescence between base and basal third; posterior margins of meso- and metafemora with elongate tuft of dense pubescence behind each base; inner margin of protibiae (Fig. 2) weakly bisinuate, but stronger at basal third; mesotibiae (Fig. 3) distinctly dilated posteriorly, with inner margin distinctly pubescent in apical half; metatibiae (Fig. 4) with inner margin moderately emarginate and covered with dense and short pubescence in apical three-fifths.

Female: Profemoral teeth a little weak; inner margin of mesotibiae with normal sparse pubescence; inner margin of metatibiae slightly and evenly emarginate, with sparse and long normal pubescence; pronotal hypomerion almost smooth, with sparse punctures; mesoventral V-shaped ridge with anterior angles acutely angulate and a little produced forwards in lateral view.

*Distribution.* India.

*Diagnosis.* This species is similar to *Phaedis elongatus* (PIC, 1926)\* from Vietnam, but different from the latter in the following characteristics: body length 9.5–11.4 mm; IE/TD 3.33–4.00 in female; head transversely trapezoidal; mCG not sinuous; clypeus nearly flat, distinctly emarginate at apex; fronto-clypeal suture distinctly engraved; genae narrow, longer than wide; inner ocular-sulci distinct, almost straight; antennae reaching middle of pronotum in female; mentum transversely hexagonal, truncate at apex; pronotum widest at middle, not sulcate along lateral margins, slightly sinuate before base at sides, with rectangular posterior angles; elytra with striae almost vestigial; striae punctures oval and irregular, fovea-like in lateral and apical declivities; intervals flat in first and second ones, slightly to weakly so in the rest; humeral calli large; elytral epipleuron sparsely punctate; pronotal hypomerion sparsely punctate; mesoventral V-shaped ridge horizontal, with anterior angles rectangular or acutely angulate; abdomens with punctures not setiferous, extremely dense and coarse in three basal ventrites; male femora with tufts of pubescence in anterior (= profemora) and posterior (= meso- and metafemora) margins.

### *Phaedis semiviolaceus* (PIC, 1921)

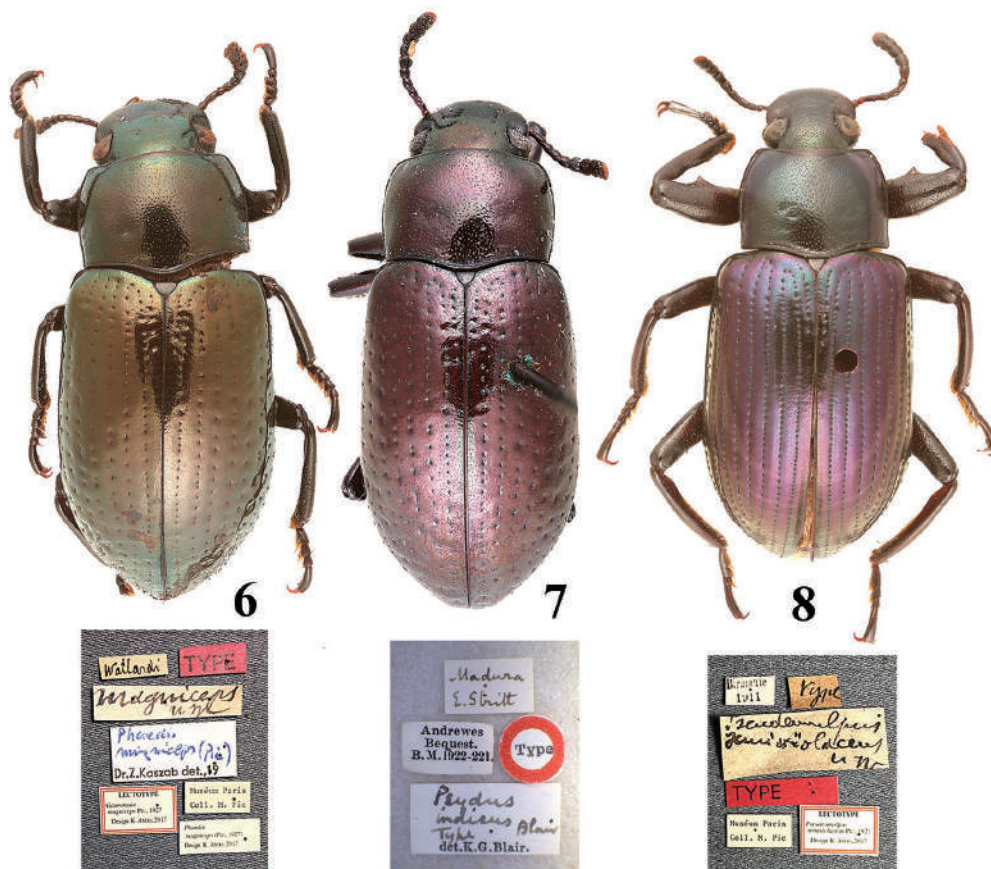
(Figs. 8–14)

*Pseudeumolpus semiviolaceus* PIC, 1921: 30.

*Phaedis semiviolaceus*: GEBIEN, 1941: 1146.

*Type materials examined.* Lectotype: ♂ (MNHN), Birmanie / 1911 // type // *Pseudeumolpus semiviolaceus* / n sp // TYPE // Muséum Paris / Coll. M. PIC // LECTOTYPE // *Pseudeumolpus semiviolaceus* PIC, 1921 / Design. K. ANDO, 2017. Paralectotypes: 1 ♀ (MNHN), Birmanie / 1911 // ex Benderitter // type // TYPE // Muséum Paris Coll. M. PIC // PARALECTOTYPE // *Pseudeumolpus semiviolaceus* PIC, 1921 / Design. K. ANDO, 2017; 1 ♀ (MNHN), Birmanie / 1911 // 127 // ressemble à

(\* Only the female type has hitherto known.)



Figs. 6–8, Types of *Phaedris* spp. and their attached labels. — 6, *P. magniceps* (PIC, 1927), lectotype; 7, *P. indicus* BLAIR, 1931, holotype; 8, *P. semiviolaceus* (PIC, 1921), lectotype.

..... Semipurpureus ..... de facies mais cuisses dentées [this line was indecipherable]//  
Muséum Paris Coll. M. PIC // PARALECTOTYPE / *Pseudeumolpus* / *semiviolaceus* PIC, 1921 / De-  
sign. K. ANDO, 2017.

**Measurements.** Lectotype: ♂ (n = 1): Body length: 11.2 mm; IE/TD 2.11; PW/PL 1.42; EL/EW 1.66. Paralectotypes: ♀ (n = 2): Body length: 11.5–12.7 mm; IE/TD 2.16–2.22; PW/PL 1.39–1.47; EL/EW 1.59–1.60.

**Redescription.** Oblong, robust, moderately convex above, shiny. Colour dark reddish brown; head and pronotum black and submat; pronotum with dark purple ambiguous spot at each side along lateral margins; elytra violet-purple, more or less darkened in part, legs darkened, mouthparts and coxae lighter in colour.

**Male:** Head hexagonal, moderately convex, feebly microsculptured, with dense and coarse puberulous punctures becoming a little larger and sparser on frons; mCG slightly sinuate; clypeus moderately convex, produced forwards, slightly emarginate at apex in middle half; fronto-clypeal suture very fine and obscure, entirely arcuate; genae wider than long, sloping posteriorly, with sides subparallel in basal half; frons slightly convex, not elevated along inner ocular-sulci; tempora gently and roundly narrowed posteriad, not produced; eyes transverse, strongly convex, thickly margined interi-



orly; inner ocular-sulci tenuous and rather shallow, becoming obscure posteriorly. Antennae rather long, reaching behind middle of pronotum; five distal antennomeres densely pubescent and weakly dilated, forming a slender club; 11th oblong-oval. Ultimate maxillary palpomere weakly securiform, with acute apical angles. Mentum linguiform, microsculptured, obtusely pointed at apex, broadly and triangularly elevated in middle, narrowly and deeply excavate at sides, coarsely punctate, sparsely with fine and long setae.

Pronotum subtrapezoidal, widest at middle, with fine isodiametric microsculpture; disc weakly convex, gently sloping laterally, finely sulcate before base and not so along lateral margins, with punctures dense and coarse, not pubescent, becoming a little larger than on frons; anterior margin weakly and evenly emarginate, moderately beaded, the bead becoming much thicker in middle; lateral margins evenly narrowed forwards in apical half, slightly narrowed basally in basal half, and somewhat sinuate before base, moderately beaded; anterior angles obtusely rounded, scarcely produced; posterior angles rectangular, not produced. Scutellum wider than long, flat, with lineate microsculpture and a few microscopic punctures.

Elytra oblong, moderately convex, gently divergent posteriad, widest at apical third, narrowly beaded at sides, finely microsculptured; striae weakly impressed; strial punctures large and dense, more or less serrate, distinct even on apical portions, becoming larger between fifth and eighth striae; intervals convex, weakly convex from first to third intervals, distinctly so from fourth to eighth, finely and rather densely punctate; humeral calli short, weakly humped; epipleuron slightly depressed, smooth.

Pronotal hypomeron densely microsculptured, submat and impunctate. Prosternum very short in front of coxae, densely rugulose and microsculptured, finely punctate; prosternal process (Fig. 9) lanceolate, weakly constricted behind coxae, sloping posteriorly, obtusely rounded at apex, and densely punctate, strongly depressed between coxae, without median sulcus. Mesoventrite with median carina divergent towards both terminals; posterior ridge V-shaped and a little sloping forwards, with anterior angles obtusely angulate in lateral view. Metaventrite gently convex, finely rugulose beside tenuous median line, with fine hair-bearing punctures. Abdomen densely punctate, coarsely so on basal three ventrites and finely so on apical two ventrites.

Male genitalia (Fig. 14) slender and large; basale slender and strongly incurved, distinctly constricted behind apex; parameres slim, steeply narrowed towards apices, very slightly convergent and not pointed at apices.

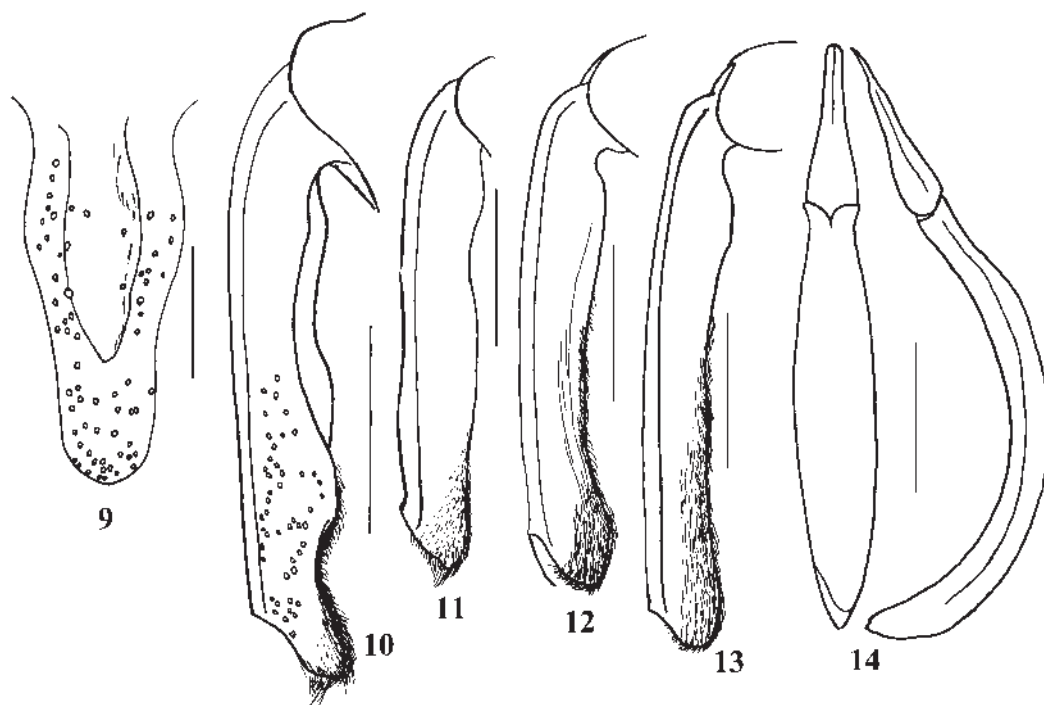
Legs robust; profemoral teeth small, directed outwards at apex; inner margins of protibiae (Figs. 10, 11) weakly sinuate in basal third in dorsal view, those in ventral view, roundly produced at apical third, thence deeply emarginate to before base; meso- and metatibiae (Figs. 12, 13) almost straight, with inner margins weakly emarginate in apical two-thirds, thence covered with lineate pubescence.

Female: Antennae shorter, with five distal antennomeres more strongly dilated; protibiae with inner margin not roundly produced at apical third in ventral view; inner margins of meso- and metatibiae devoid of lineate pubescence.

*Distribution.* Myanmar.

*Diagnosis.* This species is unique within the genus in having large male genitalia, and combination of the following points: pubescent inner margins of meso- and metatibiae, strongly impressed elytral striae, distinctly and constantly convex elytral intervals, and serrate strial punctures.

This species is faintly similar to *Phaedis violaceipennis* PIC, 1930 from Java, but readily separable from the latter in the following characteristics: Pronotum widest at middle, with dark purple ambiguous spots, and with punctures a little larger than on frons; pronotal anterior margin weakly and evenly emarginate, while those in the latter deeply and angulately so; pronotal posterior angles not



Figs. 9–14. *Phaedis semiviolaceus* (Pic, 1921), ♂. — 9, Prosternal process; 10, protibia in ventral view; 11, protibia in dorsal view; 12, mesotibia; 13, metatibia; 14, male genitalia (right: lateral; left: dorsal). Scale bars: 0.5 mm for Fig. 9; 1.0 mm for Figs. 10–14.

produced; head with coarse hair-bearing punctures; mCG slightly sinuate; genae not rounded, subparallel in basal half; frons not elevated beside inner ocular-sulci; tempora not produced; inner ocular-sulci tenuous, not broad; mentum linguiform, not triangular; fourth to eighth elytral intervals distinctly convex; prosternum finely punctate, and prosternal process lanceolate instead of cuneiform in the latter.

### Descriptions of New Species

#### *Phaedis niisatoi* sp. nov.

(Figs. 15–20, 31)

*Type specimen.* Holotype: ♂ (SMNS), Mindanao, 1–3 MAY / MISAMIS OCC., 1700 m / DON VICTORIANO / BOLM lgt. / 1996 // SMNS // HOLOTYPE / *Phaedis niisatoi* sp. nov. / ANDO, 2017.

*Measurements.* ♂ (n = 1): Body length: 6.6 mm; IE/TD 3.08; PW/PL 1.67; EL/EW 1.49.

*Description.* Male: Oblong-oval, moderately convex above, brilliant. Colour dark reddish brown; head metallic brassy-green anteriorly, brassy posteriorly behind fronto-clypeal suture, with broad and rounded reddish purple spot on frons, the spot not bordered, with a median obscure violet tint; pronotum violet-brassy, with a pair of brilliant metallic green spots; the spot oblong, contact with lateral margin, brassy in its core, bordered internally by tricolour of wide reddish purple, wide brassy,

and narrow greenish blue; elytra iridescent, with a dark brassy-copper band on middle and with a pair of multi-coloured humeral and apical fasciae; the humeral fascia oval, situated between lateral margin and first interval, contact with basal margin, and not undulate posterior margin, consists of six colours gradually changing from middle to outside such as reddish purple, brassy, metallic green, reddish purple, brassy again, and narrow bluish green; the apical fascia obtriangular, same colour as those of humeral fascia (from apical to basal direction), slightly undulate at anterior margin.

Head transversely elliptical, convex posteriad; mCG not sinuate; clypeus transversely and moderately convex, feebly rounded at apex, with large, coarse, rather dense punctures; fronto-clypeal suture fine, roundly arcuate; genae almost flat, a little more finely punctate than on clypeus, with sides evenly and weakly narrowed in basal half and steeply so in apical half; frons broad, flattened and sloping forwards, not raised laterally, with sparse punctures being dense along eyes, larger and sparser than on clypeus; tempora short, neither convex nor produced; eyes weakly transverse, strongly convex; inner ocular-sulci deep and distinct. Antennae reaching behind middle of pronotum; five distal antennomeres gently dilated and forming a distinct club. Ultimate maxillary palpomere (Fig. 15) strongly dilated; endo-apical angle very strongly produced laterad; ecto-apical angle hardly produced; ecto-lateral margin weakly rounded. Mentum narrow triangular, strongly produced downwards, acute at apex, widely and unevenly elevated in middle and shallowly excavate at sides, with a few long setae. Gula linguiform, densely covered with rugose microsculpture.

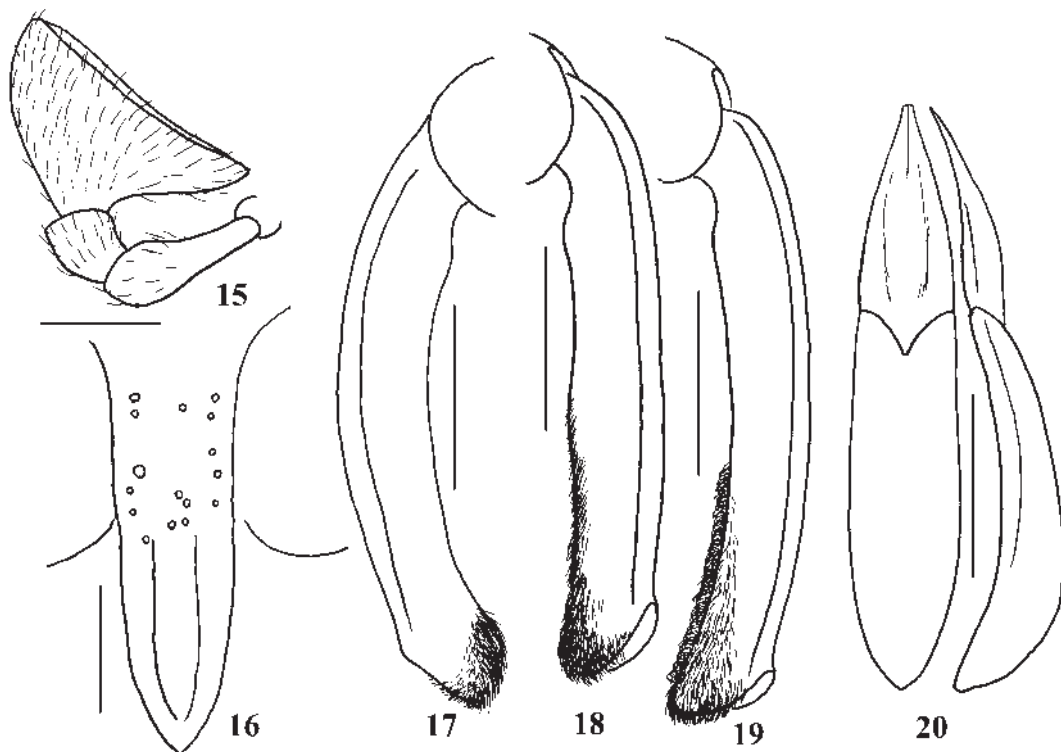
Pronotum transversely quadrate, widest at middle, finely microsculptured; disc gently convex, strongly descendant laterally, without sulci along lateral margins; punctures in median third nearly as large as and/or a little smaller than on frons, and those on lateral third becoming very minuter; anterior margin shallowly emarginate, a little produced forwards in middle third, finely beaded in each lateral fifth; lateral margins gently arcuately rounded, strongly arcuate in apical third, not sinuate before base, finely beaded; anterior angles obtusely rounded; posterior angles obtusely angulate; both angles not produced. Scutellum wider than long, flattened, with fine microsculpture and a few punctures.

Elytra oval, distinctly convex above, weakly divergent posteriorly, widest at apical third, distinctly beaded at sides; striae almost vestigial, finely impressed in part; strial punctures large and sparse though irregular in density, serrate anteriorly and foveolate in major portions, much larger than on frons; intervals almost flat or very slightly convex, invaded by foveolate strial punctures, weakly so on eighth and ninth intervals, finely and sparsely punctate; humeral calli moderately humped; epipleuron depressed, impunctate, with very fine microsculpture.

Pronotal hypomeron weakly depressed, sparsely and very obscurely punctate, with dense isodiametric microsculpture. Prosternum coarsened by dense microsculpture and rugosities, finely beaded at apex; prosternal process (Fig. 16) lanceolate, microsculptured and coarsely punctate, widely and shallowly sulcate in middle and acutely pointed at apex. Mesoventrite asperate, with a smooth median carina; posterior V-shaped ridge narrow, a little sloping forwards, with anterior angles a little obtusely angulate than rectangular in lateral view. Metaventrite moderately convex in middle, with puberulous punctures irregular and dense in median third. Abdominal ventrites densely microsculptured, with dense and obscure puberulous punctures.

Male genitalia (Fig. 20) fusiform, weakly curved ventrad; parameres 0.63 times as long as basale, depressed in middle, gently tapering towards pointed apices.

Legs short and robust; profemoral teeth normal in size, a little directed outwards; posterior margin of mesofemora sparsely pubescent behind base, weakly dentate at apical third of lower ridge; metafemora with posterior margin weakly dentate at apical four-ninths, thence weakly emarginate and sparsely pubescent to base; inner margin of protibia (Fig. 17) gently incurved, without emargination; mesotibiae (Fig. 18) simple, weakly dilated apically; metatibiae (Fig. 19) gently incurved, with inner



Figs. 15–20. *Phaedis niisatoi* sp. nov., ♂. — 15, Maxillary palpus; 16, prosternal process; 17, protibia; 18, mesotibia; 19, metatibia; 20, male genitalia (right: lateral; left: dorsal). Scale bars: 0.2 mm for Figs. 15, 16; 0.5 mm for Figs. 17–20.

margin weakly and lamellately produced behind base, and bearing short and dense pubescence in apical three-fifths.

Female: Unknown.

*Etymology.* The specific epithet is cordially dedicated to Dr. Tatsuya NIISATO, who is one of Japanese eminent taxonomists of the family Cerambycidae and my good friend for a long times. I cordially celebrate his 60th anniversary.

*Distribution.* The Philippines (Mindanao Is.).

*Diagnosis.* This new species is belongs to the *Phaedeucyrtus* species group sensu ANDO (2016), and is very similar to *Phaedis paniscus* ANDO, 2008 from Borneo. Since the latter species has also minute protuberances at ventro-posterior margins of meso- and metafemora, absolutely belongs to the same species group. The new species is readily separable from the latter in the following characteristics: Pronotal spots bordered by tricolour; humeral fasciae on elytra consist of six colours instead of two in the latter, and not undulate on posterior margin; head elliptical; mCG not sinuate; IE/TD 3.08, while 2.41 in the latter; clypeus feebly rounded at apex, not emarginate; pronotum widest at middle, with anterior margin shallowly emarginate and posterior angles obtusely angulate; strial punctures on elytra serrate anteriorly and foveolate in major portions.

*Phaedis leyteanus* sp. nov.

(Figs. 21–24, 30)

*Type specimen.* Holotype: ♀ (EUMJ), Mt. Balocau / Leyte Is. / Philippines / VII.2006 / D. MOHAGAN leg. // HOLOTYPE / *Phaedis leyteanus* sp. nov. / ANDO, 2017.

*Measurements.* ♀ (n = 1): Body length: 11.4 mm; IE/TD 2.50; PW/PL 1.68; EL/EW 1.59.

*Description.* Female: Oblong-oval, strongly convex above, very shiny. Colour dark reddish brown; head and pronotum metallic greenish light-blue; head somewhat greenish in part; pronotum with strong violet-purple sheen in angles of view; elytra golden coppery, bearing strong reddish purple reflexion, with first and second intervals aeneous-brassy in angles of view; antennae infusate; legs blackish brown.

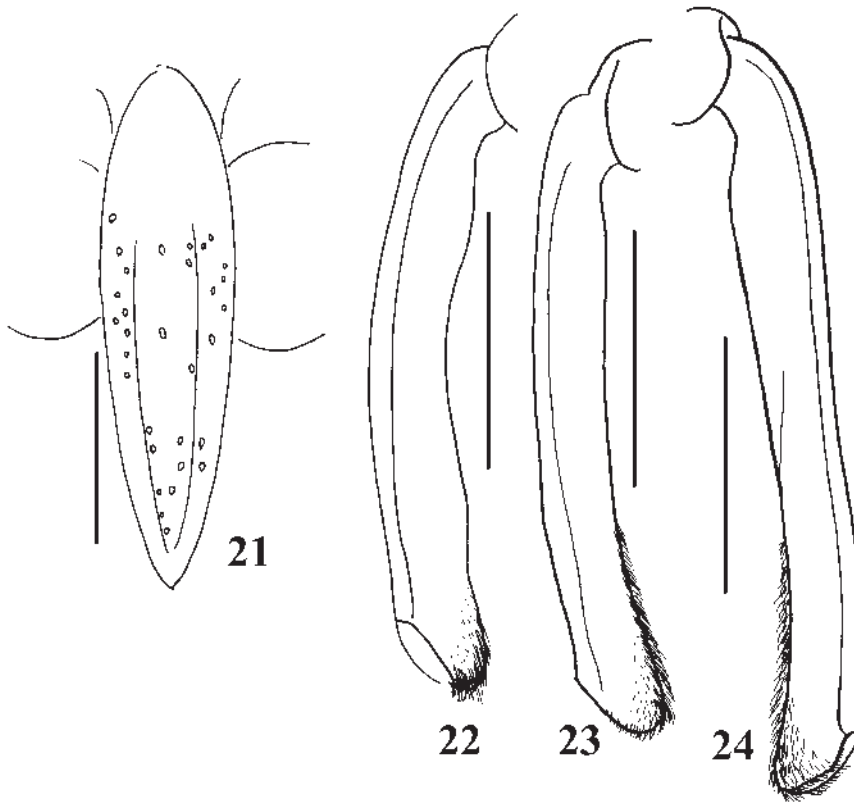
Head transversely quadrate, weakly convex, densely and finely punctate; mCG distinctly sinuate; clypeus distinctly convex in middle, weakly emarginate at apex in broad V-shape; fronto-clypeal suture fine, scarcely impressed, roundly angulate posteriorly; genae weakly and longitudinally depressed, distinctly longer than wide, subparallel-sided in basal half, steeply narrowed in apical half; frons obtriangularly depressed, weakly elevated along inner ocular-sulci; tempora thin and weakly convex, scarcely produced; eyes strongly convex and moderately transverse; inner ocular-sulci obscure, shallow and weak. Antennae stout, reaching behind middle of pronotum; five distal antennomeres distinctly dilated, forming a compact club; 11th semicircular. Ultimate maxillary palpomere small, weakly securiform; endo-apical angles acute; ecto-apical angles rectangular. Mentum triangular, rounded at apex, sub-conically elevated in middle, narrowly excavate at sides, coarsely punctate. Submentum transversely elliptical, with some coarse punctures in side by side.

Pronotum transversely quadrate, widest behind middle; disc weakly convex, gently descendant laterally, moderately sulcate along lateral margins, finely and densely punctate, the punctures finer and a little sparser than on frons; the lateral sulci weak and shallow, filled with dense microsculpture; anterior margin roundly and distinctly emarginate, almost straight in middle third, very finely beaded in each lateral fourth; lateral margins roundly narrowed forwards and weakly so backwards from the widest point, moderately sinuate before base, finely beaded; anterior angles obtusely rounded, a little produced; posterior angles acutely angulate, scarcely produced. Scutellum weakly depressed, longer than wide, acutely pointed at apex, with fine microsculpture and some minute punctures.

Elytra oblong, strongly convex above, moderately divergent posteriorly, widest at apical three-fifths, distinctly beaded at sides; striae weakly impressed, hardly so on apical declivity; strial punctures dense and rather large, serrate in part and becoming smaller in apical declivity; intervals slightly convex throughout, finely and densely punctate; humeral calli oval, distinctly humped; epipleuron flat and oblique, impunctate, finely microsculptured. Apterous.

Pronotal hypomeron weakly depressed, densely microsculptured and obscurely punctate. Prosternum finely microsculptured, obscurely beaded at apex, with weak tubercles; prosternal process (Fig. 21) fusiform, longitudinally and shallowly sulcate in middle, pointed at apex, strongly curved inwards near apex, with sparse and fine puberulous punctures. Mesoventrite elevated in middle, densely and irregularly rugose; posterior V-shaped ridge horizontal, sparsely punctate, with anterior angles rectangular in lateral view, not produced. Metaventrite rather short, strongly convex, finely and sparsely punctate. Abdomen longitudinally rugose in basal three ventrites, with punctures bearing short hair, fine and rather dense, much dense on fourth and fifth ventrites.

Legs moderate in length; profemoral teeth small, directed laterad; meso- and metafemora slender; protibiae (Fig. 22) weakly incurved, with ventral margin distinctly emarginate in basal two-thirds; mesotibiae (Fig. 23) slender and simple, slightly incurved, with inner margin bearing normal pubes-



Figs. 21–24. *Phaedis leyteanus* sp. nov., ♀. — 21, Prosternal process; 22, protibia; 23, mesotibia; 24, metatibia.  
Scale bars: 0.5 mm for Fig. 21; 1.0 mm for Figs. 22–24.

cence in apical two-fifths; metatibiae (Fig. 24) also slender, with inner margin depressed in basal half and slightly emarginate in apical half, and pubescent in the emarginate area.

Male: Unknown.

*Etymology.* The specific name of this new species is derived from the type locality.

*Distribution.* The Philippines (Leyte Is.).

*Diagnosis.* This new species is very similar to *Phaedis nemorivagus* ANDO, 2007 from Sulawesi, but is readily separable from the latter in the following characteristics: Head transversely quadrate; frons weakly raised along inner ocular-sulci; antennae reaching behind middle of pronotum; fronto-clypeal suture fine, visible instead of invisible in the latter; mentum triangular; ultimate maxillary palpomere small and weakly securiform; body colour a little different; pronotum widest behind middle; PW/PL 1.68 instead of 1.21 in the latter; pronotal anterior angles a little produced; pronotal lateral margins not straight in apical half; elytra widest at apical three-fifths, with strial punctures dense and large, serrate in part; humeral calli distinct, not vestigial; elytral intervals slightly convex throughout, densely punctate; hind wings reduced.

*Phaedis chalceus* sp. nov.

(Figs. 25–28, 32)

*Type specimen.* Holotype: ♀ (EUMJ), Mindoro Is. / Philippines / 30.VI.1989 / D. MOHAGAN leg. // HOLOTYPE / *Phaedis chalceus* sp. nov. / ANDO, 2017.

*Measurements.* ♀ (n = 1): Body length: 15.7 mm; IE/TD 2.96; PW/PL 1.62; EL/EW 1.58.

*Description.* Female: Oblong-oval, strongly convex above, shiny. Colour dark reddish brown; head brassy-coppery, somewhat greenish posteriorly; pronotum and elytra coppery; pronotum with a pair of purplish brassy patches which are quadrate, contact with lateral, anterior and posterior margins of pronotum, bordered internally by narrow metallic green-blue; mouthparts lighter in colour.

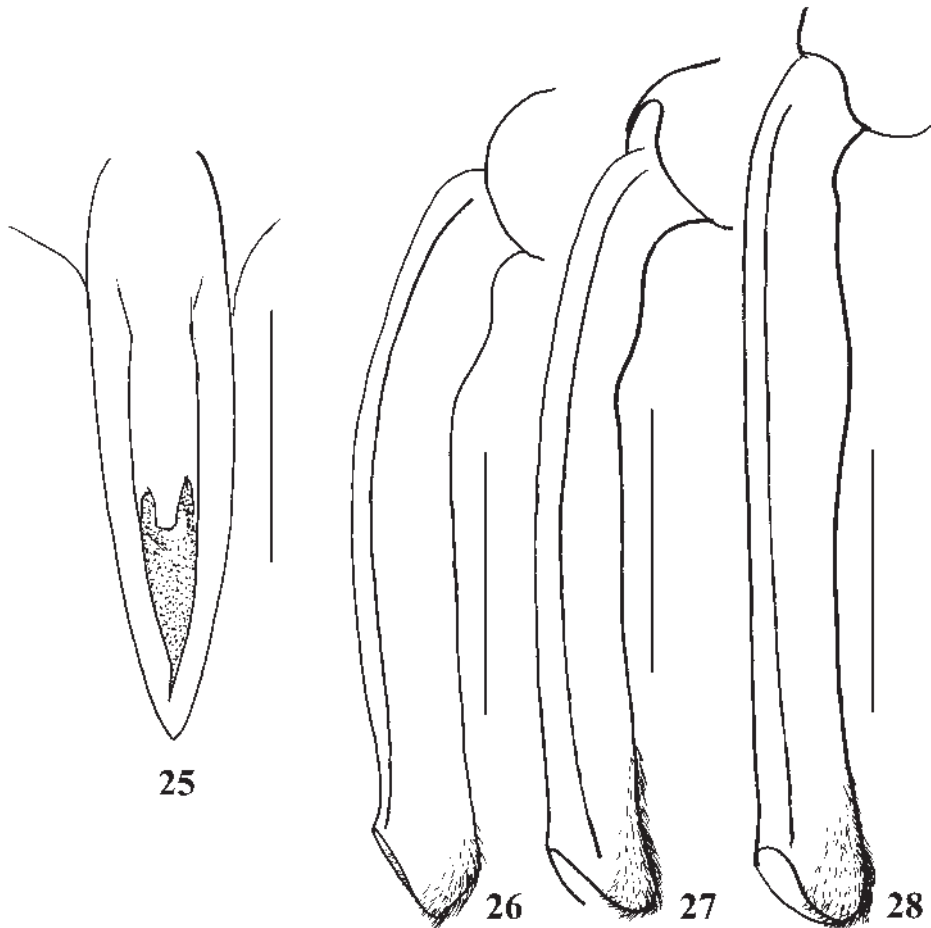
Head transversely subquadrate, weakly sloping forwards; mCG gently sinuate; punctures fine and dense, somewhat oblong, finer on genae and larger on frons behind fronto-clypeal suture; clypeus moderately convex in middle, gently emarginate at apex in middle three-fifths, roundly and distinctly produced at sides; fronto-clypeal suture finely impressed, roundly angulate posteriorly; genae longer than wide, weakly raised antero-laterally, with sides weakly roundly narrowed in basal three-fourths, steeply so in the rest; frons flat and broad, weakly sloping forwards, gently descendant laterally and not elevated there; tempora roundly produced laterad, not reaching the level of lateral peak of eyes, scarcely punctate; eyes transverse, distinctly convex, tapering laterad; inner ocular-sulci shallow and broad, obscure posteriorly. Antennae moderate in length, reaching the middle of pronotum; six distal antennomeres rather weakly dilated, forming a loosely articulate club; 11th conical. Ultimate maxillary palpomere securiform, moderate in size; endo-apical angle rectangular. Mentum transversely oval, bisinuate at anterior margin, longitudinally and widely elevated in middle and excavate at sides, densely with long setae. Submentum flabellate, strongly depressed, densely covered with long setae. Gula fine, densely microsculptured.

Pronotum transversely quadrate, widest at apical third; disc weakly convex, feebly descendant laterally, moderately sulcate along lateral margins; the sulci covered with microsculpture; punctures fine and dense, distinctly larger than on head, irregular in density, obscure on lateral spots; anterior margin weakly and arcuately emarginate, finely beaded in each lateral fourth; lateral margins rounded, gently narrowed forwards and backwards from the widest point, weakly sinuate before base, thickly beaded; anterior angles obtusely rounded, not produced; posterior angles acutely pointed, produced posteriorly. Scutellum strongly depressed, microsculptured, with a few punctures.

Elytra oblong, moderately divergent posteriorly, widest at apical third, narrowly beaded at sides, finely microsculptured; striae finely and evenly impressed, vestigial in apical portions; striae punctures small and rather sparse, irregular in density, dense in fifth and sixth striae, nearly as wide as corresponding stria, becoming smaller in apical declivity and thence mingled with punctures of intervals; intervals flat, slightly convex in apical portions, finely and densely punctate; humeral calli large and oblong, distinctly humped; epipleuron depressed, slightly oblique, smooth.

Pronotal hypomeron distinctly depressed, finely microsculptured, impunctate. Prosternum microsculptured and irregularly rugose, impunctate, not beaded at apex; prosternal process (Fig. 25) long, fusiform, elevated from the anterior margin of prosternum, evenly depressed, weakly excavate in middle, and acutely pointed at apex, strongly curved inwards in apical fourth. Mesoventrite asperate, with a smooth median carina; posterior ridge U-shaped, horizontal, coarsely punctate, with anterior angles produced and acute but rounded at apices. Metaventrite moderately convex, finely punctate in middle, coarsely and obscurely punctate laterally. Abdomen finely microsculptured, coarsely and densely punctate in basal three ventrites, finely and densely so on fourth and fifth.

Legs slender; profemoral teeth rather small, a little curved laterad; protibiae (Fig. 26) weakly in-



Figs. 25–28. *Phaedis chalceus* sp. nov., ♀. — 25, Prosternal process; 26, protibia; 27, mesotibia; 28, metatibia.  
Scale bars: 1.0 mm.

curved, with inner margin weakly emarginate between basal sixth and middle; mesotibiae (Fig. 27) slightly incurved, depressed in basal third of inner margin; metatibiae (Fig. 28) almost straight, evenly depressed dorsally.

Male: Unknown.

*Etymology.* The specific name of this new species is derived from its elytral colour.

*Distribution.* The Philippines (Mindoro Is.).

*Diagnosis.* This new species is very similar to *Phaedis picticollis* (FAIRMAIRE, 1893) from Singapore, but is readily separable from the latter in the following characteristics: Pronotal patches purple-brassy, bordered internally by single colour instead of tricolour; head with punctures oblong; mCG gently sinuate; genae never subparallel at sides; frons flat; antennae loosely articulate instead of compactly so in the latter; mentum transversely oval, not narrow linguiform; pronotum widest at apical third, moderately sulcate along lateral margins which are weakly sinuate before base; elytra with striae evenly impressed; strial punctures small and rather sparse, neither large nor dense; elytral intervals densely punctate; prosternal process fusiform; mesoventral ridge U-shaped, with anterior angles



acute.

This new species is also very similar to *P. diversicollis* PIC, 1930, but distinctly different from the latter in having the following characteristics: Elytra coppery; head subquadrate, with punctures somewhat oblong; mCG gently sinuate; genae weakly rounded in basal three-fourths; frons flat; six distal antennomeres forming a club; mentum transversely oval, with dense long setae; pronotum much more densely punctate, widest at apical third, moderately sulcate along lateral margins which are thickly beaded; elytral striae finely and evenly impressed; elytral intervals with denser punctures; strial punctures small and rather sparse; and humeral calli large and distinct.

***Phaedis andamanus* sp. nov.**

(Figs. 29, 34–37)

*Type specimen.* Holotype: ♀ (EUMJ), Port Blair / Andaman / 16.V.1982 / H. DETANI leg. // HOLOTYPE / *Phaedis andamanus* sp. nov. / ANDO, 2017.

*Measurements.* ♀ (n = 1): Body length: 11.3 mm; IE/TD 3.81; PW/PL 1.49; EL/EW 1.81.

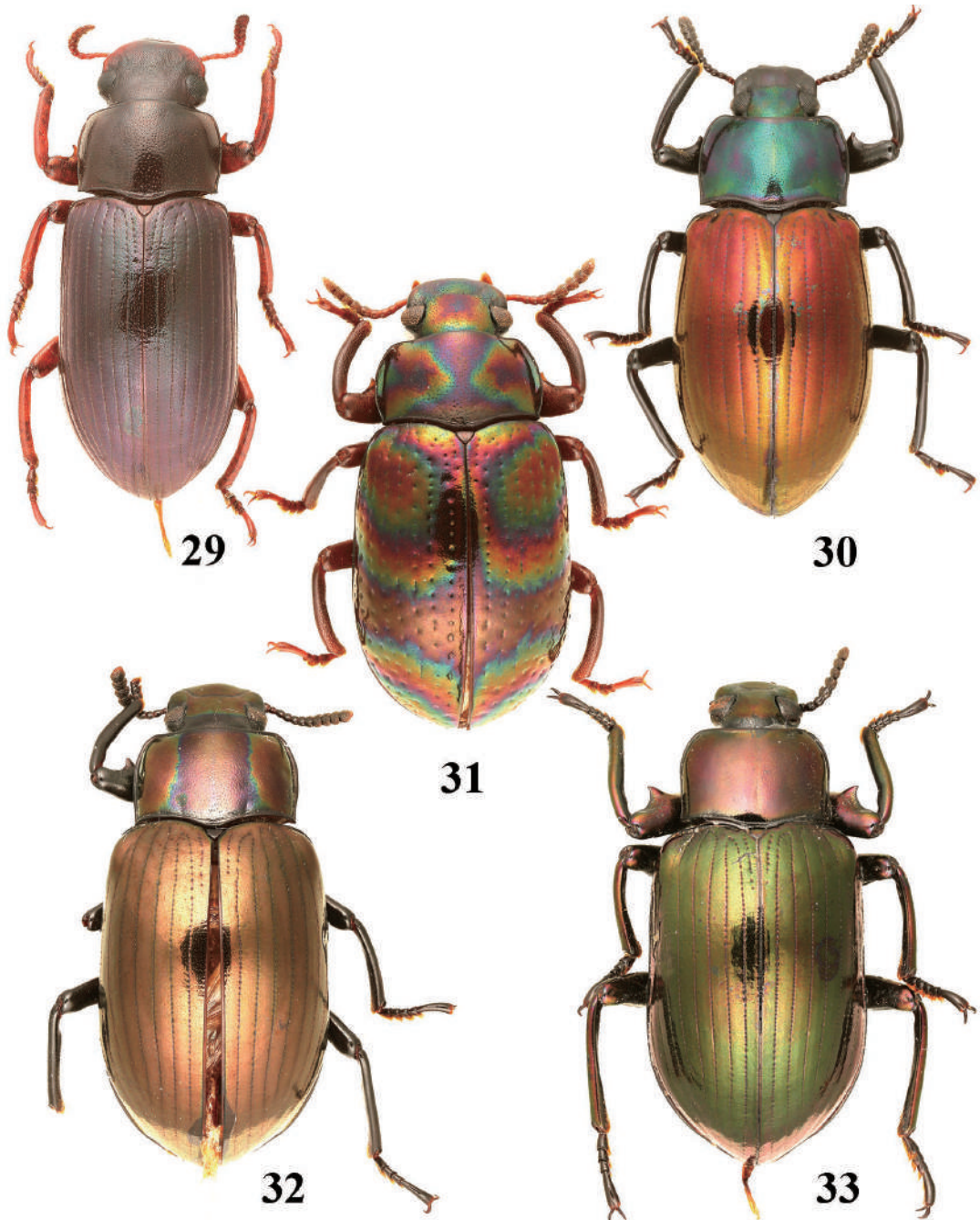
*Description.* Female: Elongate, subparallel-sided posteriorly, sub-shiny. Colour reddish brown; elytra more or less darker; venter, mouthparts, six basal antennomeres, and legs light reddish brown.

Head transversely elliptical, very finely microsculptured, with punctures oblong, small and dense on clypeus, fine and dense on genae, and sparse and large on frons; mCG slightly sinuate; clypeus gently convex, moderately produced forwards, gently and roundly emarginate at apex in middle three-fifths; fronto-clypeal suture fine, impressed laterally, depressed and roundly angulate posteriorly; genae weakly oblique laterally, longer than wide, with sides roundly narrowed in basal half and evenly so in apical half; frons broadened, distinctly depressed behind fronto-clypeal suture, not elevated laterally; tempora short, weakly produced, not reaching the level of lateral peak of eyes, coarsely and densely punctate; eyes moderately convex, rather ill-transverse in the genus; inner ocular-sulci shallow and obscure. Antennae short, reaching apical third of pronotum; five distal antennomeres thick, weakly dilated and forming a weak club; 11th oval. Ultimate maxillary palpomere weakly dilated, very weak securiform. Mentum hexagonal, strongly depressed, with a median conical elevation and shallow lateral excavations, sparsely decorated with long setae.

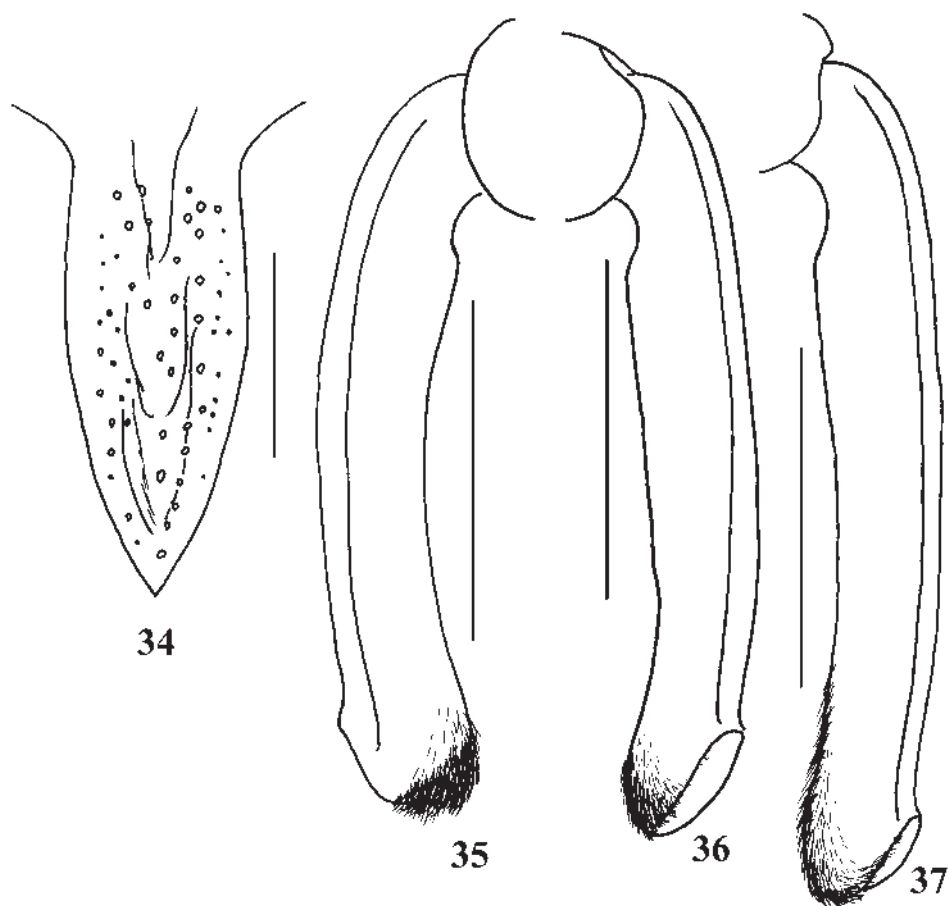
Pronotum transversely quadrate, widest before middle, very finely microsculptured; disc weakly convex forwards, subvertically fallen down laterally, finely sulcate along lateral margins, with punctures dense and large, a little smaller in lateral portions, larger than on frons; anterior margin weakly produced forwards, finely beaded in each lateral third; lateral margins weakly rounded, weakly sinuate before base, very finely beaded; anterior angles obtusely angulate, not produced; posterior angles rectangular, not produced. Scutellum depressed, pointed at posterior angle, microsculptured and densely punctate.

Elytra elongate, gently convex above, slightly divergent posteriorly and widest at apical third, very finely beaded at sides; striae distinctly impressed throughout; strial punctures irregular and rather dense, a little wider than the corresponding stria on first to fourth striae, nearly as wide as striae in the rest, a little minute and distinct even on apical declivity; intervals slightly convex in inner four intervals, weakly so in the rest, finely and densely punctate; humeral calli very weak, scarcely humped; epipleuron weakly depressed, finely microsculptured, impunctate.

Pronotal hypomeron weakly depressed, densely microsculptured, with some ambiguous punctures. Prosternum short in front of coxae, irregularly rugose, finely beaded at apex; prosternal process (Fig. 34) semi-fusiform, weakly depressed in middle and acute at apex, irregularly rugose and coarsely punctate. Mesoventrite asperate, densely rugulose, without longitudinal median carina; posterior



Figs. 29–33. *Phaedis* spp. — 29, *P. andamanus* sp. nov., holotype, ♀; 30, *P. leyteanus* sp. nov., holotype, ♀; 31, *P. niisatoi* sp. nov., holotype, ♂; 32, *P. chalcus* sp. nov., holotype, ♀; 33, *P. australis* sp. nov., holotype, ♀.



Figs. 34–37. *Phaedis andamanus* sp. nov. ♀. — 34, Prosternal process; 35, protibia; 36, mesotibia; 37, metatibia. Scale bars: 0.5 mm for Fig. 34; 1.0 mm for Figs. 35–37.

V-shaped ridge distinctly raised, horizontal, coarsely punctate, with anterior angles acutely produced forwards. Metaventricle moderately convex, finely rugulose and obscurely punctate in median third. Abdominal ventrites finely microsculptured, with dense and coarse puberulous punctures.

Legs short; profemoral teeth moderate in size, strongly curved laterad; posterior margins of meso- and metafemora moderately pubescent in each about basal third; protibiae (Fig. 35) thick, weakly incurved, devoid of emargination for receiving femoral teeth, with ventral side weakly depressed in basal half; mesotibiae (Fig. 36) almost straight, with inner margin slightly emarginate in apical half; metatibiae (Fig. 37) slender, with inner margin weakly and lamellately produced behind base.

Male: Unknown.

*Etymology.* This new species is named after the type locality.

*Distribution.* Andaman Isls.

*Diagnosis.* This new species is radically similar to *Phaedis masumotoi* ANDO, 2011 from the Philippines, but the elytra are not striped and the anterior margin of clypeus is gently emarginate in-

stead of extremely deeply notched in the latter. Also this species is similar to *P. atricolor* (PIC, 1927) from Chapa, Vietnam, but is readily separable from the latter by the following points: Body shorter; head transversely elliptical, with punctures oblong and dense instead of extremely dense in the latter; clypeus gently and roundly emarginate, not truncate; fronto-clypeal suture not bisinuate; tempora weakly produced; frons not raised along sides; inner ocular-sulci obscure; antennae shorter, reaching apical third of pronotum; pronotum finely sulcate along lateral margins, with anterior margin weakly produced, not emarginate, and anterior angles obtusely angulate; pronotal punctures larger than on frons; elytral striae distinct throughout; and humeral calli very weak, scarcely humped.

***Phaedis australis* sp. nov.**

(Figs. 33, 38–41)

*Type specimen.* Holotype: ♀ (EUMJ), Papua New-Guinea / Goroka, 16.VIII.1986 / ERBER leg. // HOLOTYPE / *Phaedis / australis* sp. nov. / ANDO, 2017.

*Measurements.* ♀ (n = 1): Body length: 17.4 mm; IE/TD 1.82; PW/PL 1.48; EL/EW 1.60.

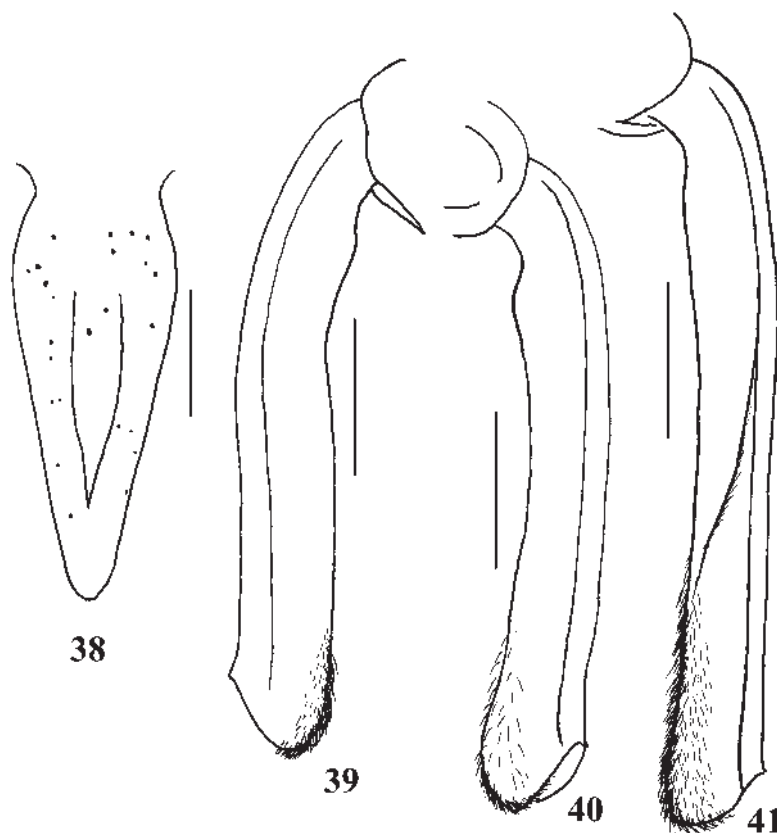
*Description.* Female: Oblong, robust, shiny, elytra distinctly wider than pronotum at base. Colour dark reddish brown; head, pronotum, scutellum and lateral margins of elytra coppery; head with greenish brassy sheen in part; elytra metallic green, with striae somewhat purplish; legs coppery, greenish brassy in part; venter metallic brassy-green and/or metallic purple-green in part; antennae infuscate, and mouthparts more or less paler.

Head hexagonal, weakly convex, with punctures fine and dense, sparse on frons; mCG neither sinuate nor notched; clypeus slightly convex, distinctly sloping in anterior portion, weakly emarginate at apex in middle three-fifths; fronto-clypeal suture very tenuous, moderately engraved, obtusely angulate posteriorly; genae rather flattened, distinctly longer than wide, with lateral margins evenly narrowed forwards in basal two-thirds and distinctly sinuate in apical third; frons depressed, slightly sloping forwards, distinctly and longitudinally elevated along inner ocular-sulci; tempora thin, a little produced laterad, scarcely punctate; eyes transverse in dorsal view, with inner margins very thick; inner ocular-sulci deep and distinct, produced posteriorly. Antennae short and thick, reaching before the middle of pronotum; five distal antennomeres strongly dilated and forming a club, coarsely with sensory pores; 11th short oval. Ultimate maxillary palpomere weakly securiform, weakly transverse, with both apical angles acute. Mentum distinct triangular, triangularly elevated in middle, narrowly and longitudinally excavate at sides, finely punctate, with long and sparse setae apically.

Pronotum subquadrate, widest at base; disc weakly convex, steeply sloping laterally, finely depressed and not sulcate along lateral margins, tenuously sulcate along basal margin, with punctures fine and dense, a little larger in middle than on head, and becoming minuter and sparser laterally; anterior margin shallowly emarginate, hardly beaded except for anterior corners; lateral margins finely beaded, very slightly emarginate in basal three-fifths, thence steeply and roundly narrowed to apex; anterior angles obtusely rounded; posterior angles pointed, a little more obtuse than rectangular. Scutellum small, weakly depressed, finely microsculptured, with a few punctures.

Elytra oblong, distinctly convex, moderately divergent posteriorly, widest at apical third, gently beaded at sides; striae distinctly engraved, becoming slightly finer apically; striae punctures irregularly dense, somewhat oblong, a little wider than the corresponding stria, but minuter on apical declivity and on basal portion of eighth striae; intervals almost flat, weakly convex on eighth and ninth intervals, microscopically and moderately punctate; humeral calli strongly humped; epipleuron flat, more or less depressed, finely and obliquely rugose, impunctate.

Pronotal hypomeron weakly convex, finely microsculptured, impunctate, very finely rugulose.



Figs. 38–41. *Phaedis australis* sp. nov. ♀. — 38, Prosternal process; 39, protibia; 40, mesotibia; 41, metatibia.  
Scale bars: 0.5 mm for Fig. 38; 1.0 mm for Figs. 39–41.

Prosternum sloping forwards, not beaded at apex, finely microsculptured and rugulose, impunctate; prosternal process (Fig. 38) cuneiform, evenly tapering towards acute apex, shallowly impressed in middle and steeply curved inwards near apical portion, finely and obscurely punctate. Mesoventrite longitudinally rugulose, with fine and tenuous median carina; posterior V-shaped ridge very weakly raised, almost smooth, with anterior angles obtusely rounded in lateral view. Metaventrite roundly depressed in middle, where the surface is sparsely and microscopically punctate. Abdomen finely and minutely punctate, distinctly and longitudinally rugose in basal three ventrites.

Legs long and robust; profemoral teeth distinctly curved outwards; meso- and metafemora rather slender; protibiae (Fig. 39) slightly incurved, with inner margin emarginate between basal seventh and basal three-sevenths; mesotibiae (Fig. 40) gently dilated apicad, weakly incurved; metatibiae (Fig. 41) almost straight, with inner margin distinctly depressed.

Male: Unknown.

*Etymology.* The specific name is derived from “southern” in Latin, because the locality of this new species, New Guinea, is the southernmost record of this genus.

*Distribution.* New Guinea.

*Diagnosis.* This new species is a little similar to *Phaedis nocturnus* ANDO, 2008 from Borneo,

but is readily separable from the latter in the following characteristics: Elytral intervals microscopically and not densely punctate, without reflection of different colour; colour of head and pronotum different; head hexagonal; clypeus emarginate at apex in middle three-fifths (cf. in middle half); IE/TD 1.82 (cf. 2.53); genae not bisinuate at sides; inner ocular-sulci deep and distinct; tempora thin, a little produced laterad; eyes with inner margins very thick; antennae not reaching beyond middle of pronotum, with five distal antennomeres forming a club instead of six in the latter; ultimate maxillary palpomere forming a weak securiform, not right-angled triangular; mentum clear triangular, not linguiform; pronotum with anterior angles rounded, not angulate, and with posterior angles not acute, obtusely angulate; elytra with strial punctures oblong, not large; humeral calli strongly humped; mesoventral ridge with obtusely rounded anterior angles; and abdomens finely and minutely punctate.

### Acknowledgements

I wish to express my deep gratitude to Dr. Antoine MANTILLERI and Dr. Olivier MONTREUIL, the Muséum National d'Histoire Naturelle, Paris, for giving me the opportunity to study the types of *Phaedis*-species described by PIC, and Mr. Maxwell V. L. BARCLAY, Natural History Museum in London for giving me the opportunity to study the type of *Phaedis indicus* BLAIR. Cordial thanks are due to Dr. Wolfgang SCHAWALLER, Staatliches Museum für Naturkunde, Stuttgart, Germany for his loaning materials under his care, and Drs. Nobuo OHBAYASHI, Kanagawa and Junsuke YAMASAKO, The University of Tokyo, for their critically reading the original draft of this paper.

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## Two New Species of the Genus *Strongylium* from Southeast Asia (Coleoptera, Tenebrionidae, Strongyliini)

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**Abstract** Two new species of the genus *Strongylium* are described from Southeast Asia: *Strongylium niisatoi* MASUMOTO et AKITA, sp. nov. from Vietnam and *S. tatsuyai* MASUMOTO et AKITA, sp. nov. from Sumatra.

We would like to express cordially thanks to Dr. Tatsuya NIISATO for his long term support toward our taxonomical study not only as editor of the journal of *Elytra* but also president of the society.

On the occasion of the celebrating his 60th birthday, we dedicate him a small paper containing descriptions of two new beautiful species of the genus *Strongylium* from Vietnam and Sumatra.

We deeply thank Dr. Ottó MERKL (The Hungarian Natural History Museum, Budapest), Messrs. Maxwell V. L. BARCLAY and Michael GEISER (The Natural History Museum, London) and Dr. Michael BALKE (Zoologische Staatssammlung, München) for loaning invaluable materials. We also thank Dr. Makoto KIUCHI (Tsukuba City) for taking very clear photographs for this article. The type depository is mentioned in each text.

*Strongylium niisatoi* MASUMOTO et AKITA, sp. nov.

(Fig. 1)

Female: Body rather elongate, fairly strongly convex longitudinally. Major posterior portion of head, scutellum, elytra and dorsal surfaces of femora and tibiae brownish black, anterior portion of head, four basal segments of antennae, and tarsi dark brown, seven apical segments of antennae nearly black, pronotum, major portions of ventral surface yellow with feeble brownish tinge; head, four basal segments of antennae, pronotum, scutellum, elytra and dorsal surfaces of legs moderately shining, elytra with bluish metallic luster, seven apical segments of antennae rather mat, ventral surface weakly shining; dorsal surface almost glabrous, ventral surface partly clothed with minute hairs, antennae rather densely clothed with fine hairs, tibiae finely, densely clothed with hairs on apico-ventral faces, tarsi clothed with setaceous hairs on ventral faces.

Head subdecagonal with basal portion concealed under pronotum, gently convex in medio-posterior portion, very weakly microsculptured; clypeus transversely hexagonal, gently inclined anteriorly and flattened in basal part, strongly bent ventrad in apical part, fairly closely punctate, the punctures becoming smaller apically, each with a fine hair; fronto-clypeal border sulcate in somewhat wide-U-shape, with lateral ends reaching exterior margins; genae strongly, obliquely raised, sparsely, finely punctate, with exterior margins rounded; frons somewhat boldly T-shaped, rather steeply inclined and hardly punctate in anterior part, gently inclined and moderately punctate in posterior part; vertex rather irregularly punctate and longitudinally depressed along midline. Eyes subreniform, moderately, roundly convex laterally, obliquely inlaid into head, with distance between eyes about 0.9 times the width of eye transverse diameter. Antennae subclavate, seven apical segments weakly flattened, tip of

terminal segment reaching basal 1/7 of elytra, length ratio from basal to apical segments: 0.40, 0.12, 0.37, 0.31, 0.29, 0.27, 0.28, 0.29, 0.31, 0.29, 0.33.

Pronotum subquadrate with rounded sides, wider than long (5 : 4), widest at middle, gently narrowed anteriorly and posteriorly from the widest point, rather strongly sinuous in basal 1/3; apex very slightly produced and ridged in middle, the ridge tapering laterad and becoming fine rims in lateral parts; base very weakly produced, grooved and ridged, the ridge obviously bolder than that of apex; sides steeply inclined, slightly enveloping ventral body, with border of ventral part finely rimmed, the rim invisible from above; front angles rounded, hind angles acutely projected postero-laterad; disc well-convex in anterior portions, longitudinally depressed along midline (thus convexity divided into two portions), obliquely impressed at basal 1/3 on each side, rather closely punctate, each puncture with a minute hair. Scutellum triangular with rounded sides, weakly depressed in medial part, weakly microsculptured, sparsely scattered with minute punctures in lateral parts.

Elytra elongated elliptical though the basal portion is truncate, 2.30 times as long as wide, nearly four times the length and 1.40 times the width of pronotum, widest at middle, very weakly constricted at basal 1/3; dorsum longitudinally convex, highest at basal 2/9; disc punctate-striate, the striae weak, the punctures round and rather strong, those in interior portion small and closely set and those in middle and exterior portions large and sparsely set, each with a granule at interior margin; intervals nearly flat in interior portions, convex in lateral and posterior portions, microsculptured, hardly punctate; humeri gently convex; apices weakly, roundly produced.

Terminal segment of maxillary palpi moderately dilated, with both sides weakly rounded and apex obliquely truncate. Mentum somewhat rhomboid, strongly convex in antero-medial part, depressed in lateral parts, rather smooth in anterior half, microscopically ruguloso-punctate and clothed with suberect, minute hairs in posterior half. Gula rather wide and moderately convex, fairly smooth, weakly, transversely micro-aciculate, with lateral borders weakly impressed.

Prosternum fairly short, weakly microsculptured, flattened and ruguloso-punctate in anterior part, strongly raised in medial part, longitudinally grooved in area between procoxal cavities, longitudinally ridged on both sides of the groove around interior margins of procoxal cavities; prosternal process strongly depressed and weakly, triangularly produced, pointed at apex. Mesoventrite short, weakly microsculptured and minutely punctate, strongly depressed in anterior part, raised and smooth in posterior part, longitudinally depressed in somewhat Y-shape in postero-medial part, with antero-interior borders of mesocoxal cavities rather strongly raised. Metaventrite gently depressed and ruguloso-punctate in anterior part, well-convex, microsculptured and sparsely scattered with finely haired punctures broadly in middle and posterior parts, with a longitudinal impression in posterior 3/4 on midline.

Abdomen weakly microsculptured, scattered with small punctures with fine hair; 5th abdominal ventrite clothed with longer hairs than those on four basal ventrites, very weakly depressed in area close to apex, with apex slightly truncate.

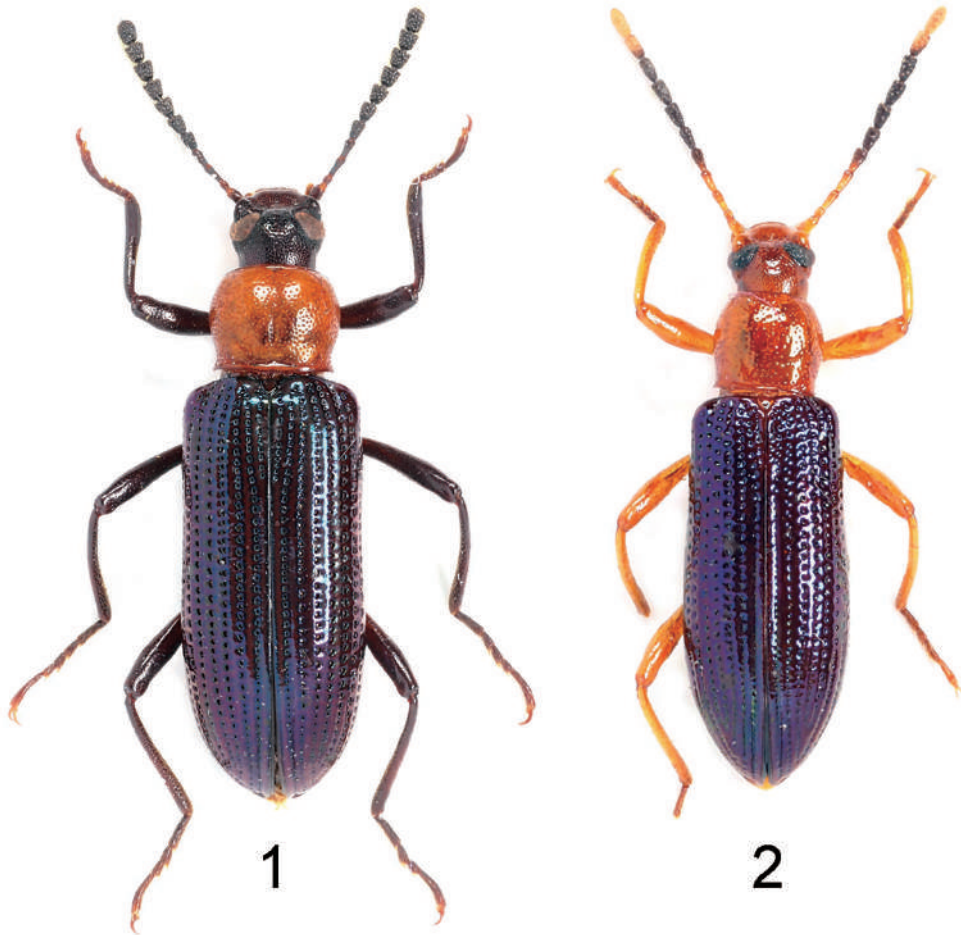
Femora subclavate, closely and finely punctate. Tibiae closely and finely punctate; protibia slightly curved exteriorly, densely haired in apical 5/6 on ventral face; mesotibia weakly curved interiorly and very slightly so dorsad, fairly densely haired in apical 5/6 on interior face; metatibia weakly curved interiorly and very slightly so dorsad, haired in apical 5/6 on interior face. Tarsi rather stout; length ratios from basal to apical segments of pro-, meso- and metatarsi: 0.24, 0.11, 0.17, 0.13, 0.62; 0.42, 0.26, 0.24, 0.19, 0.62; 0.63, 0.24, 0.20, 0.79.

Male: Unknown.

Body length: 9.5 mm.

*Type specimen.* Holotype: ♀, "Viet Nam / TAM DAO / 6.-12.6.1989 / J. Secky lgt. // COLLEC-





Figs. 1–2. Habitus of holotypes, females. — 1, *Strongylium niisatoi* MASUMOTO et AKITA, sp. nov. (Vietnam); 2, *S. tatsuyai* MASUMOTO et AKITA, sp. nov. (Sumatra).

TION / STANISLAV BECVAR". In the collection of the National Museum, Prague.

*Notes.* We have been trying to identify the present species by literature and examining specimens preserved in several European museums for these fifteen years. Finally we concluded that this species is new to science. We noticed that it is very distinguishable and isolated species in the Asian fauna. On the occasion of visiting Zoologische Staatssammlung München, we found a relatively resembling species from West Africa in the collection. So, we are going to describe comparative notes as follows.

This new species somewhat resembles *Strongylium seminigrum* GEBIEN, 1921, from West Africa. The former can be distinguished from the latter by the antennae slenderer, the head less strongly punctate, with the clypeus more strongly depressed in the basal part, the genae more strongly raised, the eyes more strongly obliquely inserted into the head, the distance between eyes wider (about 1.4 times the width of eye transverse diameter in the latter), the pronotum longer (about 1.7 times as wide as long in the latter), more noticeably constricted near the base, the disc smoother and less coarsely punctate, the elytra shining and a little slenderer (sericeous and about 2.2 times as long as wide in the

latter), strial punctures round, smaller and sparser (transverse, larger and closer in the latter), and the antennae, the head and fore legs darker in color (brownish yellow in the latter).

*Etymology.* The species is named after Dr. Tatsuya NISATO in honor of his great contribution to the coleopterology.

*Strongylium tatsuyai* MASUMOTO et AKITA, sp. nov.

(Fig. 2)

Female: Body rather elongate, fairly strongly convex longitudinally. Four basal and two apical segments of antennae, head, pronotum, scutellum, legs and almost wholly portion of ventral surface yellow with brownish tinge, five remaining segments of antennae and eyes nearly black, elytra purple; major portion of dorsal surface including four basal segments of antennae and legs rather strongly shining, elytra metallicly shining, ventral surface moderately shining; dorsal surface almost glabrous, ventral surface partly clothed with minute hairs, antennae finely, particularly seven apical segments densely haired, tibiae densely clothed with hairs on apico-ventral faces, tarsi clothed with setaceous hairs.

Head subdecaagonal with basal portion concealed under pronotum, very weakly microsculptured; clypeus transversely subhexagonal, depressed and flattened in basal and medial parts, bent ventrad in apical part, weakly rounded in front, rather densely scattered with microscopic punctures; fronto-clypeal border finely impressed, straight in medial part, bent anteriorly in lateral parts, with lateral ends reaching exterior margins; genae obliquely raised, sparsely scattered with small punctures, with exterior margins rounded; frons bold T-shape, rather steeply inclined and sparsely punctate in anterior part, raised and punctate (the punctures often fused with one another and forming longitudinal grooves) in posterior part, with a longitudinal impression on midline; vertex moderately convex, scattered with larger punctures than those on frons. Eyes rather strongly convex laterad, noticeably obliquely inlaid into head, with distance between eyes about 0.7 times the width of eye transverse diameter. Antennae subfiliform, becoming slightly bolder apicad; tip of the terminal segment reaching basal 2/5 of elytra; length ratio from basal to apical segments: 0.32, 0.12, 0.33, 0.32, 0.32, 0.29, 0.28, 0.29, 0.32, 0.30, 0.33.

Pronotum subquadrate with rounded sides, wider than long (7 : 6), widest at basal 2/5, gently narrowed anteriorly and posteriorly from the widest point, sinuous in basal 1/3; apex nearly straight and ridged, the ridge tapering laterad; base very slightly produced in middle, weakly sinuous in lateral parts, grooved and ridged, the ridge obviously bolder than that of apex; sides steeply inclined and enveloping ventral body, though the border of ventral body is indefinite; front angles very slightly obtusely angulate, hind angles noticeably acute; disc gently convex, depressed in basal portion, weakly, obliquely impressed at basal 1/3 in lateral portions, scattered with punctures, which are larger and sparser than those on head. Scutellum triangular with rounded sides, raised posteriorly, almost smooth, very weakly depressed in medial part, sparsely scattered with minute punctures in lateral parts.

Elytra subfusiform, though the basal portion is truncate, 2.35 times as long as wide, 3.77 times the length and 1.51 times the width of pronotum, widest at middle, very weakly narrowed anteriorly and roundly narrowed from the widest point, slightly constricted at basal 2/9; dorsum fairly strongly convex longitudinally, highest at basal 1/3; disc with punctate-striate, the striae disappeared in antero-lateral portions, becoming stronger in posterior portions, the punctures small and closely set in the interior portions, becoming larger and sparser in lateral portions, and much more smaller and closer in posterior portions; intervals nearly flat in interior portions, rather strongly convex in the remaining portions, very weakly microsculptured and often micro-aciculate, sparsely scattered with minute punctures

(visible under 50 times magnification); humeri gently convex; apices weakly, roundly produced.

Terminal segment of maxillary palpi moderately dilated, with both sides gently rounded and apex nearly straight. Mentum somewhat obtrapezoidal, strongly convex in medial part, steeply inclined laterad, depressed along lateral margins. Gula rather strongly convex, fairly smooth, impressed along lateral borders.

Prosternum fairly short, very finely rimmed along apex, strongly raised posteriad, longitudinally grooved in area between procoxal cavities, longitudinally ridged on both sides of the groove; prosternal process strongly depressed and very slightly, roundly produced posteriad, closely, microscopically punctate. Mesoventrite short, weakly microsculptured and minutely punctate, depressed in anterior part, raised in antero-medial part, rather strongly depressed in Y-shape in medial part, rather strongly raised in areas along antero-interior borders of mesocoxal cavities. Metaventrite weakly depressed, sericeously microsculptured and rather closely, minutely punctate in anterior part, gently convex, sparsely scattered with punctures in medial and posterior parts, with a longitudinal impression in apical 3/4 on midline. Abdomen weakly microsculptured, sparsely scattered with small punctures; two basal ventrites and basal part of 3rd longitudinally wrinkled; 5th ventrite closely scattered with small punctures in apical part, with apex narrowly rounded.

Femora subclavate, closely, finely punctate. Tibiae closely, finely punctate; protibia gently curved intero-ventrad, densely haired in apico-ventral part; mesotibia weakly curved intero-ventrad, densely haired in apico-ventral part; metatibia nearly straight, haired in apico-ventral part. Tarsi rather long, densely clothed with setaceous hairs; length ratios from basal to apical segments of pro-, meso- and metatarsi: 0.13, 0.06, 0.07, 0.05, 0.29; 0.28, 0.19, 0.13, 0.12, 0.33; 0.41, -, -, - (three apical segments lacking in the holotype).

Male: Unknown.

Body length: 6.4 mm.

*Type specimen.* Holotype: ♀, “Sumatra, Prov. / Aceh-Selatan / J. Klapperich // Babahrot, 100m, 15.-20.8.1983”. In the collection of the Hungarian Natural History Museum.

*Notes.* The new species resembles *Strongylium malaccanum* MASUMOTO, 2003, originally described from “Kwala-Lumpur”, Malacca, based on a female. As compared with *S. malaccanum*, the new species possesses the body obviously larger (5.4 mm in *S. malaccanum*), the head more noticeably punctate, the antennae longer (tip of the terminal segment reaching basal 1/4 of the elytra in *S. malaccanum*), and the eyes less strongly, obliquely inlaid into the head, the distance between eyes obviously wider (0.43 times the width of the eye transverse diameter in *S. malaccanum*), the pronotum more closely and clearly punctate, the elytral punctures in striae closer and finer, and the protibiae slightly curved (nearly straight in *S. malaccanum*). The body coloration is also different and able to be distinguished: two terminal segments of antennae noticeably yellowish and the elytra purple (dark brown in *S. malaccanum*).

*Etymology.* The specific epithet refers to the first name of Dr. Tatsuya NIISATO.

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## A New Species of the Genus *Tagalog* from Halmahera Islands (Coleoptera, Cerambycidae, Prioninae)

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**Abstract** A new macrotomine species is described under the name of *Tagalog niisatoi* sp. nov. The taxonomic note on the relation between genera *Anomophysis* and *Tagalog* is given.

Through the examinations of a series of Prioninae specimens from eastern Indonesia around Halmahera Island, a new species supposed to be a member of the tribe Macrotomini was found. I am going to describe it under the name of *Tagalog niisatoi* sp. nov.

I am very glad to participate in the special publication for celebrating Dr. Tatsuya NIISATO's 60th birthday. Since he has been very helpful in many aspects of my studies on the subfamily Prioninae, I wish to express my thanks for his help and to appreciate his works taking this opportunity.

Before going further, I would like to express my sincere gratitude to an anonymous reviewer for critically reading the original manuscript. I also owe to Mr. Alain DRUMONT of Royal Belgian Institute of Natural Sciences for his kind help through the way of the present study.

### *Tagalog niisatoi* sp. nov.

(Figs. 1–6)

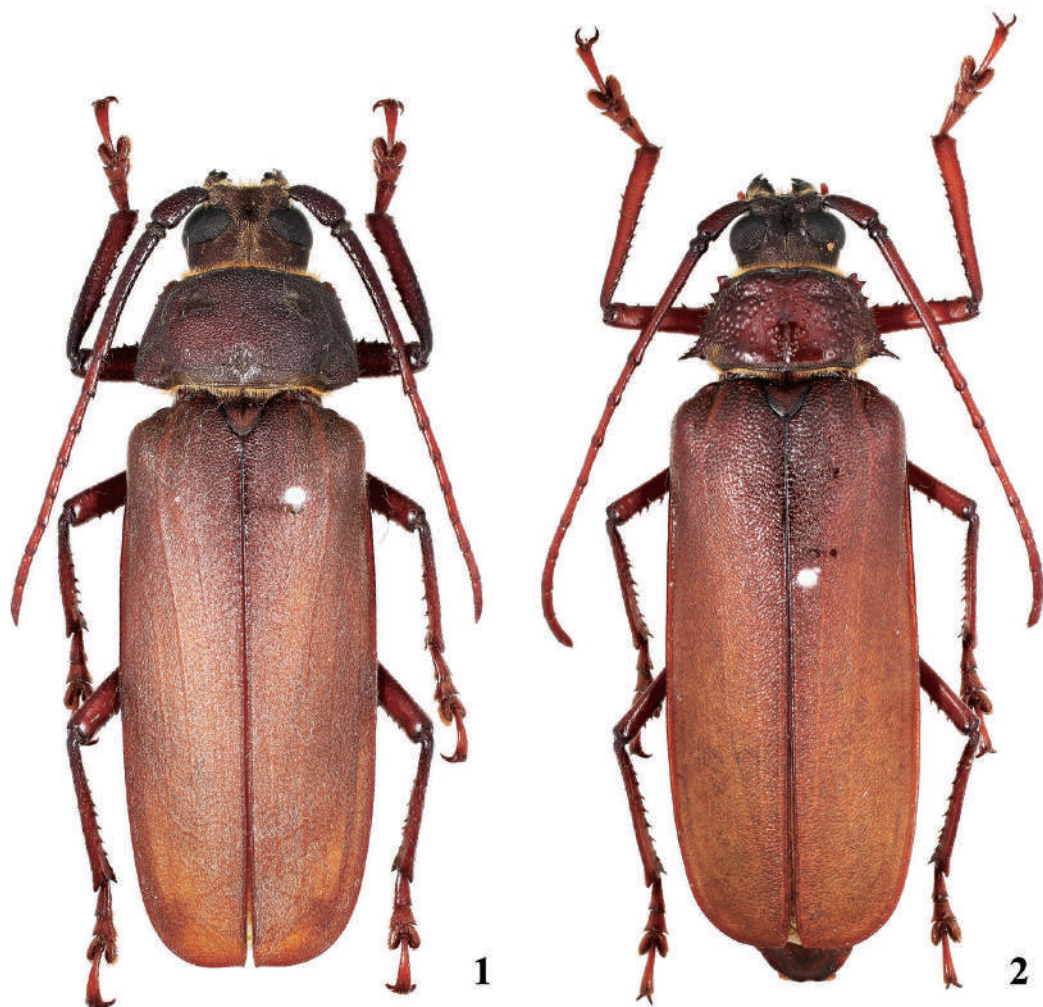
*Description.* Male: Integument largely brown, head including eyes and mandibles, pronotum, basal three segments of antennae and around jointing parts of legs darker, and slightly reddish on segments 4–11 of antennae, elytra and abdomen.

Head 0.6 times as long as wide, sub-coarsely puncto-granulate for the most parts, clypeus covered with a tuft of yellow hairs and other parts sparsely haired; antennal tubercles small; vertex furnished with a deep and wide median groove between antennal tubercles which are narrowly extending to basal margin; eyes bulging and inter-space between upper eye lobes about a half of each lobe.

Mandibles about a fourth as long as head, each mandible slightly longer than the basal width and furnished with two inner teeth and short but acute apex, covered with sparse punctures and elect short hairs.

Antennae slender, attaining to middle of elytra; segments 1–3 deeply rather roughly punctate; segments 4–10 also punctate but the punctures becoming sparser and shallower toward apex; segments 8–11 provided with poriferous area which is very short in 8 or 9 and covering almost full length in 10 or 11; segment 1 not attaining to posterior margin of eye; segment 3 about 2.1 times as long as 1 (about as long as pronotal length), widest at base and becoming narrower toward apex, strongly depressed, roughly granulate underside and furnished with a small spine at each side of apex; segment 4 about 0.6 times as long as 1, slightly depressed underside and with a small spine at each side of apex; segments 5–10 each similar to 4 and gradually becoming shorter toward apical segments; segment 11 as long as 4.

Pronotum about 0.6 times as long as wide, widest at posterior angles and almost straightly narrowed forward, anterior angles obtuse, each side furnished with a small and sub-acute basal tooth and



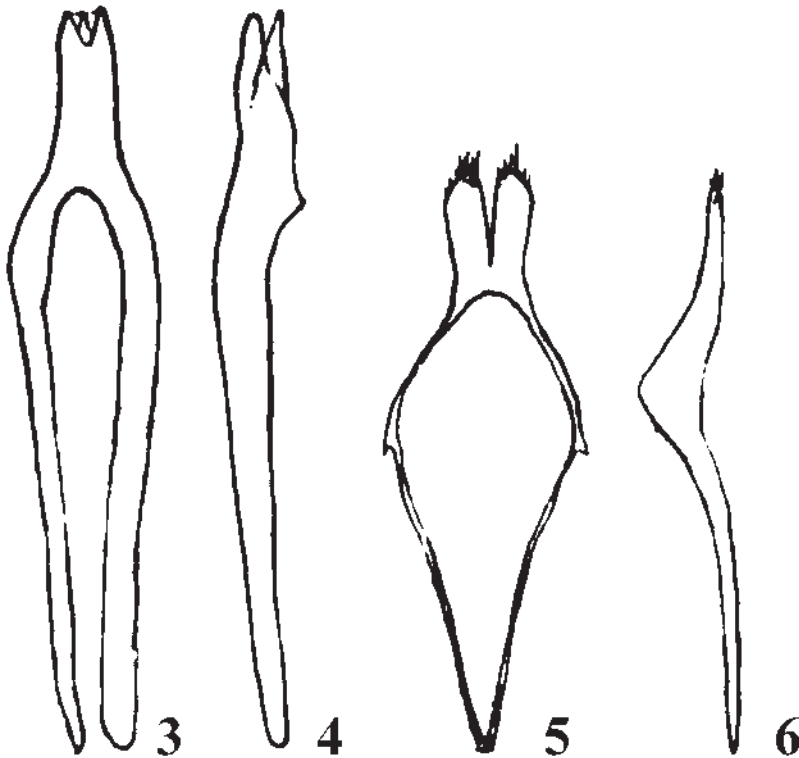
Figs. 1–2. Habitus of *Tagalog niisatoi* sp. nov. — 1, Holotype, male from Halmahera Is.; 2, paratype, female from Bacan Is.

one or two small teeth near anterior corner; disk strongly convex, tumescent, furnished with three triangular depressions, of which two are at each near side of apical third and one at middle of anterior to base, covered with fine and dense tubercles, glabrous at middle and thinly haired near each side and basal margin which is also with sparse small punctures.

Scutellum small, tongue-shape, sparsely shallowly punctate.

Elytra parallel-sided, rounded apically, about 2.6 times as long as wide, covered with thin and sparse pubescence, provided with feeble sub-parallel two inner costae and more feebler two outer costae; disk furnished with dense and large granules around scutellum, the granulate parts extending along suture to the half of elytra, narrowly furnished with sparse punctures around humeri, and other parts of elytra indistinctly irregularly granulate.

Prosternum tumescent, glabrous and finely punctate. Metasternum with reverse V-formed de-



Figs. 3–6. Male genitalia of *Tagalog niisatoi* sp. nov., holotype. — 3, 4, Median lobe; 5, 6, lateral lobe. — 3, 5, Dorsal view; 4, 6, lateral view.

pressed area which is filled with long hairs at posterior middle, the other parts of antero-lateral area glabrous and covered with dense punctures. Abdomen sparsely punctate, shiny and covered with short and sparse hairs; 5th ventrite emarginated apically and hair-fringed along lateral and apical margins.

Legs short and slender, dorsal side sparsely haired and punctate; femora furnished with several small spines on underside; protibia strongly depressed on underside and with several acute spines along inner margins, meso- and metatibiae depressed with acute spines on underside; protibia about as long as metatibia; tarsal segments 1 and 2 acutely pointed apico-laterally, segment 3 deeply bi-lobed and rounded apically.

Male genitalia not well sclerotized; median lobe (Figs. 3, 4) longer than scape of antennae, apex of ventral plate short and not well projected beyond dorsal plate; parameres (Figs. 5, 6) short and small.

Body length: 38–43 mm.

Female: Similar to male in color. Head smaller and longer. Antennae slightly longer than in male, segment 3 more slender, furnished with apical spines on external angle of segments 4–10, and also with small spines on inner middle of segments 4 and 5. Pronotum relatively smaller as compared with that of male, not tumescent, 0.5 times as long as wide, widest at posterior angle and almost straightly narrowed forward; lateral margin with an acute, long spine on posterior angle, with several small spines along margins and with a large but not acute spine on anterior angle; disk not so strongly

convex and covered with sparse rough punctures, furnished with a shallowly concaving median groove and a shiny smooth area along basal margin. Scutellum and elytra glabrous. Prosternum and metasternum not tumescent, covered with sparse long hairs. Legs slenderer than in male.

Body length: 43 mm.

*Type series.* Holotype: ♂ (Figs. 1, 3–6), Halmahera Is., Indonesia, IX.2002, no further data available, tentatively in the author's collection and will be deposited to the Department of Zoology, National Museum of Nature and Science, Tsukuba after the revision of the genus *Tagalog* will over. Paratypes: 1 ♂, 1 ♀ (Fig. 2), Mt. Sibera, alt. 500–700 m, Bacan Is., 2–12.V.2008, St. JAKL leg. in the author's collection.

*Distribution.* Halmahera Is. and Bacan Is., Indonesia.

*Diagnosis.* This new species is close to *Tagalog lumawigi* HÜDEPOHL. In the male, but the new species is different in having a pair of spines at each apex of antennal segments 3–10 while in *T. lumawigi* only having in segments 3–7; the former antenna with segment 3 is much longer than twice of scape but in the latter about as long as twice of scape. They can also be distinguished by punctures of male pronotum which are almost evenly covered with dense and sub-uniform punctures in *T. niisatoi* sp. nov., but in the latter with two kinds of punctures, small and large. Elytra are evenly covered with thin pubescence in *T. niisatoi* sp. nov. but with sub-glabrous in the latter. Apex of median lobe is not projected in *T. niisatoi* sp. nov. but distinctly projected in the latter.

In the female, pronotum is deeply and irregularly punctate and glabrous on middle parts in *T. niisatoi* sp. nov., but in *T. lumawigi*, rough granules are mingled with irregular punctures without shiny part at middle and also furnished with elect hairs.

*Etymology.* The name of this species is given in honor of Dr. Tatsuya NIISATO. Hereby I wish to express my appreciation to his contribution to the study of Cerambycinae from eastern Indonesia, which gave me important suggestions to the study of the Prioninae from this area.

### Notes on the Relation between the Genera *Tagalog* and *Anomophysis*

The genus *Tagalog* was elected by HÜDEPOHL (1987) as a member of Macrotomini based on a male of *T. lumawigi*. Later, *T. minor* HÜDEPOHL, 1994 and *T. dembickyi* DRUMONT, 2009 were added and *Macrotoma ritsemayi* LAMEERE, 1903 was also transferred to this genus. In the original description, HÜDEPOHL (1987) noted that the genus *Tagalog* differs from the known genera of this group by the combination of the following three characters (♂): (1) Antennae with segment 3 much longer than scape or segment 4; (2) prothorax without an elevated lateral margin, sides without spines or teeth; (3) sexual puncture on pronotum and sternum; triangular, very distinct depression on metasternum. However, after scrutinizing materials in this genus which have been accumulated in recent ten years including all the four species and the female of *T. lumawigi*, the character of (2) does not always agree with the genus *Tagalog* and it is better to be omitted from the generic character.

As HÜDEPOHL (1987) regarded this genus as a member of the tribe Macrotomini THOMSON, 1860 subdivision Cnemoplitiens sensu LAMEERE (1903), the word "this group" meant some genera in Cnemoplitiens such as *Cnemoplites* NEWMAN 1842 etc. (16 genera are included in Cnemoplitiens LAMEERE 1903, p. 86) and every genera in the subdivision Macrotomiens sensu LAMEERE (1903) (= the tribe Macrotomini THOMSON sensu QUENTIN & VILLIERS, 1981) must have been omitted. The characters, which were used here, are quite peculiar when this genus is regarded as Cnemoplitiens but when it is regarded as Macrotomiens, they are rather common characters and agree with many species in the genera which belong to Macrotomiens such as *Anomophysis* QUENTIN et VILLIERS, 1981. Actually, some species in the genus *Anomophysis*, such as *A. modesta*, is rather close to the genus *Tagalog*

in many respects. Therefore, when the genus *Tagalog* is regarded as a member of Macrotomini, the generic diversity mentioned above cannot be applied between the genera *Tagalog* and *Anomophysis*. Unfortunately, HÜDEPOHL (1987) did not mention the precise reason why he considered the genus *Tagalog* should belong to Cnemoplitiens, and after comparing this genus to every known genera in Cnemoplitiens and Macrotomini, it seems to be closer to the latter than to the former. These facts suggest that the genus *Tagalog* probably belongs to the subdivision Macrotomini sensu LAMEERE (1903) (= tribe Macrotomini sensu QUENTIN & VILLIERS, 1981) and, at the same time, it is possible to be a junior synonym of the genus *Anomophysis*. But still they seem to be separated into two groups based on the observation of known species belonging to both genera, though some species in the genus *Anomophysis* may be better to be transferred to *Tagalog*.

As discussed above, I tentatively define these two genera by the following points and keep *Tagalog* as a valid genus.

1. Antennae shorter than two-thirds of body in male, male antennae shorter than those of female, segment 3 short, usually not exceeding the base of pronotum, flattened underside and rounded in dorsal side, male protibia about as long as metatibia ..... *Tagalog*
- Antennae longer than body in male and two-thirds in female, male antennae much longer than those of female, with segment 3 usually exceeding the base of pronotum, flattened underside and dorsal side not rounded but having one or two flattened faces (usually having a triangular section), male protibia much longer than metatibia ..... *Anomophysis*

These two genera from eastern Indonesia seem to contain a long series of unsolved problems and some more investigations will be required in the future.

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## *Niisatoa malaisei*, a New Genus and Species of the Tribe Xylosteini from Myanmar (Coleoptera, Cerambycidae, Lepturinae)

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**Abstract** A new xylosteine genus, *Niisatoa* gen. nov. is established for *Niisatoa malaisei* sp. nov. from Myanmar.

In 2014, the second author, Tomáš TICHÝ visited the Bernice P. Bishop Museum in Honolulu and found an interesting specimen determined as "*Teledapus* n. sp." by J. L. GRESSITT. At a glance, it seemed to have some relation with genera of the tribe Xylosteini REITTER, 1913 of the Lepturinae. He passed this information to the first author and we borrowed this specimen through the courtesy of Mr. James BOONE, an entomology collection manager of the Bishop Museum.

A brief examination of this specimen indicated a species new to science, but we hesitated to describe it because only one female specimen was available. However, no additional specimens were collected during several recent expeditions to the region and we are afraid that there is only a slight chance of discovering additional specimens in the near future. After a close examination, we concluded that the specimen is a distinct new species which should be placed in a new genus belonging to Xylosteini. The specimen is described herein.

Before going into details, we wish to express sincere gratitude to Alexander MIROSHNIKOV (Krasnodar, Russia) and Junsuke YAMASAKO (The University of Tokyo) who kindly read an early draft of this manuscript and provided useful suggestions. My special thank is also due to Petr ŠVÁCHA (Czech Academy of Sciences) for critical reading of the original manuscript of this paper.

### Tribe Xylosteini REITTER, 1913

Xylosteina REITTER, 1913: 5. Type genus: *Xylosteus* FRIVALDSZKY, 1838.

Xylosteini: PLAVILSTSHIKOV, 1936: 107, 493; GRESSITT, 1951: 47; PANIN & SAVULESCU, 1961: 73; ŠVÁCHA & DANILEVSKY, 1989: 23, 28; MIROSHNIKOV, 1998: 8; CHANG & CHEN, 2001: 33, 34, 235; BOUSQUET *et al.*, 2009: 8, 23; BOUCHARD *et al.*, 2011: 463; BI & OHBAYASHI, 2014: 6; ŠVÁCHA & LAWRENCE, 2014: 155; DANILEVSKY, 2014: 66.

*Description.* The tribe Xylosteini is generally characterized by coarsely faceted eyes, anteriorly abbreviated head, and laterally tuberculate pronotum. Body usually elongate with normally developed hind wing which is rudimentary in females of species of *Xylosteus*. The related tribe Teledapini PASCOE, 1871 is separable from Xylosteini by the following features (MIROSHNIKOV, pers. comm.): Rudimentary hind wing with no distinct venation in both sexes; larger coxae (particularly the mesocoxae); lateral tubercles of pronotum from weakly developed to well-expressed, broadly rounded laterally, but as a rule not acuminate; elytra of both sexes elongate oval with reduced humeri.

*Notes.* The tribe Teledapini was originally erected by PASCOE (1871) as a new subfamily Teledapinae based on *Teledapus dorcadioides* PASCOE, 1871. Since PASCOE (1871), this subfamily was not accepted by most researchers and the genus *Teledapus* was placed in Lepturini (AURIVILLIUS, 1912), Rhagiini (BOPPE, 1921), or Xylosteini (MIROSHNIKOV, 2000), but BOUSQUET *et al.* (2009) reinstated it

as a lepturine tribe. At present, the tribe comprises three genera, *Teledapus*, *Teledapalpus* MIROSHNIKOV, 2000, and *Parateledapus* MIROSHNIKOV, 2000 (TAVAKILIAN & CHEVILLOTE, 2017), but the relationship between Teledapini and the other lepturine tribes has never been properly discussed. MIROSHNIKOV, in the course of our personal communication, kindly re-examined the relation between Teledapini and Xylosteini, and contributed his opinion that the tribe Teledapini would be separable from Xylosteini. The detailed results will be reported by him.

*Niisatoa* N. OHBAYASHI et TICHÝ, gen. nov.

Type species: *Niisatoa malaisei* N. OHBAYASHI et TICHÝ, sp. nov.

*Description* (female). Body elongate with relatively long slender legs and posteriorly widened elytra. Head short with obliquely inclined mouthparts and steep short frons. Eyes oval without emargination, coarsely faceted; interocular space wider than distance between antennal cavities. Maxillary palpus with terminal segment triangular and obliquely truncate apically, 2.6 times as long as the penultimate segment. Antennae inserted somewhat before eyes, reaching apical fourth of elytra; scape stout, slightly curved and thickened apically; flagellum filiform with apices of most antennomeres expanded, second flagellomere shorter than first and third.

Pronotum longer than the basal width, deeply constricted at apical fourth and shallowly so near base; sides with conical tubercles near basal third. Prosternum with intercoxal process very narrow with slightly dilated apex; procoxal cavities narrowly open behind. Mesonotum with stridulatory plate symmetrically divided by a median line. Mesosternal process oblong with bifurcate apex. Mesocoxal cavity open to episternum. Metasternum not remarkably abbreviated, twice as long as mesosternum.

Elytra distinctly widening from humeri to apical three-fourths, then gently rounded to bluntly angulated inner angles; slightly dehiscent apically. Hind wings not reduced, with venation type widespread in Lepturinae (Fig. 5; cf. OHBAYASHI & LIN, 2012), with five free veins in medial region and wedge cell absent. Legs slender with slightly clavate femora; fifth segment of tarsi not inflated.

*Etymology*. The generic name is dedicated to Dr. Tatsuya NIISATO, an excellent leader in coleopterology and one of the most active longicornists in Japan, on occasion of his 60th birthday. Gender: feminine.

*Notes*. The type specimen of this new genus bears GRESSITT's determining label "*Teledapus* n. sp." It is habitually similar to the genus *Teledapus*, but does not have a close relation with the latter, differing in several important characters. We therefore concluded that the new genus does not belong to Teledapini and should be placed under the tribe Xylosteini.

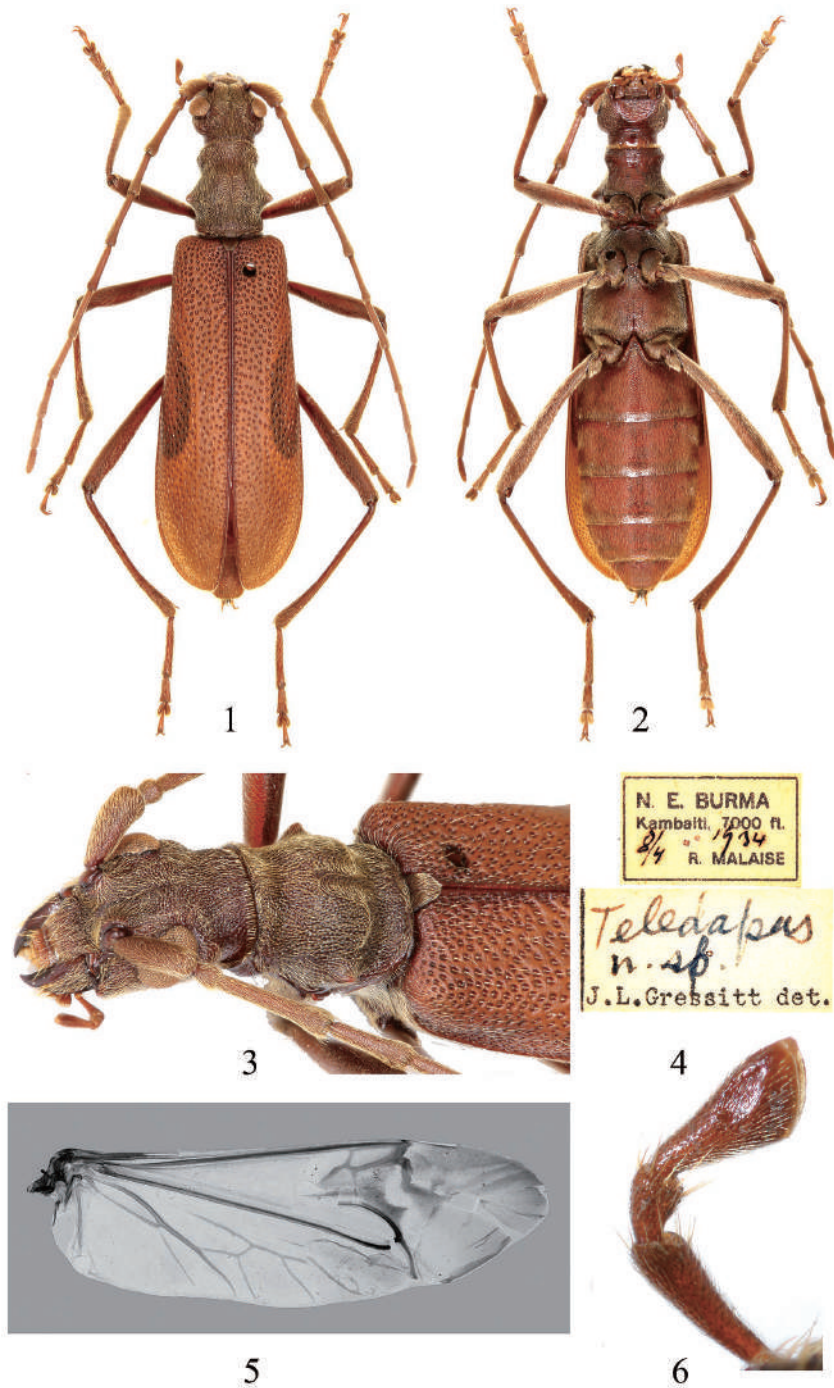
BI and OHBAYASHI (2014) provided a key to the six known genera of Xylosteini. The new genus groups with *Xylosteus* FRIVALDSZKY, 1938, *Pseudoxylosteus* SAMA, 1993 and *Leptorhabdium* KRAATZ, 1879 by the narrowly open procoxal cavities (they are widely open in the remaining genera), but is separable from them by the divided stridulatory plate of mesosternum or entire eyes without emargination.

*Niisatoa malaisei* N. OHBAYASHI et TICHÝ, sp. nov.

(Figs. 1–6)

*Description*. Female: Body length from tips of mandibles to elytral apices 14.5 mm, width 3.5 mm at humeri, 4.4 mm at the widest point of elytra. Pronotum 3.0 mm long, 2.7 mm across lateral tubercles.

Body brown; head, maxillary palpi, antennae, pronotum, scutellum, femora and tibiae dark



Figs. 1–6. *Nisatoa malaisei* N. OHBAYASHI et TICHÝ, sp. nov., female holotype. — 1, Dorsal habitus; 2, ventral habitus; 3, head and pronotum, antero-lateral view; 4, holotype labels; 5, hind wing venation; 6, left maxillary palpus, dorsal view.

brown; labrum and clypeus yellow-brown; elytra testaceous with a dark brown oval macula at each middle of lateral margin.

Head across eyes narrower than pronotum at lateral tubercles, densely punctured with golden yellow recumbent pubescence, abbreviated, with anteriorly produced mouth parts and steeply up-standing frons; outer face of mandibles deeply, longitudinally sculptured with suberect golden hairs; labrum rectangular with long suberect golden hairs on both sides; clypeus short trapezoidal; vertex triangularly concave between well developed antennal tubercles; genae as long as shortest diameter of eyes; tempora roundly convergent from posterior margin of eyes towards neck; gula transversely wrinkled; terminal segment of maxillary palpus triangular with a wedge-shaped impressed field of digitiform sensilla on upper surface (Fig. 6: cf. FAUCHEUX, 2014). Eyes prominent, oval in shape, coarsely faceted; interocular space 1.3 times as wide as distance between antennal cavities. Antennae densely furnished with recumbent short pale brown pubescence throughout, slender, with last segments reaching apical fourth of elytra; relative lengths of segments from base to apex = 24 : 8 : 34 : 26 : 35 : 30 : 30 : 27 : 25 : 20 : 18.

Pronotum 1.3 times as long as the basal width, deeply constricted near apical fourth and shallowly so near base, provided with conical lateral tubercles at basal two-fifths; relative width at apex, across lateral tubercles and at base = 30 : 49 : 39; apical and basal margins narrowly margined; disk densely punctured with golden yellow recumbent pubescence as head; basal two-thirds of disk weakly convex with median longitudinal depression. Scutellum tongue-shaped, densely furnished with sub-recumbent pale brownish hairs.

Ventral surface of body furnished with feeble pale pubescence; prosternum transversely wrinkled; prosternal process strongly narrowed between coxae and dilated distally; procoxal cavities narrowly open behind; mesosternum shagreened, mesosternal process nearly parallel-sided; metasternum densely and shallowly punctured, its process 1.5 times as broad as mesosternal process; abdomen with fifth visible sternite narrowed apically with truncate apex.

Elytra 3.2 times as long as the humeral width, straightly widened from humeri to apical three fourths, then gently rounded to blunt sutural angles, with the widest point 1.4 times as broad as the humeral width; disk lightly depressed behind scutellum, moderately scattered with deep punctures associated with suberect pale yellow short hairs, the punctures become shallower and sparser in apical half; suture dehiscent apically, distinctly margined, with outer margin densely fringed by short sub-erect hairs.

Legs long and slender; hind femur slightly longer than tibia; relative lengths of hind tarsomeres from first to third as 20 : 7 : 4.

Male: Unknown.

*Type specimen.* Holotype: ♀, N. E. Burma, Kambaiti, 7,000 ft, 8.IV.1934, R. MALAISE leg. (Collection of Bernice P. Bishop Museum, Hawaii, USA.)

*Etymology.* The species name is dedicated to the Swedish entomologist René MALAISE (1892–1978) who collected this interesting species. According to his biography (VÅRDAL & TAEGER, 2011), he travelled to Burma with his newly wedded wife, Ebba SÖDERHELL from 1933 until 1935. During this trip, he invented the famous "Malaise trap" and collected some 100,000 insects, and possibly the new species might have been collected by this trap.

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## The Longicorn Beetle Genus *Apatophysis* CHEVROLAT, 1860 (Coleoptera, Cerambycidae, Apatophyseini) in China, with Preliminary Remarks on its Intrageneric Structure and with Descriptions of Three New Species

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**Abstract** A review of the Chinese species of the genus *Apatophysis* CHEVROLAT, 1860 is given. Three species, namely, *A. xizangensis* MIROSHNIKOV et LIN, sp. nov. from Xizang, *A. niisatoi* MIROSHNIKOV et LIN, sp. nov. from Sichuan, and *A. insolita* MIROSHNIKOV et LIN, sp. nov. from Shaanxi, Henan, Hunan, Jiangxi and Zhejiang, are described as new. The genus is noted as being very complex taxonomically, while its intrageneric structure has hitherto remained poorly developed. At this stage, the following species groups are preliminarily proposed: the *barbara*-group, the *serricornis*-group, the *sinica*-group, the *sieversi*-group, the *insolita*-group, and the *richteri*-group (no representatives of the latter group are known yet in the fauna of China). Detailed diagnoses of the groups are presented. Some controversies concerning the assignment of certain species, including *A. centralis* SEMENOV, 1901, to this or that group are shown. The peculiarities of lectotype and paralectotype designations in the type series of *A. mongolica* SEMENOV, 1901 [syn. pro *A. serricornis* (GEBLER, 1843)] are discussed. The female of *A. sieversi* GANGLBAUER, 1887 is described for the first time, while a morphologically peculiar female from Gansu Province which probably belongs to *A. sinica* SEMENOV, 1901 is considered in due detail. *Apatophysis sieversi* is recorded from Hebei, Shandong, Henan, and Sichuan provinces for the first time. An amazing record of *A. serricornis* in Guangdong Province is discussed. A key to all Chinese species is proposed, based on male characters. Abundant color pictures, including almost all type specimens, are presented.

### Introduction

Only seven species of the genus *Apatophysis* CHEVROLAT, 1860 have hitherto been known to occur in China (LÖBL & SMETANA, 2010), with almost all of them described more than a century ago (GEBLER, 1843; GANGLBAUER, 1887; SEMENOV, 1901). Since the present paper adds another three new species, the fauna of China expands to ten *Apatophysis* species, although there can hardly be any doubt that further species will be found in China in the future.

The genus *Apatophysis* belongs to a number of taxonomically very complex groups with an unsettled intrageneric structure, even though it has been divided so far into two subgenera (LÖBL & SMETANA, 2010). The present study of Chinese representatives, including three new species, nevertheless shows that the classification of the genus is more intricate and actually can be split into at least several species groups peculiar to a varying degree. The taxonomic statuses of these groups seem to be insufficiently clear yet, as are discussed below in due detail.

The material this paper is based upon comes from the following institutional and private collections:

BMNH — Natural History Museum (London, United Kingdom);

IZAS — Institute of Zoology, Chinese Academy of Sciences (Beijing, China);

NMP — National Museum (Natural History) (Prague, Czech Republic);

NWAFU — Northwest Agriculture and Forestry University (Yangling, China);  
 ZIN — Zoological Institute of the Russian Academy of Sciences (St. Petersburg, Russia);  
 ZMUM — Zoological Museum of the Moscow State University (Moscow, Russia);  
 cAM — collection of Alexandr MIROSHNIKOV (Krasnodar, Russia);  
 cNO — collection of Nobuo OHBAYASHI (Kamimiyada, Miura City, Japan);  
 cSM — collection of Sergey MURZIN (Moscow, Russia).

To study the structure of the mandibles, these were prepared fully exposed in many specimens. Therefore, the total body length of such specimens, including the types, is given below as being mainly somewhat larger than that indicated in the literature. The length of the females is shown regardless of the ovipositor.

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## Results and Discussion

### Genus *Apatophysis* CHEVROLAT, 1860

*Apatophysis* CHEVROLAT, 1860: 304; J. THOMSON, 1860: 368; MARSEUL, 1863: 260; J. THOMSON, 1864: 147, 409; MARSEUL, 1867: 119; LACORDAIRE, 1869: 234; GEMMINGER in GEMMINGER & HAROLD, 1872: 2987; HEYDEN, 1881: 192; GANGLBAUER, 1882: 686, 719; HEYDEN *et al.*, 1883: 183; GANGLBAUER in MARSEUL, 1889: 466; HEYDEN *et al.*, 1891: 338; HEYDEN, 1893: 179; PIC, 1900: 12; HEYDEN *et al.*, 1906: 502; GAHAN, 1906: 69; AURIVILLIUS, 1912: 160; BOPPE, 1921: 45; WINKLER, 1929: 1146; PLAVILSTSHIKOV, 1932: 188; SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 60 (Revision); PLAVILSTSHIKOV, 1936: 109, 494 (Review of the former USSR); WU, 1937: 683; VILLIERS, 1946: 38; PLAVILSTSHIKOV, 1948: 26; GRESSITT, 1951: 48 (*Centrodera* subgen.); GRESSITT & RONDON, 1970: 26 (partim); KOSTIN, 1973: 130; LOBANOV *et al.*, 1981: 794; DANILEVSKY & MIROSHNIKOV, 1985: 99; CHIANG *et al.*, 1985: 27; DANILEVSKY, 1988: 125 (larvae); WANG, 2003: 59; DANILEVSKY, 2006: 1 (Review of Iran); DANILEVSKY, 2008: 8 (Review of Russia and adjacent regions, including China); LÖBL & SMETANA, 2010: 142; MIROSHNIKOV, 2014: 13.

Type species: *Apatophysis toxotoides* CHEVROLAT, 1860 (by monotypy) = *Polyarthron barbarum* P. H. LUCAS, 1858.

At the present stage of research, it seems appropriate to distinguish the following species groups based on the characteristics of the male and thus to preliminary advance the following intrageneric classification of *Apatophysis* (in the groups below, only Chinese species are listed):

The *barbara*-group (*Apatophysis* s. str. et sensu auct.):

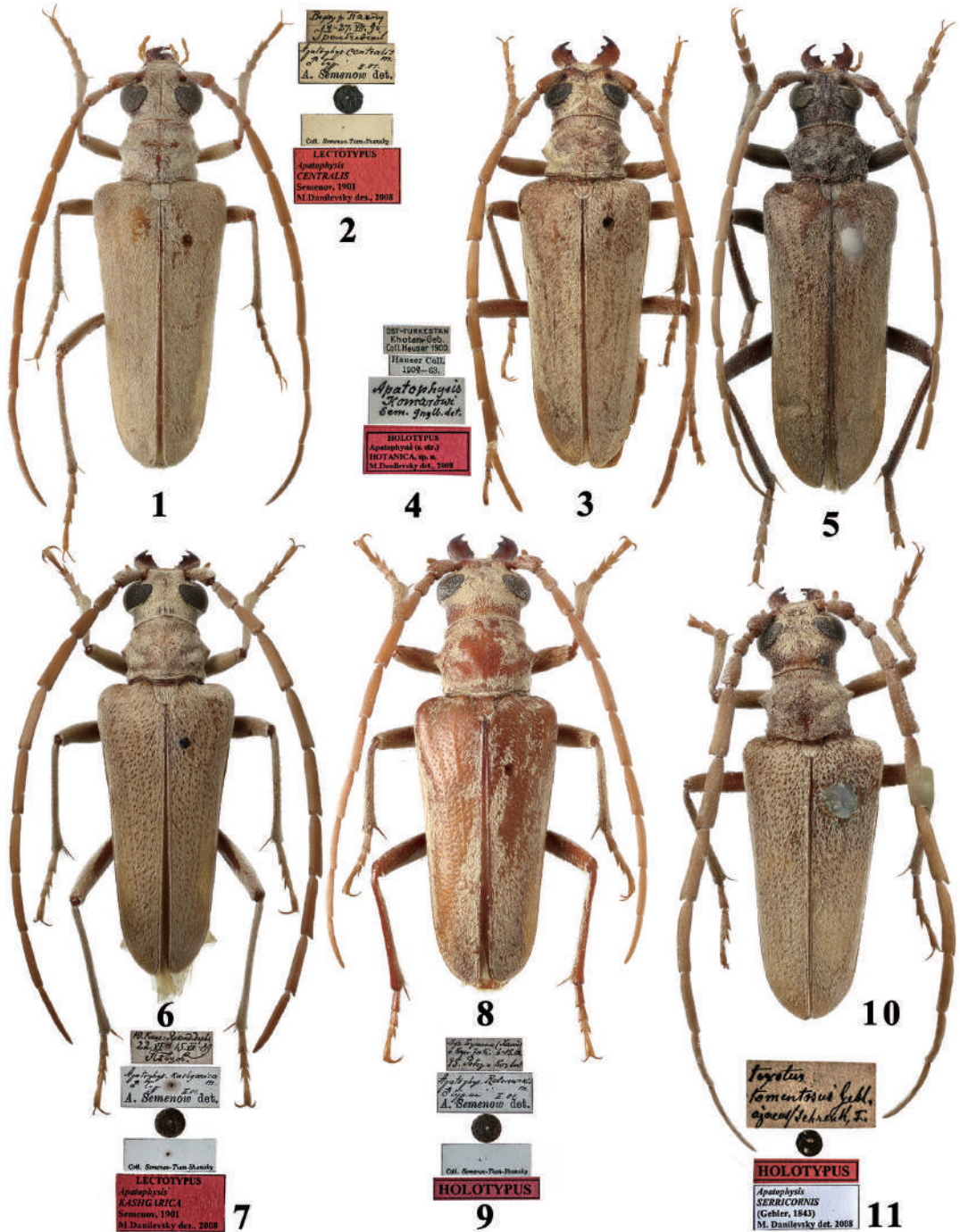
*A. centralis* SEMENOV, 1901

*A. hotanica* DANILEVSKY, 2008

*A. xizangensis* MIROSHNIKOV et LIN, sp. nov.

The *serricornis*-group:

*A. serricornis* (GEBLER, 1843)



Figs. 1–11. Habitus and labels of *Apatophysis* spp. (males). — 1, 2, *A. centralis* SEMENOV, 1901, lectotype; 3, 4, *A. hotanica* DANILEVSKY, 2008, holotype; 5, *A. xizangensis* MIROSHNIKOV et LIN, sp. nov., holotype; 6, 7, *A. kashgarica* SEMENOV, 1901, lectotype; 8, 9, *A. roborowskii* SEMENOV, 1901, holotype; 10, 11, *A. serricornis* (GEBLER, 1843), holotype of *A. tomentosa* (GEBLER, 1844).



*A. kashgarica* SEMENOV, 1901

*A. roborowskii* SEMENOV, 1901

The *sinica*-group:

*A. sinica* SEMENOV, 1901

*A. niisatoi* MIROSHNIKOV et LIN, sp. nov.

The *sieversi*-group:

*A. sieversi* GANGLBAUER, 1887

The *insolita*-group:

*A. insolita* MIROSHNIKOV et LIN, sp. nov.

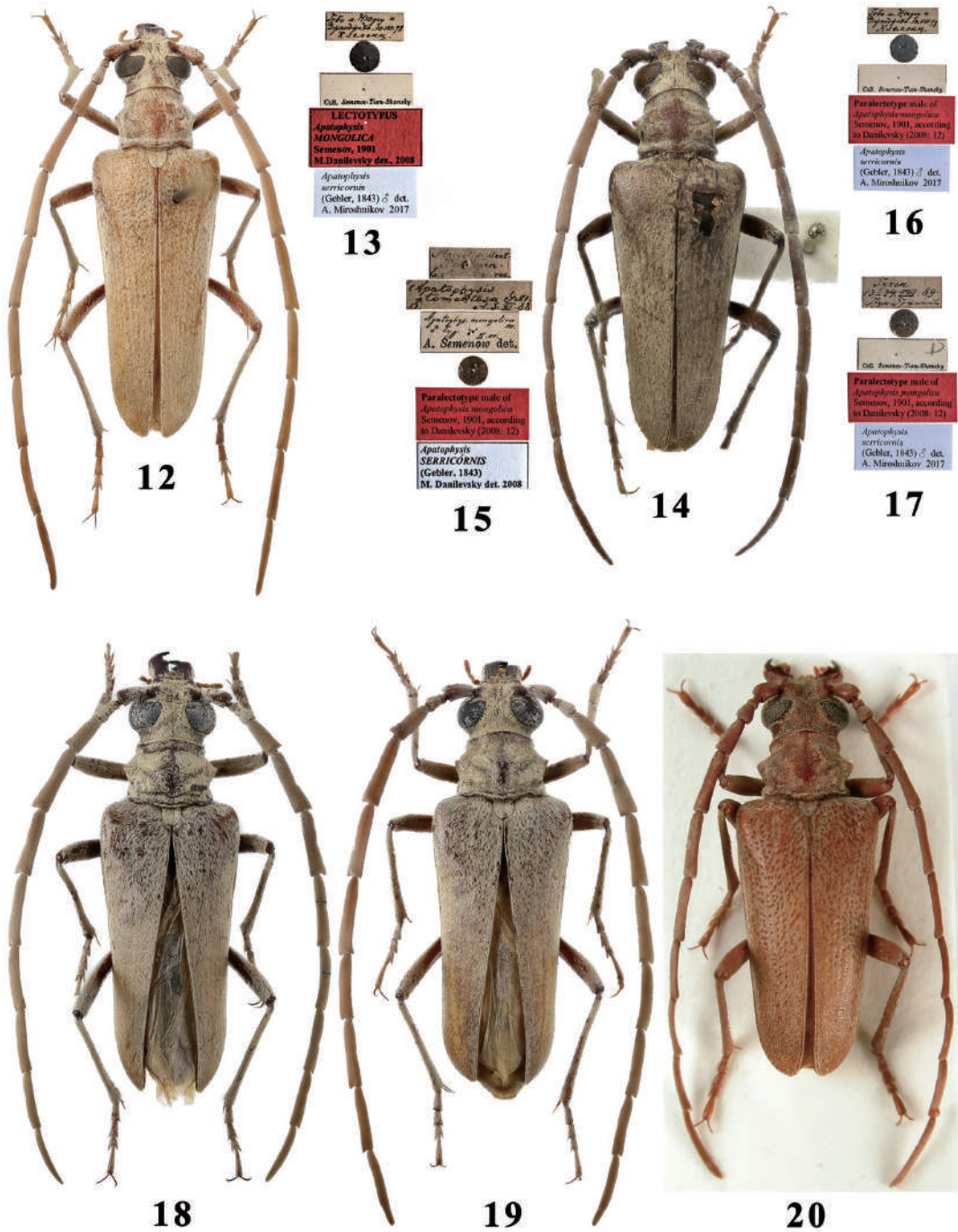
Within this genus, the *richteri*-group [*Angustephysis* PIC, 1956 (*Apatophysis* subgen.) sensu auct.] is also distinguished, whose representatives are not yet known from China. This group consists of six species and differs from other groups at least in the peculiar structure of all tibiae which bear ventrally a brush of dense short setae.

It seems quite possible that each of these groups deserves of the rank of a separate subgenus (for *Apatophysis* s. str. and *Angustephysis* only the recognition or confirmation of this status is required, because the names are already available), while the *insolita*-group perhaps even of an independent genus. However, a detailed and comprehensive rationale for such taxonomic solutions can only be elaborated with due account of material that is presently missing. This especially concerns the still unknown females of species in the *sinica*- and *insolita*-groups. Studies on their morphological features could prove to be very important that some preliminary data considered in this paper already shows this. In addition, it seems necessary to investigate in due detail the still poorly or completely unexplored morphological structures of various representatives of these species groups not only within the whole genus, but also with the involvement of representatives of other closely related genera, such as *Protapatophysis* SEMENOV-TIAN-SHANSKIJ et STSHEGOLEVA-BAROVSKAJA, 1936 and *Mimapatophysis* MIROSHNIKOV, 2014. Only this way does it seem possible to achieve a correct assessment of the levels of both the similarities and differences between the groups, and the taxonomic significance of various features, and ultimately to successfully solve the still existing complex problems of the supraspecific systematics of the *Apatophysis*-group. Thus, the establishment of new genus-group taxa at this stage of research seems premature yet.

The characteristics of the groups, both diagnoses and compositions, are given taking into account all their representatives, not only the known Chinese species.

#### The *barbara*-group

*Diagnosis.* This group are characterized by the following features: body from small to medium-sized; recumbent light setation of elytra from almost entirely or strongly hiding, through less significantly concealing, to generally weakly hiding their puncturation; primary puncturation of elytra from very clear and well-expressed, at least so in their basal part, to generally very faint; antennae more or less long, considerably extending beyond apices of elytra, sometimes even by antennomere 8, or shorter (typical of the Chinese representatives), extending beyond apices of elytra only by last antennomere or apical part of penultimate antennomere, in which cases antennomere 4 clearly or significantly not reaching the bases of elytra; from antennomere 6 until 10th from moderately to strongly serrate; antennomere 1, 1.22–1.41 times as long as antennomere 4; genae rather short, only sometimes (in *A. xizangensis* sp. nov.) moderately short; mandibles well-developed, as in Figs. 42–47, 3.9–4.8 times as long as genae, but sometimes 3.5 times as long as them; inner margin of left mandible varying in structure, but at least in the Chinese representatives neither dentate nor partly, nor regularly



Figs. 12–20. Habitus and labels of *Apatophysis serricornis* (GEBLER, 1843) (males). — 12, 13, Lectotype of *A. mongolica* SEMENOV, 1901; 14, 15, paralectotype of *A. mongolica*; 16, 17, paralectotypes of *A. mongolica*; 18, 19, *A. ? serricornis* (from Nanling Baohuzhan, Guangdong); 20, holotype of *A. kadyrbekovi* KADLEC, 2006 (after KADLEC, 2006, photograph reproduced courtesy of Luboš DEMBICKÝ).

curved, nor devoid of obtuse tooth near middle; abdominal ventrites without peculiar brushes in apical part, sometimes (in *A. centralis*) recumbent setation in this area in most ventrites can only be denser than over their remaining surface; all tibiae relatively straight, with neither a clear curvature nor a very dense setation, nor denticles ventrally, but sometimes (in *A. xizangensis* sp. nov.) both meso- and metatibiae dentate ventrally, albeit not curved; all femora without spines ventrally; tarsomere 3 not deeply or only moderately split (but not more than about halfway); pads on tarsi formed only by narrow fragments along margins of tarsomeres, most tarsomeres thereby with a rather lax, recumbent, light pubescence either not or only poorly hiding a shiny surface of integument contrasting as a wide strip.

The *barbara*-group differs from all other groups of the genus by the combination of these characteristics, as well as by these or those features from each of the other groups individually, as shown below in their diagnoses.

*Composition.* The group consists of 11 species (see Remarks), three of which inhabit China.

*Remarks.* DANILEVSKY (2008, p. 26) referred to the “*casgica*-group” (*A. casgica* SEMENOV, 1901 and several species that are close to it, none of which being known from China) as a component of *Apatophysis* s. str. In his opinion, it differs from other species groups by the presence of very dense suberect setae forming a brush on each femur, and being especially well-expressed on the metafemora. However, this feature is not stable, being variable or even absent at all, as the author indicated. DANILEVSKY (2008) did not list all species that he referred to that group. But it is noteworthy that in the type species of the genus, *A. barbara*, which had not been considered by the author, the femora, at least the middle and posterior ones, also ventrally show more or less dense short setae forming something like a brush, clearly resembling such, for example, in some specimens of *A. casgica*. By the way, it was long ago that SEMENOV-TIAN-SHANSKIJ and STSHEGOLEVA-BAROVSKAJA (1936) paid attention to the strong general similarity of the males of *A. barbara* and *A. casgica*.

Taking all above in consideration, it seems too difficult to recognize a “*casgica*-group” sensu DANILEVSKY (2008). Instead, *A. casgica* and all similar species are taken into account in the characteristics of the *barbara*-group where they belong.

### *Apatophysis centralis* SEMENOV, 1901

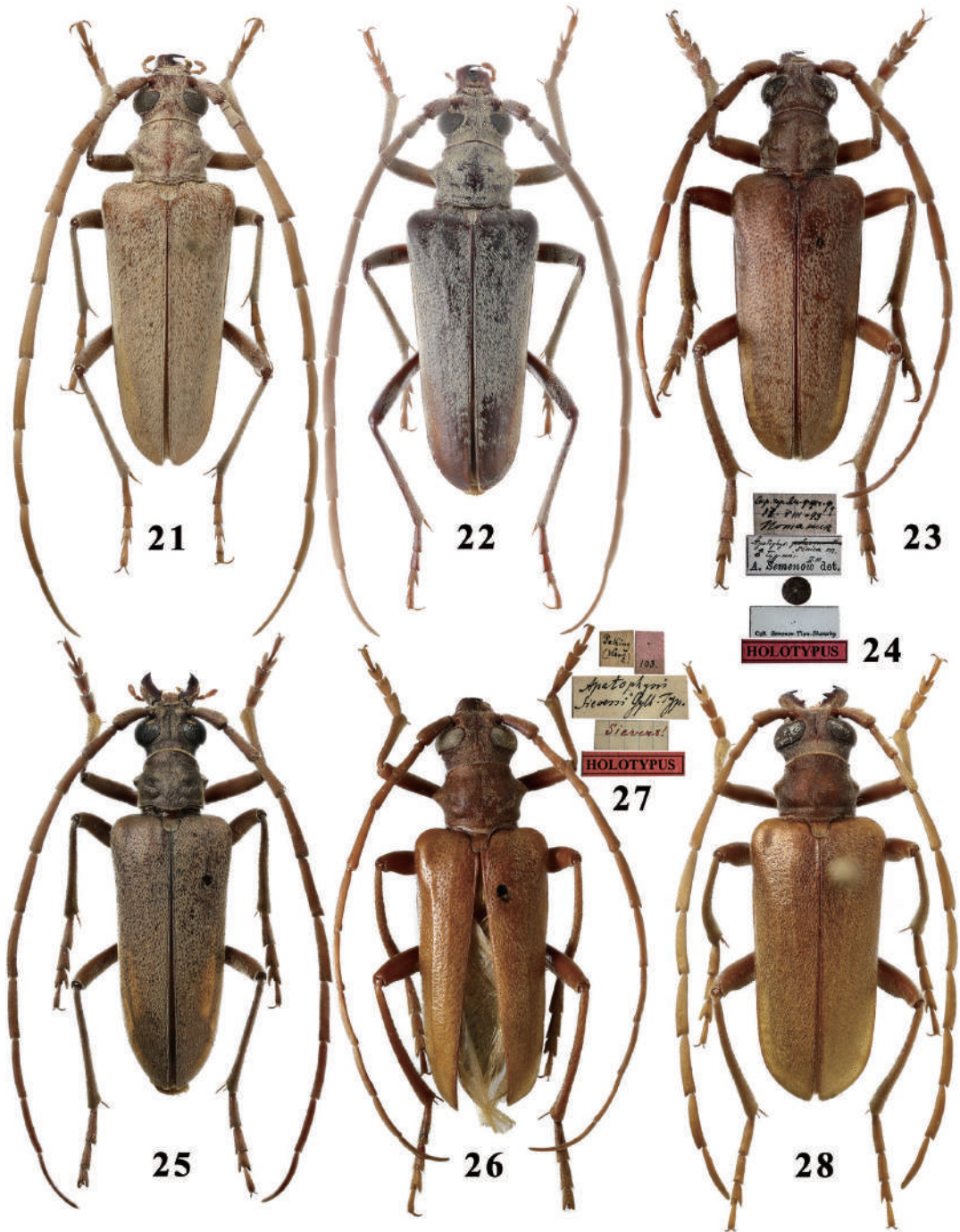
(Figs. 1, 2, 34, 35, 45, 67, 72, 73, 80, 83, 109, 127)

*Apatophysis centralis* SEMENOV, 1901: 32 (“Turkestanica sinica: curs. super. fl. Pakhpu; Kok-jar Tochtachon; curs. super. fl. Kul-jar”). Type locality: upper stream of Pakhpu River [Xinjiang, China] [according to DANILEVSKY (2008) and the label of the lectotype]; AURIVILLIUS, 1912: 160; BOPPE, 1921: 46; WINKLER, 1929: 1146; WU, 1937: 683; HUA, 1982: 10; CHIANG *et al.*, 1985: 27, pl. II, fig. 17; HUA, 2002: 194; WANG, 2003: 60, Figs. (in the figures is not at all *Apatophysis*, misidentification); WANG & HUA, 2009: 162; HUA *et al.*, 2009: 7 (pl. VII, fig. 80), 134.

*Apatophysis* (s. str.) *centralis*: SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 81; DANILEVSKY, 2008: 18; LÖBL & SMETANA, 2010: 142.

*Centrodera* (*Apatophysis*) *centralis*: GRESSITT, 1951: 48, 49.

*Materials examined.* China: lectotype ♂ (ZIN) (Fig. 1), “Upper stream of Pakhpu River, 14–27. VII.[18]90, Grombchevsky leg.” [in Russian] / “*Apatophysis centralis* m. ♂ typ. II.[19]01. A. Semenov det.” / silver circle / “Coll. Semenov-Tian-Shansky” / “Lectotypus *Apatophysis centralis* Semenov, 1901, M. Danilevsky des., 2008” (Fig. 2); paralectotype ♂ (ZIN), same labels as the lectotype, but “Paralectotypus *Apatophysis centralis* Semenov, 1901, M. Danilevsky des., 2008”; paralectotype ♀ (ZIN) (Fig. 34), “Upper stream of Kul-jar River, 27.VII– 3.VIII.[18]90, Grombchevsky leg.” [in Russian] / “*Apatophysis centralis* m. ♀ typ. II.[19]01. A. Semenov det.” / silver circle / “Coll. Semenov-Tian-Shansky” / “Paralectotypus *Apatophysis centralis* Semenov, 1901, M. Danilevsky des., 2008”



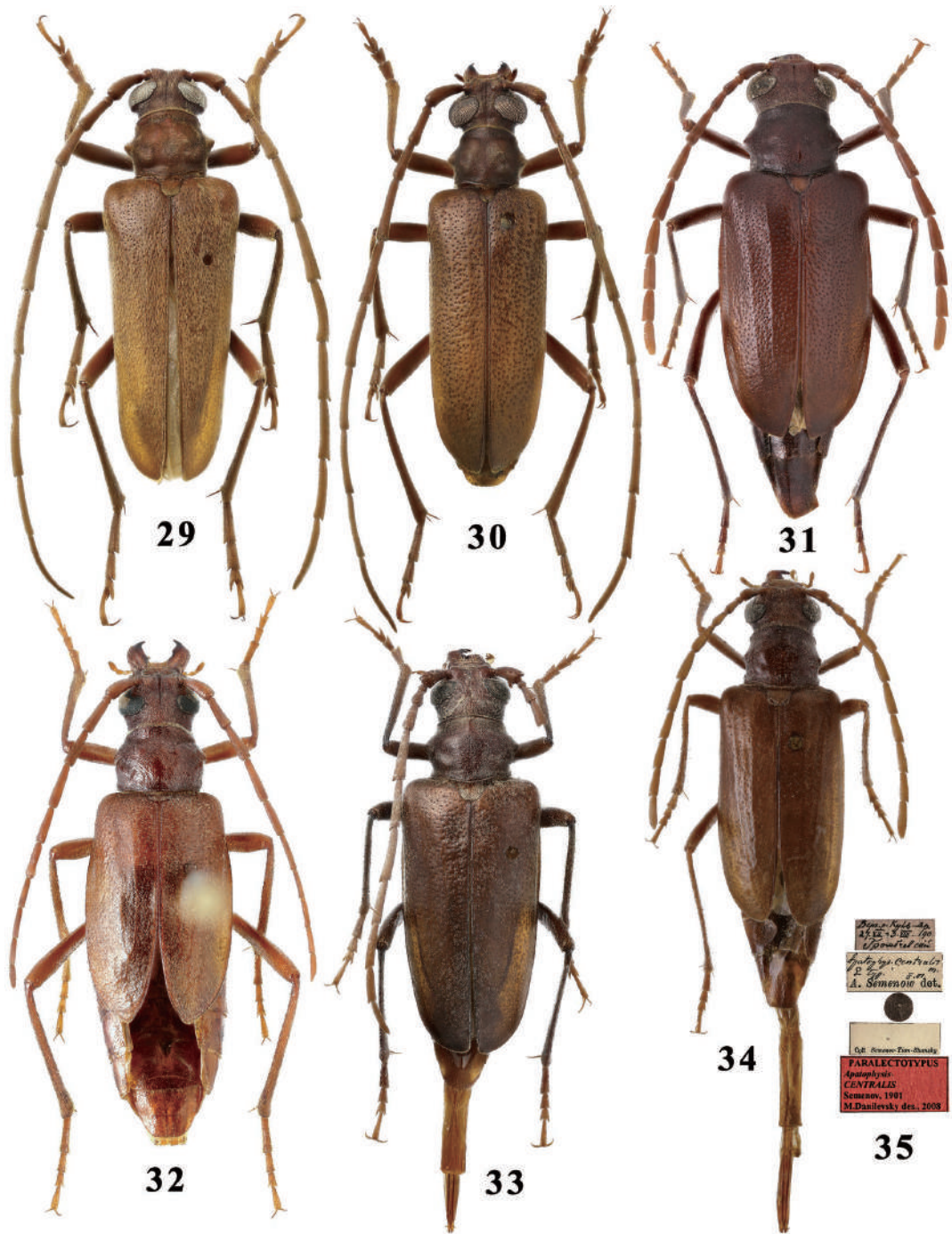
Figs. 21–28. Habitus and labels of *Apatophysis* spp. (males). — 21, 22, *A. serricornis* (GEBLER, 1843) (from Inner Mongolia); 23, 24, *A. sinica* SEMENOV, 1901, holotype; 25, *A. niisatoi* MIROSHNIKOV et LIN, sp. nov., holotype; 26, 28, *A. sieversi* GANGLBAUER, 1887 (26–27, holotype; 28, from Sanbao, Beijing).

(Fig. 35); 1 ♂ (ZMMU), “Upper stream of Pakhpu River, 14–27.VII.[18]90, Grombchevsky leg.” [in Russian] / “*Apatophysis centralis* Sem., N. Plavilstshikov det.”; 3 ♀♀ (ZIN), “Ak-Su River, Chinese Turkestan, VI.1910, Riukbeil leg.” [in Russian] / “Coll. Semenov-Tian-Shansky”; 1 ♂ (ZIN), “Ost-Turkestan, Aksu, 1067 m, V.1903, Coll. Hauser” / “380” / “Coll. Semenov-Tian-Shansky”.

*Remarks.* Body length of males 11.2–13.15 mm, humeral width 3.4–4.1 mm, the holotype being the largest; body length of females 14.1–17.4 mm, humeral width 3.9–5.6 mm. In the original description, the body lengths range from 9.5 to 15.0 mm.

Both the original description (SEMENOV, 1901) and the “Monograph of the genus *Apatophysis* Chev. ....” (SEMENOV-TIAN-SHANSKIJ and STSHEGOLEVA-BAROVSKAJA, 1936) failed to indicate which congener(s) *A. centralis* is most similar to. At the same time, DANILEVSKY (2008) noted the following: “The species is close to *A. serricornis*-group of species because of the presence of hair patches in abdominal sternites, but here hair patches are small, consist of short setae, so *A. centralis* connects *A. serricornis*-group of species with other *Apatophysis* s. str. It differs from all other species of the group by small 3rd and 4th antennal joints of similar length; by indistinct elytral punctuation because of dense pubescence; by shallow emargination of 3rd joint of hind tarsi with shortened lobes.” However, the “hair patches” (sensu DANILEVSKY, 2008) in *A. centralis* differ strongly from those in *A. serricornis*, *A. roborowskii*, *A. kashgarica*, as well as *A. pavlovskii* PLAVILSTSHIKOV, 1954 and *A. afghanica* MIROSHNIKOV, 2014, the latter two species being absent from the fauna of China. In *A. centralis* (Fig. 109), recumbent setae predominantly in the middle areas of ventrites 1–4 or 1–3 are only denser in the apical parts than over the remaining surface of these ventrites, whereas in all of the above five species the dense setae in the respective places of the same ventrites are erect and form a peculiar brush (Figs. 110–113), thereby on the 1st and 2nd or in the majority of the ventrites the setae at least partly look more or less twisted. Whether the concentration of completely recumbent setae on the ventrites in *A. centralis* represents a certain strongly reduced derivative of such a peculiar structure as described above in the species close to *A. serricornis*, remains unknown. Therefore, it is difficult so far to judge if *A. centralis* should indeed be included into a group of species close to *A. serricornis*. But what is quite obvious even now is that the use of the peculiarities of sternal setation in *A. centralis* as the main distinctive feature in the same thesis of the key together with the species similar to *A. serricornis*, as DANILEVSKY (2008, p. 40) did, is absolutely unacceptable (see also below).

Besides the absence of brushes on the ventrites, by some other morphologically important features *A. centralis* is very similar to *A. hotanica* and it also resembles *A. xizangensis* sp. nov., thereby differs clearly from the species close to *A. serricornis*. Thus, in *A. centralis*, *A. hotanica* and *A. xizangensis* sp. nov., the length ratio of antennomeres 3 and 4 is quite stable, antennomere 4 being only about 1.1 times as long as antennomere 3, thereby the apical external angle of antennomeres 4 and 5, like that of the 3rd, is regularly rounded, not so sharply expressed (Figs. 67–69), while in *A. serricornis*, *A. kashgarica* and *A. roborowskii*, the length ratio of antennomeres 3 and 4 is highly variable, antennomere 4 being 1.45–2.4 times (sometimes up to 2.65 times, see below) as long as antennomere 3, thereby the apical external angle of antennomeres 4 and 5 is usually more or less sharply expressed (but in no case rounded) (Figs. 75–78), often serrate; in the former three species, antennomere 1 is 1.37–1.41 times as long as antennomere 4, lobes on tarsomere 3 only more or less clearly sharpened apically, but neither too sharp nor spine-shaped (Figs. 83–85), while in the latter three species, antennomere 4 is either not more than 1.33 times as long as antennomere 1 or these antennomeres are subequal, or antennomere 1 can also be barely (but not more) longer than antennomere 4, with lobes on tarsomere 3 being very sharp apically, spine-shaped (Figs. 86–89), thereby very sharp apically can also be lobes of tarsomeres 1 and 2. Besides the absence of brushes on the ventrites, *A. centralis*, *A. hotanica* and *A. xizangensis* sp. nov. differ very clearly from *A. pavlovskii* and *A. afghanica* as well by



Figs. 29–35. Habitus and labels of *Apatophysis* spp. — 29, 30, *A. insolita* MIROSHNIKOV et LIN, sp. nov., holotype and paratype (from Shennonggu, Henan), males, respectively; 31, *A. barbara* (P. H. LUCAS, 1858), female; 32, *A. modica* GAHAN, 1906, female (the *richteri*-group); 33, *A. serricornis* (GEBLER, 1843), female (from Eastern Gobi Aimak, Mongolia); 34, 35, *A. centralis* SEMENOV, 1901, paralectotype female.

the structure of the basal antennomeres, the mandibles, the tarsi, the peculiarity of both setation and puncturation of the elytra, and some other features.

All above allows us to doubt even more in the assignment of *A. centralis* to “*A. serricornis*-group of species” (sensu DANILEVSKY, 2008), and in contrast provides sufficient grounds for the inclusion of this species into the *barbara*-group.

Returning to the key by DANILEVSKY (2008, pp. 40–41), it seems noteworthy that its use can cause great difficulties in identifying not only *A. centralis*, but also another Chinese species, *A. sieversi*. Thus, in thesis “1(29)”, the author indicated “... all tibiae straight ... 1. Subgen. *Apatophysis* Chev. s. str.”. Further, in thesis “14(13)”, he referred *A. sieversi* to the above subgenus, but at the same time he noted “Middle and hind tibiae strongly curved, ...”. As a result, DANILEVSKY contradicted himself, although the structure of both meso- and metatibiae in *A. sieversi* is exactly as he described in thesis “14(13)”. Besides this, the partly erroneous numbering of these “2(10)”, “3(4)”, “3(2)”, “4(9)” causes more confusion in his key.

*Distribution.* China: Xinjiang. The records from Sichuan, as well as in the former USSR, Kashmir and Laos (HUA, 2002) are wrong.

### *Apatophysis hotanica* DANILEVSKY, 2008

(Figs. 3, 4, 46, 68, 74, 79, 84)

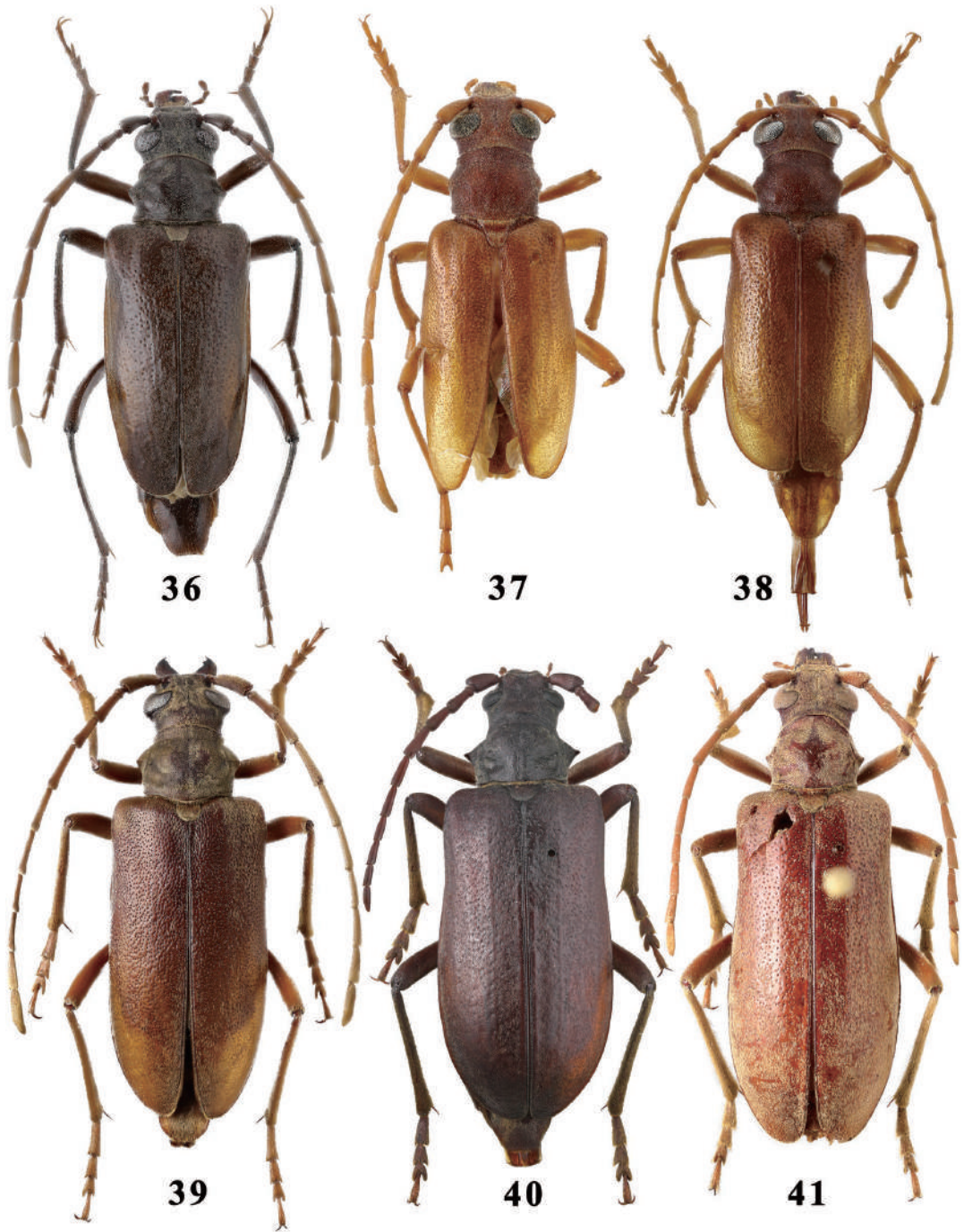
*Apatophysis* (s. str.) *hotanica* DANILEVSKY, 2008: 35 (“Hotan, north-east slope of Kun-Lun Ridge, North-West China”). Type locality: Hotan [Xinjiang, China] (according to the original description and the label of the holotype); LÖBL & SMETANA, 2010: 142.

*Material examined.* China: holotype ♂ (BMNH) (Fig. 3), “Ost Turkestan, Khotan-Geb., Coll. Hauser 1900” / “Hauser Coll. 1904-63” / “*Apatophysis komarowi* Sem. Gn. det.” / “Holotypus *Apatophysis* (s. str.) *hotanica*, sp. n. M. Danilevsky det., 2008” (Fig. 4).

*Remarks.* Until now, this species is only known from the holotype, body length 13.5 mm, humeral width 4.2 mm.

DANILEVSKY (2008), in the original description of *A. hotanica*, brought it close to *A. komarowi* SEMENOV, 1889 and *A. baeckmanniana* SEMENOV, 1907, neither present in China, and he totally omitted *A. centralis*. However, *A. hotanica*, as shown above, much more strongly resembles the latter species by a number of characters compared to the former two species. Besides the two characters indicated by DANILEVSKY (2008), i.e. the short antennae and the very short antennomeres 3 and 4, *A. hotanica* differs from both *A. komarowi* and *A. baeckmanniana* by the less strongly elongated antennomere 1, whose length is distinctly less than the shortest distance between the antennal cavities (in *A. komarowi* and *A. baeckmanniana*, the length of antennomere 1 clearly exceeds the shortest distance between the antennal cavities), the less strongly flattened antennomeres 3 and 4 (Figs. 70, 71, 74), the rounded shape of the apical external angle of antennomere 5 (Figs. 65, 66, 68), the less strongly elongated tarsomeres at least of the metatarsus (Figs. 81, 82, 84), a somewhat different structure of the mandibles, in particular the presence of a well-expressed obtuse tooth at the inner margin of the left mandible at its middle (Figs. 43, 44, 46), and the less sharp constriction behind the eyes, whereas by the conformation of all these structures in addition to some others, *A. hotanica* is clearly similar to *A. centralis* (Figs. 45, 46, 67, 68, 72, 73, 74, 83, 84). The differences between *A. hotanica* and *A. centralis* are presented in the key.

*Distribution.* China: Xinjiang.



Figs. 36–41. Habitus of *Apatophysis* and *Protapatophysis* spp., females. — 36, *A. serricornis* (GEBLER, 1843) (from Inner Mongolia); 37, 38, *A. sieversi* GANGLBAUER, 1887; 39, *Apatophysis* sp. (? *sinica* SEMENOV, 1901) (from Wenxian, Gansu); 40, *P. kashmiriana* (SEMENOV, 1901), paralectotype; 41, *P. montana* (GAHAN, 1906).



*Apatophysis xizangensis* MIROSHNIKOV et LIN, sp. nov.

(Figs. 5, 47, 69, 85)

*Diagnosis.* This new species seems to be especially similar to *A. hotanica* and *A. centralis*, but differs very clearly from both by the evidently more strongly developed lateral tubercles of the pronotum, the generally more strongly transverse pronotum, the slightly more elongated elytra (Figs. 1, 3, 5), the clear puncturation on most of their parts, the somewhat different structure of the inner margin of both mandibles, the longer genae (Figs. 45–47), the clearly expressed antennal tubercles, the obviously stronger legs (Figs. 1, 3, 5), the ventrally dentate meso- and metatibiae, the wider basal tarsomeres, the clearly sparser recumbent setation of the venter, the peculiarities of the sculpture, setation and coloration of the head ventrally, the ventrally mostly absent setation in the apical half of all femora, and the clearly darker coloration of the head dorsally, of the pronotum, scutellum, legs (Figs. 1, 3, 5) and most of the venter, as well as by several other minor features.

*Description.* Male. Body length 15.9 mm, humeral width 4.75 mm. Reddish-brown; head mostly, pronotum, scutellum, femora and tibiae darker.

Head at eye level clearly narrower than pronotum at level of lateral tubercles; antennal tubercles well-developed, median longitudinal groove between them distinctly visible, but much less strongly expressed between eyes, with a clear, very dense and confluent puncturation and poorly-visible microsculpture; eyes moderately convex, shallowly emarginate; genae well-developed; mandibles long, sharpened by a narrow cone apically, inner margin of both mandibles with large tooth as in Fig. 47; submentum with a slightly scabrous sculpture; gula almost smooth, on either side of it with a rough rugose puncturation; posterior margin of eyes, predominantly laterally, with rugose, partly curved folds; antennae relatively short, extending beyond apices of elytra by last antennomere, from antennomere 6 until 10th moderately serrate; length ratio of antennomeres 1–11, 53 : 12 : 34 : 38 : 84 : 79 : 77 : 73 : 76 : 76 : 108; antennomere 2 clearly transverse.

Pronotum strongly transverse, broadest at level of lateral tubercles where it is 1.67 times as wide as long, with base noticeably wider than apex, with a clear, very dense and confluent puncturation and almost invisible microsculpture; lateral tubercles very well-developed, sharpened apically; disk with clearly expressed two pairs of tubercles and deep transverse depression between each pair, at base with a median, well-visible, smooth, shiny area.

Scutellum moderately narrowed toward apex, rounded apically, with a fine puncturation.

Elytra 2.32 times as long as the humeral width, with sides near bases moderately narrowed toward apices, partly about parallel-sided behind the middle, with distinct, but not too sharp longitudinal ribs; basal part with a clear, sparse, irregular, rough puncturation, partly hidden by a dense setation and strongly weakened in apical part, with very small, dense punctures forming a somewhat scabrous microsculpture.

Pro- and mesosterna with a small puncturation and partly with gentle rugose sculptures; prosternal process very narrow between coxae, significantly broadened at apex; mesosternal process moderately wide; metasternum with a distinct, partly rugose, in places confluent puncturation; metepisterna elongate, moderately narrowed toward apex. Abdomen with last ventrite widely truncate at apex, noticeably impressed at the extremity.

Legs long, relatively strong; meso- and metatibiae dentate ventrally; metatibia about 1.5 times as long as metatarsus; metatarsomere 1 slightly shorter than 2nd and 3rd of the same tarsus combined.

Recumbent light setation on dorsum relatively dense, moderately sparse on venter, only denser mostly on mesepisterna, mesepimera, metepisterna, adjacent surface of metasternum and at metacoxae; sparse, more or less long, erect and suberect setae mainly developed on venter and legs.

*Material examined.* Holotype: ♂ (IZAS, IOZ(E)1905136), China, Xizang, Qushui County, 3,620 m, 26.V.1960, Chunguang WANG leg. / “*Apatophysis mongolica* Sem., E. Vives det. 2012” (misidentification).

*Etymology.* The new species is the first and so far only representative of the genus found in Xizang. Its name just is derived from the name of this region of China.

*Distribution.* China: Xizang.

### The *serricornis*-group

*Diagnosis.* This group seems to be especially similar to the *barbara*-group, but differs very clearly from it, as well as from other groups of the genus, by the structure of the abdominal ventrites, namely, the presence in the apical part, mainly in the middle area, of ventrites 1–4 or 1–3 of very dense, erect, partly twisted setae forming a peculiar brush, as in Figs. 110–113. The *serricornis*-group is also characterized by the following features, the combination of which even more reliably sets it from each of the other groups: body from small to medium-sized; lobes of tarsomere 3 sharpened (Fig. 90) or very sharp apically (Figs. 86–89), besides this with lobes on tarsomeres 1 and 2 which can also be very sharp; antennomere 4 either up to about 1.3 times as long as antennomere 1 or these antennomeres subequal, or antennomere 1 can also be barely (but not more) longer than antennomere 4; pads on tarsi like in the *barbara*-group. Some representatives show strong individual variability.

*Composition.* The group consists of five species, three of which inhabit China.

*Remarks.* It is noteworthy that the Chinese representatives of this group differ clearly from the other two members, *A. pavlovskii* and *A. afghanica* mentioned above, by the clearly more strongly developed recumbent setation of the body, at least so on the elytra, usually very strongly or significantly hiding their puncturation, the clearly apically sharper lobes on tarsomere 3 (Figs. 86–90) or also on the two previous tarsomeres, the structure of the mandibles, in particular, the presence of a large tooth at the inner margin of the left mandible, like on the right mandible (Figs. 48, 50–52), and some other features.

### *Apatophysis serricornis* (GEBLER, 1843)

(Figs. 10–22, 33, 36, 48, 49, 75, 76, 86, 87, 110, 114–119, 128)

*Pachyta serricornis* GEBLER, 1843: 39 (“In deserto ad lac. Alakul”). Type locality: Alakol (= Alakul) Lake [about 160 km E of Balkhash Lake, Kazakhstan] (according to the original description); GEBLER, 1859: 507; GEMMINGER in GEMMINGER & HAROLD, 1872: 2860 [= *spinicornis* GEBLER (“*serricornis*”, misspelling)]; HEYDEN, 1881: 192 [= *spinicornis* GEBLER (“*serricornis*”, misspelling)].

*Apatophysis serricornis*: AURIVILLIUS, 1912: 160 [= *tomentosa* GEBLER; = *spinicornis* GEBLER (“*serricornis*”, misspelling)]; = *obtusicollis* MOTSCHULSKY; BOPPE, 1921: 46; WINKLER, 1929: 1146; PLAVILSTSHIKOV, 1932: 188; WU, 1937: 684; HEYROVSKÝ, 1968: 235; LOBANOV *et al.*, 1981: 794; HUA, 1982: 10; HUA, 2002: 195; WANG & HUA, 2009: 163; HUA *et al.*, 2009: 450.

*Apatophysis* (s. str.) *serricornis*: DANILEVSKY, 2008: 11; LÖBL & SMETANA, 2010: 142; MIROSHNIKOV, 2014: 14.

*Centrodera* (*Apatophysis*) *serricornis*: GRESSITT, 1951: 48, 49.

*Toxotus? tomentosus* GEBLER, 1844: 105 (“Ad fl. Ajagus et Tschui”); GEBLER, 1860: 30; GEMMINGER in GEMMINGER & HAROLD, 1872: 2859.

*Apatophysis tomentosus*: FAUST, 1877: 113, 116 (= *Psilotarsus obtusicollis* MOTSCHULSKY; = *Apatophysis toxotoides* CHEVROLAT, mistakenly); HEYDEN, 1881: 192 (= *toxotoides* CHEVROLAT, mistakenly); GANGLBAUER, 1882: 719 (= *toxotoides* CHEVROLAT, mistakenly); “Algier, Caucasus”, mistakenly); HEYDEN *et al.*, 1883: 183 (= *toxotoides* CHEVROLAT, mistakenly); GANGLBAUER in MARSEUL, 1889: 466 [= *toxotoides* CHEVROLAT, mistakenly]; “Casp.” (Caspian coast), mistakenly); HEYDEN, 1893: 179 (“Turcmenien”, mistakenly); PIC, 1900: 12 [= *serricornis* GEBLER, incorrectly]; “Casp.” (Caspian coast), mistakenly].

- Apatophysis tomentosa*: GANGLBAUER, 1888: 193 ["Turcmenien (Transcaspischen Gebiete)", mistakenly]; HEYDEN *et al.*, 1891: 338 (= *toxotoides* CHEVROLAT, mistakenly; = *serricornis* GEBLER, incorrectly); HEYDEN *et al.*, 1906: 502 (= *serricornis* GEBLER, incorrectly); PLAVILSTSHIKOV, 1936: 113, 494; KOSTIN, 1973: 131.
- Apatophysis* (s. str.) *tomentosa*: SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 69 (= *serricornis* GEBLER, incorrectly).
- Pachyta spinicornis*: RENARD, 1859: 427 ("*serricornis*", misspelling); GEBLER, 1859: 349 ("in deserto ad lac. Alakul"; "*serricornis*", misspelling); MOTSCHULSKY, 1860: 538 ("*serricornis*", misspelling); MOTSCHULSKY, 1861: 444 ("*serricornis*", misspelling); GEMMINGER in GEMMINGER & HAROLD, 1872: 2860 [*serricornis* GEBLER = *spinicornis* GEBLER ("*serricornis*", misspelling)]; KRAATZ, 1879a: 75 ("*serricornis*", misspelling); KRAATZ, 1879 b: 79 ("*serricornis*", misspelling).
- Apatophysis spinicornis*: WINKLER, 1929: 1146 ("*serricornis*", misspelling).
- Psilotarsus obtusicollis* MOTSCHULSKY, 1860: 538 ("steppes orientales des Kirghises"); MOTSCHULSKY, 1861: 444; GEMMINGER in GEMMINGER & HAROLD, 1872: 2758.
- Apatophysis mongolica* SEMENOV, 1901: 28 ("in Mongolia usque ad Dshungariae oram orientalem: des. Gobi int. Njursu et Dshandshicho. jug. Bajtyk-bogdo; Gutshen; Mongolia sept.-occid."); AURIVILLIUS, 1912: 160; BOPPE, 1921: 46; WINKLER, 1929: 1146; PLAVILSTSHIKOV, 1936: 115, 495; WU, 1937: 683; NAMHAIDORZH, 1972: 499; KOSTIN, 1973: 131; NAMHAIDORZH, 1976: 202; LOBANOV *et al.*, 1981: 794; HUA, 1982: 10; DANILEVSKY, 1988: 128, 129 (larvae); HUA, 2002: 194; WANG, 2003: 60, Figs. (the figures do not depict *A. mongolica* at all, maybe not even an *Apatophysis*, thus representing a misidentification); WANG & HUA, 2009: 163; HUA *et al.*, 2009: 450.
- Apatophysis* (s. str.) *mongolica*: SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 71 (probable synonymy: *tomentosa* GEBLER = *mongolica* SEMENOV); DANILEVSKY, 2008: 11 (*serricornis* GEBLER = *mongolica* SEMENOV).
- Centrodera* (*Apatophysis*) *mongolica*: GRESSITT, 1951: 48, 49.
- Apatophysis kadyrbekovi* KADLEC, 2006: 1 ("SE Kazakhstan, r. Ili, env. Borandisu").
- Apatophysis* (s. str.) *kadyrbekovi*: DANILEVSKY, 2008: 12 (*serricornis* GEBLER = *kadyrbekovi* KADLEC).

*Materials examined.* CHINA: 1 ♂ (ZIN), "Ordos, right bank of Yellow River, 22–25.V.[19]08, Kozlov's ex[pedition]." [in Russian] / "*Apatophysis mongolica* m. ♂ A. Semenov-Tian-Shansky det."; 1 ♂ (ZIN) (Fig. 21), "Ka-tu-hu [= Ka-tu-ku] [southern Alashan], 9.VII.[19]08, Kozlov's ex[pedition]." [in Russian] / "Coll. Semenov-Tian-Shansky"; 1 ♀ (ZIN), "Southern Alashan, Dolone-gol River valley, 13.VII.[19]08, Kozlov's ex[pedition]." [in Russian] / "*Apatophysis mongolica* m. ♀ A. Semenov-Tian-Shansky det., V.[19]22"; 1 ♂ (ZIN), "Chinese Turkestan, Barkul, VII.1910, Riukbeil leg." [in Russian] / "*Apatophysis barkulica* [nomen nudum] m., typ., G. Suworov det." / "*Apatophysis baeckmanniana* Sem. W. Shawrow det."; 2 ♂♂ (ZIN), "Chinese Turkestan, Barkul, VII.1910, Riukbeil leg." [in Russian] / "Coll. Semenov-Tian-Shansky"; 1 ♂ (IZAS, IOZ(E) 1904870), Xinjiang, Mori Kazakh Autonomous County, 1,500 m, 21.V.1977 (unknown collector); 1 ♂ (IZAS, IOZ(E)1904871), Xinjiang, Fukang, Wucuiwan, 2011, Shuo WANG leg.; 1 ♂ (IZAS, IOZ(E)1904865), Inner Mongolia, Alxa League, Ejina Banner, 22.VI.1986, Feng QIAO leg.; 1 ♂ (IZAS), same data, but taken on 21.VI.1986; 1 ♂ (IZAS, IOZ(E)1904866), same data, but taken on 27.VI.1986, Lu-Tu TAO leg.; 1 ♂ (IZAS), same data, but taken on 20.VI.1986, Ge-Tu TAO leg.; 1 ♂ (IZAS, IOZ(E)1904867), Inner Mongolia, Alxa League, Right Banner, 20.VII.1986, Yong-Chang ZHANG leg.; 1 ♀ (IZAS), same data, but taken on 27.VI.1986, Yong-Cai LV leg.; 1 ♀ (IZAS), same locality, but taken on 1.VII.1986, Ming GE leg.; 1 ♀ (IZAS), same locality, but taken on 5.VII.1986, Li-Zhu ZHANG leg.; 1 ♂ (IZAS), same locality, but taken on 2007 (unknown collector); 1 ♂ (cSM) (Fig. 22), Inner Mongolia, E Bayan Hot, 1780 m, 29.VI.2011, S. MURZIN leg.; 1 ♀ (cSM) (Fig. 36), 5 km S Bayan Hot, 30.VI.2011, S. MURZIN leg.; 2 ♂♂ (IZAS, IOZ(E)1905320–21) (Figs. 18, 19), Guangdong, Nanling Baohuzhan, V–VIII.2009, Lei GAO leg. / *Apatophysis ?serricornis* (GEBLER, 1843) ♂ det. A. MIROSHNIKOV 2015. MONGOLIA: 2 ♂♂ (ZIN), "NW Mongolia, Shuryk near Uliasutai, 20.VIII.[1]887, Potanin leg." [in Russian]; lectotype of *A. mongolica*, ♂ (ZIN) (Fig. 12), "Gobi, between Niursu and Dzhandzhikho, 10.VIII.[18]98, Klements [leg.]" [in Russian] / "Coll. Semenov-Tian-Shansky" / silver circle / "Lectotypus *Apatophysis mongolica* Semenov, 1901 M. Danilevsky des., 2008" [see "Notes on the type series of *A. mongolica*" below] + "*Apatophysis serricornis* (Gebler, 1843) ♂ det. A. Miroshnikov 2017" (Fig. 13); para-



Figs. 42–53. Head (dorsal view) of *Apatophysis* spp. — 42, *A. barbara* (P. H. LUCAS, 1858); 43, *A. komarowi* SEMENOV, 1889; 44, *A. baeckmanniana* SEMENOV, 1907; 45, *A. centralis* SEMENOV, 1901; 46, *A. hotanica* DANILEVSKY, 2008, holotype; 47, *A. xizangensis* MIROSHNIKOV et LIN, sp. nov., holotype; 48, 49, *A. serricornis* (GEBLER, 1843); 50, *A. kashgarica* SEMENOV, 1901, lectotype; 51, *A. roborowskii* SEMENOV, 1901, holotype; 52, *A. pavlovskii* PLAVILSTSHIKOV, 1954; 53, *A. sieversi* GANGLBAUER, 1887, the large-sized specimen. — 42–48, 50–53, Males; 49, female.

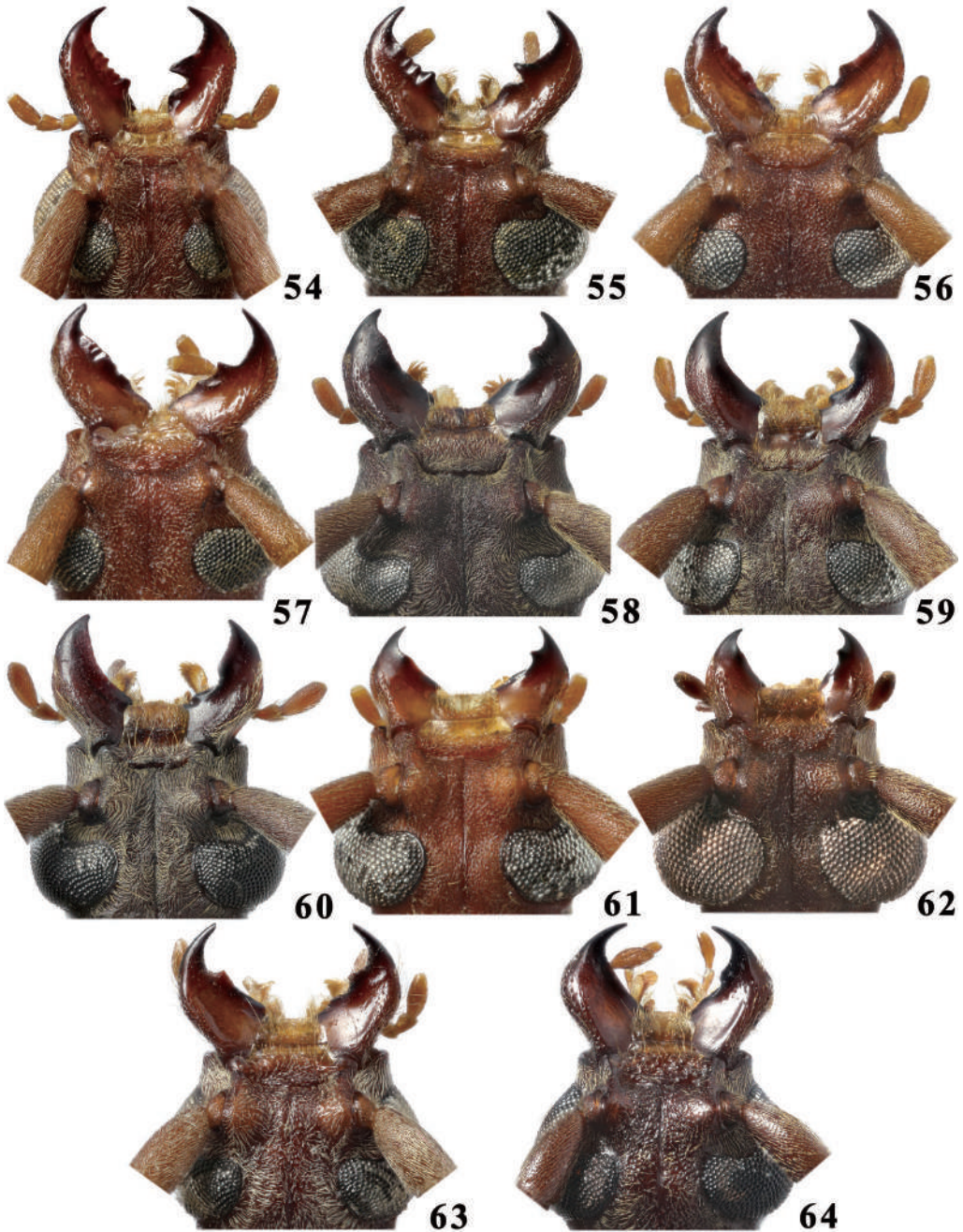
lectotype of *A. mongolica*, ♂ (ZIN), same labels as lectotype, but “Paralectotype male of *Apatophysis mongolica* Semenov, 1901, according to Danilevsky (2008: 12)” [see “Notes ...” below] (Fig. 16); paralectotype of *A. mongolica*, ♂ (ZIN) (Fig. 14), “Mongol. septent., Potanin, E. Mus. Acad. rec.” (label is difficult to read) / “*Apatophysis tomentosa* Gebl., ♂ 5.XI.[18]88” / “*Apatophysis mongolica* m. typ. II.[19]01. A. Semenov det.” / silver circle + “Paralectotype male of *Apatophysis mongolica* Semenov, 1901, according to Danilevsky (2008: 12)” [see “Notes ...” below] / “*Apatophysis serricornis* (Gebler, 1843) M. Danilevsky det. 2008” (Fig. 15); paralectotype of *A. mongolica*, ♂ (ZIN), “Guchen, 13–24.VIII.[18]89, Grum-Grzhimailo leg.” [in Russian] / “Coll. Semenov-Tian-Shansky” / silver circle + “Paralectotype male of *Apatophysis mongolica* Semenov, 1901, according to Danilevsky (2008: 12)” [see “Notes ...” below] + “*Apatophysis serricornis* (Gebler, 1843) ♂ det. A. Miroshnikov 2017” (Fig. 17); 1 ♂ (ZIN), “Central Mongolia, Tszosto, 28.VI–2.VII.[19]09, Kozlov’s ex[pedition].” [in Russian] / “*Apatophysis mongolica* m. ♂ A. Semenov-Tian-Shansky det.”; 1 ♂ (ZMUM), “Central Gobi, 1956 (unknown collector)”; 1 ♂, 1 ♀ (cAM), Khailastyn-Khuduk, Zagan oi, 19–20.VI.1971, B. NAMKHAIDORZH leg. [in Russian]; 8 ♂♂ (ZIN), Southern Gobi Aimak, Dzengin-Gobi, 25 km SSW Khailastyn-Khuduk, 20.VI.1971, KERZHNER leg. [in Russian]; 1 ♂ (ZIN), Southern Gobi Aimak, Khushu-Sair, 25 km SW Khailastyn-Khuduk, 21.VI.1971, EMELJANOV leg. [in Russian]; 1 ♀ (ZIN), Eastern Gobi Aimak, 5 km W Tenger-Nur Lake, 25.VI.1971, EMELJANOV leg. [in Russian]; 1 ♀ (ZIN), same label, but KOZLOV leg.; 1 ♂ (cSM), Kobdosskij Aimak, Elkhon, 20 km SE Altai, 1200 m, 31.VII.[19]76, L. MEDVEDEV leg. KAZAKHSTAN: holotype of *A. tomentosa*, ♂, by monotypy (ZIN) (Fig. 10), “*Toxotus tomentosus* Gebl. Ajaxus [Ajaguz]/Schrenk, F.” / golden circle / “*Apatophysis serricornis* (Gebler, 1843) M. Danilevsky det. 2008” (Fig. 11); 1 ♂ (ZIN), “Dzharkent Distr., Temerlik-Kopaly, 14.VIII.1908, Zenkov leg.” [in Russian] / “*Apatophysis komarovi* Sem. W. Shawrow det.” / “*Apatophysis mongolica* Sem. M. Danilevsky det., 2001”; 1 ♂ (ZIN), “Dzharkent Distr., Ili River, V.[19]09, Riukbeil leg.” [in Russian] / “Coll. Semenov-Tian-Shansky”; 1 ♂ (cSM), Dzharkent, 14.VIII.[19]36 [in Russian]; 1 ♂ (cSM), “40 km S Panfilov [now Dzharkent], Ili River, 21.VI.1988, V. Tuzov leg.”; 2 ♂♂ (cAM), Almaty Prov., 22 km N Masak, 43°46'N, 78°27'E, 560 m, 16.VIII.1995, G. FÁBIÁN leg.; holotype of *A. kadyrbekovi*, ♂ (NMP) (photograph, Fig. 20), SE Kazakhstan, Ili River, Borandisu env., 29.VII.1994, KADYRBEKOV leg.

*Remarks.* Body length of males 11.2–17.0 mm, humeral width 3.5–5.6 mm; body length of females 15.5–20.5 mm, humeral width 4.9–6.6 mm.

This species is characterized by very strong individual variability. Hardly surprisingly, some of its forms have been described as separate species (SEMENOV, 1901; KADLEC, 2006). Even SEMENOV-TIAN-SHANSKIJ and STSHEGOLEVA-BAROVSKAJA, (1936, p. 72) assumed that *A. mongolica* SEMENOV, 1901 he had established earlier (SEMENOV, 1901) could prove to be just a form of *A. tomentosa* (syn. pro *A. serricornis*).

The distribution area of *A. serricornis* covers a quite vast territory, ranging from the area of Lake Balkhash in the west (SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936; PLAVILSTSHIKOV, 1936; PARFENTJEV, 1958; KOSTIN, 1973) to the banks of Huang He (Yellow River) in the environs of Ordos and the Alashan (Alxa) Mountain Range in the east and southeast (SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936; PLAVILSTSHIKOV, 1936; the collections of the Zoological Institute, St. Petersburg and Sergey V. MURZIN, Moscow).

Completely unexpected was the discovery of two males (Figs. 18, 19) from Guangdong Province in the IZAS collection, which were preliminarily identified by us as *A. serricornis*. Based on the finding of these specimens, the southernmost range limit of *Apatophysis* has recently been established (MIROSHNIKOV, 2014) since some species from Vietnam and Laos previously attributed to this genus (PIC, 1912; GRESSITT & RONDON, 1970) actually belong to other genera, and have been described as



Figs. 54–64. Head (dorsal view) of *Apatophysis* spp. — 54, *A. sieversi* GANGLBAUER, 1887, the medium-sized specimen; 55, the same, but the small-sized specimen; 56, 57, *A. sieversi*; 58, *Apatophysis* sp. (? *sinica* SEMENOV, 1901) (from Wenxian, Gansu); 59, *A. sinica* SEMENOV, 1901; 60, *A. niisatoi* MIROSHNIKOV et LIN, sp. nov., holotype; 61, 62, *A. insolita* MIROSHNIKOV et LIN, sp. nov., paratypes; 63, 64, *A. margiana* SEMENOV-TIANSHANSKIJ et STSHEGOLEVA-BAROVSKAJA, 1936 and *A. modica* GAHAN, 1906 (the *richteri*-group), respectively. — 54, 55, 59–64, Males; 56–58, females.

new (MIROSHNIKOV, 2014).

Considering that Guangdong Province is very remote from the above-mentioned extreme southern and southeastern localities of *A. serricornis*, i.e. more than half of the currently known maximum extent of the general distribution area of this species, initially we believed that the Guangdong specimens most likely represent a new species of the *serricornis*-group. However, taking into account the strong individual variability of *A. serricornis*, all our attempts to find any significant stable differences between these males and those of *A. serricornis* from other parts of the distribution range have been unsuccessful yet. The following observation is noteworthy. In one of the Guangdong specimens, antennomere 4 is 2.65 times as long as antennomere 3, while in *A. serricornis* this ratio has so far been 1.8–2.4. However, in the other male, antennomere 4 is only 2.15 times as long as antennomere 3. The elytra of the Guangdong males are 2.05–2.07 times as long as the humeral width, while in *A. serricornis*, this ratio usually varies between 2.15–2.3. Yet in some other males the elytra can be about 1.9 times as long as the humeral width, as observed, for example, in the holotype of *A. kadyrbekovi* (syn. pro *A. serricornis*) (Fig. 20; see also notes below).

So we do not have any serious reasons so far to consider the record of *A. serricornis* in Guangdong Province as dubious, although per se it is very unusual in terms of the distribution of this species. Complete certainty seems to be achievable and should only be accepted after the discovery of additional relevant material and a detailed study.

Returning to the profound individual variability of *A. serricornis*, some very curious errors are also noteworthy which are available in the literature and require correction. Thus, several absurd photographs of this species were published by DANILEVSKY (2008, p. 45, figs. 2a, b, c, g), where the beetles are shown with unnaturally elongated bodies, and obviously with very strongly distorted habituses. Two of the specimens in the pictures of DANILEVSKY (2008, p. 45, figs. 2b, g) are kept in the collection of the Zoological Institute, St. Petersburg (ZIN) and we have restudied them. As one could expect, actually they are absolutely normal in structure, as is visible from the photographs presented here (Figs. 14, 33). Two other specimens (DANILEVSKY, 2008, p. 45, figs. 2a, c), although not re-examined by us, should also have the usual structure. Unfortunately, DANILEVSKY's absurd photographs have already been reproduced and used in some sources as corresponding to the reality, in particular, by certain specialized popular sites (see, for example, "A Photographic Catalog of the Cerambycidae of the World" by Larry G. BEZARK). This requires correction as well.

*Notes on the type series of A. mongolica.* DANILEVSKY (2008) designated the lectotype and three paralectotypes in the section "Material studied" (p. 12) in the following way: «2 ♂♂, lectotype and paralectotype of *A. mongolica* SEM., present designation, ["Gobi, between Njursu and Dshandshiho, 10.viii.1898, Clemenz] [in Russian] – ZIN; 1 ♂, paralectotype (present designation) of *A. mongolica* SEM., ["Gutshen, 13–24.viii.1889, Gr.-Grzhimailo leg." [in Russian] – ZIN; 1 ♂, paralectotype (present designation) of *A. mongolica* SEM. with three labels: (1 – in bad condition and so, hardly readable) "Mongol. septent., Potanin, E. Mus. Acad. rec.", (2) "Apatophysis tomentosa Gebl., et. 5.xi.88", (3) "Apatophysis mongolica m. typ. ii.01 A. Semenov det." – ZIN». Further on, in the "Remarks" section (p. 15), the author noted: «... I designated as lectotype of *A. mongolica* Sem. one (Fig. 2b) of two males with the label: ["Gobi, between Njursu and Dshandshiho, 10.viii.1898, Clemenz"] [in Russian] preserved in Zoological Institute (Sankt-Petersburg). Other specimens of type series are designated as paralectotypes». However, in the caption to Fig. 2b (p. 45) DANILEVSKY stated: «2. *A. serricornis*: ...; b – male, paralectotype of *A. mongolica* Sem., "Mongol. septent."», i.e., instead of a photograph of the lectotype (which he referred to on page 15: «... (Fig. 2b) ...»), with the relevant information on its label, he mistakenly presented a picture of one of the paralectotypes and reproduced its label. As noted above, this picture is thereby highly distorted and does in no way correspond to the actual habitus

of this specimen.

Through the courtesy of Mr. Andrey M. SHAPOVALOV, in February 2017, the first author received, together with other material, all four specimens of the type series from the ZIN collection. When revising these specimens, the male with the above labels designated and illustrated by DANILEVSKY as a paralectotype, including “Mongol. septent., Potanin, E. Mus. Acad. rec.”, in fact turned out to be equipped with the label “Lectotypus *Apatophysis mongolica* Semenov, 1901 M. Danilevsky des., 2008”. This seems to explain the confusion arising from his publication. Without any doubt, at least this very specimen was initially mistakenly supplied by DANILEVSKY with the label “Lectotypus ...”. It seems too unlikely that this label had been moved by chance to that specimen from another previously labeled individual. The following is noteworthy as well. The beetle proper carrying the labels “Mongol. septent., Potanin, E. Mus. Acad. rec.” etc. is pasted on a rectangle of white cardboard and strongly displaced to the left from the pin which this rectangle is pinned with (Fig. 14). Therefore, on the label “Lectotypus ...” there is only one hole from the pin strongly displaced to the right, as in Fig. 13, i.e., the proper label (impaled on a pin) is located in more or less the same projection as the beetle, but not strongly shifted to the right. Both specimens with the identical labels reading “Gobi, between Niursu and Dzhandzhikho ...” etc. are neatly pinned on pins. This means that if only one of them was originally equipped by DANILEVSKY with the label “Lectotypus ...”, then this label would have had one more pin hole (or at least its clear trace), but located closer to the longitudinal axis of the label proper. In practice it is too hard to believe that the label was originally pinned to the specimen (which is pinned properly) with such a position of the hole in the label as in Fig. 13.

The remaining three specimens of the type series have in no way been designated by DANILEVSKY.

In order to bring the designations of the specimens of the *A. mongolica* type series into full compliance with the published data of DANILEVSKY (2008), the first author of this paper has undertaken the following procedures. Firstly, he transferred the label “Lectotypus ...” from the above specimen (Fig. 14) to one (Fig. 12) of the two specimens with the labels (information on some of them was omitted by DANILEVSKY in his publication) reading “Gobi, between Niursu and Dzhandzhikho, 10.VIII.[18]98, Klements [leg.]” [in Russian] / “Coll. Semenov-Tian-Shansky” / silver circle (Fig. 13), the label “Lectotypus ...” is herewith transferred to the specified specimen in such a way that only single original hole from the previous pin remains there (see above). Secondly, he provided each of the remaining three specimens (as in Fig. 14) with a label reading “Paralectotype male of *Apatophysis mongolica* Semenov, 1901, according to Danilevsky (2008, p. 12)” (Figs. 15–17). It is in this form that all of those specimens have been returned to ZIN. By the way, the specimen indicated here as the lectotype (Fig. 12) was studied by the first author back in 2012 during one of his stays at ZIN. Information about this male has since been published (MIROSHNIKOV, 2014, p. 14). At that time it still had none of DANILEVSKY’s designations.

The lectotype and paralectotypes have the following body sizes: length 16.8 and 13.6–16.6 mm, humeral width 5.4 and 3.95–5.5 mm, respectively.

*Notes on the picture of the holotype of A. kadyrbekovi.* To avoid any misunderstanding when comparing the text of the links to the photograph of the holotype of *Apatophysis kadyrbekovi* KADLEC, 2006 given in the present paper (see Fig. 20) and some other publications, in particular, that of DANILEVSKY (2008), the following is noteworthy. This picture was kindly provided to us by its author, Mr. Luboš DEMBICKÝ, Brno, Czech Republic, with the permission to publish in this paper, as noted in the introduction. At the same time, DANILEVSKY (2008, p. 45, fig. 2d), when using this very photograph in his work, mentioned no source, but added to the caption: “Photo by S. Kadlec” (instead of the correct entry: after KADLEC, 2006, note by A. MIROSHNIKOV), while the original description of *A. kadyrbekovi*



clearly quotes the correct authorship of the picture under discussion: “Special thanks are due to L. Dembický for his digital photography” (KADLEC, 2006, p. 7).

*Distribution.* China: Xinjiang, Inner Mongolia, but obviously distributed much wider, since here the species is recorded, albeit with some reservations from Guangdong Province as well; Mongolia: most records are from the southern part, but to the north it reaches at least up to the Baityk-Bogdo Mountain Range in the environs of Uliastai; southeastern Kazakhstan; possibly also the adjacent areas of Kyrgyzstan.

### *Apatophysis kashgarica* SEMENOV, 1901

(Figs. 6, 7, 50, 77, 88, 111, 120, 121)

*Apatophysis kashgarica* SEMENOV, 1901: 29 (“in Kashgaria merid.: ad fl. Jarkend-darja”). Type locality: Jarkend-darja [= Yarkant He] River [Xinjiang, China] (according to the original description and the label of the lectotype); AURIVILLIUS, 1912: 160; BOPPE, 1921: 46; WINKLER, 1929: 1146; HUA, 1982: 10; HUA, 2002: 194; WANG & HUA, 2009: 162; HUA *et al.*, 2009: 450.

*Apatophysis* (s. str.) *kashgarica*: SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 72; DANILEVSKY, 2008: 17; LÖBL & SMETANA, 2010: 142.

*Centrodera* (*Apatophysis*) *kashgarica*: GRESSITT, 1951: 49.

*Apatophysis cashgarica*: WANG & HUA, 2009: 162 (“*kashgarica*”, misspelling).

*Materials examined.* China: lectotype ♂ (ZIN) (Fig. 6), “S Kashg[aria].: Jarkend-daria, 22.VI–15.VII.[18]89, Pevtsov leg.” [in Russian] / “*Apatophysis kashgarica* m. ♂ typ. II.[19]01. A. Semenov det.” / silver circle / “Coll. Semenov-Tian-Shansky” / “Lectotypus *Apatophysis kashgarica* Semenov, 1901, M. Danilevsky des., 2008” (Fig. 7); paralectotype ♂ (ZIN), same labels as lectotype, but “Paralectotypus *Apatophysis kashgarica* Semenov, 1901, M. Danilevsky des., 2008”; 2 ♂♂ (IZAS, IOZ(E)1904868–69), Xinjiang, Korla, 13.VIII.1955, Shi-Jun MA, Kai-Ling XIA & Yong-Lin CHEN leg; 1 ♂ (IZAS), same label.

*Remarks.* Body length 11.2–15.5 mm, humeral width 3.7–4.95 mm, the holotype being the largest, while is one of two males occurring from Korla the smallest.

*Distribution.* China: Xinjiang.

### *Apatophysis roborowskii* SEMENOV, 1901

(Figs. 8, 9, 51, 78, 89, 112)

*Apatophysis roborowskii* SEMENOV, 1901: 29 [“in Mongoliae ora occidental: inter Bugas (Chami) et Kara-tjube”]. Type locality: between Hami and Kara-tjube [about 70 km W of Hami] [Xinjiang, China] (according to the original description and the label of the holotype); AURIVILLIUS, 1912: 160; BOPPE, 1921: 46; WINKLER, 1929: 1146; WU, 1937: 683; HUA, 2002: 195; WANG & HUA, 2009: 163; HUA *et al.*, 2009: 450.

*Apatophysis* (s. str.) *roborowskii*: SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 73; DANILEVSKY, 2008: 16; LÖBL & SMETANA, 2010: 142.

*Centrodera* (*Apatophysis*) *roborowskii*: GRESSITT, 1951: 48, 49.

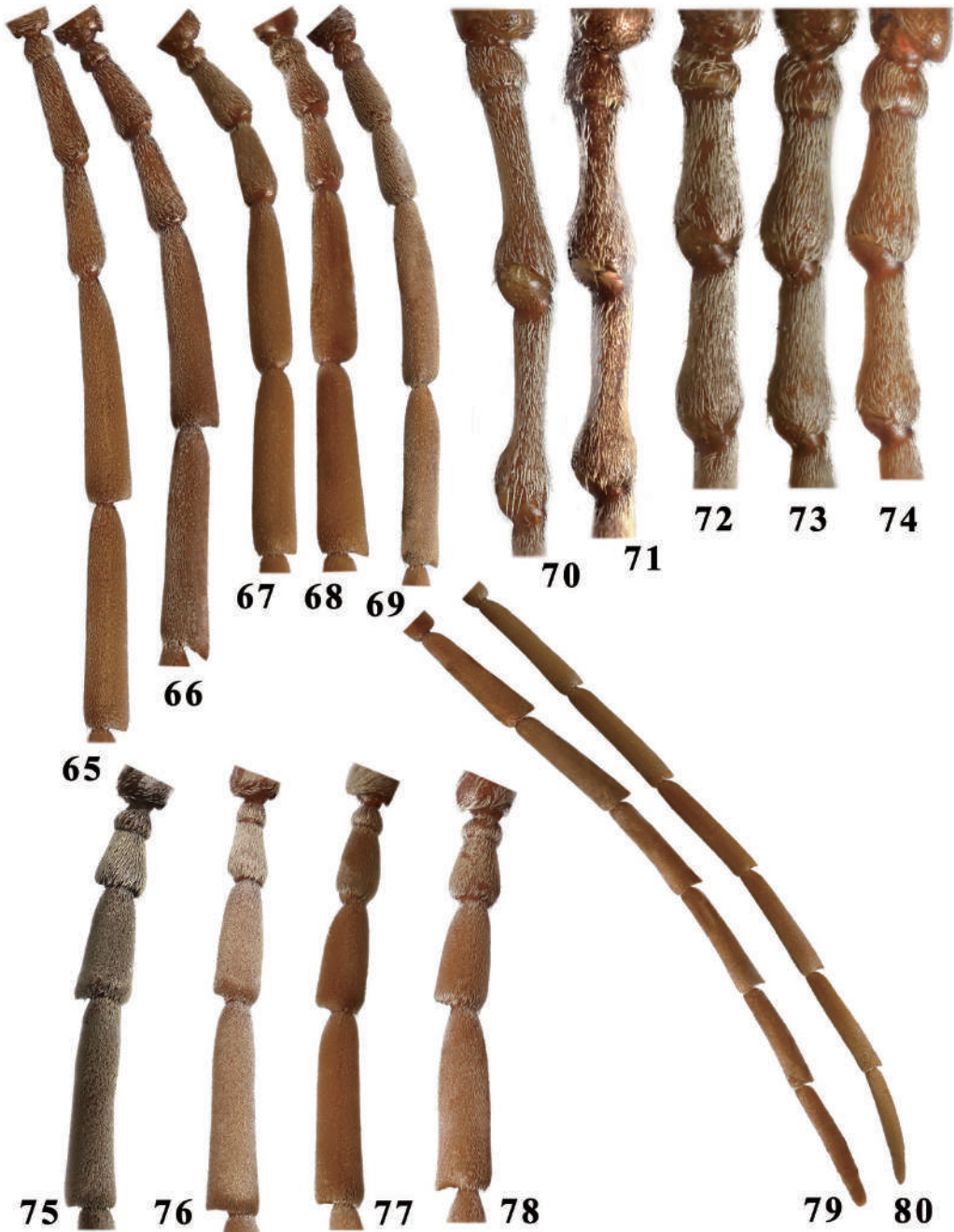
*Apatophysis roborowskii*: HUA, 1982: 10 (“*roborowskii*”, misspelling).

*Apatophysis roborowskii*: WANG, 2003: 59, 60 (“*roborowskii*”, misspelling).

*Material examined.* China: holotype ♂, by monotypy (ZIN) (Fig. 8), “Between Bugas (Hami) and Kara-tiube, 6–15.IX.[18]95, Robor[ovskij]. and Kozlov leg.” [in Russian] / “*Apatophysis roborowskii* m. ♂ typ. un. II.[19]01. A. Semenov det.” / silver circle / “Coll. Semenov-Tian-Shansky” + “Holotypus” (Fig. 9).

*Remarks.* Until now, this species is only known from the holotype, body length 15.6 mm, humeral width 4.9 mm.

*Distribution.* China: Xinjiang.



Figs. 65–80. Antennomeres of *Apatophysis* spp., males. — 65, 70, *A. komarowi* SEMENOV, 1889; 66, 71, *A. baekmanniana* SEMENOV, 1907; 67, 72–73, 80, *A. centralis* SEMENOV, 1901 (67, 72, lectotype); 68, 74, 79, *A. hotanica* DANILEVSKY, 2008, holotype; 69, *A. xizangensis* MIROSHNIKOV et LIN, sp. nov., holotype; 75, 76, *A. sericornis* (GEBLER, 1843) (76, lectotype of *A. mongolica* SEMENOV, 1901); 77, *A. kashgarica* SEMENOV, 1901, lectotype; 78, *A. roborowskii* SEMENOV, 1901, holotype. — 65–69, Antennomeres 2–6, dorsal view; 70–74, antennomeres 2–4, lateral view; 75–78, antennomeres 2–5, dorsal view; 79–80, antennomeres 6–11, dorsal view.

The *sinica*-group

*Diagnosis.* This group differs from all other groups of the genus, at least clearly so from their Chinese representatives, by the structure of the mandibles, particularly the more or less regularly curved and smooth inner margin of the left mandible, the latter devoid of a tooth (Figs. 59, 60); the somewhat peculiar emargination at the inner margin of the right mandible (Figs. 59, 60); the shapes of the mandibles at the apex, both sharpened into a comparatively wide short cone, as in Figs. 59 and 60. The *sinica*-group is also characterized by the following features, the combination of which makes it even more distinct compared to other groups: body from medium- to large-sized; pronotum with small, gentle, dense puncturation, without deep punctures; elytra with sharp and rough puncturation over their greater part, weakly or almost completely not hidden by recumbent setation; antennae long, considerably extending beyond apex of elytra, freely reaching the base of elytra by antennomere 4 (Figs. 23, 25), from antennomere 6 until 10th moderately serrate; length ratios of antennomeres 1 and 4 somewhat varying, but usually both are subequal or antennomere 4 barely longer than 1st, or vice versa; genae well-developed, as in Figs. 59 and 60, but even then the mandibles 2.8–2.9 times as long as genae, distinctly longer than the shortest distance between antennal cavities; abdominal ventrites without peculiar brushes in their apical parts; all tibiae either comparatively straight or meso- and metatibiae can be barely/slightly curved, without very dense setation ventrally; femora without spines ventrally, tibiae not dentate; in comparison with the *barbara*- and *serricornis*-groups, ventral setation of tarsi generally more strongly developed, at least protarsomeres 2 and 3 completely covered with pads that form no clear, longitudinal, median line.

*Composition.* The group consists of two Chinese species.

*Apatophysis sinica* SEMENOV, 1901

(Figs. 23, 24, 59, 94–96, 123)

*Apatophysis sinica* SEMENOV, 1901: 30 [“in Chinae prov. Se-tschuan: ad urb. Tsa-gu-tin (Tsa-ku-ting = Li-fan-fu)”. Type locality: Weizhou (= “Li-fan-fu”), [31°28' N, 103°35' E], Sichuan [China] (according to the original description and the label of the holotype); AURIVILLIUS, 1912: 160; BOPPE, 1921: 46; WINKLER, 1929: 1146; WU, 1937: 684; HUA, 1982: 11; CHIANG *et al.*, 1985: 27, pl. II, fig. 18; HUA, 1987: 4; HUA, 2002: 194; WANG & HUA, 2009: 163; HUA *et al.*, 2009: 7 (pl. VII, fig. 81), 134.

*Apatophysis* (s. str.) *sinica*: SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 82; DANILEVSKY, 2008: 20; LÖBL & SMETANA, 2010: 142.

*Centrodera* (*Apatophysis*) *sinica*: GRESSITT, 1951: 48, 50.

*Materials examined.* China: holotype ♂, by monotypy (ZIN) (Fig. 23), “Li-Fan-Fu Mts. env., 17.VIII.[18]93, Potanin leg.” [in Russian] / “*Apatophysis sinica* m. ♂ typ. un. II.[19]01. A. Semenov det.” / silver circle / “Coll. Semenov-Tian-Shansky” + “Holotypus” (Fig. 24); 1 ♂ (cAM, ex cSM), Sichuan Province, Tonghua env., 1,900–2,000 m, 8.VIII.2001, S. MURZIN leg.; 6 ♂♂ (cSM), Sichuan Province, Tonghua, 20 km W Wenchuan, 1,800 m, 7–9.VIII.2002, S. MURZIN & I. SHOKHIN leg.

*Remarks.* Until now, this species is only known from males (see also below). Body length 15.0–21.0 mm, humeral width 4.8–6.8 mm, the holotype 18.2 and 5.9 mm, respectively.

There is a morphologically rather unusual female at our disposal (Fig. 39) coming from the extreme south of Gansu Province (Wenxian env., 1,300 m, 32°55'30"N / 104°41'09"E, 1–5.VI.2012, Mikhail MURZIN leg. – cSM), which was kindly transferred to us for study by Dr. Sergey V. MURZIN (Moscow, Russia). The length of its body is 26.6 mm, the humeral width is 7.8 mm. Even though it shows some very peculiar features, it seems to be especially similar to the male of *A. sinica*. The most important diagnostic differences of this female from the known females of all other species of *Apatophysis*



Figs. 81–99. Tarsi of *Apatophysis* spp. — 81, *A. komarowi* SEMENOV, 1889; 82, *A. baeckmanniana* SEMENOV, 1907; 83, *A. centralis* SEMENOV, 1901, lectotype; 84, *A. hotanica* DANILEVSKY, 2008, holotype; 85, *A. xizangensis* MIROSHNIKOV et LIN, sp. nov., holotype; 86, 87, *A. serricornis* (GEBLER, 1843); 88, *A. kashgarica* SEMENOV, 1901, lectotype; 89, *A. roborowskii* SEMENOV, 1901, holotype; 90, *A. pavlovskii* PLAVILSTSHIKOV, 1954; 91–93, *Apatophysis* sp. (? *sinica* SEMENOV, 1901) (from Wenxian, Gansu); 94–96, *A. sinica* SEMENOV, 1901, holotype; 97–99, *A. niisatoi* MIROSHNIKOV et LIN, sp. nov., holotype. — 81–89, 93, 96, 99, Metatarsi; 90, 91, 94, 97, protarsi; 92, 95, 98, mesotarsi. — 81–90, 94–99, Males; 91–93, female.

*physis* lie in the structure of the protrusion of ventrite 1 that divides the metacoxae, and in the location of the metacoxae proper (set apart from each other). The protrusion of this ventrite in the female from Gansu is sharply narrowed toward the apex, conical, sharpened apically, as in Fig. 131, i.e. very similar to that observed in females of species of the genus *Protapatophysis* (Figs. 132, 133), while in females of *Apatophysis* it is obtuse lobe-shaped, wide or very wide, as in Figs. 125–128. At the same time, in the previously unknown and here described female of *A. sieversi* (see below), the protrusion of the ventrite is somewhat peculiar, triangular in shape, with an obtuse angle at the apex, as in Figs. 129 and 130, thus occupying what seems to be an intermediate position in the structure between the female from Gansu and females of the remaining *Apatophysis* species. However, based on the location of the metacoxae, the female of *A. sieversi* is comparatively more similar to females of other congeners than to the female from Gansu. At the same time, the location of the metacoxae of the female from Gansu occupies, in its turn, a position intermediate between the females of *Protapatophysis* and the known females of *Apatophysis* species. Interestingly, already SEMENOV-TIAN-SHANSKIJ and STSHEGOLEVA-BAROVSKAJA (1936, p. 83) assumed some similarity in the location of the metacoxae in the female of *A. sinica* and the females of *Protapatophysis*. Even though they mentioned in the above assumption the possible similarity to *Protapatophysis* males, there can be little doubt that those authors made a lapse and actually meant females of *Protapatophysis*, since the location of the metacoxae in *Apatophysis* and *Protapatophysis* males is very similar.

In the female from Gansu, the habitus in general and the shape of the elytra in particular are also somewhat different from those of the females of other *Apatophysis* species. The elytra of the Gansu female are subparallel-sided from the base to the distal third, as in Fig. 39, 2.1 times as long as the humeral width, while the shape of the elytra of the females of other *Apatophysis* species is usually somewhat different, as in Figs. 31–34, 36–38; they can be subparallel-sided only rarely, more often, on the contrary, they are clearly broadened at the middle and look somewhat less strongly elongated, 1.7–2.0 times as long as humeral width. It is noteworthy that the female from Gansu differs also from *Protapatophysis* females by the structure of the elytra, the latter being clearly broadened mainly near the distal two-thirds and quite similar in shape in different species of the genus, as in Figs. 40 and 41 and in DANILEVSKY (2011, p. 99). However, the picture of the female of *Protapatophysis vartianae* (HEYROVSKÝ, 1971), from the Muree Hills, Thobba, in the table in DANILEVSKY's paper was labeled "2c", while in the caption the same image was erroneously referred to as "Fig. 2 ...; c – male, Jhelum River (BMNH); ..." [DANILEVSKY missed the repository of this female, unlike that of all other specimens of *P. vartianae*, but apparently it is also kept in BMNH].

We have evaluated the degree of similarity of the Gansu female to the male of *A. sinica*, taking into account the known features of resemblance of the conspecific male and female general characteristic of the genus *Apatophysis*. The Gansu female is quite similar to the male of *A. sinica* by the large and robust body, its coloration, the structure of the pronotum (Figs. 122, 123), especially the shape of the lateral tubercles, the proportions of the basal antennomeres, the absence of longitudinal ribs on the elytra, the structure of the tarsi, including the proportions of their segments (Figs. 91–96), the moderately split tarsomere 3, the shape of their lobes at the apex, the peculiarities of the structure of tarsal pads, and the shape of the mesosternal process. Besides this, the structure of the mandibles of the female (Fig. 58) also largely resembles that of the *A. sinica* male (Fig. 59): at least the inner margin of the left mandible, although not quite regularly curved, has no evident tooth, while the inner margin of the right mandible is emarginate at the middle. However, the mandibles proper are noticeably longer in the female from Gansu than the shortest distance between the antennal cavities. The large puncturation of the elytra of that female is somewhat denser than that of the male of *A. sinica*, while the very small punctures form a well-visible microsculpture that generally creates a clearly expressed scabrous



Figs. 100–113. Tarsi and abdomen of *Apatophysis* spp., males. — 100–102, *A. insolita* MIROSHNIKOV et LIN, sp. nov., holotype; 103–105, the same, but the paratype (from Shennonggu, Henan); 106–108, *A. sieversi* GANGLBAUER, 1887; 109, *A. centralis* SEMENOV, 1901, lectotype; 110, *A. serricornis* (GEBLER, 1843); 111, *A. kashgarica* SEMENOV, 1901, lectotype; 112, *A. roborowskii* SEMENOV, 1901, holotype; 113, *A. pavlovskii* PAVILSTSHIKOV, 1954. — 100, 103, 106, Protarsi; 101, 104, 107, mesotarsi; 102, 105, 108, metatarsi. — 109–113, Lateral view.

surface which is not observed in the male of *A. sinica*. There can hardly be any doubt that these differences in the sculpture of the elytra are only sexual dimorphic characters, since they are detected in this or that way in some other *Apatophysis* species, including the type species *A. barbara*.

Considering all above, we believe that the female from Gansu very likely belongs to *A. sinica*. This assumption, however, can only be confirmed by indisputable facts. Nevertheless, already now it seems possible to assume that not only *A. sinica*, but obviously the entire *sinica*-group forms a most distinct link between *Apatophysis* and *Protapatophysis*. Besides elucidating the exact specific attribution of the female from Gansu, it would be extremely interesting to find the female of the other new species in this group described below from males alone. It seems likely to expect the females of both species to be rather similar morphologically, at least so in the structure of the protrusion of the 1st ventrite and in the location of the metacoxae.

*Distribution.* China: Sichuan, ?Gansu. The records from “Kiangsi (Kuling), Hopei (Peiping)” (GRESSITT, 1951), Shandong and the very same Jiangxi and Hebei provinces (HUA, 2002) require confirmation.

*Apatophysis niisatoi* MIROSHNIKOV et LIN, sp. nov.

(Figs. 25, 60, 97–99, 124)

*Diagnosis.* This new species seems to be especially similar to *A. sinica*, but differs clearly by the slenderer body and legs (Figs. 23, 25), the more narrowly conical and more sharply protruding lateral tubercles, as in Figs. 123 and 124, the clearly darker general coloration (Figs. 23, 25), the more strongly elongated tarsomeres 1 and 2 (Figs. 94–99), and on the average a smaller body size.

*Description.* Male: Body length 13.6–18.5 mm, humeral width 4.1–5.4 mm; the holotype is the largest. Reddish brown, head dorsally and pronotum darker.

Head at eye level barely narrower than pronotum at level of lateral tubercles; antennal tubercles well-developed; median longitudinal groove between eyes clearly visible, with a small, predominantly shallow puncturation; eyes strongly convex, shallowly emarginate; genae moderately long; mandibles of a peculiar structure as in Fig. 60 (see also the diagnosis of the *sinica*-group above), clearly longer than shortest distance between antennal cavities; submentum with a unclear scabrous sculpture; gula with several gentle transverse wrinkles, on either side of it with rough, predominantly rugose sculpture and irregular puncturation; antennae long, extending beyond apex of elytra by at least antennomere 9, from antennomere 6 until 10th moderately serrate; length ratio of antennomeres 1–11 (holotype taken as an example), 36 : 7 : 35 : 38 : 58 : 53 : 57 : 54 : 55 : 70; antennomere 2 slightly transverse; antennomere 1 can be subequal to or barely longer than 4th.

Pronotum clearly transverse, broadest at level of lateral tubercles where it is 1.22–1.27 times as wide as long, base 1.25–1.26 times as wide as width at apex, with a deep transverse depression between each pair of discal tubercles, provided with small, gentle, dense puncturation; lateral tubercles well-developed as in Fig. 124.

Scutellum distinctly narrowed toward apex, widely rounded apically, with unclear sculpture.

Elytra moderately narrowed toward apices, 2.23–2.3 times as long as the humeral width, with a very clear, partly rough, rather regular puncturation, well-developed at least in first two-thirds, and with very small, barely visible punctures.

Pro- and mesosterna with a clear, transverse, rugose sculpture; metasternum and abdominal ventrites with a small, dense puncturation. Abdomen with last ventrite strongly transverse, with or without a weak emargination apically.

Femora and tibiae without brushes, spines and denticles ventrally; tibiae straight; tarsi compara-

tively long, metatibia 1.3–1.4 times as long as metatarsus; metatarsomere 1, 2.9–3.0 times as long as the width.

Recumbent setation grayish, partly yellowish, most dense on head dorsally, pronotum and scutellum, on elytra poorly hiding their puncturation; setation of erect and suberect setae poorly developed in general.

*Materials examined.* Holotype: ♂ (IZAS, IOZ(E)1905324) (Fig. 25), China, Sichuan, Kanding County, Guanzhen, 1,435 m, 21.V.2009, by light trap, Dong LIU leg. Paratypes: 2 ♂♂ (IZAS, IOZ(E)1905322–23), same label as the holotype; 1 ♂ (cAM, ex IZAS, IOZ(E)1905325), same label as the holotype.

*Etymology.* We are pleased to dedicate this species to our colleague, the famous cerambycidologist, Dr. Tatsuya NIISATO who celebrates the 60th birthday this year.

*Distribution.* China: Sichuan.

### The *sieversii*-group

*Diagnosis.* This group differs from all other groups of the genus by the meso- and metatibiae being more or less strongly curved (Figs. 26, 28) and dentate ventrally, the presence ventrally on the meso- and metafemora of small, but well- visible spines, the structure of the mandibles, in particular, a peculiarly dentate inner margin of the left mandible and usually a strongly or very strongly developed sharp tooth with a conspicuous emargination in front at the inner margin of the right mandible, as in Figs. 53–55. The *sieversii*-group is also characterized by the following features, the combination of which even more clearly sets it from each of the other groups: body from small to large; elytra with sharp rough puncturation over their greater part, poorly or nearly not concealed by recumbent setation, usually with well-expressed longitudinal ribs; antennae long, considerably extending beyond apex of elytra, freely reaching the base of elytra by antennomere 4 (Figs. 26, 28), from antennomere 6 until 10th relatively strongly serrate; length ratios of antennomeres 1 and 4 somewhat variable, antennomere 4 can be barely or slightly longer than antennomere 1, or vice versa, or both of these antennomeres subequal in length; genae relatively short, as in Figs. 53–55; mandibles 4.1–4.4 times as long as genae, as well as clearly or much longer than the shortest distance between antennal cavities; abdominal ventrites without peculiar brushes in their apical parts; in comparison with the *barbara*- and *serri-cornis*-groups, ventral setation of tarsi generally more strongly developed, at least protarsomeres 2 and 3 completely covered with pads forming no evident longitudinal median line; tarsomeres 1 and 2 at least of metatarsus rather elongate, as in Fig. 108.

*Composition.* The group includes a single Chinese species.

#### *Apatophysis sieversii* GANGLBAUER, 1887

(Figs. 26–28, 37, 38, 53–57, 106–108, 129, 130)

*Apatophysis sieversii* GANGLBAUER, 1887: 21 (“Peking”). Type locality: Beijing (= Peking) [China] (according to the original description and the label of the holotype); AURIVILLIUS, 1912: 160; BOPPE, 1921: 46; WINKLER, 1929: 1146; WU, 1937: 683; HUA, 2002: 194; WANG, 2003: 61, Figs. (as “*sinica*”; both figures depict males, thus the picture on the right is not a female); HUA *et al.*, 2009: 450.

*Apatophysis* (s. str.) *sieversii*: SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936: 83; DANILEVSKY, 2008: 21; LÖBL & SMETANA, 2010: 142.

*Centrodera* (*Apatophysis*) *sieversii*: GRESSITT, 1951: 48, 50.

*Apatophysis sieversii*: HUA, 1982: 11 (“*sieversii*”, misspelling); WANG & HUA, 2009: 163 (“*sieversii*”, misspelling).

*Materials examined.* CHINA: Beijing: holotype ♂, by monotypy (ZIN) (Fig. 26), “Peking



(Herz)" / "*Apatophysis sieversi* Gglb. Typ." / "Sievers!" / "103" + "Holotypus" (Fig. 27); 1 ♂ (ZMUM), "Peking, Westberge, Exp. Stötzner"; 1 ♂ (IZAS, IOZ(E)1904886), "PeiPing, 13.VII.1937, T. P. Chang leg."; 2 ♂♂ (IZAS), same label; 1 ♂ (IZAS, IOZ(E)1904885), Beianhe, Qinghualinchang, 7.VI.1973, You-Qiao LIU leg.; 1 ♂ (IZAS), same label; 2 ♂♂ (IZAS), same label, but taken on 8.VI.1973; 1 ♂ (IZAS, IOZ(E)1904877), Sanbao, 24.VI.1976, You-Wei ZHANG leg.; 3 ♂♂ (IZAS, IOZ(E)1904873–74, 1904876), same label, but taken on 25.VI.1976; 8 ♂♂ (IZAS), same label as No. 1904876; 1 ♂ (cAM, ex IZAS, IOZ(E)1904875) (Fig. 28), same, but taken on 10.VII.1976, Jian-Ming ZHAO leg.; 6 ♂♂ (IZAS), same label; 1 ♂ (IZAS, IOZ(E)1904884), Shangfangshan, 12.VIII.1981 (unknown collector); 2 ♂♂ (IZAS, IOZ(E)1904880–81), same, but taken on 10.VI.1982, by light trap, Su-Bai LIAO leg.; 2 ♂♂ (IZAS), same, but taken on 9–11.VI.1982; 1 ♂ (IZAS, IOZ(E)1904879), same label, but taken on 11.VI.1982; 1 ♂ (cAM, ex IZAS, IOZ(E)1904878), same label; 2 ♂♂ (IZAS, IOZ(E)1904882–83), same label, but taken on 19.VI.1982; 1 ♂ (IZAS), Badaling, 24.VI.1957 (unknown collector). Hebei: 1 ♂ (IZAS, IOZ(E)1904887), Jinxian, Xishicun, 12.V.1951 (unknown collector); 1 ♂ (IZAS, IOZ(E)1904889), Luanxian, Guoshuchang, 11.VI.1977 (unknown collector); 1 ♂ (IZAS, IOZ(E)1904888), Dongfenchang, 5.V.1981, Yu-Jun JIN leg. Shandong: 1 ♂ (IZAS, IOZ(E)1904891), Pingyi, VIII.1984, Hui-Ling CHENG leg.; 1 ♀ (IZAS, IOZ(E)1905318), same label; 1 ♂ (IZAS, IOZ(E)1904890), Heze, Dian-Ying FENG leg. (unknown date, but after 1970); 1 ♂ (IZAS, IOZ(E)1905316), same label; 1 ♀ (IZAS, IOZ(E)1905317), same label. Henan: 1 ♂ (IZAS, IOZ(E)1904892), "Honan [= Henan], 5.V.1936 (unknown collector)"; 1 ♂ (IZAS, IOZ(E)1904893), Neihuanglinchang, 1975, Meng-Xi ZHANG leg. Sichuan: 1 ♂ (IZAS, IOZ(E)1904894), Nianshipangou, 24.VI.1985, Guo-Zhu LIU leg.

*Remarks.* This species was described from a single male (GANGLBAUER, 1887) which is kept in the ZIN. Another male is in the ZMMU collection. Besides these two specimens (with a body length of 18.3 and 18.5 mm, respectively), we have restudied and also known from the literature (e.g. GANGLBAUER, 1887; SEMENOV-TIAN-SHANSKIJ & STSHEGOLEVA-BAROVSKAJA, 1936), *A. sieversi* has also been recorded based on males by WANG (2003), but under the name "*A. sinica*". The body lengths noted by the author are 13–19 mm. Until now, the female has remained unknown.

The study of a large and diverse series of males of *A. sieversi*, kept in IZAS, has allowed us not only to clarify body size variations, but also to reveal some other important morphological features and individual variability traits. Besides this, the IZAS collection contains two very small females that belong to *A. sieversi*. Thus, the female of this species is described here for the first time.

*Morphological notes on the male* (Figs. 26, 28, 53–55, 106–108). Body length 12.9–21.5 mm, humeral width 4.2–7.1 mm, thereby a more or less gradual transition in their body size, from the smallest to the largest, has been found. Coloration somewhat variable, larger specimens sometimes darker, while smaller ones, on the contrary, lighter, thereby the elytra in the latter can be entirely yellow, without reddish tone; elytra usually with well-visible or strong shine, but sometimes with indistinct shine.

Head sometimes with eyes more convex than in the holotype; the structure of the mandibles (previously not described in detail in the literature, same as in other species) is rather peculiar (see diagnosis of the *sieversi*-group), thereby in larger specimens the number of clearly expressed denticles at the inner margin of the left mandible is usually higher than in smaller specimens, as in Figs. 53, 55.

Pronotum with somewhat variable lateral tubercles from very well to moderately developed, from obtuse to sharper apically; transverse depression in front of discal tubercles in basal part on either side of midline from very weak to very well-expressed.

Elytra barely or slightly narrowed toward apex, but not more than that (in the holotype, they are strongly deformed and appear to be more strongly narrowed toward the apex); longitudinal ribs from



Figs. 114–124. Pronotum of *Apatophysis* spp. — 114–119, *A. serricornis* (GEBLER, 1843) (114, from Bayan Hot, Inner Mongolia; 115, from Wucaiwan, Xinjiang; 116, from Ordos, Inner Mongolia; 117, from southern Alashan; 118, from Barkul = Barkol, Xinjiang; 119, lectotype of *A. mongolica* SEMENOV, 1901); 120, 121, *A. kashgarica* SEMENOV, 1901 (120, lectotype; 121, from Korla, Xinjiang); 122, *Apatophysis* sp. (? *sinica* SEMENOV, 1901) (from Wenxian, Gansu); 123, *A. sinica* SEMENOV, 1901, holotype; 124, *A. niisatoi* MIROSHNIKOV et LIN, sp. nov., holotype. — 114–121, 123, 124, Males; 122, female.

very well-expressed (as in the holotype) to almost invisible, thereby such variations are observed in specimens of various sizes.

The structure of the meso- and metafemora, as well as the meso- and metatibiae is as described in the diagnosis of the *sieversi*-group, always clear.

*Description of female* (Figs. 37, 38, 56, 57, 129, 130). Body length 11.5–12.3 mm, humeral width 3.85–3.9 mm (without any doubt, females can be larger in the sizes). Coloration is similar to male.

Head at eye level barely narrower than pronotum at level of lateral tubercles, with a gentle, but distinct median groove; genae moderately short; mandibles as in Figs. 56 and 57, unlike in male, inner margin of left mandible without a large tooth in basal part, with a clearly less strongly expressed denticles, while median tooth at inner margin of right mandible only more or less moderately developed, with a much less deep emargination in front of it; antennae noticeably longer than elytra, extending beyond their apices by penultimate antennomere (as it seems, this is the peculiar feature for the genus); length ratio of antennomeres 1–11 (specimen with entire left antenna taken as an example), 49 : 9 : 43 : 41 : 58 : 57 : 56 : 51 : 42 : 48 : 69 (in another female, antennomere 1 also about 1.2 times as long as antennomere 4); antennomere 2 clearly transverse; from antennomere 6 until 10th moderately serrate.

Pronotum 1.26–1.37 times as wide as long, at base noticeably wider than at apex, with more or less well-expressed obtuse lateral tubercles, as in Figs. 37 and 38; disc with two weak or more visible tubercles in basal part on either sides of midline, with clear, rough, dense, in places confluent puncturation.

Elytra behind humeri subparallel-sided by about 1/6, then very clearly broadened toward middle, as in Figs. 37 and 38, 1.9 times as long as the humeral width; disc with rough, irregular, partly rugose puncturation and small sparse punctures, well-visible almost to apex.

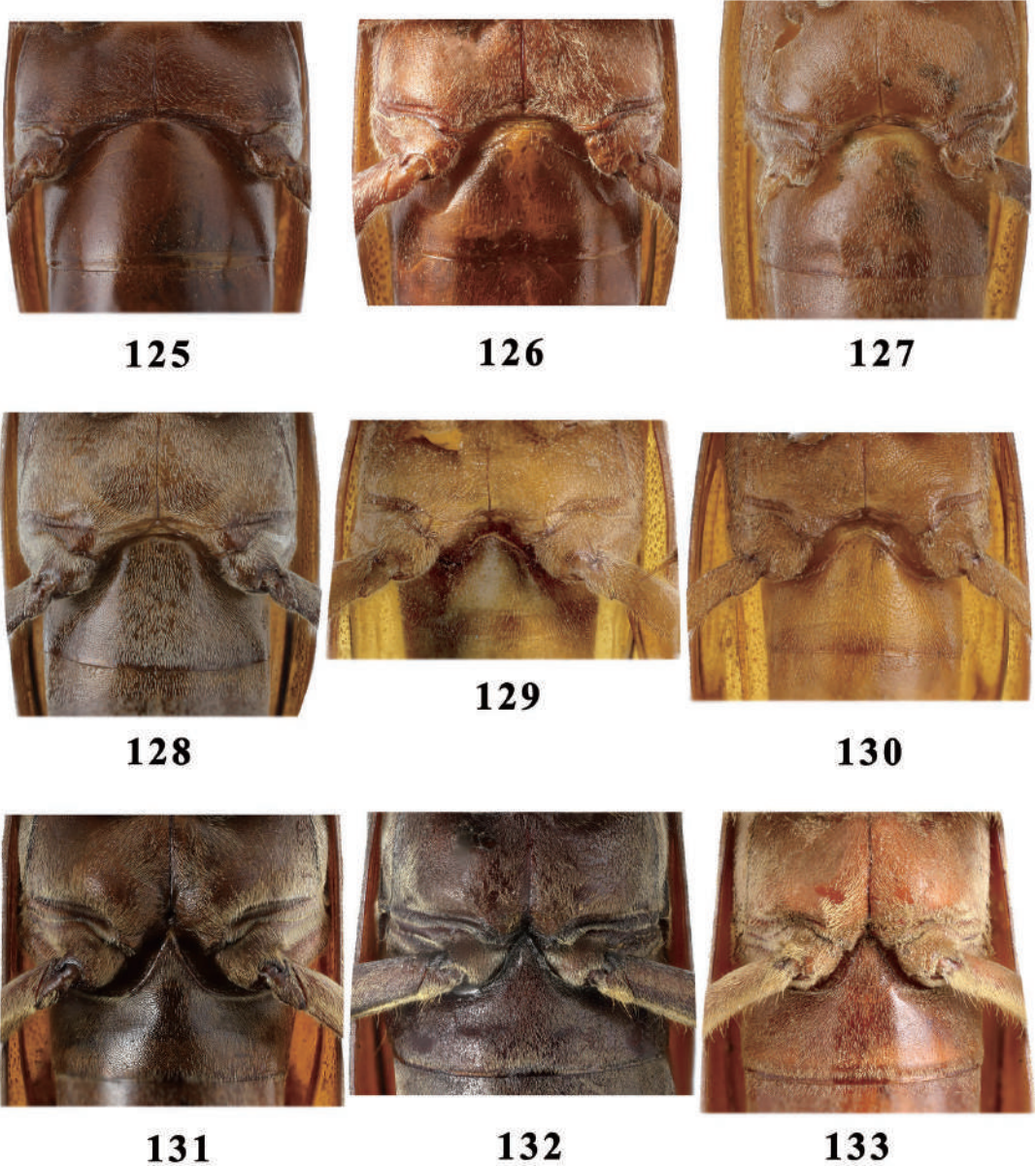
Shape of protrusion of ventrite 1, dividing metacoxae, and location of metacoxae proper (described in remarks to *A. sinica*, see above) as in Figs. 129 and 130.

Meso- and metafemora without spines ventrally, most of these femora also ventrally, starting from base, rather narrow, like in male; meso- and metatibiae barely curved, without clear denticles ventrally or partly very weakly dentate.

*Notes.* The female described here is in many characters clearly similar to the known females of the other *Apatophysis* species (discarding the female from Gansu with a still unestablished specific attribution), but differs at least by the long antennae (none of all other congeners seems to have the female with the antennae that extend this or that way beyond the apex of the elytra, Figs. 31–34, 36; at most they can only slightly fail to reach the apex), the somewhat peculiar shape of the protrusion of the 1st ventrite, and the slightly or barely more closely positioned metacoxae.

SEMENOV-TIAN-SHANSKIJ and STSHEGOLEVA-BAROVSKAJA (1936, pp. 83–84) believed that, based on males, *A. sieversi* is very close to *A. sinica*, and assumed that the females of these species can be similar in the location of the metacoxae. In this case, in their opinion, “*A. sieversi* and *A. sinica* would have to form a separate group in the subgenus *Apatophysis* [s. str.]” (in Russian). However, at present, based on the results of additional studies which concern diverse material, it is clear that the males of these species, albeit characterized by some similar features, show a number of important differences, most of which are shown above. This does not seem to allow us to place these species within the same group. And if we conditionally refer to *A. sinica* the female from Gansu described above and compare it in detail with two females of *A. sieversi*, then the character of differences between them will only favour our conclusions.

*Distribution.* China: Beijing, Liaoning, Hebei, Shandong, Henan, and Sichuan. Above are the



Figs. 125–133. Metacoxae and 1st ventrite of *Apatophysis* and *Protapatophysis* spp., females. — 125, *A. barbara* (P. H. LUCAS, 1858); 126, *A. caspica* SEMENOV, 1901; 127, *A. centralis* SEMENOV, 1901, paralectotype; 128, *A. serricornis* (GEBLER, 1843); 129–130, *A. sieversi* GANGLBAUER, 1887; 131, *Apatophysis* sp. (? *sinica* SEMENOV, 1901) (from Wenxian, Gansu); 132, *P. kashmiriana* (SEMENOV, 1901), paralectotype; 133, *P. montana* (GAHAN, 1906).

first records from the latter four provinces.

### The *insolita*-group

*Diagnosis.* This group, in comparison with all other groups of the genus (Figs. 42–48, 50–55, 59, 60, 63, 64, 81–90, 94–99, 106–108), has the most poorly developed mandibles, as in Figs. 61 and 62, in length only 2.0–2.2 times exceeding the genae, tarsomere 3 being the most deeply split, as in Figs. 100–105. The *insolita*-group is also characterized by the following features, the combination of which even more clearly sets it from each of the other groups: body from small to large; elytra strongly elongated, up to about 2.4 times as long as the humeral width (such a great index of the length to width ratio of the elytra can only be observed in certain species of the *barbara*-group absent from China), with a sharp rough puncturation over their greater part, almost or completely not hidden by recumbent setation; antennae long, considerably extending beyond apices of elytra, freely reaching the bases of elytra by antennomere 4, from antennomere 6 until 10th relatively moderately serrate; length ratio of antennomeres 1 and 4 varying, but either they are usually subequal or antennomere 4 barely or slightly longer than 1st, or vice versa (see also the description below); genae relatively well-developed, as in Figs. 61 and 62; mandibles distinctly shorter than the shortest distance between antennal cavities, as in Figs. 61 and 62; abdominal ventrites without peculiar brushes in apical parts; all tibiae relatively straight, without strong curvature, ventrally neither dentate nor with brushes; femora without spines ventrally; ventral setation of tarsi generally even more strongly developed than in the *sini-ca*- and *sieversi*-groups; tarsomeres 1 and 2, at least metatarsus, rather elongate, as in Figs. 102 and 105.

*Composition.* The group includes a single Chinese species.

### *Apatophysis insolita* MIROSHNIKOV et LIN, sp. nov.

(Figs. 29, 30, 61, 62, 100–105)

*Diagnosis.* This new species seems to be especially similar to *Apatophysis niisatoi* sp. nov., but differs by the shorter and somewhat peculiar shape of the mandibles (Figs. 60–62), which are distinctly shorter than the shortest distance between the antennal cavities (see the diagnoses of both the *sini-ca*- and *insolita*-groups above); the more distinct puncturation on the pronotal disk, the more deeply split tarsomere 3 (Figs. 97–105), the slightly more elongated tarsomere 1 of at least the posterior tarsus (Figs. 99, 102, 105), the often more elongate elytra, the peculiar coloration of the body, same as of its setation.

*Description.* Male. Body length 13.1–18.2 mm, humeral width 3.65–5.8 mm, herewith the holotype is 16.0 and 5.35 mm, respectively. Rufous or dark rufous, partly reddish or dark reddish.

Head at eye level barely or clearly narrower than pronotum at level of lateral tubercles; antennal tubercles well-developed, median longitudinal groove between them and eyes usually clearly visible, with a shallow, but well-expressed, dense, partly confluent puncturation and more or less distinct microsculpture; eyes strongly (Fig. 61) or very strongly (Fig. 62) convex, shallowly emarginate; genae moderately long; mandibles relatively short, as in Figs. 61 and 62 (see the diagnosis of the *insolita*-group above), sharpened apically, each of them at inner margin strongly curved before apex, thereby on left mandible with a weak or barely expressed obtuse protrusion in middle part, while on right mandible with a more or less well-developed obtuse tooth, as in Figs. 61 and 62; submentum with a scabrous, often rugose sculpture; gula with gentle, transverse wrinkles, on either side of it with coarse, irregular punctures; antennae long, extending beyond apex of elytra by antennomere 9, from antenno-

mere 6 (sometimes from 7th, see below) until 10th moderately serrate; length ratio of antennomeres 1–11 (holotype taken as an example), 35 : 7 : 31 : 36 : 52 : 48 : 49 : 47 : 48 : 48 : 67; antennomere 1 very rarely noticeably longer than antennomere 4, but less than 1.26 times; antennomere 2 from slightly transverse to subequal in length and width; apical external angle of antennomere 6 variable in shape, can be about straight or clearly serrate.

Pronotum clearly, sometimes strongly transverse, broadest at level of lateral tubercles where it is 1.23–1.47 times as wide as long, base 1.11–1.27 times as wide as width at apex; lateral tubercles moderately or strongly developed, as in Figs. 29 and 30; discal tubercles before base clearly or much more strongly developed than tubercles in apical part, sometimes with a smooth, shiny, median area at base, with a shallow, but clear, very dense, partly confluent puncturation and a well-visible microsculpture.

Scutellum distinctly narrowed toward apex, widely rounded apically, with unclear sculpture.

Elytra moderately or weakly narrowed toward apex, 2.24–2.43 times as long as the humeral width; disk with a very clear, partly rough, rather regular puncturation, well-developed at least in first two-thirds, and a more or less distinct microsculpture.

Pro- and mesosterna with a clear, transverse, rugose sculpture; mesosternal process from rather narrow to wider; metasternum and abdominal ventrites with a distinct, dense puncturation, partly rugose on metasternum. Abdomen with last ventrite strongly transverse, widely truncated apically.

Femora and tibiae without brushes, spines and denticles ventrally; tibiae stright, sometimes metatibiae slightly curved inwards; tarsi comparatively long, metatibia 1.26–1.35 times as long as metatarsus; metatarsomere 1, 3.45–3.86 times as long as the width.

Recumbent setation yellowish, with a golden tint, most dense on pronotum and often on head dorsally and scutellum while on elytra weakly hiding their puncturation; setation of erect and suberect setae poorly developed in general.

*Materials examined.* China: Shaanxi: Holotype: ♂ (IZAS, IOZ(E)1905464) (Fig. 29), Zhouzhi County, Jixianzhen, Lixincun, 18.VII.2006, by light trap, Mei-Ying LIN leg.; paratypes: 8 ♂♂ (IZAS, IOZ(E)1905333–34, 1905459–63, 1905465), same label as the holotype; 1 ♂ (cAM, ex IZAS, IOZ(E)1905138), same label as the holotype; 2 ♂♂ (IZAS, IOZ(E)1905335, 1905458), same label as the holotype, but taken on 16.VII.2006; 6 ♂♂ (IZAS, IOZ(E)1905331–32, 1905454–57), Zhouzhi County, Banfangzi, 20.VII.2006, by light trap, Mei-Ying LIN leg.; 3 ♂♂ (IZAS, IOZ(E)1905137, 1905466–67), same label, but taken on 21.VII.2006; 1 ♂ (IZAS, IOZ(E)1905329), Foping, 950 m, 12.VII.1998, Jian YAO leg.; 1 ♂ (cAM, ex IZAS, IOZ(E)1905330), Liuba, Miaotaizi, 1,350 m, 21.VII.1998, Jian YAO leg.; 1 ♂ (IZAS, IOZ(E)1905453), Ankangshi, Ningshan County, Guanghuojie-zhen, 1,178 m, 33°45'48"N, 108°46'15" E, 2.VII.2014, by light trap, Yuan-Yuan LU leg.; 3 ♂♂ (IZAS, IOZ(E) 1905468–70), same, but 1,227 m, 33°46' 46" N, 108°47'27" E, 26.VII.2014; 1 ♂ (IZAS, IOZ(E)1905471), Shangluoshi, Zhashui County, Yingpanzhen, 955 m, 33°46' 35"N, 109°2'36"E, 29.VII.2014, by light trap, Yuan-Yuan LU leg.; 2 ♂♂ (IZAS, IOZ(E)1905472–73), same, but 953 m, 33°45'48"N, 109°03'08"E, 30.VII.2014; 3 ♂♂ (IZAS, IOZ(E)1905474–76), same, but 995 m, 33°46'51"N, 109°01'57"E, 31.VII.2014; 1 ♂ (cAM, ex IZAS, IOZ(E)1905477), same label; 1 ♂ (NWFU, CO025809), Chang'an, Nanwutai, 24.VII.1951, Io CHOU (= Yao ZHOU) leg.; 1 ♂ (NWFU, CO025810), Chang'an, Cuihuashan, 28.VII.1951, Io CHOU (= Yao ZHOU) leg.; 12 ♂♂ (NWFU, CO 025789–800), Zhouzhi, Louguantai, 2–5.VII.1954 (unknown collector); 1 ♂ (NWFU, CO025802), Fengxian, 10.VII.1974 (unknown collector); 1 ♂ (NWFU, CO028393), Qinling, 24.VII.1995 (unknown collector). Henan: Paratype: ♂ (IZAS, IOZ(E)1904895), Xinyang, Jigongshanlinchang, VI.1982 (unknown collector). Hunan: Paratypes: 1 ♂ (IZAS, IOZ(E)1905327), Shennonggu, 640 m, 5.VII.2008, by light trap, Zhuo YANG leg.; 1 ♂ (cAM, ex IZAS, IOZ(E)1905326) (Fig. 30), same label; 1 ♂ (IZAS, IOZ(E)1905328), Yanling, Taoyuandong, 5.VII.2008, by light trap, Hong-Bin LIANG

leg. Jiangxi: Paratype: ♂ (IZAS, IOZ(E)1905319), Lushan, Mumachang, 15.VIII.1979 (unknown collector). Zhejiang: Paratype: ♂ (cNO), Xi-Tianmu Shan Mt., 15–30.VIII.2003, HU and TANG leg. / “Geni-959”.

*Etymology.* The name of this new species is associated with some of its morphological features noted above, which are not typical representatives of the genus *Apatophysis*; from “insolita” (Latin), meaning “unusual” or “peculiar”.

*Distribution.* China: Shaanxi, Henan, Hunan, Jiangxi and Zhejiang.

### Key to the Chinese Species of *Apatophysis*, Based on Male Characters

1. Ventrites 1–4 or 1–3 in apical part with dense, erect, partly twisted setae forming a peculiar brush, as in Figs. 110–113; lobes of at least tarsomere 3 very sharp apically, spine-shaped, as in Figs. 86–89 ..... 2
- Ventrites 1–4 without dense, erect setae forming a brush (Fig. 109); lobes of tarsomere 3 only more or less strongly narrowed toward apex, but not too very sharp apically (Figs. 83–85, 94–108) ..... 4
2. Antennae longer, extending beyond apices of elytra by usually antennomere 9 (Figs. 6, 10, 12, 14, 18–22), sometimes by penultimate antennomere; head comparatively smaller, but with more strongly developed eyes, as in Figs. 6, 10, 12, 14, 18–22 ..... 3
- Antennae shorter, barely extending beyond apices of elytra by last antennomere (Fig. 8); head comparatively larger, but with less strongly developed eyes, as in Fig. 8 ..... *A. roborowskii* SEMENOV, 1901
3. Pronotum in area of midline usually with a clearly sparser (or in general very sparse) setation, than over remaining of disk surface, very often with a well-expressed, shiny, smooth area in basal part, but without characteristic separate naked punctures among setation in median part of disk (Figs. 114–119), usually with more strongly sharpened lateral tubercles; antennomere 3 relatively short, usually 1.3–1.7 times as long as width, sometimes even subequal in length and width; antennomere 4, 1.8–2.4 times (very rarely 2.65 times) as long as antennomere 3 ..... *A. serricornis* (GEBLER, 1843)
- Pronotum with more or less uniform setation on disk, but with separate naked punctures in median part, as in Figs. 120 and 121, without a shiny, smooth area in basal part, with less strongly sharpened lateral tubercles; antennomere 3 relatively long, 1.6–1.9 times as long as width; antennomere 4, 1.45–1.8 times as long as antennomere 3 ..... *A. kashgarica* SEMENOV, 1901
4. All tibiae comparatively straight, meso- and metatibiae can be only barely/slightly curved; all femora without spines ventrally; ventral margin of meso- and metafemora of usual structure, not narrow; inner margin of left mandible non-dentate, can only be with large tooth near middle (Figs. 45–47, 59–62) ..... 5
- Meso- and metatibiae comparatively strongly curved (Figs. 26, 28), dentate ventrally; meso- and metafemora with small spines ventrally; ventral margin of these femora, predominantly in basal part, rather narrow; inner margin of left mandible peculiarly dentate partly, as in Figs. 53–55 ..... *A. sieversi* GANGLBAUER, 1887
5. Antennae shorter, barely extending beyond apices of elytra by only last antennomere, clearly or significantly not reach bases of elytra by antennomere 4 (Figs. 1, 3, 5), thereby antennomeres 3 and 4 much less strongly elongated (Figs. 1, 3, 5, 67–69, 72–74); antennomere 1, 1.37–1.41 times as long as antennomere 4; setation of elytra significantly or very strongly hiding their puncturation; inner margin of left mandible with a clear or large tooth in median part (Figs. 45–

- 47) ..... 6
- Antennae longer, extending beyond apices of elytra by usually antennomere 9, freely reaching the bases of elytra by antennomere 4 (Figs. 23, 25, 29–30), thereby antennomeres 3 and 4 much more strongly elongated (Figs. 23, 25, 29–30); lengths ratio of antennomeres 1 and 4 varies, but usually they subequal or antennomere 4 barely longer than antennomere 1, or vice versa, only very rarely antennomere 4 up to 1.26 (but not more) times as long as antennomere 1; setation of elytra not or very weakly hiding their puncturation; inner margin of left mandible without a clear or large tooth in median part (Figs. 59–62) ..... 8
6. Pronotum less strongly transverse, with clearly weaker developed lateral tubercles (Figs. 1, 3); legs distinctly slenderer (Figs. 1, 3); meso- and metatibiae not dentate venrally; recumbent setation of venter much denser in general, strongly hiding its sculpture in considerable part; at least head dorsally, pronotum, scutellum, legs, and most of venter clearly lighter (Figs. 1, 3) ..... 7
- Pronotum more strongly transverse, with clearly stronger developed lateral tubercles (Fig. 5); legs distinctly stronger (Fig. 5); meso- and metatibiae dentate venrally; recumbent setation of venter much sparser in general, mainly weakly hiding its sculpture; at least head dorsally, pronotum, scutellum, legs, and most of venter clearly darker (Fig. 5) ..... *A. xizangensis* sp. nov.
7. Antennomeres 6–9 weaker broadened toward apex, weakly serrate, as in Fig. 80; longitudinal ribs of elytra not or barely visible; recumbent setation of ventrites 1–4 in apical part, predominantly in middle area, somewhat denser than over their remaining surface .....  
..... *A. centralis* SEMENOV, 1901
- Antennomeres 6–9 stronger broadened toward apex, stronger serrate, as in Fig. 79; longitudinal ribs of elytra more distinct; recumbent setation of ventrites 1–4 rather uniform, at least without fragments of denser setae in apical part than over their remaining surface .....  
..... *A. hotanica* DANILEVSKY, 2008
8. Mandibles longer, 2.8–2.9 times as long as genae and clearly longer than shortest distance between antennal cavities; inner margin of left mandible more or less uniformly curved, while inner margin of right mandible with a peculiar emargination in middle part, as in Figs. 59 and 60; metatarsomere 1 comparatively less strongly elongated, as in Figs. 96, 99; tarsomere 3 less deeply split, as in Figs. 94–99; recumbent setation grayish or partly yellowish light gray, without a clear golden tint ..... 9
- Mandibles shorter, only 2.0–2.2 times as long as genae and distinctly shorter than shortest distance between antennal cavities; inner margin of left mandible strongly curved before apex, while inner margin of right mandible without a peculiar emargination in middle part, as in Figs. 61 and 62; metatarsomere 1 comparatively more strongly elongated, as in Figs. 102, 105; tarsomere 3 more deeply split, as in Figs. 100–105; recumbent setation with a clear golden tint .....  
..... *A. insolita* sp. nov.
9. Body and legs slenderer (Fig. 25); pronotum with narrower conical and more sharply protusive lateral tubercles, as in a Fig. 124; coloration clearly darker in general (Fig. 25); body length 13.6–18.5 mm ..... *A. niisatoi* sp. nov.
- Body and legs more robust (Fig. 23); pronotum with wider conical and less sharply protusive lateral tubercles, as in Fig. 123; coloration clearly lighter in general (Fig. 23); body length 15.0–21.1 mm ..... *A. sinica* SEMENOV, 1901

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## Two New Callichromatine Genera (Coleoptera, Cerambycidae) from Sumatra and North Vietnam

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**Abstract** Two new genera of the tribe Callichromatini, are described based on following two new species, *Zonochroma sumatranus* gen. et sp. nov. from Sumatra, Indonesia and *Trichocheilidonium niisatoi* gen. et sp. nov. from Lao Cai, North Vietnam.

### Introduction

Continuing with my study of the tribe Callichromatini from Southeast Asia, I recently found two new species belonging to two new genera. The first species is *Zonochroma sumatranus* gen. et sp. nov. which was captured by famous plant collector, Friedrich Carl DRESCHER (1875–1957) from Sumatra, Indonesia. The second species is *Trichocheilidonium niisatoi* gen. et sp. nov., originating from Lao Cai Province in North Vietnam. The main diagnostic character of this new genus is a dense fringe of short brown setae on the external surface of antennal segments 3–11.

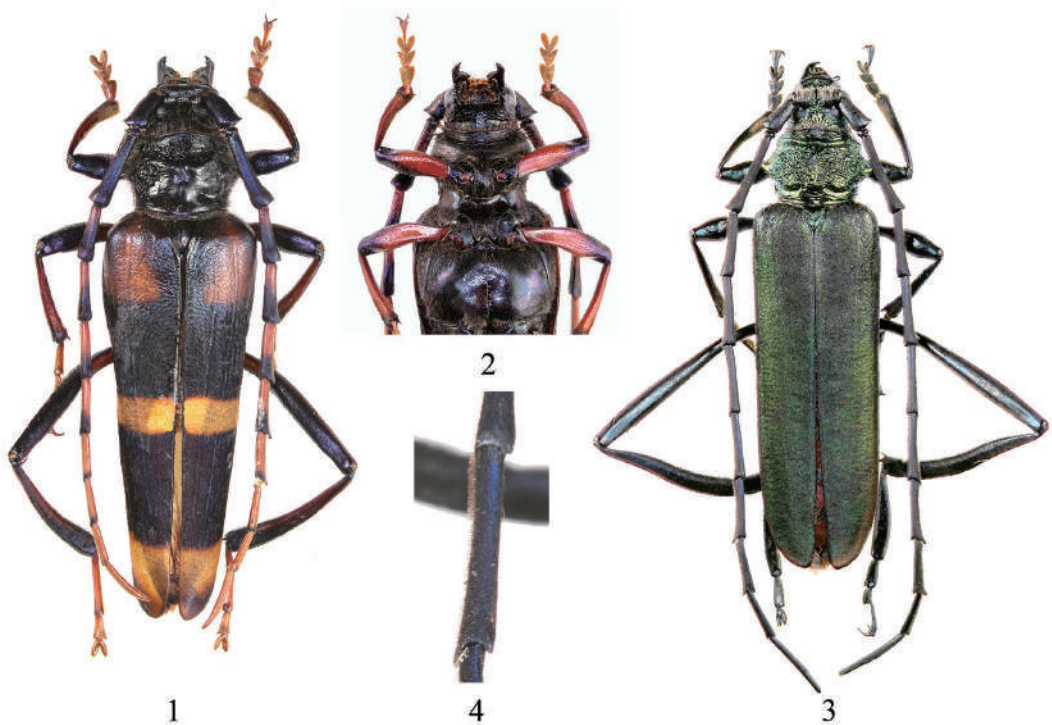
### *Zonochroma* gen. nov.

Type species: *Zonochroma sumatranus* sp. nov.

*Description* (male). Head large and deeply inserted into prothorax. Occiput short and granulose. Antennal tubercles extended internally, each forming a sharp spine, with a superficial groove between them. Frons subquadrate and steeply declivous, longitudinally grooved along midline, clothed with long brown setae. Epistome transverse, with a transversal undulated rib. Labrum trapezoidal, bearing short setae on basal margin. Mandibles short and broad, expanded at base, slightly curved at apex, armed with a large rectangular spine at middle of inner margin, smooth, shiny, sharply edged, pubescent on external sides. Maxillary palpi long, with segment 3 slightly thickened apically. Labial palpi short, with segment 3 thickened. Paraglossae very short. Mentum trapezoidal, short and rugose. Eyes large, microfaceted, not distinctly prominent, with upper lobe very reduced. Gena with three or four short arcuate ribs. Antennae long and compressed, only just attaining elytral apices.

Pronotum distinctly transverse at a level between lateral protuberances; anterior margin sinuate and strongly bordered; posterior margin arcuate and finely bordered, bearing a fine fringe of brown setae along both margins; sides widened at anterior half, bearing a short, very obtuse protuberance medially, straight and narrowed after the posterior half; disc slightly convex, provided with a large transversal groove on apical third, two smooth shiny gibbosities anteriorly and three at posterior area, and a small shiny callus at either side; surface shiny, covered with long brown tomentum, which are denser on sides. Scutellum long, triangular, longitudinally grooved, and finely punctate near sides, slightly strangled at apex.

Prosternum dilated at middle, finely punctate; coxal cavities bordered along margins; prosternal process wide, grooved along sides, smooth in centre and rugose near sides, sparsely clothed with long



Figs. 1–4. Holotypes of *Zonochroma sumatranus* gen. et sp. nov. and *Trichocheilidonium niisatoi* gen. et sp. nov. — 1–2, *Z. sumatranus*, ♂; 3–4, *T. niisatoi*, ♂. — 1, 3, Dorsal habitus; 2, ventral habitus of anterior body; 4, left antenna, detail of 8th antennal segment.

brown setae, with apical part slightly cleft, not closed behind coxal cavities. Mesosternum short and broad, smooth and shiny centrally; mesosternal process very wide, bilobate at apical margin, which is covered with long brown setae. Metasternum short and broad, with a medial longitudinal groove, finely punctate, clothed with long brown pubescence. Metepisternum wide in anterior half, clothed with brown tomentum.

Elytra long, tapering progressively towards apex; humeri distinctly rounded, slightly projecting; apices individually rounded, disc flattened, with two barely conspicuous longitudinal ribs, one medial and another humeral; surface shagreened, densely clothed with short decumbent pubescence, with weak transversal folds near suture in basal third; epipleura complete, very wide and convex in humeral regions.

Abdomen with ventrites wide and slightly convex, clothed with golden setae on the posterior margins; pygidium cleft to distal half.

Legs long, sturdy; fore and mid femora weakly dilated at middle, compressed, forming a weak longitudinal groove at base; hind femora distinctly long, flattened; fore tibiae short and arcuate, with two fine longitudinal ridges externally; mid tibiae compressed, straight and dilated at apex; hind tibiae arcuate, compressed and grooved on both sides; fore tarsi short and flattened, except for onychium; mid tarsi with segment 1 long and convex, segments 2 and 3 short and flattened; hind tarsi with segment 1 long and compressed; all claws divergent.

*Comparative notes.* *Zonochroma* gen. nov. can be separated clearly from the other *Callichroma*-

tini genera by the single large medial mandibular tooth, suborbital ribs of epistome, bicoloured antennal segments, and compressed femora and tibiae. Some prothoracic characters are similar to the genus *Cataphrodisium* AURIVILLIUS, 1907, particularly by densely covered surface with long brown tomentum.

*Etymology.* The name of this new genus, *Zonochroma* nov., is formed by the Greek names ζώνη (= zone) and χρώμα (= colour). The gender is masculine.

***Zonochroma sumatranus* sp. nov.**

(Figs. 1, 2, 5–8)

*Type specimen.* Holotype: ♂, Alahan Pandjang, 1,500 m, Sumatra, Indonesia, IV.1934, F. C. DRESCHER leg., ex-coll. J. NEGRE. The holotype is temporarily in the E. VIVES collection, Terrassa, and will be preserved in the entomological collection of the public institution in Spain.

*Description.* Male: Length 38 mm, width 12 mm. Body shiny black; elytra dark blue, clothed with dense tomentum, provided with three wide transversal brownish-yellow bands without tomentum: one basal band, a narrower medial band and an apical band; antennae with basal three segments purple, and the remaining are brown with black apices; head and pronotum black; ventral side chestnut brown, with long brown tomentum; legs with femora mostly reddish, purple at apical parts; fore and mid tibiae reddish medially, purple at apical and basal parts; tarsi brown, with golden setae.

Head large, broad, covered with long brown setae; eyes microfaceted. Antennae long and slender, only just attaining elytral apices; scapes thick, punctate, dentate externally at apex; segment 3 twice as long as 4; apical eight segments slightly compressed, with an apical tooth at external corner, except for the last segment.

Pronotum distinctly transverse, smooth and shiny on disc, weakly punctate on sides which are clothed with long brown pubescence; lateral protuberances short and rather conspicuous, included partially in the anterior expansion of pronotum. Scutellum large, longitudinally grooved, shiny black.

Elytra long and narrow; sides almost straight, tapering towards the apical parts; suture very fine and barely projecting; disc slightly flattened, shagreened on basal third.

Abdomen with wide and slightly convex ventrites, with golden pubescence on each posterior margin. Pigidium slightly cleft at posterior half.

Legs long and sturdy, femora compressed and slightly sulcate; hind tibiae very compressed and arcuate; hind tarsi with segment 1 long and laterally compressed.

Male genitalia with aedeagus short and hardly arcuate, acuminate at apex; endophallus short and broad, with two basal sclerites, four apical vesicles and another vesicle ventrally, apical sclerites very reduced. Tegmen rhomboid, with parameres wide and pubescent at apices.

***Trichocheilidonium* gen. nov.**

Type species: *Trichocheilidonium niisatoi* sp. nov.

*Description* (male). Head small, deeply retracted into pronotum; occiput strongly granulate; antennal tubercles separated by a deep longitudinal groove; eyes large and prominent, with reduced upper lobe; frons subquadrate, depressed near middle which is rugose; epistome trapezoidal; labrum transverse, clothed with long setae along margin; mandibles short, dilated basally, finely punctate externally; mentum short and broad, rugose.

Pronotum transverse, finely bordered anterior and posterior margins, with a deep transversal groove and small transversal folds near anterior margin; sides arcuate, provided with a strong lateral



Figs. 5–14. Male genitalia of *Zonochroma sumatranus* gen. et sp. nov. and *Trichocheilidonium niisatoi* gen. et sp. nov. — 5–8, *Z. sumatranus*; 9–14, *T. niisatoi*. — 5, 9, Median lobe with endophallus in lateral view; 6, 10, ditto in dorsal view; 7, 11, ditto in ventral view; 8, detail of the apical area of endophallus; 12, tegmen in ventral view, 13, ditto in lateral view; 14, ditto in dorsal view.

spine at middle; disc rugose, with five protuberances near central area, two of them anteriorly and three posteriorly, which are very diffuse due to transversal rugosities.

Elytra long, parallel-sided, rounded at humeri; apices individually rounded, with fine and very short sutural tooth; disc flattened, finely shagreened; epipleurae very fine and complete, smooth.

Abdomen with ventrites short and not so distinctly convex, clothed with brown tomentum; py-

gidium cleft in apical half.

Legs long and slender; fore and mid femora widened, almost claviform; hind femora long and slender, clothed with golden tomentum on inner margin; fore tibiae arcuate and short; mid tibiae straight and widened apically; hind tibiae distinctly compressed, sinuate; fore tarsi short, broad and convex; mid tarsi with segment 1 long and distinctly convex; hind tarsi with all segments compressed; all claws strongly divergent.

*Comparative notes.* *Trichocheilidonium* gen. nov. can be separated clearly from the other Callichromatini genera by the long fringe of short setae on the external margin of antennal segments, foliaceous segments of hind tarsi, and coxal cavities opened behind. The great foliaceous expansion of the hind tarsi can also be observed in the other close genera such as *Paracheilidonium* VIVES *et al.*, 2007, and *Pseudocheilidonium* VIVES *et al.*, 2007 (VIVES *et al.*, 2007, 2008).

*Etymology.* The name of this new genus, *Trichocheilidonium* nov., is composed of the Greek τριχός (= hair) due to its pubescent antennae and the genus name *Cheilidonium* THOMSON, 1864. The gender is masculine.

***Trichocheilidonium niisatoi* sp. nov.**

(Figs. 3, 4, 9–14)

*Type specimen.* Holotype: ♂, Sapa, Lao Cai Province, Vietnam, VI.2014, local collector leg. The holotype is temporarily in the E. VIVES collection, Terrassa, and will be preserved in the entomological collection of the public institution in Spain.

*Description.* Male: Length 27 mm, width 6.4 mm. Body dark metallic green; head and pronotum with golden metallic reflections, elytra more golden along sides; antennae and legs bluish black; underside greenish; tarsi black. Between antennal tubercles, sides of pronotum and entire part of prosternum covered with short brown pubescence. Trochanters, anterior margin of fore femora, and posterior margins of mid and hind femora provided with long setae. Mesosternum and metasternum clothed with short brown setae.

Head small, rugose; mandibles short, curved at apex; maxillary palpi long, slightly compressed in segment 3; paraglossae short. Antennae long and slender, exceeding elytral apices by segment 9; scape short and thick, armed with a sturdy external tooth at apex; pedicel very short; segment 3 thrice as long as scape, slightly carinate at external side near apex with flattened apical margin; segment 4 half the length of segment 3 with similar apical margin as in the preceding; segments 5–9 cylindrical, each with bell-shaped apex which form a sturdy external tooth at apex; segment 3 sparsely clothed with long setae along inner side; segments 3–11 provided with a very distinctive short fringe of hairs along entire margin of external side.

Pronotum transverse, provided with short obtuse lateral protuberances near middle. Scutellum triangular, acuminate at apex, strongly punctate.

Elytra long, almost parallel-sided, rounded at apices, not so distinctly prominent at humeri, densely clothed with very short, decumbent black pubescence, which are especially dense along sides.

Prosternum transverse, finely punctate; prosternal process wide and dilated behind; coxal cavities opened behind. Mesosternum very short and wide, clothed with brown tomentum; mesosternal process wide, cleft in apical half. Metasternum subquadrate, covered with brown tomentum, longitudinally grooved along midline. Metepisternum wide, densely clothed with short tomentum.

Legs long and slender; fore and mid femora claviform; hind femora slender, dilated apically; fore tibiae arcuate and short; mid tibiae straight and widened apically; hind tibiae distinctly compressed, bi-sinuate; fore tarsi short, broad and convex; mid tarsi with segment 1 long and well convex, seg-



ments 2 and 3 short; hind tarsi with basal two segments distinctly compressed, expanded dorsally and ventrally like foliaceous, segment 3 slightly compressed when compared it with that of mid tarsi; all claws distinctly divergent, almost divaricate.

Male genitalia with median lobe long, wide and gently arcuate, ending in a slender point at apex; endophallus not very long, provided with two basal sclerites, a series of large transversal spines on medial lobe and a long narrow apical sclerite. Tegmen long and narrow; parameres short and digitiform, entirely fringed with long brown setae. Gastral spicula short, arcuate and compressed, with basal apodemes strongly curved.

*Comparative notes.* At a first glance, *T. niisatoi* sp. nov. is similar to *Chelidonium buddleiae* GRESSIT et RONDON, 1970, but it can be separated by the afore mentioned characters.

*Etymology.* The name of this new species is in honour of my friend and eminent Japanese longicornist Dr. Tatsuya NIISATO (Tokyo), for his very important contribution to the knowledge of the Asian Cerambycidae, on the occasion of his 60th anniversary.

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## A New Clytine Species Related to *Rhaphuma ruficollis* MITONO (Coleoptera, Cerambycidae) from Southern Taiwan

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**Abstract** A new species of the clytine genus *Rhaphuma* PASCOE is described from southern Taiwan. It is closely related to *R. ruficollis* MITONO from Taiwan, but differs from it particularly in the features of head, elytral pubescence and male genitalia.

### Introduction

The genus *Rhaphuma* PASCOE is one of large group of the tribe Clytini, and comprised about 170 species flourishing in the most of Asia and Oriental regions (VIKTORA, 2014; VIKTORA & TICHÝ, 2017). A total nine species of the genus have so far been recorded from Taiwan (NAKAMURA *et al.*, 1992; NAKAMURA *et al.*, 2014). In this paper, I will describe an additional species of the genus from southern Taiwan.

### Materials and Methods

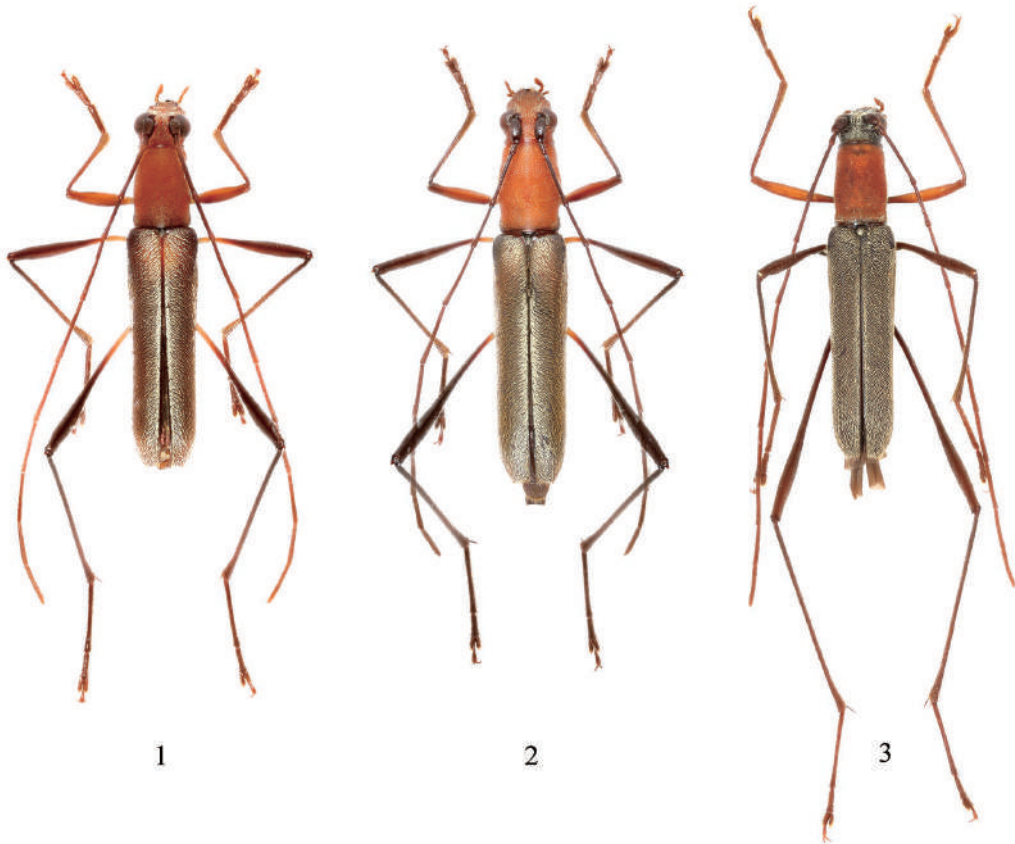
Specimens used in the present study were originated from the private collection of Shunei NAKAZATO, Tatsuya NIISATO and Tetsuo WAKEJIMA. The holotype of the new species described herein is preserved in the National Museum of Nature Science, Taichung, Taiwan, and the paratypes are in the private collection of the above collectors. The morphological observation and the abbreviation used in the description follow NIISATO and HAN (2017, p. 201).

The collecting data of comparative specimens examined shown in text figures are as follows: *Rhaphuma ruficollis*: 1 ♂ (Fig. 3), Nanshanchi, Renai Township, Nantou County, Taiwan, 27.III.1978, T. NIISATO leg.; 1 ♀ (Figs. 7–9), same locality and collector, 19.V.1977.

### *Rhaphuma niisatoi* sp. nov.

(Figs. 1, 2, 4–6, 10–16)

**Description.** Slender species of bicolored body, with markedly long antennae and legs. Colour almost reddish or dark brown, weakly glossy in head and elytra, reddish in head, pronotum, fore femora, and basal halves of mid femora and basal 2/5 of hind femora (basal short areas of mid and hind femora in paratype ♀ from Mt. Jinzhen Shan), dark brown in antennae, tibiae and tarsi, mid and hind femora except for their reddish areas, right brown in mandibles except for black apical margins, ambiguously dark red near suture in basal fifth of elytra, and eyes black. Body moderately clothed with pale yellow pubescence, scattered with a few elect long yellowish white hairs on genae, clypeus, mandibles and pronotum, more or less densely with white pubescence on head except for triangular part of frons, and most of ventral surface including coxae; antennae sparsely clothed with pale yellowish hairs on basal four segments, densely with the rest segments, provided with long pale brown spinous setae along undersides of segments 2–4, rather sparsely with the same setae on segment 5; elytra



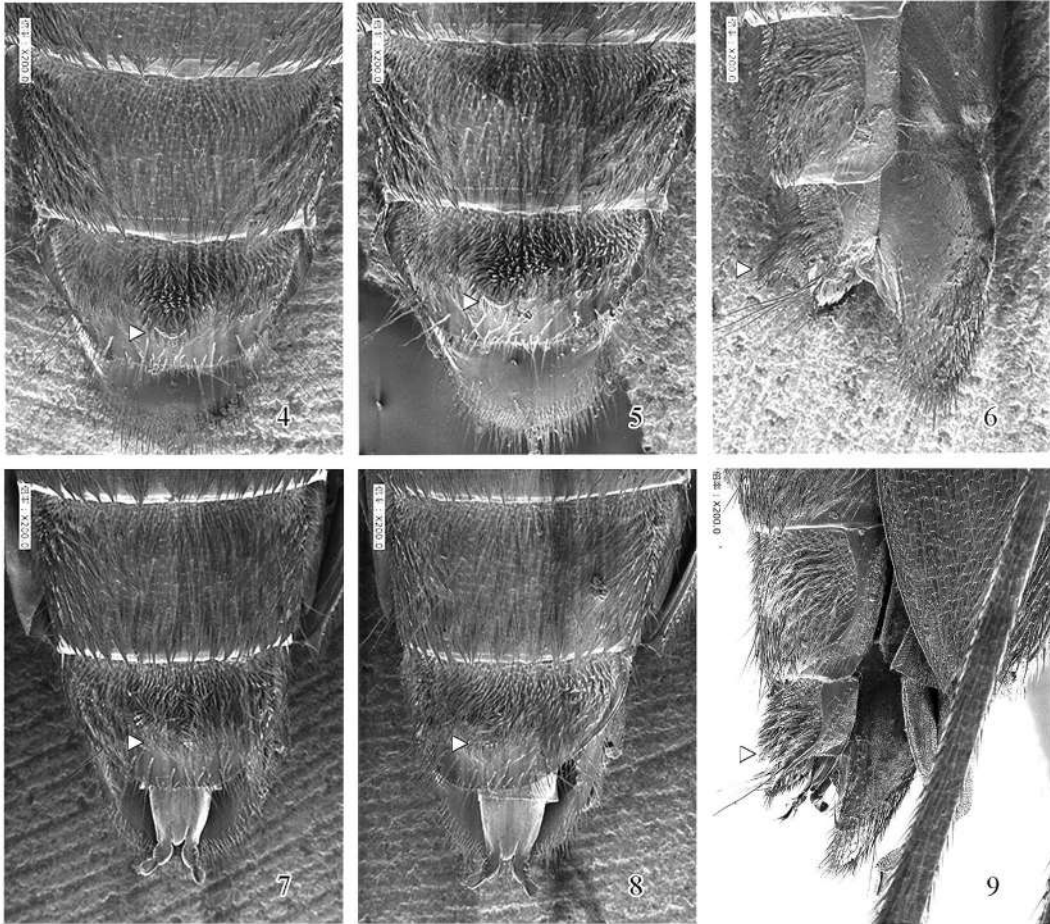
Figs. 1–3. *Rhaphuma* spp. from Taiwan. — 1, *R. niisatoi* sp. nov., holotype, ♂; 2, ditto, paratype, ♀; 3, *R. ruficollis* MITONO, ♂.

densely clothed with yellowish white pubescence around scutellum and along suture; scutellum more or less densely with pale yellow hairs; legs clothed with short brown hairs, densely on mid and hind tibiae, with fore femur densely with light yellow hairs on apical 2/5.

Male: Body length (n = 6): 7.9–9.6 mm (from vertex to elytral apices).

Head closely provided with irregular-sized punctures, HW/PA 1.17–1.45 (M 1.26), HW/PW 0.93–1.23 (M 1.03); frons 3/5 the length of wide, almost flattened, with a median triangular carina in basal half which is sparsely, coarsely punctured in basal 2/3; genae almost half the depth of lower eye-lobes in frontal view; terminal segments of maxillary palpus strongly dilated apicad; occiput strongly narrowed posteriad behind eyes; eyes strongly prominent, less than half the width of frons in frontal view. Antennae about 1.5 times as long as body, surpassed the elytral apices at apical third of segment 8; scape quite stout, gently arcuate in profile, shallowly, coarsely punctured, about half the length of segment 3, segment 3 almost 1.3 times as long as segment 4, segment 4 about 3/5 as long as segment 5 and distinctly shorter than segments 6–9, terminal segment almost straight, a little longer than segment 10.

Pronotum elongate, slightly convergent apicad; PL/PA 1.74–1.95 (M 1.84), PL/PW 1.46–1.54 (M 1.50), PA/PB 0.78–0.88 (M 0.85), PL/EL 0.35–0.39 (M 0.37); sides slightly dilated in weak arcuate



Figs. 4–9. SEM images of female anal ventrite of *Rhaphuma* spp. from Taiwan. — 4, 5, 6, *R. niisatoi* sp. nov. (paratype); 7, 8, 9, *R. ruficollis* MITONO. — 4, 7, Ventral view; 5, 8, latero-ventral view; 6, 9, lateral view.

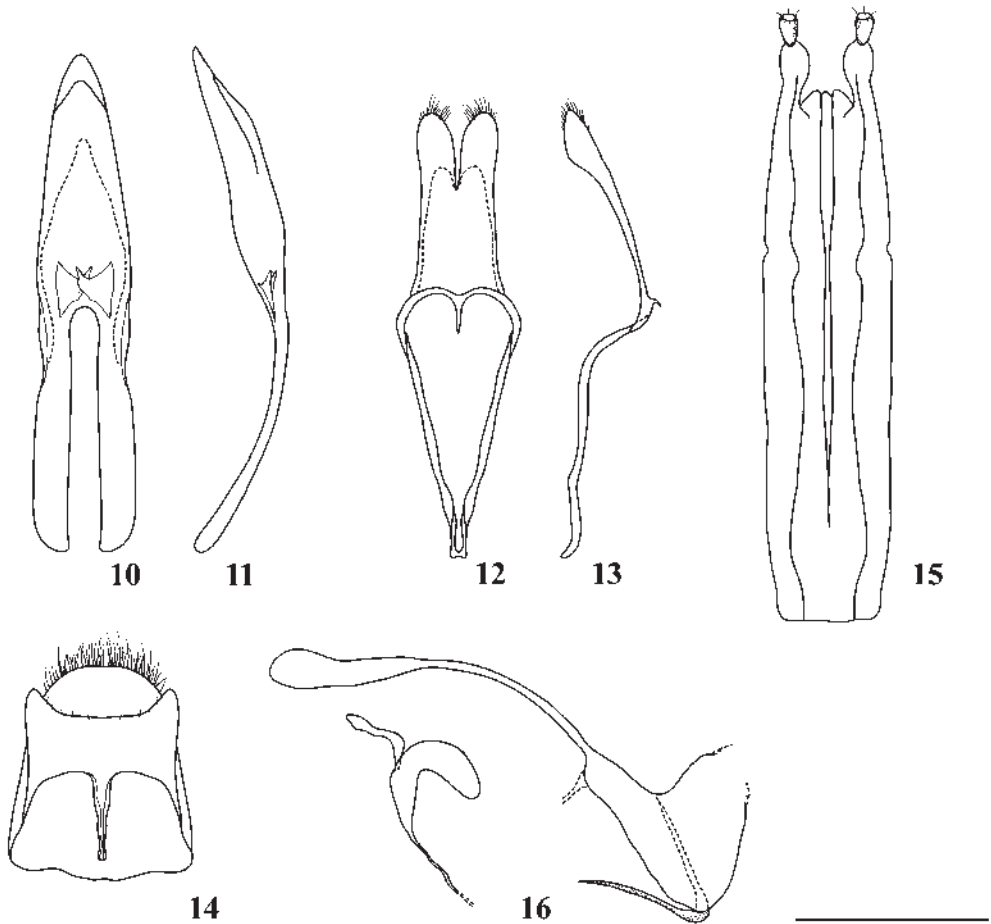
line to the widest point of basal 2/5, remarkably constricted near apex and base; disc gently flattened though weakly raised in apical half, finely densely punctured. Scutellum regularly triangular, more or less acute at apex, with fine and shallow punctures.

Elytra long and slender, EL/EW 3.11–3.53 (M 3.34); sides with humeri strongly prominent latero-antierad, gently emarginate at a level between basal tenth and just before swollen part in apical fifth, apices obliquely arcuate with blunt teeth at external angles; disc more or less convex, almost flattened except for the depression near suture, somewhat closely, coarsely punctured in basal 2/5, and densely, finely so in the rest.

Ventral surface almost smooth, provided with shallow coarse punctures; anal ventrite quadrate, 2/5 the length of basal width, almost truncate on apical margin.

Legs markedly long; hind femur strongly swollen in apical third, exceeding elytral apices near middle; 1st hind tarsal segment 1.9 times as long as the following two segments combined.

Male genital organs: Median lobe almost 1/4 the length of elytra, slender and gently arcuate in



Figs. 10–16. Genital organs of *Rhaphuma niisatoi* sp. nov. — 10, Median lobe, dorsal view; 11, ditto, lateral view; 12, tegmen, dorsal view; 13, ditto, lateral view; 14, 8th abdominal segment, ventral view; 15, ovipositor, ventral view; 16, spermatheca and bursa copulatrix. — 10–14, Male (paratype); 15, 16, female (paratype). Scale: 0.5 mm.

profile; ventral plate remarkably longer than dorsal plate, moderately narrowed in arcuate line to apex which is bluntly pointed; median struts slender, almost half the length of median lobe. Tegmen elongate, distinctly shorter than median lobe; parameres relatively slender, about  $2/5$  the length of tegmen, almost parallel-sided in basal  $2/3$ , weakly arcuate to apex, divided in apical  $2/5$ ; lobe gently narrowed to apex, which is rounded and provided with numerous short and middle setae. Eighth tergite more or less elongate, gently narrowed from apical  $2/5$  to apex which is weakly arcuate, provided with numerous long setae along margin. Eighth sternite transverse quadrate, heavily emarginate on apical margin, provided with a few short setae near sides of apical margin.

Female: Body length ( $n = 3$ ): 9.4–10.2 mm (from vertex to elytral apices).

Body more or less stouter than male. Head rather sparsely clothed with white pubescence in frons; terminal segments of maxillary palpus weakly delated apicad. Antennae shorter than in male, 1.3 times as long as body, exceeding elytral apices at apical  $4/5$  or so of segment 9, terminal segment

slightly shorter than that of male, almost equal to the preceding segment. Pronotum rather broad, more arcuate on sides than in male. Anal ventrite basically similar in male, though provided with a large triangular tubercle in middle, which is bluntly pointed apicad. Standard ratio of body parts are as follows: HW/PA 1.10–1.23 (M 1.15), HW/PW 0.86–0.94 (M 0.91), PL/PA 1.69–1.92 (M 1.79), PL/PW 1.32–1.47 (M 1.41), PA/PB 0.85–0.92 (M 0.88), PL/EL 0.35–0.37 (M 0.36), EL/EW 3.30–3.37 (M 3.32).

Female genitalia: Coxite lobe ovoid, scattered with short setae. Stylus almost equal to the length of coxite lobe, elongate, weakly dilated apicad. Bursa copulatrix thin and small. Spermatheca narrow, strongly arcuate in basal half; gland short and thin, attached at apical 2/3; duct relatively long and thin, slightly sinuate, not strongly coiled.

*Type series.* Holotype (Fig. 1): ♂, Mt. Dahan Shan, Chunri Township, Pingtung County, Taiwan, 15.VI.2007, Wenhsin LIN leg. Paratypes: 1 ♂, 1 ♀ (Figs. 2, 4–6, 10–16), same data as the holotype; 1 ♀, Mt. Jinzhen Shan, Taimali Township, Taitung County, Taiwan, 2.VII.2016, T. WAKEJIMA leg.; 4 ♂♂, 1 ♀, same locality as the preceding, 9.VII.2017, S. NAKAZATO leg.

*Etymology.* The name of new species is dedicated to Dr. Tatsuya NIISATO, who has provided excellent contribution to the field of Asian longicorn beetles.

*Distribution.* Taiwan.

*Notes.* *Rhaphuma niisatoi* sp. nov. has close relationship with *R. ruficollis* MITONO from Taiwan, and has no other relative among the members of the genus even in the mainland of China. The new species is easily distinguished from *R. ruficollis* in the following characters: 1) Head entirely reddish (black in *R. ruficollis*), mid- and hind femora reddish in basal third (entirely dark brown in *R. ruficollis*), 2) frons elongate, 3/5 the length of wide (almost as wide as long in *R. ruficollis*), 3) elytra densely clothed with yellowish white pubescence near scutellum and along suture (rather densely with the same pubescence on the entire of disc in *R. ruficollis*), 4) parameres short, divided in apical 2/5 (divided in about apical half in *R. ruficollis*), 5) triangular tubercle of anal ventrite in female strongly pointed (only moderately raised in *R. ruficollis*).

*Rhaphuma ruficollis* and *R. niisatoi* sp. nov. deceptively resemble to *R. testaceiceps* PIC from Taiwan in the cylindrical and markedly slender body with very long antennae and legs, slender median lobe with clearly short dorsal plate compared with long ventral plate, and elongate tegmen with ring part in its half length. Their true relationship is probably far, since *R. testaceiceps* has the triangular pyriform 8th abdominal sternite in male instead of quadrate one as in *R. ruficollis* and *R. niisatoi* sp. nov., and flattened anal ventrite in female without a median tubercle.

This new species has so far been known from two localities of southern Taiwan, Mt. Dahan Shan of Pingtung County and Mt. Jinzhen Shan of Taitung County. The populations of these localities show a weak geographical variation in the color of mid and hind femora as shown in above description. According to the personal information of S. NAKAZATO, five paratypes specimens including one female were collected from the blossoms of *Camelia* sp. at around 10 o'clock in clear weather.

### Acknowledgements

I would like to thank the late Mr. Wenhsin LIN and Messrs. Shunei NAKAZATO and Tetsuto WAKEJIMA for their offer of valuable material and useful information used in this study, and grateful to Drs. Nobuo OHBAYASHI and Junsuke YAMASAKO for their useful suggestions to the present study. Special thanks are due to Dr. Tatsuya NIISATO of Bioindicator Co. Ltd., Tokyo, who gave me the excellent guidance of the basics systematic entomology and the enthusiastically attraction for cerambycid beetles.

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## Three New Species of the Clytini MULSANT, 1839 (Coleoptera, Cerambycidae, Cerambycinae) from Central Vietnam

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**Abstract** Three new species, *Acrocyrta fabula* sp. nov. from Thua Thien-Hue, *Demonax niisatoi* sp. nov. from Kon Tum and Thua Thien-Hue, and *Rhaphuma allegoria* sp. nov. from Kon Tum, are described and illustrated. Consequently, the type species of the genus *Acrocyrta* PASCOE, 1857 is newly recorded from peninsular Malaysia.

### Introduction

Continuing with our study of the tribe Clytini MULSANT, 1839 of Southeast Asia, we hereby describe three additional species from Vietnamese provinces of Kon Tum and Thua Thien-Hue.

The first species (*Acrocyrta fabula* sp. nov.) is described from Thua Thien-Hue Province and belongs to the genus *Acrocyrta* PASCOE, 1857, which, until now, has not been recorded outside Borneo. The second species (*Demonax niisatoi* sp. nov.) is described from Kon Tum and Thua Thien-Hue Provinces. The third species (*Rhaphuma allegoria* sp. nov.) is described from Kon Tum Province. It belongs to the *R. sulphurea* species group which was recently defined by VIKTORA and TICHÝ (2017 a).

### Material and Methods

The material examined during the study is deposited especially in private collections of the authors. Some other private collections were studied as well. The holotypes of the new species described here will temporary be located in private collection of the second author; after finishing our study of related groups they will be placed in MNHL.

Moreover, the second author recently had a chance to visit several museums and institutes of USA, Europe, China and Japan, and studied their significant collections, including many specimens of Clytini and their types. Some of them are quoted in the paper. Abbreviation of the collections in this paper are as follows:

BPBM — Bernice P. Bishop Museum, Honolulu, USA.

CPV — private collection of Petr VIKTORA, Kutná Hora, Czech Republic.

CTT — private collection of Tomáš TICHÝ, Opava, Czech Republic.

MNHL — Natural History Museum, London, UK.

SMNH — Swedish Museum of Natural History, Stockholm, Sweden.

The photographs of the whole habitus of all the new species were taken by a Canon EOS 350D digital camera with a Sigma 105 mm macro lens. Microstructures of dissected parts were observed under a DNT DigiMicro Profi USB microscope. Composite images were created using the software Image Stacking Software Combine ZP. The photographs were modified using Adobe Photoshop CC in needed case.



## Results

### Tribe *Clytini* MULSANT, 1839

Clytaires MULSANT, 1939: 70. Type genus: *Clytus* LAICHARTIG, 1784.

### Genus *Acrocyrta* PASCOE, 1857

*Acrocyrta* PASCOE, 1857: 44. Type species: *Acrocyrta clytoides* PASCOE, 1857.

### *Acrocyrta clytoides* PASCOE, 1857

(Fig. 1a–e)

*Acrocyrta clytoides* PASCOE, 1857: 44, pl. XVI, fig. 1. Type locality: Borneo.

*Type material examined.* 1 ♂ (MNHL), Wallace / Borneo / Fry Coll., 1905.100.

*Other specimens examined.* 1 ♂ (MNHL), SAR., 887; 1 ♀ (MNHL) / Mt. Matang, W. Sarawak, G. E. Bryant, 8. ii. 14 (=1914) / G. Bryant, 1919-147; 3 ♂♂, 1 ♀ (BPBM), MALAY PEN.: SE Pahang, Rompin Mining Co., Railway Track, 42 km, 28. ii. 1961 / K.J.Kuncheria, Collector / BISHOP; 1 ♀ (CPV), W. Malaysia, Cameron Highlands, 19 miles to Ringlet, III–V.2007, local collector.

*Distribution.* Borneo (Sarawak), Malay Peninsula (Pahang, Perak).

*Notes.* According to PASCOE (1857, 1869), and TAVAKILIAN and CHEVILLOTTE (2016), it has been recorded only for Malaysian province of Borneo (Sarawak), though its distribution in Sabah and Indonesian provinces of Borneo (Kalimantan) is probable. Hereby, we provide a new record of the species from the Malay Peninsula (Pahang and Perak).

### *Acrocyrta fabula* VIKTORA et TICHÝ, sp. nov.

(Fig. 1f–j)

*Description.* Habitus of male holotype as in Fig. 1f. Body black, robust, elongate, dilated apically, punctate, reticulate, granulate. Body length 14.1 mm, widest in humeral part of elytra (3.8 mm), 3.7 times longer than wide.

Head black, relatively short, widest across eyes, distinctly narrower than pronotum, reticulated in posterior part, with sparse white pubescence. Clypeus reddish brown with longer pale setae. Eyes distinctly longitudinally emarginate. Mandibles black, with white pubescence in basal part, apically glabrous. Palpomeres brown with pale brown apex, ultimate palpomere black, widened apically, apex rounded.

Antennae filiform, black, distinctly longer than body (as in Fig. 1f). Antennomere II the shortest, antennomere VII the longest. Antennomeres I–II and apex of antennomeres III–VII shiny, antennomeres punctured, covered by short white pubescence, antennomeres III–VI with long pale setae in inner side. Antennomeres III–V with spines in inner side of apex, spine of antennomere IV the longest, spine of antennomere V the shortest. Ultimate antennomere hooked (similarly to the type species of the genus). Ratios of relative lengths of antennomeres I–XI as: 0.64 : 0.20 : 1.00 : 0.69 : 0.95 : 1.02 : 1.02 : 1.00 : 1.00 : 0.88 : 0.99.

Pronotum black, roundly elongate, distinctly arcuate in lateral margins, 1.6 times longer than wide at base and 1.28 times longer than wide at the widest point (in one third from base to apex), reticulated. Disc with short and sparse white pubescence in apical third. Anterior margin slightly arcu-

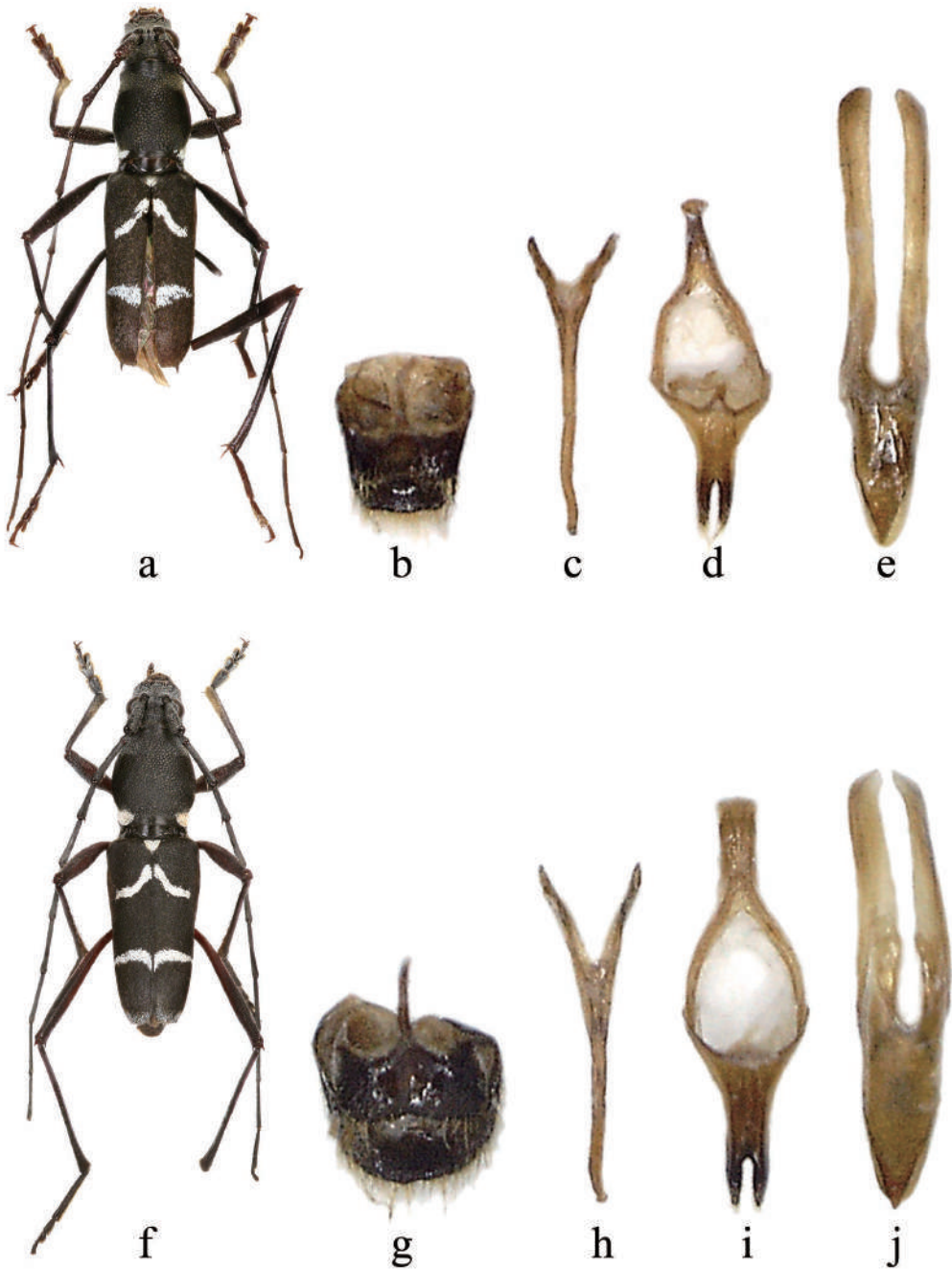


Fig. 1. *Acrocyrta* spp. — a–e, *A. clytoides* PASCOE, 1857 from Pahang, peninsular Malaysia (BPBM); f–j, *A. fabula* VIKTORA et TICHÝ, sp. nov., holotype. — a, f, ♂; b, g, VIII abdominal segment; c, h, furcular; d, i, tegmen; e, j, median lobe.

ate, base slightly excised. Posterior angles with spot of dense white pubescence from dorsal view (as in Fig. 1f).

Scutellum black, triangular, covered by dense white pubescence.

Elytra 7.6 mm long and 3.8 mm wide, black, narrowing apically. Dorsal surface with granulation in basal part, with smaller granulation in middle and punctuation in apical part. Disc with stripes of white pubescence. Apical part with sparse white pubescence (as in Fig. 1f). Apex terminated with a short spine in outer side.

Legs long and narrow, from reddish brown to black, base of femora reddish brown, with short pale pubescence, denser in apex of protibia and mesotibia. Metatibia and metafemora longer than pro- and mesotibia and pro- and mesofemora. Protarsomeres distinctly wider than mesotarsomeres. Metatarsomere I 2.2 times longer than metatarsomeres II and III together.

Ventral side of body black, prosternum, metasternum, episternum of metaventricle and ventrites I and II partly covered by white pubescence. Elytral epipleura black, narrow, glabrous.

Male genitalia as in Fig. 1g–j. Median lobe rather short and broad, sharp in apex; struts long and thick. Tegmen distinctly narrowed in basal part. It has rather short lateral lobes, well separated and rounded at apex with some short setae.

Female: Unknown.

*Type specimen.* Holotype: ♂ 'JUNE 2015, Vietnam' / 'ThuaThienHue' / 'Bach Ma' / '1400m, Da-nang'. The type is provided with a printed red label: 'Acrocyrta fabula sp. nov.' / 'HOLOTYPUS' / 'P. VIKTORA et T. TICHÝ det., 2017'.

*Distribution.* Vietnam (Thua Thien-Hue).

*Etymology.* From Latin *fabula* (it means “fairytale”).

*Diagnosis.* The most similar species is obviously the type species of the genus, *Acrocyrta clytoides* PASCOE, 1857 (Fig. 1a–e). *Acrocyrta fabula* sp. nov. clearly differs from *A. clytoides* by wider pronotum, different dorsal surface of elytra in basal part, antennomeres distinctly thicker, spines in outer side of apex of elytra, and very short and different shape of tegmen (compare Figs. 1a, f; 1d, i), since *A. clytoides* has narrower pronotum, antennomeres distinctly thinner, spines in outer side of apex of elytra long, median lobe with longer and thinner struts and different shape of ringed part of tegmen.

### *Acrocyrta rufofemorata* AURIVILLIUS, 1910

*Acrocyrta rufofemorata* AURIVILLIUS, 1910: 162. Type locality: Sarawak.

*Type material examined.* Syntype: 1 ♀ (SMNH), Borneo, May 1898.

*Other specimen examined.* 1 ♀ (CTT), Mt. Bawang, 245 m, W. Kalimantan, Borneo/Kalimantan, 0°53.5/109°22.2, IX.2014.

*Distribution.* Borneo (Malaysia and Indonesia).

*Notes.* The available females differ from females of *A. clytoides* in the structure of antennal segments. This species has not been formally recorded since its original description from Malaysian Sarawak Province of Borneo. Hereby, we provide a new record of the species from Indonesian part of the island. However, a male of this species is still unknown, and its discovery would help to decide about correct generic placement of the species.



Fig. 2. Clytini spp. — a–f, *Demonax niisatoi* VIKTORA et TICHÝ, sp. nov.; g–l, *Raphuma allegoria* VIKTORA et TICHÝ, sp. nov. — a, g, Holotype, ♂; b, h, paratype, ♀; c, i, VIII abdominal segment; d, j, furcular; e, k, tegmen; f, l, median lobe.

Genus *Demonax* J. THOMSON, 1861

*Demonax* THOMSON, 1861: 226. Type species: *Demonax nigrofasciatus* THOMSON, 1861 (Type locality: Batchian).

*Demonax niisatoi* VIKTORA et TICHÝ, sp. nov.

(Figs. 2a–f)

*Description.* Habitus of male holotype as in Fig. 2a. Body black, elongate, narrow, slightly narrowing apically, punctuate, with pubescence. Body length 10.86 mm (male paratypes from 9.9 to 14.7 mm), widest in humeral part of elytra (2.18 mm), 5 times as long as wide.

Head black, relatively short and narrow, widest through eyes, approximately as wide as pronotum at the widest point (near the middle of lateral margins), with double punctuation (dense small punctuation and a few large punctures basally), with ochre recumbent pubescence. Eyes distinctly longitudinally emarginate. Mandibles dark reddish brown, of the same color as clypeus, with black top. Front margin of head with a few long ochre setae. Maxillary palpus pale brown with a few short pale setae. Ultimate palpomere longer than penultimate, slightly darker, apex cut.

Antennae long, distinctly exceeding elytral apex (as in Fig. 2a), filiform, black, with dense punctuation (punctures very small) and short white pubescence. Antennomere II the shortest, antennomere VI the longest. Apex of antennomere I distinctly paler than the basal part (brown). Antennomeres III–VI with longer pale setae in inner side. Antennomeres III–IV with distinct spine in inner side of apex. Ratios of relative lengths of antennomeres I–XI equal to 0.58 : 0.27 : 1.00 : 0.95 : 1.15 : 1.26 : 1.10 : 1.01 : 0.91 : 0.80 : 0.80.

Pronotum black, cylindrical, elongate, narrow, 1.46 times as long as wide at the widest point (in the middle), finely granulated, with short yellowish gray pubescence. Lateral margins with a few long white setae. Anterior margin almost straight, base straight.

Scutellum black, slightly cordiform, covered by dense yellowish white pubescence.

Elytra 7.0 mm long and 2.18 mm wide, narrow, elongate, narrowing apically, black, with fine granulation, covered by sparse and short yellowish grey recumbent pubescence, with glabrous spots in basal part (as in Fig. 2a). Apical margin slightly serrate, with distinct teeth from both sides (the outer one larger).

Legs long and very narrow, black, with short white pubescence. Tibiae covered with longer and denser yellowish pubescence. Metatibia and metafemora longer than pro- and mesotibia and pro- and mesofemora. Protarsi wider than mesotarsi and mesotarsi wider than metatarsi. Metatarsomere I 1.6 times longer than metatarsomeres II and III together.

Ventral side of body black, completely covered by very dense white pubescence. Elytral epipleura black, with short yellowish pubescence.

Male genitalia as in Fig. 2c–f. Median lobe rather short and broad, sharp in apex, struts quite long. Tegmen has apically thickened and long lateral lobes, rounded at apex with apparent setae; ringed part roundly expanded.

Female: Habitus of female paratype as in Fig. 2b. Females without distinct differences, body slightly wider, antennae hardly reaching elytral apex. Body length (female paratypes) from 10.4 to 14.8 mm.

*Type series.* Holotype: ♂, 'VIETNAM, Kon Tum Prov.' / 'Ngoc Linh Mt., 1,700 m' / 'VI.2016, local collector lgt.'

Paratypes (41 ♂♂, 25 ♀♀): 39 ♂♂, 24 ♀♀ (CPV, CTT, MNHL), same data as the holotype; 1 ♂ (CTT), March 2016, Vietnam / 'ThuaThienHue' / 'Bach Ma' / '1400m, Danang'; 1 ♂, 1 ♀ (CTT), Au-

gust 2016, Vietnam / ThuaThienHue / Bach Ma / 1400m, Danang.

The types are provided with printed red labels: *Demonax niisatoi* sp. nov. / HOLOTYPUS (respective PARATYPUS) / P. Viktora et T. Tichý det., 2017.

*Distribution.* Vietnam (Kon Tum, Thua Thien-Hue).

*Etymology.* Dedicated to Tatsuya NIISATO, one of the most excellent and active longicornists in the world, on the occasion of his 60th birthday.

*Diagnosis.* The typical feature of *Demonax niisatoi* sp. nov. is narrow cylindrical pronotum. Despite its quite narrow shape, the new species coincide with all the key features of the genus (antennae inserted fairly close each to the other, antennomeres III and IV with small, but distinct apical spine, long first metatarsomere), and does not differ significantly from the type species of the genus, so it should be classified as *Demonax* species in its current treatment.

Moreover, a similar shape of pronotum can be found in several other species, such as *D. conjugatus* DAUBER, 2014, *D. quaesitus* DAUBER, 2014, *D. martes* PASCOE, 1869, *D. transversalis* AURIVILLIUS, 1910, and *D. unicolor* AURIVILLIUS, 1924 from Malaysia; *D. elisabethae* HOLZSCHUH, 2016 from Laos; *D. dignus* GAHAN, 1894 described from Myanmar; *D. leucoscutellatus* (HOPE, 1831) described from Nepal, *D. nugator* VIKTORA et TICHÝ, 2017 from Vietnam; and *D. longicollis* HELLER, 1916 from the Philippines, placed in *Demonax* by their authors (AURIVILLIUS, 1910, 1924; DAUBER, 2014; GAHAN, 1894; HELLER, 1916; HOLZSCHUH, 2016; HOPE, 1831; PASCOE, 1869; VIKTORA & TICHÝ, 2017 b). *Demonax niisatoi* sp. nov. distinctly differs from all these species except *D. unicolor* and *D. elisabethae* by dorsal surface of elytra with unicolored pubescence, while all species mentioned above have dorsal surface of elytra with bicolor pubescence. *Demonax niisatoi* sp. nov. distinctly differs from *D. unicolor* and *D. elisabethae* by ochre pubescence on dorsal surface of head and glabrous spot in basal part of elytra (the other two species have glabrous spot only in shoulders). Moreover, *D. unicolor* has much prominent spines at antennomeres III–IV and rather convex elytral apex.

### Genus *Rhaphuma* PASCOE, 1858

*Rhaphium* WHITE, 1855: 289. Type species: *Clytus quadricolor* CASTELNAU et GORY, 1841 (Type locality: Iles Philippines).

*Rhaphuma* PASCOE, 1858: 240–241.

*Arcyphorus* CHEVROLAT, 1863: 287. Type species: *Arcyphorus histrio* CHEVROLAT, 1863 (Type locality: Java).

### *Rhaphuma allegoria* VIKTORA et TICHÝ, sp. nov.

(Figs. 2g–l)

*Description.* Habitus of male holotype as in Fig. 2g. Body black, relatively short, punctuate, with pubescence. Body length 9.2 mm, widest in humeral part of elytra (2.16 mm), approximately 4.2 times longer than wide.

Head black, relatively short, widest through eyes, approximately as wide as pronotum at the widest point (near the middle), with fine punctuation, with longer ochre pubescence. Clypeus partly pale reddish brown. Anterior part of head with a few long pale setae. Eyes strongly longitudinally emarginate, between roots of antennae with one distinct tubercle from both sides. Dorsal surface of mandibles blackish brown, partly glabrous. Maxillary palpus reddish brown, palpomeres short, with pale setae. Ultimate palpomere the longest, roundly triangular, widest at apex, axe shaped.

Antennae filiform, slightly exceeding elytral apex, with fine punctuation, with short white pubescence and long pale setae in inner side of antennomeres I–VIII. Antennomeres I–II reddish brown, antennomeres III–XI partly reddish brown, partly black. Antennomeres without spines. Antennomere II

the shortest, antennomere VII the longest. Ratios of relative lengths of antennomeres I–XI equal to 0.64 : 0.26 : 1.00 : 0.93 : 0.99 : 1.03 : 1.07 : 0.95 : 0.86 : 0.70 : 0.59.

Pronotum black, slightly convex, with distinctly arcuate lateral margins, 1.2 times as long as wide at the widest point (near the middle of pronotum). Dorsal surface with distinct punctuation, punctures large, with white recumbent pubescence, on disc slightly yellowish (as in Fig. 2g) and long pale erected setae. Anterior margin arcuate, base straight.

Scutellum black, roundly triangular, with recumbent yellowish white pubescence.

Elytra 5.76 mm long and 2.16 mm wide (2.66 times longer than wide), black, rather stout, with dense punctuation, covered by recumbent white pubescence, in base and apex rather yellowish white. Humeri, two spots near base and suture narrowly black without pubescence (as in Fig. 2g). Apex slightly arcuate.

Legs long and narrow, covered with dense recumbent white pubescence and dark erected setae. Tibia and femora black with underside reddish brown, tarsi dark brown. Metatibiae and metafemora longer than pro- and mesotibiae and pro- and mesofemora. Protarsi and mesotarsi wider than metatarsi. Metatarsomere I 1.64 times longer than metatarsomeres II and III together.

Ventral side of body black, completely covered by white pubescence.

Male genitalia as in Fig. 2i–l and fit quite well *Rhaphuma sulphurea* species group (see VIKTORA & TICHÝ, 2017 a: 221). Median lobe laterally dilated; struts very long; apical part short, rounded, evenly and gently narrowed. Tegmen has thick and short lateral lobes, rounded at apex with long setae; ringed part roundly expanded, not projected laterally.

Female: Habitus of female paratype as in Fig. 2h. Female without distinct differences, but body slightly wider, antennae slightly shorter than male (clearly not reaching elytral apex). Body length 9.7–10.8 mm in female paratypes.

*Type series.* Holotype: ♂, vi. 2016; Vietnam / 'Kon Tum' / 'Ngoc Linh, 1700m' / 'TayNguyen/CentHigh'. Paratypes: 1 ♀ (CPV): same data as the holotype; 1 ♀ (CTT): same data as the holotype, but v. 2017.

The types are provided with printed red labels: '*Rhaphuma allegoria* sp. nov.' / 'HOLOTYPUS (respective PARATYPUS)' / 'P. Viktora et T. Tichý det., 2017'.

*Distribution.* Vietnam (Kon Tum).

*Etymology.* From Latin *allegoria* (it means “allegory”).

*Diagnosis.* *Rhaphuma allegoria* sp. nov. clearly belongs to the *Rhaphuma sulphurea* species group (see VIKTORA & TICHÝ, 2017 a: 221) due to its rather stout and short body and unique shape of genitalia resembling several species of *Paraclytus* BATES, 1884 of Anaglyptini LACORDAIRE, 1868. In order to fix the generic placement of this group, complete revision of both tribes is necessary. It is however interesting that *R. allegoria* sp. nov. strongly resembles *D. niisatoi* sp. nov. by its color (generally with yellowish grey to greenish pubescence, especially on pronotum, elytra and legs, and ochre pubescent head and indistinct black markings (glabrous areas) in basal part of elytra).

*Rhaphuma allegoria* sp. nov. distinctly differs from similar species, *R. boreovietnamica* VIKTORA et TICHÝ, 2017, *R. meridiosinica* VIKTORA et TICHÝ, 2017, and *R. meridiovietnamica* VIKTORA et TICHÝ, 2017 by longer and narrower elytra (ratio elytral length / elytral width in humeri 2.66), by dorsal surface of elytra (with short white pubescence without significant black spots; as in Figs. 2g, h) and by different shape of tegmen (especially the length and width of lateral lobes), since *R. boreovietnamica*, *R. meridiosinica* and *R. meridiovietnamica* have shorter and wider elytra (ratio elytral length / elytral width in humeri from 2.25 to 2.45), and dorsal surface of elytra yellow with apparent black spots. *Rhaphuma allegoria* sp. nov. differs from further two species of the group, *R. boreolaosica* VIKTORA et TICHÝ, 2017 and *R. sulphurea* GRESSITT, 1941, by color of dorsal surface (elytra and pro-

notum with short and sparse white pubescence, head with ochre pubescence), by apex of elytra without distinct spines in outer sides and different shape of tegmen (especially the length and width of lateral lobes), since *R. boreolaosica* and *R. sulphurea* have dorsal surface of head, pronotum and elytra with long and dense yellow pubescence and apex of elytra with distinct spines in outer sides.

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## A New Species of the Genus *Rucentra* (Coleoptera, Cerambycidae, Lamiinae, Apomecynini) from Central Java, Indonesia

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**Abstract** A new apterous species, *Rucentra niisatoi* sp. nov., is described from Mt. Slamet, Central Java, Indonesia.

### Introduction

The apterous lamiine genus *Rucentra* SCHWARZER, 1931 was comprised of nine species and one subspecies as follows: *R. dammermani* SCHWARZER, 1931, *R. posticata* SCHWARZER, 1931, *R. melancholia* SCHWARZER, 1931, *R. ochraceopunctata ochraceopunctata* BREUNING, 1940, and *R. ochraceopunctata silvicola* MAKIHARA, SUGIARTO et NOERDJITO, 2011 from East Java; *R. celebensis* BREUNING, 1943 from Sulawesi; *R. grossepunctata* BREUNING et DE JONG, 1941 from Sumatra; *R. smetanai* HÜDEPOHL 1992 from Borneo; *R. v-signata* SCHWARZER, 1931 and *R. punctifrons* BREUNING, 1940 from Luzon, the Philippines. All these species were reported from only highland of each island (SCHWARZER, 1931; BREUNING, 1940; BREUNING & DE JONG, 1941; BREUNING, 1958–1969; HÜDEPOHL & SMETANA, 1992; MAKIHARA *et al.*, 2011).

The second author, NOERDJITO collected a species belonging to the genus *Rucentra* from the high altitude area of Mt. Slamet, Central Java. We compared and investigated this species with the other species and subspecies of *Rucentra* described from Java. As a result, this species is differed from them on many morphological characters. Therefore, we determined it as a new species.

The holotype and the paratype will be preserved in the Museum Zoologicum Bogorensis (MZB), Cibinon, Indonesia.

### *Rucentra niisatoi* sp. nov.

(Figs. 1A–D, 2A, 3A–D)

Male: Body short and stout, blackish brown, dull glossy, tinged with reddish brown in antennae. Length from tip of frons to elytral apices 6.2 (paratype) and 7.5 mm (holotype), width near middle of elytra 2.0 (paratype) and 2.3 mm (holotype).

Body partly covered with dense prostrate silver pubescence; pronotum decorated with yellowish brown pubescent small patch sparsely on lateral sides; elytra with many small and irregular reddish brown pubescent markings overall but without oblong markings.

Head narrower than prothorax, deeply and roughly punctured; vertex feebly concave; inferior eye-lobe shallower than gena.

Antenna rather short, as long as body; relative length of segments from basal to apical (%) — 9.3 : 3.7 : 14.9 : 14.7 : 10.7 : 9.1 : 8.3 : 7.7 : 7.5 : 6.4 : 7.7; scape fusiform; scape and pedicel covered with dense short appressed brown hairs; 3rd to 11th segments with dense brown pubescence on each apical

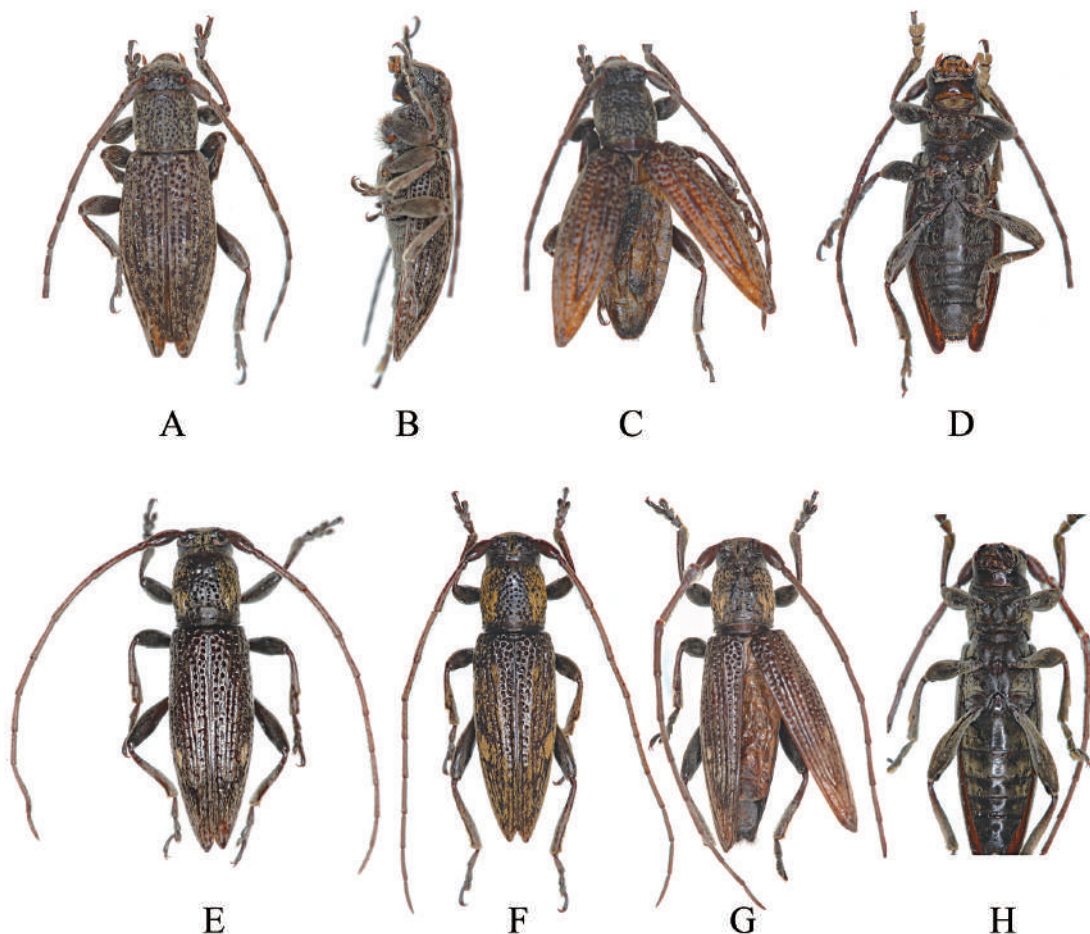


Fig. 1. *Rucentra* spp. — A–D, *R. niisatoi* sp. nov. (holotype); E, G, H, *R. ochraceopunctata ochraceopunctata*; F, *R. o. silvicola* (paratype). — A, E, F, Dorsal view; B, lateral view; C, G; showing hind wing condition by opened elytra; D, H, ventral view.

part, with silver pubescence on each basal part, and sparse erect or suberect short brown hairs on each ventral side.

Prothorax as long as wide, slightly rounded at sides, deeply and irregularly punctured except for apical portion. Scutellum semicircular.

Elytra widened from humeri to basal 4/7, then straightly narrowed toward rounded apices, 2.1 times as long as wide at the widest point, about 2.3 times as long as the combined length of head and prothorax; disk flat in basal area, then swelling to middle, provided with ten regular rows of striae with deep and irregular punctures, which are getting smaller and shallower toward apices. Hind wing reduced (Fig. 1C).

Ventral surface smooth and coarse in part; metasternum strongly granulated overall (Fig. 2A); 1st to 5th visible sternites with median longitudinal wide obtuse concavity; 1st abdominal sternite without

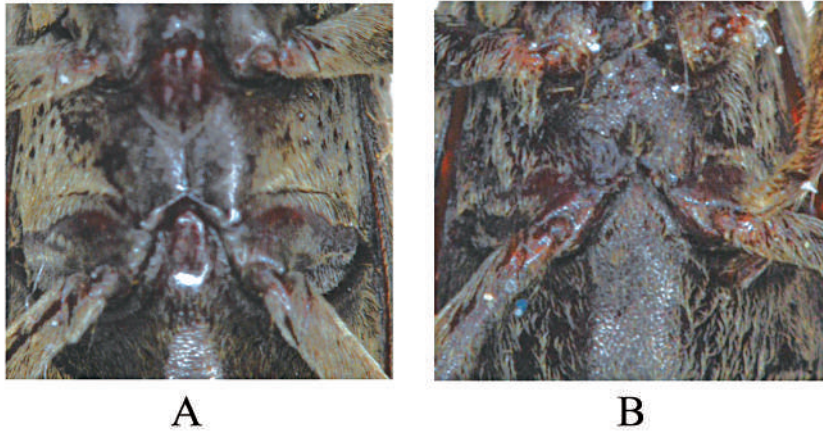


Fig. 2. Metasternum and base of visible 1st abdominal sternite. — A, *Rucentra niisatoi* sp. nov.; B, *R. ochraceopunctata ochraceopunctata*.

tubercle (Fig. 2A).

Legs short and stout, but hind femur long and reach to 4th visible abdominal sternite; each tibia as long as each tarsus, provided with two very short spines at apex on ventral side; fore and hind legs with tibiae slightly longer than each femur; mid leg with tibia as long as femur.

Median lobe (Fig. 3C, D) without lateral projection at the widest point, median struts 1/3 times as long as median lobe; apex of dorsal plate longer than ventral plate, sharply pointed. Tegmen (Fig. 3A, B) provided with short roof; lateral lobes broad and gently curved inward, weakly rounded at apices which are provided with long setae; ringed part geniculated at the widest portion.

Female: Unknown.

*Type series.* Holotype: ♂ (MZB. Col. 344), Mt. Slamet, 1,600 m, Central Java, Indonesia, 18.III.2009, Woro A. NOERDJITO leg. Paratype: 1 ♂ (MZB. Col. 311), same locality and collector as the holotype, but 1,600–1900 m, 25.III.2009.

*Distribution.* Indonesia: Central Java (Mt. Slamet).

*Etymology.* The name of this new species is dedicated to Dr. Tatsuya NIISATO who is one of an excellent leader of Coleopterology in Japan.

*Comparative notes.* *Rucentra niisatoi* sp. nov. somewhat resembles two subspecies of *Rucentra ochraceopunctata* BREUNING, 1940 (Figs. 1E, F) from Mts. Bromo, East Java, than the other species of the genus from Java. The subspecies of *R. ochraceopunctata* are different from the new species by the following features: Body rather long and slender; integument glossy; antenna rather long, 1.2–1.3 times as long as body (Fig. 1E, F); elytra with a pair of small oblong markings; metasternum weakly granulated (Fig. 2B); 1st abdominal visible sternite with a tubercle at base (Fig. 2B); median struts rather long, 0.7 times as long as median lobe (Fig. 3G, H); lateral lobe gradually narrowed from base to apex (Fig. 3E, F), with long setae in apical halves on ventral side (Fig. 3E, F).

*Biology.* The holotype was collected from cut off twigs of *Artocarpus* sp. hanging on a tree trunk at alt. 1,600 m, which is a kind of bait traps used by MAKIHARA *et al.* (2011) and MAKIHARA (2013) as well. Besides, the paratype was collected from a trap of *Ficus* sp. at alt. 1,600–1,900 m.

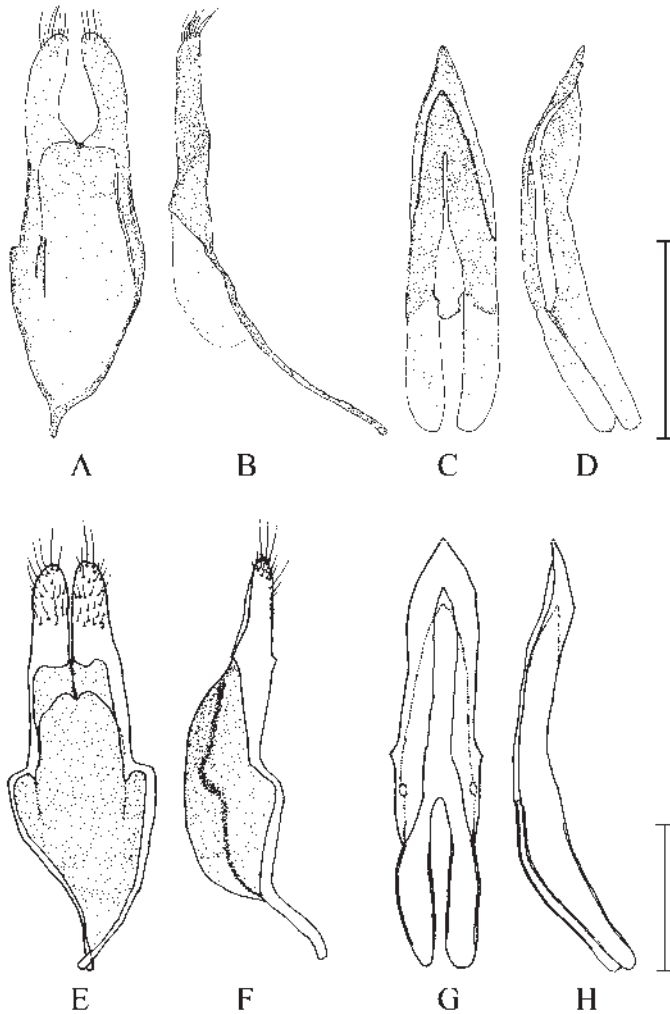


Fig. 3. Male genitalia of *Rucentra* spp. — A–D, *R. niisatoi* sp. nov.; E–H, *R. ochraceopunctata ochraceopunctata* (quoted from MAKIHARA *et al.*, 2011). — A, B, E, F, Tegmen; C, D, G, H, median lobe. — A, C, E, G, Ventral view; B, D, F, H, lateral view. Scale bars: 1 mm.

### Notes on the Systematic Position of *Rucentra*

The apterous genus, *Rucentra* definitely has close relation with the genus *Sybra* by sharing following characteristics: Non-divided eye, feebly concave vertex, hardly raised antennal tubercle, not distinctly fringed beneath antenna, and not distinctly carinate femur, etc. The features of *Rucentra* such as short pronotum, rounded elytral humeri, and shortened metasternum, which are plausible to be derived characteristics associated with reducing of hind wings and developed legs. SCHWARZER (1931) already noted the resemblance of Luzon species, *Rucentra v-signata* SCHWARZER, 1931 with *Sybra vittaticollis* and *S. separanda*, both described by AURIVILLIUS (1927) from the Philippines. We also noticed the resemblance between *Rucentra ochraceopunctata* BREUNING, 1940 (Fig. 1E) and *Sybra*

*bisignata* SCHWARZER, 1931 (figured in SCHWARZER, 1931) both from East Java. Furthermore, speciation thought to be caused by reducing hind wings sometimes occur even in the relatives of the genus *Sybra*, such as *S. miscanthivola* MAKIHARA, 1977, *Palausybra vestigalis* GRESSITT, 1956, and so on (e.g., MAKIHARA, 1977; GRESSITT, 1956).

However, *Rucentra niisatoi* sp. nov. described in this paper and *R. ochraceopunctata* distributed in the same island are not so close to each other. It means that the former would not be directly speciated from the latter, but might derive from some nearest another *Sybra* species. Generally speaking, the *Rucentra* species are mostly found only in high altitude, and we speculate the roots and speciation of them as follows.

1. The unknown ancestors (may be *Sybra* spp.) of *Rucentra* inhabiting around lowland area had migrated to highland.

2. The migrated ancestor adapted to highland environment by reducing hind wings independently.

3. As the result, morphological convergences were occurred in the genus *Rucentra* with resemblance of each ancestor.

Up to now, we have only limited specimens of *Rucentra* species from another islands, and we avoid discuss more details herein. However, it is necessary to revise systematically the genus *Rucentra* in the future.

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## A New Species of the Genus *Eupogoniopsis* (Coleoptera, Cerambycidae, Lamiinae) from Taiwan

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**Abstract** *Eupogoniopsis niisatoi* sp. nov. is described from Taiwan. The genus is recorded from Taiwan for the first time.

The genus *Eupogoniopsis* BREUNING, 1949 is a small genus of the tribe Desmiphorini. According to recent researches (LÖBL & SMETANA, 2010; LIM *et al.*, 2013; TSUYUKI & HIRAYAMA, 2017), it contained the following five species: *Eupogoniopsis tenuicornis* (BATES, 1884) from Japan, *E. omeimontis* (GRESSITT, 1938) from China (Sichuan), *E. caudatula* HOLZSCHUH, 1999 from China (Yunnan), *E. sepicola* HOLZSCHUH, 1999 from Nepal, and *E. granulata* LIM, 2013 from Korea and introduced to Japan. Although the species of this genus are widely distributed from Nepal to Japan, no congeners have been known from Taiwan so far. Recently, however, the author found two Taiwanese specimens of an unknown species belonging to this genus in Dr. NIISATO's private collection. After close examination with some additional materials, it was concluded as new to science. Herein, a new species of *Eupogoniopsis* is described from Taiwan.

Before going into details, the author wish to express heartfelt thanks to Jun ITO (Inagi, Japan), Tatsuya NIISATO (Bioindicator Co., Ltd., Tokyo, Japan), and Shigeo TSUYUKI (Zushi, Japan) for kindly offering materials, and to Nobuo OHBAYASHI (Miura, Japan) for providing helpful comments on the draft of this manuscript.

### *Eupogoniopsis niisatoi* sp. nov.

(Figs. 1–12)

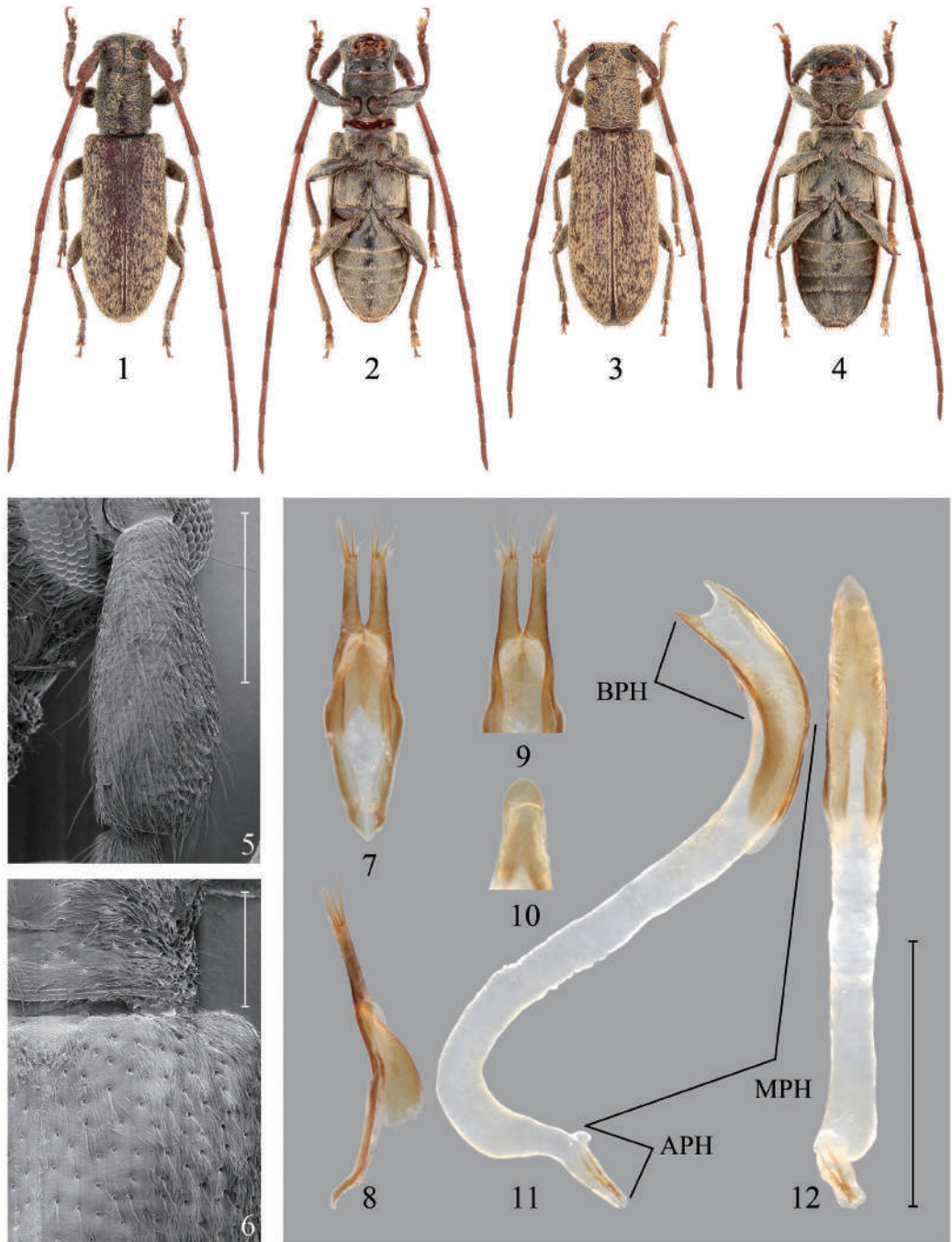
*Type locality.* Taiwan, Hualien county, Xiulin Township, Xibao.

*Type series.* Holotype (Figs. 1, 2, 5–12): ♂, “Taiwan, Hualian, / Xibao, 13.X.2013, / K. Takahashi leg.”, “西寶 (Xipao) / Hualien Hsien / FORMOSA / 13 X 2013 / Kei. TAKAHASHI leg.”. [The verbatim data of each label are cited in double quotation marks with a slash indicating its line break. The holotype is deposited in National Museum of Nature and Science, Tokyo (NMNS).]

Paratypes: 1 ♂, Wetuan, Liukuei, Kaohsiung, Taiwan, 19.V.1977, Jun ITO leg.; 2 ♀♀, Sengping, Liukuei, Kaohsiung, Taiwan, emerged on 21.III.1978, T. NIISATO leg.; 1 ♂, 1 ♀ (Figs. 3, 4), same data as the holotype.

*Diagnosis.* This new species is similar to *Eupogoniopsis sepicola* among the members of the genus, but based on a comparison with the original description (HOLZSCHUH, 1999) and a photo of the paratype shown in LIN (2015), this new species is different from the latter in the following features: Body dominantly covered with dense light brown pubescence; male with antennomeres X–XI short, subequal or less than a half length of antennomere III or IV; pronotum more elongate.

It is easily distinguishable from the other congeners by having light brown pubescence through-



Figs. 1–12. *Eupogoniopsis niisatoi* sp. nov. — 1, 2, Male (holotype); 3, 4, female (paratype); 5, antennal scape; 6, elytral base; 7–12, male genitalia (7, 8, tegmen; 9, lateral lobe; 10, apex of median lobe; 11, 12, median lobe with endophallus). — 1, 3, 5, 6, 7, 12, Dorsal view; 2, 4, 9, 10, ventral view; 8, 11, lateral view. Scales: 500.0  $\mu\text{m}$  for Figs. 5–6; 1.0 mm for Figs. 7–12. Abbreviations: APH, apical phallomer; BPH, basal phallomer; MPH, median phallomer.

out the body.

*Description.* Male (Figs. 1, 2, n = 3): Body length 5.8–6.8 mm, maximum body width 1.8–2.1 mm.

Body reddish brown, clothed with dense light brown pubescence except for antenna. Antenna with scape dominantly clothed with sparse light brown pubescence; each basal part of antennomeres III–IX with same pubescence, but the reminders with sparse brown pubescence.

Head with sparse punctures on frons. Eye deeply emarginate between upper and lower lobes; lower lobe prominent, slightly long vertically, 1.4–1.5 times as long as gena. Antenna long, 1.5–1.6 times as long as body; relative length of each segment from base to apex as follows: 0.8–0.9 : 0.2 : 1.5–1.6 : 1.6–1.7 : 1.0 : 0.9–1.0 : 0.8–0.9 : 0.8 : 0.7–0.8 : 0.7 : 0.7; scape to antennomere VII with suberect brown setae beneath; scape clavate, well thickened apically, with a few granules on apical half of outer side (Fig. 5); antennomere III subequal or slightly shorter than IV. Pronotum oblong, 1.1 times as long as wide, provided with small spinous projection on each side near middle, weakly constricted at base; disk with sparse punctures. Scutellum linguiform. Elytra 2.2–2.3 times as long as the humeral width, with coarse punctures which are distinct in basal half (Fig. 6), then getting smaller and shallower apically; sides weakly narrowed from subquadrate humeri toward basal fourth, slightly dilated apically, widest behind middle, thence arcuately narrowed toward rounded apices. Pro- and mesosternal processes hardly projected below, sloped in lateral view. Legs with femora clavate; mesotibia without notch on outer margin; claws divided, with obtuse inner angle.

Male genitalia (Figs. 7–12, n = 1) with tegmen in dorsal view widest before middle, gently curved in lateral view; paramere in ventral view approximately 1/3 the length of tegmen, slightly narrowed apically, with several setae which are concentrated at apex. Median lobe gently curved in lateral view, bifurcate before middle in dorsal view. Endophallus approximately three times as long as median lobe, subdivided into basal, median and apical phallomers; basal phallomer without distinct crescent shaped sclerites; median phallomer with minute spinous sclerites on distal part; apical phallomer with single ejaculatory duct arising from small projection on proximal dorsal side, with bifurcate chitinous plate laid on dorsal side.

Female (Figs. 3, 4, n = 3): Body length 6.0–7.7 mm, maximum body width 2.0–2.5 mm. Similar to male, but relatively rotund. Antenna 1.3 times as long as body; relative length of each segment as follows: 0.9–1.0 : 0.2 : 1.6 : 1.6 : 0.9–1.0 : 0.9 : 0.9 : 0.8 : 0.8 : 0.7 : 0.7. Pronotum slightly shorter than male, 1.0–1.1 times as long as wide.

*Distribution.* Taiwan.

*Remarks.* This new species was first recognized as an unknown species by Dr. NIISATO who is the collector of two paratypes. According to his firsthand information, it was very similar to *Xenolea asiatica* (PIC, 1925) at first glance, but different in the thanatosis behavior. *Xenolea asiatica* usually put its antennae forward in its death feigning position, yet this species didn't do so when he collected the specimens. With this information derived from his observation, he entrusted the specimens to the author for further study. After a close examination, I concluded that it is certainly different from *Xenolea* but identical with *Eupogoniopsis* defined mainly by the following characters (BREUNING, 1949): antenna long and fine, more than 1.5 times as long as body, with dense suberect setae beneath; scape short and thick; antennomere III almost twice as long as scape, subequal to antennomere IV which is 1.5 times as long as antennomere V; antennal tubercle dully projected, not so widely separated each other; eye coarsely faceted, emarginated; lower eye lobe slightly long vertically; frons slightly wide; pronotum with a small conical spinous tubercle on each lateral side near middle, narrowed behind basal margin and before apical margin; elytra elongate, slightly wider than pronotum, rounded at apices; prosternal process not projected below, roundly sloped apically; mesosternal process sloped to-



ward basal margin; metasternum normal; mesocoxal cavity closed laterally; legs moderate in length; femora clavate; mesotibia without notch; craws divided.

Even so, it still deceptively resembles to *X. asiatica* especially in mounted specimen, and thus the discovery of this new species might be delayed without Dr. NIISATO's indication based on his observation. For distinguishing it from *X. asiatica*, the simplest difference would be as: *Eupogoniopsis niisatoi* sp. nov. has moderately separated antennal sockets, like in the other *Eupogoniopsis* species, instead of very close to each other in *Xenolea*.

Since only a few specimens were found at present, this new species is probably a rare species in Taiwan. Further specimens may be expected by re-surveying materials determined as *X. asiatica* in public or personal collections, which might be misplaced in *X. asiatica* due to its similarities. Actually, the author found several additional specimens misplaced together with *X. asiatica* in the private collections of himself and his colleagues.

*Etymology.* The species name is dedicated to Dr. Tatsuya NIISATO, who first recognized this new species and provided me the opportunity to describe it, on the occasion of his 60th birthday.

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## Taxonomic Study on the Genus *Ostedes* (Coleoptera, Cerambycidae, Lamiine, Acanthocinini) from Japan and Taiwan

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**Abstract** The genus *Ostedes* from Japan and Taiwan is revised. Two new species, *Ostedes* (*Ostedes*) *niisatoi* sp. nov. and *O. (O.) yamasakoi* sp. nov., are described from Taiwan. *Ostedes* (*O.*) *inermis densepunctata* HAYASHI, 1962 is raised to a species rank. *Rondibilis* (*Rondibilis*) *sapporensis* (MATSUSHITA, 1933) is transferred to the genus *Ostedes* (*Ostedes*).

### Introduction

The genus *Ostedes* was erected by PASCOE in 1859 on the basis of *Ostedes pauperata* PASCOE, 1859 from Aru, Molucca, and it is now separated into three subgenera, *Ostedes* (s. str.), *Ostedes* (*Dentatostedes*) BREUNING, 1961 and *Ostedes* (*Trichostedes*) BREUNING, 1961. Up to the present, 31 species of *O. (Ostedes)*, one species of *O. (Dentatostedes)* and five species of *O. (Trichostedes)* have so far been known from Asia, of which two species and one subspecies of *O. (Ostedes)* have been known from Japan and Taiwan, viz., *O. (O.) inermis inermis* SCHWARZER, 1925, *O. (O.) inermis densepunctata* HAYASHI, 1962 and *O. (O.) subfasciata* MATSUSHITA, 1933.

Recently I had an opportunity to examine enough series of specimens of this genus from Japan and Taiwan through the courtesy of many colleagues. After a careful examination of those specimens, I recognized two new species described herein. In addition, *O. (O.) inermis densepunctata* should be ranked to an independent species, and *Rondibilis* (*Rondibilis*) *sapporensis* (MATSUSHITA, 1933) should be transferred to *Ostedes* (*Ostedes*) judging from the feature of prothorax, male 8th tergite and genitalia. Taking this occasion, I intend to revise the Japanese and Taiwanese species of this genus with description or redescription of them.

### Materials and Methods

Materials used in the present study are mainly from the private collection of the author and Nobuo OHBAYASHI. The collecting data of specimens examined are cited from the original spellings of the label, though several Japanese or Chinese characters were transformed to alphabetical notation. Type specimens were indirectly examined by the photographs offered by Nobuo OHBAYASHI, Junsuke YAMASAKO and Hiroshi MAKIHARA, which were taken during their visit to the following institutes: Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (SDEI); Museum für Naturkunde, Berlin, Germany (MNHUB); Bernice Pauahi Bishop Museum, Honolulu, Hawaii, USA (BPBM); Hokkaido University Museum, Sapporo, Japan (HUM); Collection of the late Mr. Taichi SHIBATA, in Osaka Museum of Natural History, Osaka, Japan (TS).

The holotypes designated herein will be preserved in the National Museum of Nature and Science, Tsukuba, Japan, and the paratypes in the private collection of the author.

To observe the genital organ, the abdomen was cut off from softened body, then 1) sunk in 10 %

KOH at normal temperature for about 24 hours; 2) washed and dissected in the water; 3) eighth abdominal tergite and genital organs were drawn out from the abdomen; 4) these were dipped in 50 % glycerin and observed; 5) then fixed and preserved in a small glass tube with pure glycerin. Figures were drawn by using the drawing system of Leica.

Abbreviations used in the measurements are as follows: IEL – length of inferior eye lobe measured from lateral or sub-lateral view; GL – length of gena, measured from lateral or sub-lateral view; PL – length of pronotum; PB – basal width of pronotum; EL – length of elytra; EW – maximal width of elytra; TL – total length of body, from tip of head to elytral apices; M – arithmetic mean  $\pm$  SD; n – number of specimens.

## Taxonomy

### Genus *Ostedes* (*Ostedes*) PASCOE, 1859

*Ostedes* PASCOE, 1859: 43 (type species: *Ostedes pauperata* PASCOE, 1859).

*Ostedes* (s. str.): BREUNING, 1961 a: 135; BREUNING, 1961 b: 249; BREUNING, 1963: 521; RONDON & BREUNING, 1970: 498; BREUNING, 1977: 116, 118.

*Ostedes* (*Ostedes*): HASEGAWA, 2007: 636.

*Diagnosis.* Body medium-sized, sub-depressed, provided with erect setae on surface.

Head large, broader than the basal width of pronotum; vertex distinctly concave; eyes large, not divided but deeply emarginate and upper and lower lobes narrowly connected; antennae stout and long, about 1.4 times as long as body in male, 3rd to 7th or 8th segments provided with obliquely erect setae beneath; scape 0.6 to 0.9 times as long as the length of 3rd; 3rd shorter than 4th; 4th to 11th each gently abbreviated in order.

Pronotum longer than the basal width in male or almost same as the basal width in female; each side provided with large spinous tubercle, and sometimes with two circular swellings on disc. Prosteronum strongly convex, without erect setae; procoxal cavities opened behind; mesosternum long, without transverse groove along apical margin; mesocoxal cavities closed to epimeron; mesocoxal process broad.

Elytra usually provided with basal callosities and oblique depression behind the callosities, but these are sometimes vestigial; surface usually with coarse and rather large punctures.

Legs relativity long, with fore femora moderately swollen, male hind femora not clavate; tibiae nearly equal in length to femora; oblique groove of mid tibia rather shallowly slanting from about apical half to near apex on dorsal side; hind tarsi long, with 1st segment longer than the following two segments combined.

Abdomen rather slender; apical margin of 3rd ventrite not decorated with silky setae; apex of last ventrite truncate or slightly emarginated; 8th tergite very large and long, of which bilobed apex is provided with stout and long setae at each extremity.

Median lobe relativity stout, moderately arcuate or curved in profile; median struts 1/3 to 1/2 the whole length of median lobe. Endophallus about twice the length of median lobe, sometime with indistinct sclerites at apex. Tegmen slender, without roof, almost the same length or slightly longer than median lobe; lateral lobes long and narrow, about 1/3 the whole length of tegmen, provided with several setae at apical part of each lobe.

*Notes.* BREUNING (1961 a, b) erected two subgenera *Trichostedes* and *Dentatostedes* of the genus *Ostedes*. But the subgeneric definitions of the genus are still unstable and should be restudied in the future.



Figs. 1–5. Type specimens of the genus *Ostedes* (*Ostedes*). — 1, *O. subfasciata* MATSUSHITA (holotype); 2a, *O. inermis* SCHWARZER (syntype); 2b, labels attached to syntype of *O. inermis*; 3a, *O. nubila* MATSUSHITA (syntype); 3b, labels attached to syntype of *O. nubila*; 4, *O. inermis* SCHWARZER *densepunctatus* [sic] HAYASHI (holotype); 5, *Rhopaloscelis sapporensis* MATSUSHITA (holotype).

***Ostedes* (*Ostedes*) *subfasciata* MATSUSHITA, 1933**

(Figs. 1, 6, 12, 18)

*Ostedes subfasciata* MATSUSHITA, 1933: 392, pl. 4, fig. 9 (type locality: Baibara, Formosa).

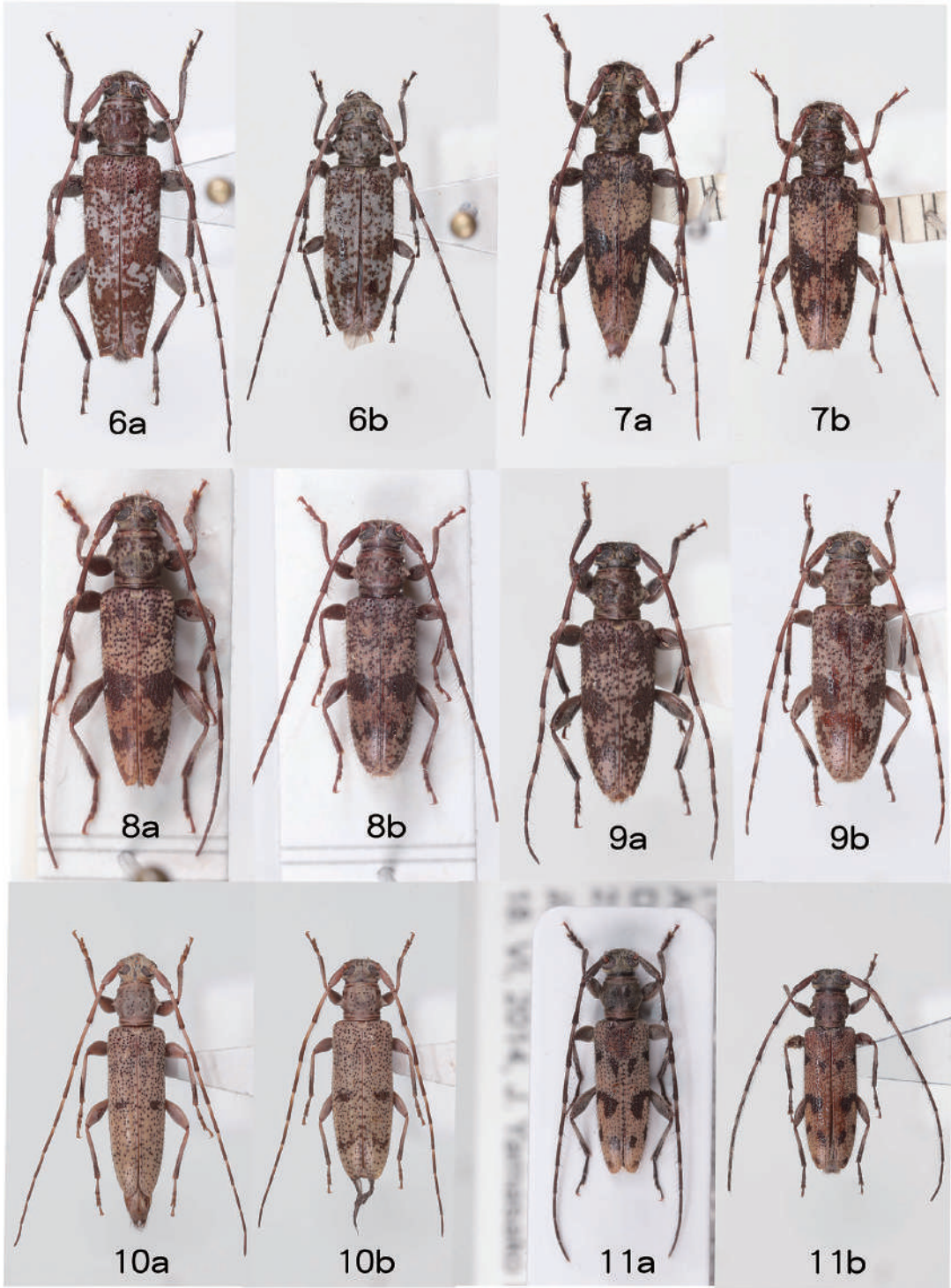
*Ostedes* (*Ostedes*) *subfasciata*: BREUNING, 1963: 521; BREUNING, 1977: 120.

**Redescription.** Male: Length (from tip of head to elytral apices) 9.76–14.65 (M = 12.21±3.45, n = 2) mm. Width (maximum width of elytra) 2.65–4.00 (M = 3.32±0.96, n = 2) mm.

Color dark reddish brown to blackish brown, strongly shiny; head, pronotum and elytra dark reddish to blackish brown; antennae reddish brown, darkened in apical half of each segment; legs blackish brown, with claws dark reddish brown.

Body clothed with golden and whitish pubescence; head and pronotum densely with golden and whitish pubescence intermixed; antennae with scape sparsely with whitish pubescence, decorated with white pubescence in each basal margin of segments 3rd to 10th; elytra with golden pubescence, each provided with three indistinct broad transversal bands of whitish pubescence, which are situated just before middle, behind middle and apex.

Head relatively small, very sparsely punctured, densely provided with long erect setae throughout; vertex shallowly concave; frons transverse, about 1.3 times as broad as height; eyes large, IEL/





Figs. 12–17. Elytra of *Ostedes* (*Ostedes*) spp., showing setae and apices. — 12, *O. (O.) subfasciata* MATSUSHITA; 13, *O. (O.) inermis inermis* SCHWARZER; 14, *O. (O.) niisatoi* HASEGAWA, sp. nov.; 15, *O. (O.) densepunctata* HAYASHI; 16, *O. (O.) sapporensis* (MATSUSHITA), comb. nov.; 17, *O. (O.) yamasakoi* HASEGAWA, sp. nov.

GL = 2.37–2.67 (M = 2.52±0.21, n = 2). Antennae about 1.4 times as long as body, exceeding elytral apices at apex of 8th segment, provided with erect setae on scape, undersides of 2nd to 8th segments and each apex of 3rd to 9th segments; scape 0.85–0.91 times as long as 3rd; 3rd/4th = 0.70–0.76 (M = 0.73±0.05, n = 2); combined length of 3rd and 4th account for about 27 % the whole length of antennae; relative length of segments as follows: 7.7 : 1.0 : 8.7 : 11.9 : 9.2 : 8.1 : 7.3 : 6.4 : 5.8 : 5.4 : 5.4.

Pronotum stout, about 1.14 times as long as the basal width, strongly inflated and constricted at apical and basal sixth, sparsely provided with erect setae; lateral tubercles large, with a stout and blunt spine at each top which is directed obliquely backward; disc with a pair of large circular swellings at apico-median area, very sparsely scattered with small granules mainly at basal half area.

Elytra moderate in length, EW/PB = 1.55–1.58 (M = 1.57±0.02, n = 2), EL/EW = 2.56–2.57 (M = 2.56±0.01, n = 2), EL/PL = 3.48–3.57 (M = 3.53±0.06, n = 2), EL/TL = 0.69–0.70 (M = 0.70±0.01, n = 2), densely provided with long erect setae throughout, gently narrowed in basal 3/4, and then straightly attenuate toward widely truncate oblique apices, of which inner angles are rounded and out-

Figs. 6–11. Habitus of *Ostedes* (*Ostedes*) spp. — 6, *O. (O.) subfasciata* MATSUSHITA; 7, *O. (O.) inermis inermis* SCHWARZER; 8, *O. (O.) niisatoi* HASEGAWA, sp. nov. (holotype & paratype); 9, *O. (O.) densepunctata* HAYASHI; 10, *O. (O.) sapporensis* (MATSUSHITA), comb. nov.; 11, *O. (O.) yamasakoi* HASEGAWA, sp. nov. (holotype & paratype). — a, Male; b, female.

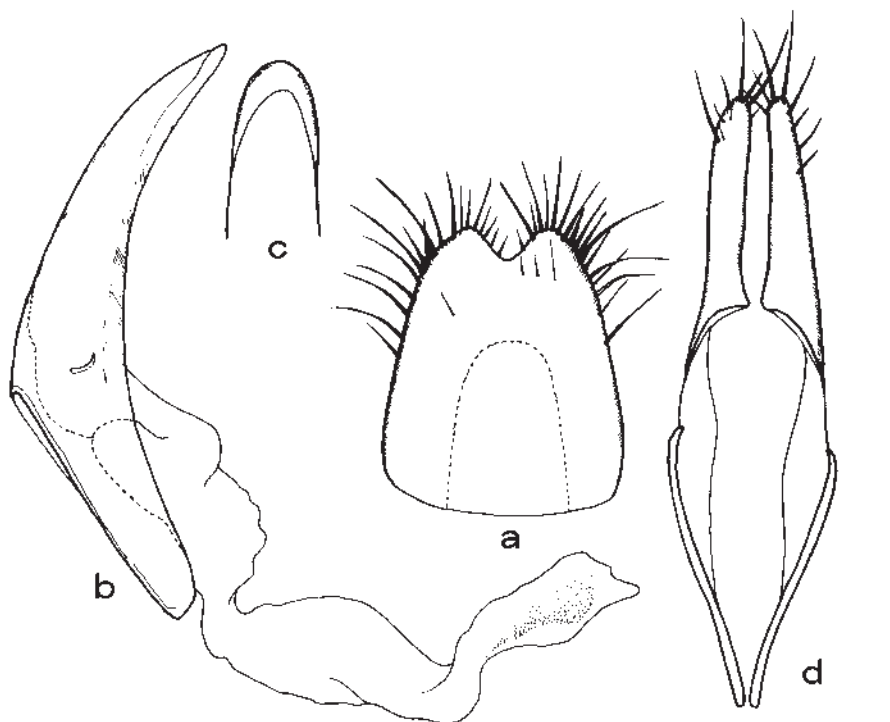


Fig. 18. Eighth abdominal tergite and male genitalia of *Ostedes (Ostedes) subfasciata* MATSUSHITA. — a, Eighth abdominal tergite; b, median lobe; c, apex of median lobe; d, tegmen. — a, c, d, Dorsal view; b, lateral view. Scale: 1.0 mm.

er angles almost rectangular; basal callosities on disc weakly gibbous; oblique depression behind the callosities shallow and indistinct; surface provided with rather large punctures which are getting sparser and weaker inwardly and apically.

Legs robust, with femora moderately clavate.

Abdomen impunctate; last ventrite truncate at apex; 8th tergite tongue-shaped, about 1.17 times as long as the basal width, gently narrowed toward shallowly bilobed apex, of which each extremity is rounded, and densely provided with rather long setae.

Median lobe relatively stout, about 3/10 the length of abdomen, strongly curved and thickest near basal third, then rapidly convergent toward narrowly rounded apex; ventral plate slightly longer than dorsal plate, gently convergent toward widely rounded apex in dorsal view; median struts about 1/3 the whole length of median lobe. Tegmen relatively stout, slightly longer than median lobe, widest at about basal 8/13; lateral lobes long, about 1/3 the whole length of tegmen, with each lobe gently narrowed toward narrowly rounded apex, which is provided with several long setae.

Female: Length (from tip of head to elytral apices) 11.59–11.88 ( $M = 11.73 \pm 0.15$ ,  $n = 3$ ) mm. Width (maximum width of elytra) 3.35–3.53 ( $M = 3.43 \pm 0.09$ ,  $n = 3$ ) mm.

Almost same as male in general appearance, but different from it in the following points: Body more or less stout; antennae shorter, about 1.3 times as long as body, exceeding elytral apices at mid-

dle of 8th segment; eyes smaller; pronotum transverse, almost same length as the basal width; three whitish bands on elytra broader but more indistinct; femora weakly clavate. The ratio of body parts ( $n = 3$ ): IEL/GL = 1.80–2.12 ( $M = 1.94 \pm 0.16$ ), PL/PB = 1.03–1.05 ( $M = 1.04 \pm 0.02$ ), EW/PB = 1.54–1.62 ( $M = 1.59 \pm 0.04$ ), EL/PL = 3.67–3.78 ( $M = 3.71 \pm 0.06$ ), EL/EW = 2.38–2.46 ( $M = 2.42 \pm 0.04$ ), EL/TL = 0.70–0.71 ( $M = 0.71 \pm 0.01$ ).

*Type specimen examined.* Holotype (HUM): ♂, Baibara, Formosa, 7.V.1926, Y. SAITO & K. KIKUCHI leg.

*Other specimens examined.* 1 ♂, Shishitou, Nantou, Taiwan, 25.IV.1992, W.-I CHOU leg.; 1 ♀, Kantou-shan, Nantou, Taiwan, 5.IV.1994, Jinji LUO leg.; 1 ♂, 1 ♀, Mt. Dahan-shan, ca. 1,500 m alt., Chunrih, Pingtung, Taiwan, 29.IV.2014, J. YAMASAKO leg.; 1 ♀, Shin-shan, Pingtung, Taiwan, 2.V.1998, W.-I CHOU leg.

*Distribution.* Taiwan.

### *Ostedes (Ostedes) inermis inermis* SCHWARZER, 1925

(Figs. 2, 3, 7, 13, 19)

*Ostedes inermis* SCHWARZER, 1925: 146 (type localities: Fuhsho, Hoozan and Alikang, Formosa).

*Ostedes inermis inermis*: GRESSITT, 1940: 190; HAYASHI, 1962: 39.

*Ostedes (Ostedes) inermis inermis*: BREUNING, 1963: 521; BREUNING, 1977: 119.

*Ostedes nubila* MATSUSHITA, 1931: 405 (type localities: Hozan and Taihorin, Formosa).

*Redescription.* Male: Length (from tip of head to elytral apices) 9.24–12.41 ( $M = 11.24 \pm 1.08$ ,  $n = 8$ ) mm. Width (maximum width of elytra) 2.47–3.24 ( $M = 2.93 \pm 0.29$ ,  $n = 8$ ) mm.

Color black to dark reddish brown, moderately shiny; head and pronotum black, dark reddish brown along basal and apical margins of the latter; antennae reddish brown, darkened in apical halves of 3rd to 11th segments; elytra reddish brown, each provided with black bands and macula as follows: A broad transversal band at base, a large oblique macula at middle, and a zigzagged narrow band at apical fourth; legs black, with basal half of each tibia, tarsus and claw black. Body clothed with rather short golden pubescence; head densely with golden pubescence throughout; antennae with scape sparsely with golden pubescence, sparsely decorated with white pubescence in each basal margin of 3rd to 11th segments; pronotum and elytra with golden pubescence, studded with many black spots on the former which are formed by lacking of golden pubescence; pubescence on elytral black bands sparse or glabrous.

Head relatively large, sparsely punctured, densely provided with long erect setae throughout; frons transverse, about 1.4 times as broad as height; eyes large, IEL/GL = 2.12–2.73 ( $M = 2.43 \pm 0.19$ ,  $n = 8$ ). Antennae about 1.4 times as long as body, exceeding elytral apices at middle of 8th segment, provided with erect setae on scape, undersides of 2nd to 8th segments and each apex of 3rd to 9th segments; scape 0.65–0.71 times as long as 3rd, 3rd/4th = 0.82–0.87 ( $M = 0.85 \pm 0.02$ ,  $n = 8$ ); combined length of 3rd and 4th account for about 28 % the whole length of antennae; relative length of segments as follows: 8.4 : 1.0 : 12.4 : 14.6 : 11.7 : 10.4 : 9.3 : 8.5 : 7.8 : 6.3 : 5.8.

Pronotum distinctly longer than the basal width; PL/PB = 1.29–1.36 ( $M = 1.32 \pm 0.02$ ,  $n = 8$ ), strongly constricted at basal and apical fifth, sparsely provided with erect setae; lateral tubercles large, with a stout and blunt spine at each top which is directed backward; disc with four circular swellings arranged in trapezoidal, of which former distinct two swellings appear at apico-median areas, and latter two swellings are sometimes effaced in small specimen.

Elytra long, EW/PB = 1.50–1.68 ( $M = 1.59 \pm 0.05$ ,  $n = 8$ ), EL/EW = 2.48–2.79 ( $M = 2.58 \pm 0.10$ ,  $n = 8$ ), EL/PL 2.90–3.43 ( $M = 3.11 \pm 0.17$ ,  $n = 8$ ), EL/TL 0.66–0.69 ( $M = 0.67 \pm 0.01$ ,  $n = 8$ ), provided



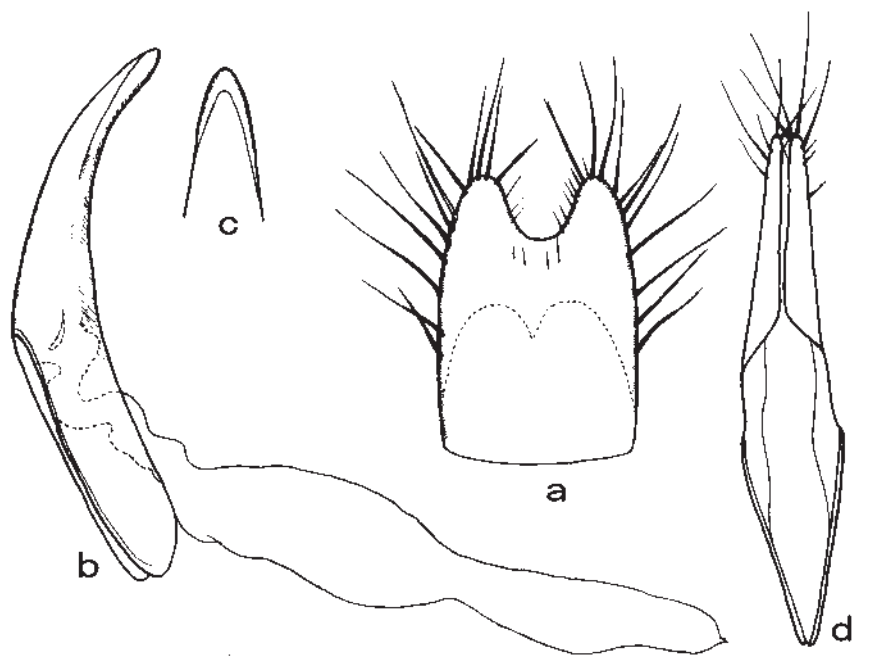


Fig. 19. Eighth abdominal tergite and male genitalia of *Ostedes (Ostedes) inermis inermis* SCHWARZER. — a, Eighth abdominal tergite; b, median lobe; c, apex of median lobe; d, tegmen. — a, c, d, Dorsal view; b, lateral view. Scale: 1.0 mm.

with long erect setae throughout, nearly straightly narrowed toward obliquely truncate apices, of which inner angles are rounded and outer angles are angulate in about 80 degree; basal callosities on disc relatively large and distinct, oblique depression behind the callosities shallow; surface provided with punctures which are getting sparser and weaker inwardly and apically.

Legs relatively long, with femora moderately clavate.

Abdomen impunctate; last ventrite shallowly emarginate at apex; 8th tergite tongue-shaped, about 1.42 times as long as the basal width, parallel-sided in basal 3/2, deeply bilobed on apex, with each extremity rather narrowly rounded, and sparsely provided with long setae.

Median lobe rather slender, 3/10 the length of abdomen, viewed laterally, thickest just before middle, then moderately convergent to narrowly rounded apex, though apical sixth weakly arcuate and feebly curved ventrad; ventral plate slightly longer than dorsal plate, rapidly convergent toward narrowly rounded apex in dorsal view; median struts about half the whole length of median lobe. Tegmen elongate and feeble, almost same the length of median lobe, widest at basal 7/11; lateral lobes long and narrow, about 3/7 the whole length of tegmen, with each lobe gently narrowed toward narrowly rounded apex, which is provided with a few long and several short setae.

Female: Length (from tip of head to elytral apices) 10.06–11.65 ( $M = 10.73 \pm 0.60$ ,  $n = 5$ ) mm. Width (maximum width of elytra) 2.76–3.24 ( $M = 2.96 \pm 0.17$ ,  $n = 5$ ) mm. Almost same as male in general appearance, but different from it in the following points: Body more or less stout, antennae shorter, about 1.3 times as long as body, exceeding elytral apices at apex of 8th segment; eyes smaller; pronotum shorter, with four circular swellings on disc weaker and indistinct; femora weakly clavate.

The ratio of body parts ( $n = 5$ ): IEL/GL = 1.83–2.20 ( $M = 2.02 \pm 0.15$ ), PL/PB = 1.09–1.19 ( $M = 1.15 \pm 0.04$ ), EW/PB = 1.55–1.67 ( $M = 1.61 \pm 0.05$ ), EL/PL = 3.08–3.76 ( $M = 3.50 \pm 0.28$ ), EL/EW = 2.35–2.56 ( $M = 2.51 \pm 0.09$ ), EL/TL = 0.68–0.70 ( $M = 0.69 \pm 0.01$ ).

*Type specimens examined.* Syntype (SDEI, #200634): ♂, Fuhosho, Formosa, H. SAUTER, 7.VIII. Syntype of *Ostedes nubila* (MNHUB): ♂, Formosa, Hoozan, V. 10, H. SAUTER, S. G.

*Other specimens examined.* 1 ♂, Wulai, Taipei, Taiwan, 5.VIII.1998, N. OHBAYASHI leg.; 1 ♂, 1 ♀, Ganghe, Sanxia District, Taipei, Taiwan, 4.VIII.1998, N. OHBAYASHI leg.; 1 ♂, Nanshanchi, Nantou, Taiwan, 23.VII.1974, N. ITO leg.; 1 ♂, same locality, 13.X.1976, Jun ITO leg.; 2 ♂♂, same locality, 17.VIII.1981, Jun ITO leg.; 1 ♀, same locality, 19.VIII.1981, Jun ITO leg.; 1 ♀, near Hori (400 m), Taichu, Formosa, VI.1943, A. AOKI leg.; 2 ♂♂, 1 ♀, Wushibi, Nanao, Ilan, Taiwan, 5.VII.2009, N. OHBAYASHI leg.; 1 ♂, Shouka, Shihzih, Pingtung, Taiwan, 29.V.2016, J. YAMASAKO leg.; 1 ♀, Mt. Lilingshan, Pingtung, Taiwan, 21–22.VII.2008, N. OHBAYASHI leg.; 1 ♀, Liukuei, Kaohsiung, Taiwan, 5.VI.1976, T. SHIMOMURA leg.

*Distribution.* Taiwan, SE. China (Fujian, Guangdong).

*Host plant.* Unknown.

*Note.* Until now this species has also been recorded from Fujian (GRESSITT, 1951; HUA *et al.*, 1993) and Guangdong (HUA *et al.*, 1993) of China. In addition, GRESSITT (1940) described a subspecies *Ostedes. (Ostedes) inermis dwabina* from Hainan Island. But I was not able to examine any specimens from the mainland China and Hainan Is. for this study.

***Ostedes (Ostedes) niisatoi* HASEGAWA, sp. nov.**

(Figs. 8, 14, 20)

Male: Length (from tip of head to elytral apices) 8.24–10.76 ( $M = 9.29 \pm 0.93$ ,  $n = 9$ ) mm. Width (maximum width of elytra) 2.06–2.76 ( $M = 2.41 \pm 0.25$ ,  $n = 9$ ) mm.

Color dark reddish brown to blackish brown, weakly shiny; head and pronotum blackish brown, except for dark reddish brown basal and apical margins of the latter; antennae reddish brown, darkened in apical halves of 3rd to 11th segments; elytra dark reddish brown, each provided with black bands and macula as follows: A broad transversal band at base, a large oblong semicircular macula behind middle, and a zigzagged narrow band at apical fourth; legs reddish brown to blackish brown, with femora, apical half of tibiae and apical margin of tarsi darkened.

Body clothed with golden pubescence; head densely with golden pubescence throughout; antennae with scape sparsely with golden pubescence, distinctly decorated with white pubescence in each basal margin of 3rd to 11th segments; pronotum and elytra with golden pubescence, studded with many black spots on the former which are formed by lacking of golden pubescence; pubescence on elytral black bands sparse or glabrous.

Head relatively short, very sparsely punctured, provided with rather long obliquely erect setae throughout; frons transverse, about 1.4 times as broad as height; eyes large, IEL/GL = 2.23–2.91 ( $M = 2.48 \pm 0.21$ ,  $n = 9$ ). Antennae about 1.3 times as long as body, exceeding elytral apices at middle of 8th segment; 2nd to 8th segments with obliquely erect setae on undersides and at each apex; scape 0.65–0.78 times as long as 3rd, 3rd/4th = 0.76–0.80 ( $M = 0.79 \pm 0.02$ ,  $n = 9$ ); combined length of 3rd and 4th account for about 27 % the whole length of antennae; relative length of segments as follows: 5.6 : 1.0 : 7.7 : 9.8 : 7.8 : 6.9 : 6.2 : 5.5 : 4.9 : 4.5 : 4.5.

Pronotum stout, slightly longer than the basal width; PL/PB = 1.09–1.23 ( $M = 1.18 \pm 0.04$ ,  $n = 9$ ), strongly constricted at apical and basal sixth; lateral tubercles large, provided with a small spine at each top which is directed obliquely backward; disc sparsely punctured, fully inflated, sometimes ap-

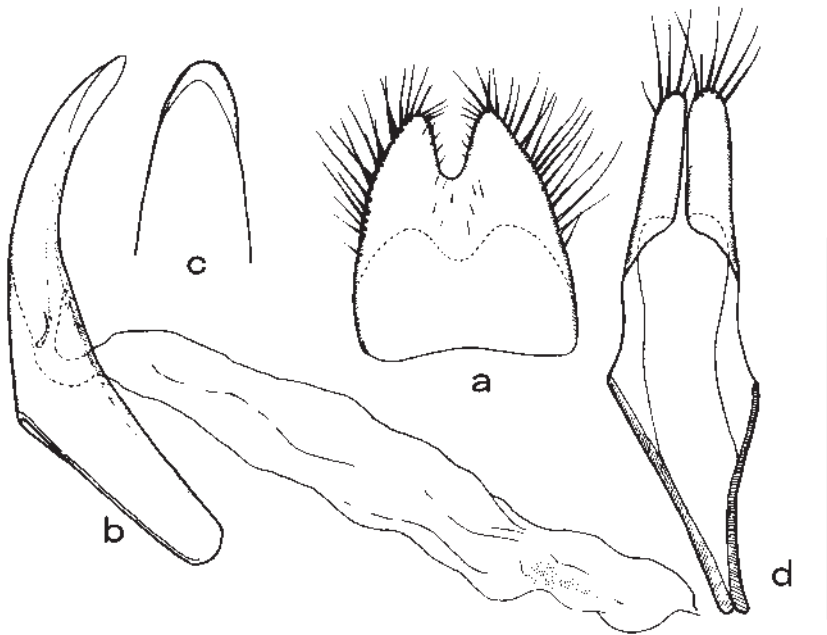


Fig. 20. Eighth abdominal tergite and male genitalia of *Ostedes (Ostedes) niisatoi* HASEGAWA, sp. nov. — a, Eighth abdominal tergite; b, median lobe; c, apex of median lobe; d, tegmen. — a, c, d, Dorsal view; b, lateral view. Scale: 1.0 mm.

pearing a pair of vestigial circular swellings at apico-median area.

Elytra somewhat slender,  $EW/PB = 1.57-1.70$  ( $M = 1.61 \pm 0.05$ ,  $n = 9$ ),  $EL/EW = 2.58-2.78$  ( $M = 2.66 \pm 0.07$ ,  $n = 9$ ),  $EL/PL = 3.37-4.00$  ( $M = 3.63 \pm 0.25$ ,  $n = 9$ ),  $EL/TL = 0.63-0.71$  ( $M = 0.69 \pm 0.02$ ,  $n = 9$ ), densely provided with short obliquely erect setae throughout, gently narrowed in basal 3/4, then slightly roundly attenuate toward obliquely truncate apices, of which inner angles are rounded and outer angles obtusely angulated; basal callosities on disc slightly gibbous; oblique depression behind the callosities shallow and indistinct; surface densely provided with about ten rows of sub-seriated punctures which are getting sparser and weaker inwardly and apically.

Legs somewhat long, with femora moderately clavate.

Abdomen impunctate, with last ventrite slightly emarginate at apex; 8th tergite triangular, about 1.13 times as long as the basal width, deeply bilobed at apex, of which each extremity is narrowly rounded or bluntly pointed, and densely provided with long setae.

Median lobe stout, about 2/7 the length of abdomen, viewed laterally, strongly curved and thickest near basal third, then gently convergent toward rounded apex, though apical half rather strongly arcuate; ventral plate slightly longer than dorsal plate, gently convergent toward rounded apex in dorsal view; median struts about 1/3 the whole length of median lobe. Tegmen relatively stout, as long as median lobe, widest at about basal 2/5; lateral lobes relatively short and stout, about 1/3 the whole length of tegmen, with each lobe gently narrowed toward rounded apex which is provided with several long setae.

Female: Length (from tip of head to elytral apices) 7.71–10.95 ( $M = 9.41 \pm 1.06$ ,  $n = 10$ ) mm.

Width (maximum width of elytra) 2.06–2.76 ( $M = 2.46 \pm 0.24$ ,  $n = 10$ ) mm. Almost same as male in general appearance, but different from it in the following points: Body somewhat thin with shorter pronotum; femora weakly clavate. The ratio of body parts ( $n = 10$ ): IEL/GL = 2.00–2.36 ( $M = 2.14 \pm 0.11$ ), PL/PB = 1.03–1.19 ( $M = 1.10 \pm 0.05$ ), EW/PB = 1.29–1.67 ( $M = 1.58 \pm 0.11$ ), EL/PL = 3.58–4.44 ( $M = 3.92 \pm 0.32$ ), EL/EW = 2.51–3.30 ( $M = 2.72 \pm 0.24$ ), EL/TL = 0.69–0.73 ( $M = 0.71 \pm 0.01$ ).

*Type series.* Holotype: ♂, Dahanshan, Chunri, Pingtung, Taiwan, 4.VI.2002, W.-I CHOU leg. Paratypes: 1 ♂, same locality as the holotype, 2.VI.2013, J. YAMASAKO leg.; 1 ♀, same locality, 5.VI.2016, J. YAMASAKO leg.; 1 ♂, Hsileng, Fushing, Taoyuan, Taiwan, 20.V.1983, M. HASEGAWA leg.; 1 ♂, Lushan, Nantou, Taiwan, 6.VI.1976, H. MAKIHARA leg.; 1 ♂, 1 ♀, same locality, 20.VI.1976, H. MAKIHARA leg.; 2 ♀♀, Nanshanchi, Nantou, Taiwan, 30.IV.1983, H. YAMAZAKI leg.; 1 ♀, same locality, 26.V.1978, T. SENOH leg.; 1 ♂, 1 ♀, Lijia forest road, Beinan, Taitung, Taiwan, 31.V.2016, J. YAMASAKO leg.; 1 ♀, Kuanshan forest road, Baolai, Liukuei, Kaoshiung, Taiwan, 18.VI.2014, N. & T. OHBAYASHI leg.; 5 ♂♂, 10 ♀♀, Kenting park, Pingtung, Taiwan, 13–17.V.1978, T. SENOH leg.

*Distribution.* Taiwan.

*Host plant.* Unknown.

*Note.* This new species is similar to *Ostedes (Ostedes) inermis inermis*, but differs in the following features: Setae on elytra short and obliquely erect; apex of elytron narrow, obliquely truncate and obtuse at outer angle; pronotum shorter, less than 1.23 times as long as the basal width in male; circular swellings on pronotal disc weaker and indistinct, and so on. Also it resembles *O. (O.) densepunctata*, but is different in the following features: Setae on elytra thinner; male 8th tergite triangular and deeply bilobed on apex, of which each extremity is narrowly rounded or bluntly pointed; median lobe of male genitalia strongly curved at basal third, and so on.

*Etymology.* The specific epithet of this new species is dedicated to Dr. Tatsuya NIISATO for commemorating his 60th birthday. He has been my good adviser on the study of entomology, and also an excellent leader of the Coleopterological Society of Japan.

***Ostedes (Ostedes) densepunctata* HAYASHI, 1962**

[Japanese name: Amami-harimune-momobuto-kamikiri]

(Figs. 4, 9, 15, 21)

*Ostedes (Ostedes) inermis* SCHWARZER ssp. *densepunctatus* [sic] HAYASHI, 1962: 39, pl. 7, fig. 8 (type locality: Ikari, Is. Amami-Ōshima, Japan).

*Ostedes (Ostedes) inermis densepunctata*: BREUNING, 1977: 120; HASEGAWA, 2007: 637, pl. 70, fig. 11.

*Redescription.* Male: Length (from tip of head to elytral apices) 7.12–10.41 ( $M = 8.80 \pm 1.17$ ,  $n = 5$ ) mm. Width (maximum width of elytra) 2.18–2.88 ( $M = 2.48 \pm 0.26$ ,  $n = 5$ ) mm.

Color dark reddish brown to blackish brown, weakly shiny; head and pronotum blackish brown; antennae reddish brown, darkened in apical halves of 3rd to 11th segments; elytra dark reddish brown, each provided with indistinct blackish bands and macula as follows: A broad transversal band at base, a large semicircular macula just behind middle, and a zigzagged narrow band at apical fourth; legs dark reddish brown, black in apical half of tibia and apical margins of 1st to 3rd tarsal segments.

Body clothed with golden and whitish pubescence; head and pronotum densely with golden and whitish pubescence intermixed, studded with black spots on the latter which are formed by lacking pubescence; antennae with scape sparsely with golden pubescence, decorated with white pubescence in each basal half of 3rd to 11th segments; elytra densely with whitish pubescence except black bands which are sparse or glabrous.

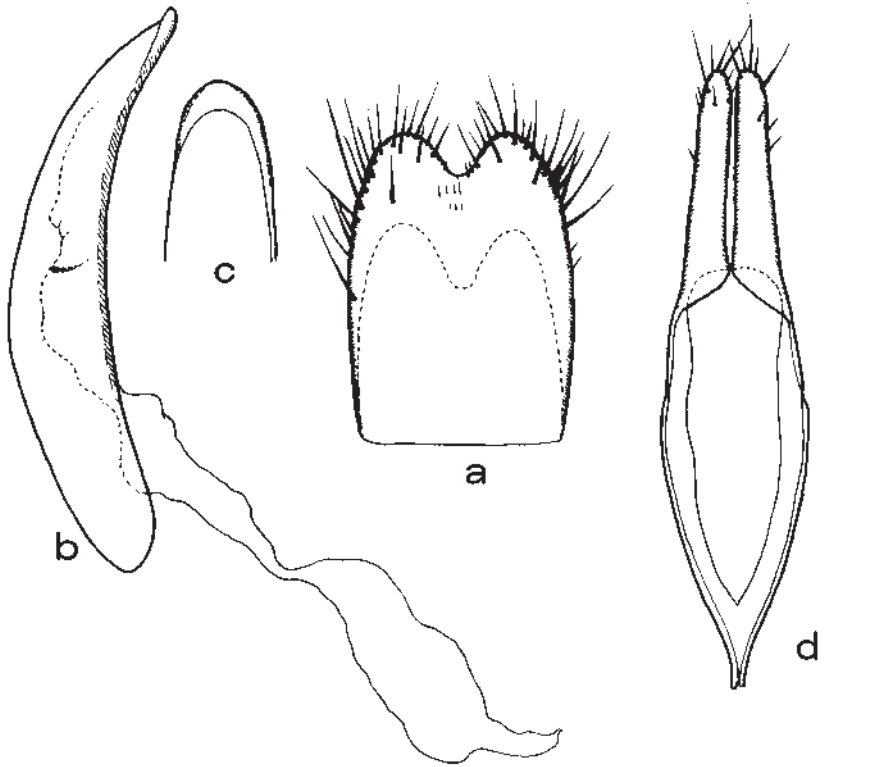


Fig. 21. Eighth abdominal tergite and male genitalia of *Ostedes (Ostedes) densepunctata* HAYASHI. — a, Eighth abdominal tergite; b, median lobe; c, apex of median lobe; d, tegmen. — a, c, d, Dorsal view; b, lateral view. Scale: 1.0 mm.

Head relatively short, very sparsely punctured, provided with rather short obliquely erect setae throughout; frons transverse, about 1.4 times as broad as height; eyes large, IEL/GL = 1.85–2.65 ( $M = 2.21 \pm 0.34$ ,  $n = 5$ ). Antennae about 1.4 times as long as body; exceeding elytral apices at apex of 7th segment or base of 8th segment; 2nd to 9th segments provided with obliquely erect setae on undersides and at each apex; scape 0.79–0.86 times as long as 3rd, 3rd/4th = 0.77–0.80 ( $M = 0.79 \pm 0.02$ ,  $n = 5$ ); combined length of 3rd and 4th account for about 26 % the whole length of antennae; relative lengths of segments as follows: 5.5 : 1.0 : 6.6 : 8.4 : 6.9 : 6.0 : 5.4 : 4.8 : 4.4 : 4.1 : 4.0.

Pronotum stout and transverse; PL/PB = 1.04–1.15 ( $M = 1.10 \pm 0.04$ ,  $n = 5$ ), rather weakly constricted at apical and basal fifth; lateral tubercles large, provided with a stout spine at each top which is directed obliquely backward; disc nearly even, with a pair of vestigial circular swellings at apico-median area; surface sparsely punctured.

Elytra short and stout, EW/PB = 1.58–1.65 ( $M = 1.61 \pm 0.03$ ,  $n = 5$ ), EL/EW = 2.35–2.56 ( $M = 2.47 \pm 0.09$ ,  $n = 5$ ), EL/PL = 3.43–3.73 ( $M = 3.62 \pm 0.11$ ,  $n = 5$ ), EL/TL = 0.68–0.72 ( $M = 0.70 \pm 0.01$ ,  $n = 5$ ), densely provided with short and stout obliquely erect setae throughout; sides gently narrowed in basal 3/4, and then slightly roundly attenuate toward oblique truncate apices, of which inner angles are rounded and outer angles are almost rectangular; disc with basal callosities weakly gibbous,

oblique depression behind the callosities shallow and indistinct; surface rather densely with punctures which are getting sparser and weaker inwardly and apically.

Legs robust, with femora strongly clavate.

Abdomen impunctate; last ventrite widely rounded at apex; 8th tergite tongue-shaped, about 1.55 times as long as the basal width, shallowly bilobed at apex, of which each extremity is widely rounded, and densely provided with relatively short setae.

Median lobe 2/7 to 1/3 the length of abdomen, viewed laterally, weakly arcuate throughout, thickest just before middle, then gently convergent toward rounded apex; ventral plate slightly longer than dorsal plate, gently convergent toward widely rounded apex in dorsal view; median struts about half the whole length of median lobe. Tegmen slightly longer than median lobe, widest just before middle; lateral lobes long and narrow, about 1/3 the whole length of tegmen, with each lobe gently narrowed toward narrowly rounded apex which is provided with several rather short and stout setae.

Female: Length (from tip of head to elytral apices) 7.29–10.82 (M = 8.96±1.52, n = 5) mm. Width (maximum width of elytra) 2.06–3.18 (M = 2.61 ±0.50, n = 5) mm. Almost same as male in general appearance, but different from it in the following points: Body more or less thinner, antennae shorter, about 1.2 to 1.3 times as long as body, exceeding elytral apices at base of 9th segment; pronotum as long as the basal width; elytra subparallel-sized; femora weakly clavate; abdomen with last ventrite truncate.

The ratio of body parts (n = 5): IEL/GL = 1.61–2.17 (M = 1.86±0.20), PL/PB = 1.00–1.05 (M = 1.01±0.02), EW/PB = 1.50–1.75 (M = 1.62±0.09), EL/PL = 3.75–4.07 (M = 3.90±0.12), EL/EW = 2.33–2.54 (M = 2.44±0.08), EL/TL = 0.69–0.72 (M = 0.71±0.01).

*Type specimen examined.* Holotype (TS): ♂, Ikari, Amami-Ōshima Is., Ryukyus, Japan, 3.VII.1961, T. SHIBATA leg.

*Other specimens examined.* 7 ♂♂, 5 ♀♀, Akatsuchiyama-rindō, Uken-son, Amami-Ōshima Is., Ryukyus, Japan, 24.VI–1.VII.1995, N. KANIE leg.; 1 ♀, Mt. Yunan-dake, Amami-Ōshima Is., Ryukyus, Japan, 30.VII.1985, M. HAYAKAWA leg.; 2 ♂♂, Chuou-ronō, Amami-Ōshima Is., Ryukyus, Japan, 3–4.VII.1989, S. ITŌ leg.; 1 ♂, same locality, 3.VII.1977, N. KANIE leg.; 1 ♂, 2 ♀♀, same locality, 24.VI.1979, K. KAWADA leg.; 2 ♂♂, 1 ♀, Hatsuno, Amami-Ōshima Is., Ryukyus, Japan, 5.VII.1975, N. KANIE leg.; 1 ♂, 2 ♀♀, same locality, 8.VII.1975, N. KANIE leg.; 5 ♂♂, 7 ♀♀, same locality, 10–11.VII.1962, N. OHBAYASHI leg.; 3 ♂♂, 2 ♀♀, same locality, 28–29.VII.1963, N. OHBAYASHI leg.

*Distribution.* Amami-Ōshima Is., Tokunoshima Is., Ryukyus, Japan.

*Host plant.* According to TAKEDA (2007), *Castanopsis* spp. [Fagaceae] was known as the host plant.

*Note.* This species was originally described as a subspecies of *Ostedes* (*Ostedes*) *inermis* SCHWARZER, 1925. The population of Amami-Ōshima Islands is, however, separable from *O. (O.) inermis* by having distinctly short and stout setae on elytra; male 8th tergite more shallowly emarginated at apex, of which extremities are widely rounded; median lobe of male genitalia stout, weakly arcuate in profile; apex of ventral plate widely rounded; tegmen wider, with setae on apices of lateral lobes shorter. In view of these morphological differences, the Amami-Ōshima population should be regarded as an independent species.

***Ostedes* (*Ostedes*) *sapporensis* (MATSUSHITA, 1933), comb. nov.**

[Japanese name: Hounoki-togeba-kamikiri]

(Figs. 5, 10, 16, 22)

*Rhopaloscelis sapporensis* MATSUSHITA, 1933: 375 (type locality: Sapporo, Hokkaido, Japan) [Apodasyini].

*Eryssamena saperdina* var. *sapporensis*: MATSUSHITA, 1943: 5.

*Eryssamena sapporensis*: HAYASHI, 1969: 66.

*Eryssamena* (s. str.) *sapporensis*: BREUNING, 1977: 141.

*Rondibilis (Rondibilis) sapporensis*: KUSAMA & TAKAKUWA, 1984: 490, pl. 84, fig. 575.

*Rondibilis sapporensis*: HASEGAWA, 2007: 637, pl. 70, fig. 14.

*Eryssamena acta* (non BATES, 1884): HAYASHI, 1963: 134.

*Ostedes acuta* (non BATES, 1884): OHBAYASHI, 1963 a: 12; OHBAYASHI, 1963 b: 313, pl. 157, fig. 7.

*Redescription.* Male: Length (from tip of head to elytral apices) 8.00–9.41 ( $M = 8.60 \pm 0.61$ ,  $n = 5$ ) mm. Width (maximum width of elytra) 2.12–2.47 ( $M = 2.28 \pm 0.16$ ,  $n = 5$ ) mm.

Color black to reddish brown, rather hardly shiny; head and pronotum black, except for dark reddish brown basal and apical margins of the latter; antennae reddish brown, darkened in scape, each apical half of 3rd to 8th segments and 9th to 11th segments; elytra reddish brown, usually each provided with a transversally oblong black macula behind middle, and sometimes with an indistinct zig-zagged narrow black macula at apical fifth; legs reddish brown, darkened in femora, apical half of tibia and apical margins of 1st to 3rd tarsal segments.

Body densely clothed with grayish pubescence, studded with many black spots on pronotum which are formed by lacking pubescence; antennae sparsely decorated with white pubescence in each basal half of 3rd to 5th segments, and each basal margin of 6th to 10th segments; elytra densely with grayish pubescence except black maculae which are sparse or glabrous.

Head relatively large, very sparsely punctured, provided with long erect setae on vertex and apical part of frons; frons transverse, about 1.5 times as broad as height; eyes large, IEL/GL = 2.13–2.60 ( $M = 2.35 \pm 0.21$ ,  $n = 5$ ). Antennae about 1.4 times as long as body, exceeding elytral apices at base or middle of 8th segment; 2nd to 8th segments provided with short obliquely erect setae on undersides; scape 0.63–0.68 times as long as 3rd, 3rd/4th = 0.83–0.85 ( $M = 0.84 \pm 0.01$ ,  $n = 5$ ); combined length of 3rd and 4th account for about 27 % the whole length of antennae; relative length of segments as follows: 4.7 : 1.0 : 7.4 : 8.8 : 7.1 : 6.3 : 5.6 : 5.2 : 4.7 : 4.5 : 4.2.

Pronotum nearly cylindrical, moderately constricted at basal fifth; PL/PB = 1.13–1.25 ( $M = 1.19 \pm 0.05$ ,  $n = 5$ ); lateral tubercles rather small, provided with a sharp spine at each top which is directed laterally; disc weakly convex, slightly depressed at apico-median area; surface very sparsely punctured.

Elytra slender, EW/PB = 1.62–1.71 ( $M = 1.67 \pm 0.05$ ,  $n = 5$ ), EL/EW = 2.61–2.69 ( $M = 2.66 \pm 0.04$ ,  $n = 5$ ), EL/PL = 3.47–4.04 ( $M = 3.75 \pm 0.025$ ,  $n = 5$ ), EL/TL = 0.69–0.71 ( $M = 0.70 \pm 0.01$ ,  $n = 5$ ), moderately provided with short and stout obliquely erect setae throughout, parallel-sided or slightly narrowed in basal 4/5, thence roundly attenuate toward oblique truncate apices, of which each angle is rounded; disc almost flat, with basal callosities and oblique depression very feeble and vestigial, rather densely provided with coarse and rather large punctures which are getting sparser and weaker inwardly and apically.

Legs slender, with femora somewhat weakly clavate.

Abdomen impunctate, with last ventrite slightly emarginate at apex; 8th tergite long tongue-shaped, about 1.75 times as long as the basal width, parallel-sided in basal 2/3, deeply bilobed at apex, of which each extremity is rather narrowly rounded, and very densely provided with long setae.

Median lobe 2/7 to 1/4 the length of abdomen, viewed laterally, thickest at middle, depressed just behind middle thence rather strongly arcuately convergent toward rounded apex; ventral plate longer than dorsal plate, gently convergent toward rounded apex in dorsal view; median struts about 2/5 the whole length of median lobe. Tegmen elongate, longer than median lobe, widest at middle of ringed part; ringed part weakly constricted just before middle; lateral lobes long and narrow, about 5/13 the

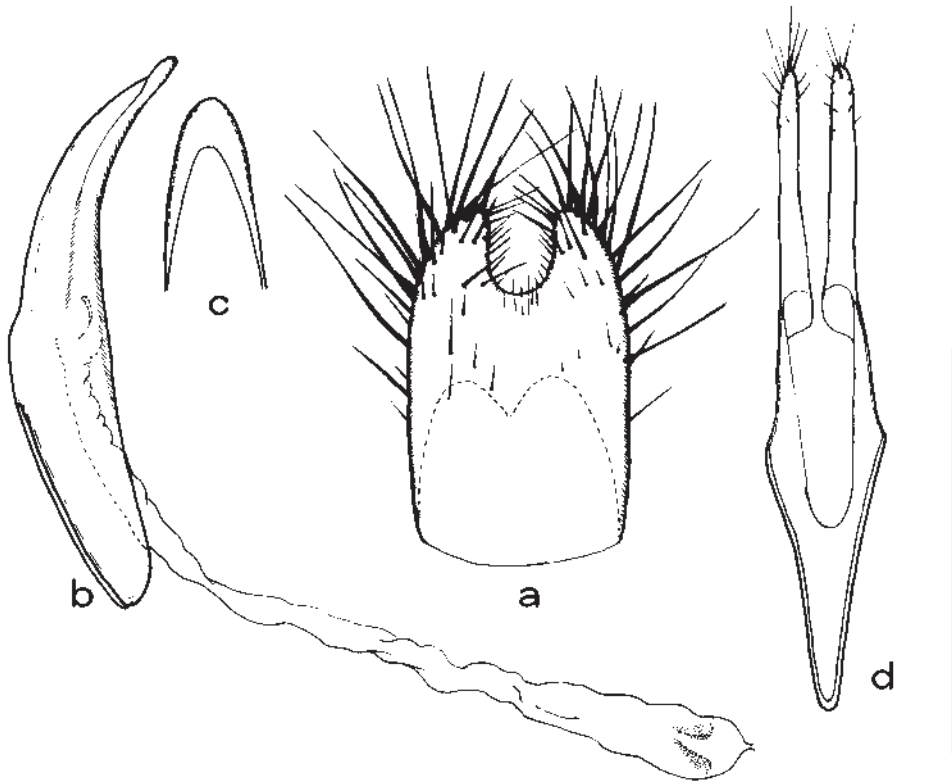


Fig. 22. Eighth abdominal tergite and male genitalia of *Ostedes (Ostedes) sapporensis* (MATSUSHITA), comb. nov. — a, Eighth abdominal tergite; b, median lobe; c, apex of median lobe; d, tegmen. — a, c, d, Dorsal view; b, lateral view. Scale: 1.0 mm.

whole length of tegmen, each lobe gently narrowed toward narrowly rounded apex which is provided with several long and many short setae.

Female: Length (from tip of head to elytral apices) 7.82–9.71 ( $M = 8.55 \pm 0.71$ ) mm. Width (maximum width of elytra) 2.06–2.65 ( $M = 2.31 \pm 0.22$ ) mm. Almost same as male in general appearance, but different from it in the following points: Body relatively thinner; antennae shorter, about 1.2 to 1.3 times as long as body, exceeding elytral apices at base of 9th segment; pronotum as long as the basal width; elytra subparallel-sized; abdomen with last ventrite truncate at apex with triangular depression.

The ratio of body parts ( $n = 5$ ): IEL/GL = 2.00–2.27 ( $M = 2.16 \pm 0.12$ ), PL/PB = 1.00–1.05 ( $M = 1.02 \pm 0.02$ ), EW/PB = 1.59–1.68 ( $M = 1.65 \pm 0.04$ ), EL/PL = 4.12–4.64 ( $M = 4.33 \pm 0.22$ ), EL/EW = 2.58–2.76 ( $M = 2.68 \pm 0.08$ ), EL/TL = 0.71–0.73 ( $M = 0.72 \pm 0.01$ ).

*Type specimen examined.* Holotype (HUM): ♀, Sapporo, 3.IX.1923.

*Other specimens examined.* 2 ♂♂, Lake Shikotsu, 24.VII.1961, M. OBIKA leg.; 2 ♂♂, 5 ♀♀, Horonuka, Rumoi-City, Hokkaido, 27–28.VII.1981, T. NAKAMURA leg.; 1 ♂, 1 ♀, same locality, 1.VIII.1981, T. NAKAMURA leg.; 1 ♂, 1 ♀, Mt. Hayachine, Iwate Pref., 2–5.VII.1982, H. MAKIHARA leg.; 3 ♂♂, 1 ♀, near Hiraiwa, Otari-mura, Nagano Pref., 3.VII.1984 (emerg.), M. HASEGAWA leg.; 1 ♂,



1 ♀, Kizaki Lake, Ômachi-City, Nagano Pref., 16.VI.1973 (emerg.), S. INOKAWA leg.; 1 ♂, Odagi, Inabu, Toyota-City, 12.VII.2009, N. KANIE leg.; 1 ♀, Komagahara, Shitara-Cho, Aichi Pref., 1.VII.1983 (emerg.), M. HASEGAWA leg.; 5 ♂♂, 1 ♀, near Obora dam, Hagiwara-Cho, Gifu, 6.VII.2003, K. HOSOKAWA leg.; 1 ♀, Amagodani, Gifu Pref., 3.VII.1947, K. OHBAYASHI leg.; 6 ♂♂, 11 ♀♀, Ômi, Ôhara, Sakyo-ku, Kyoto Pref., 16.VIII.1984, M. HASEGAWA leg.; 1 ♂, Oonomata, Tokushima Pref., 30–31.VII.1994, M. KAWANABE leg.; 1 ♀, Oonomata-rindo, Odamiyama, Ehime Pref., 30–31.VII.1994, N. OHBAYASHI leg.; 1 ex., Mt. Hiko, Fukuoka Pref., 17.VII.1971, H. MAKIHARA leg.; 1 ex., Mt. Fukuchi, Fukuoka Pref., 2.VII.1950, Y. KATSURADA leg.

*Distribution.* Japan (Hokkaido, Honshu, Shikoku, Kyushu, Sado Is., Oki Is.).

*Host plant.* *Magnolia obovata*, *M. kobus* [Magnoliaceae] (TAKEDA, 2007; KOJIMA & NAKAMURA, 2011); *Abies firma* [Pinaceae], *Juglans mandshurica* var. *sachalinensis* [Juglandaceae], *Celastrus orbiculatus* [Celastraceae] (KOJIMA & NAKAMURA, 2011).

*Note.* This species was first described under the genus *Rhopaloscelis* (MATSUSHITA, 1933), then transferred to the genus *Eryssamena* (MATSUSHITA, 1943). KUSAMA and TAKAKUWA (1984) downgraded the genus *Eryssamena* as a subgenus of *Rondibilis*, and included this species in *Rondibilis* (s. str.). But it should be placed in *Ostedes* judging by the following characters: Pronotum with lateral large spinous tubercles; procoxal cavities opened behind; male 8th tergite very large and long, with apex deeply emarginate; tegmen of male genitalia very slender, with narrow and long lateral lobes.

***Ostedes (Ostedes) yamasakoi* HASEGAWA, sp. nov.**

(Figs. 11, 17, 23)

Male (n = 1): Length (from tip of head to elytral apices) 8.00 mm. Width (maximum width of elytra) 1.94 mm.

Color black to dark reddish brown, rather hardly shiny; head and pronotum black, dark reddish brown in basal and apical margins of the latter; antennae dark reddish brown, reddish brown in each basal half of 3rd to 6th segments and each apical margin of 7th to 9th segments; elytra dark reddish brown, each provided with three incomplete black bands as in Fig. 11a; legs dark reddish brown, with apical half of tibiae and tarsi black, claws reddish brown.

Body densely clothed with grayish pubescence; head densely with grayish pubescence throughout; antennae with scape sparsely with whitish pubescence, decorated with white pubescence in each basal half of 3rd to 5th segments and each basal margin of 6th to 9th segments; pronotum rather sparsely with grayish pubescence, provided with two large indistinct black maculae at middle of disc and studded with several glabrous spots; elytra densely with grayish pubescence except black maculae which are sparse or glabrous.

Head relativity large, very sparsely punctured, densely provided with short obliquely erect hairs throughout and with long erect setae on vertex and apical area of frons; frons transverse, about 1.8 times as broad as height; eyes large, IEL/GL = 2.50. Antennae about 1.4 times as long as body, exceeding elytral apices at middle of 8th segment, provided with obliquely erect setae on undersides of 2nd to 9th segments and each apex of 2nd to 10th segments; scape about 0.78 times as long as 3rd, 3rd/4th = 0.85; combined length of 3rd and 4th account for about 26 % the whole length of antennae; relative length of segments as follows: 6.0 : 1.0 : 7.7 : 9.0 : 7.3 : 6.7 : 6.3 : 6.0 : 5.0 : 4.7 : 4.7.

Pronotum nearly cylindrical, about 1.19 times as long as the basal width, moderately constricted at apical and basal fifth; lateral tubercles small, provided with a vestigial spine at each top which is directed laterally; disc nearly even with a slight depression at apico-median area.

Elytra slender, EW/PB = 1.57, EL/EW = 2.85, EL/PL = 3.76, EL/TL = 0.69, densely provided

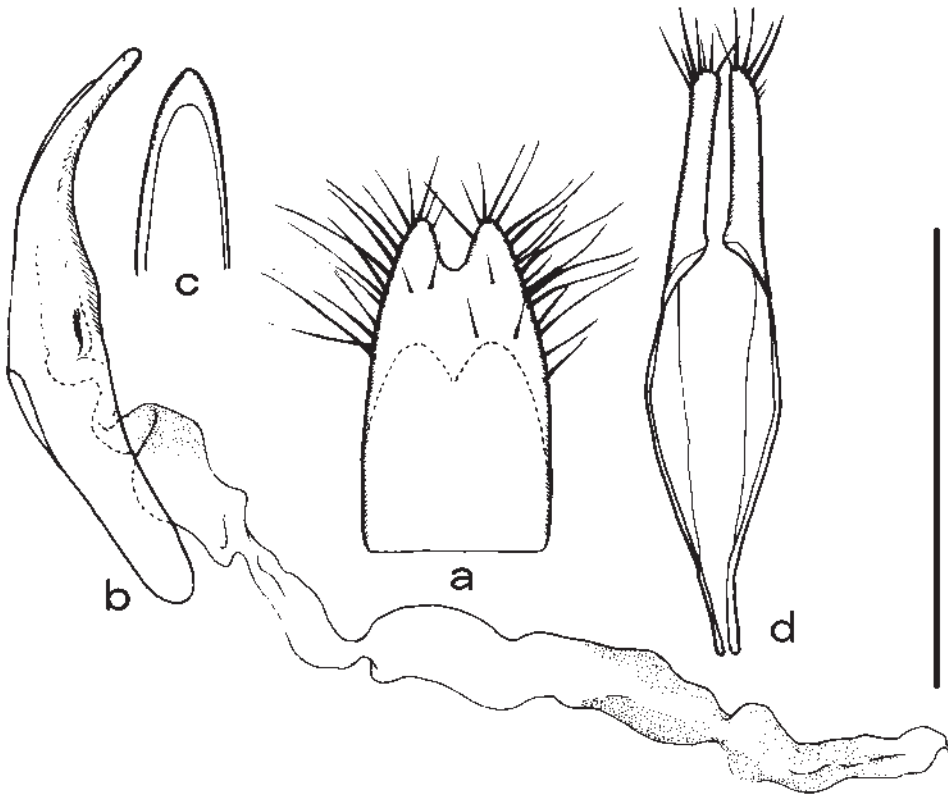


Fig. 23. Eighth abdominal tergite and male genitalia of *Ostedes (Ostedes) yamasakoi* HASEGAWA, sp. nov. — a, Eighth abdominal tergite; b, median lobe; c, apex of median lobe; d, tegmen. — a, c, d, Dorsal view; b, lateral view. Scale: 1.0 mm.

with short obliquely erect setae throughout, almost parallel-sided in basal 3/4, thence slightly roundly attenuate toward widely rounded apices; basal callosities and oblique depression of disc very feeble and vestigial; each elytron densely provided with about ten rows of subseriated punctures which are getting sparser and weaker toward apically.

Legs slender, with femora weakly clavate.

Abdomen impunctate, with last ventrite shallowly emarginate at apex; 8th tergite long tongue-shaped, about 1.75 times as long as the basal width, almost parallel-sided in basal half thence attenuate toward deeply bilobed apex, of which each extremity is narrowly rounded, and densely provided with long setae.

Median lobe about 1/3 the length of abdomen, viewed laterally, thickest at middle, thence strongly arcuately convergent toward rounded apex; ventral plate longer than dorsal plate, gently convergent toward narrowly rounded apex in dorsal view; median struts about 5/11 the whole length of median lobe. Tegmen slender, slightly longer than median lobe, widest just before middle; lateral lobes long, about 1/3 the whole length of tegmen; each lobe subparallel sided in basal 6/7, thence narrowed toward narrowly rounded apex which is provided with several long setae.

Female (n = 2): Length (from tip of head to elytral apices) 9.06–9.12 (M = 9.09±0.04) mm.

Width (maximum width of elytra) 2.41–2.47 ( $M = 2.44 \pm 0.04$ ) mm. Almost same as male in general appearance, but different from it in the following points: Body more or less stout; pronotum wider; elytra stouter. The ratio of body parts ( $n = 2$ ): IEL/GL = 2.00–2.31 ( $M = 2.15 \pm 0.22$ ), PL/PB = 1.04–1.08 ( $M = 1.06 \pm 0.03$ ), EW/PB = 1.62–1.64 ( $M = 1.63 \pm 0.02$ ), EL/PL = 3.89–4.23 ( $M = 4.06 \pm 0.24$ ), EL/EW = 2.60–2.68 ( $M = 2.64 \pm 0.06$ ), EL/TL = 0.71 ( $M = 0.71 \pm 0$ ).

*Type series.* Holotype: ♂, Kuanshan forest road, Baolai, Liukuei, Kaoshiung, Taiwan, 700–800 m alt., 23°5′N 120°43′E, 18.VI.2014, J. YAMASAKO leg. Paratypes: 1 ♀, Liukuei, Kaoshiung, Taiwan, 28.IV.1978, Y. KOMIYA leg.; 1 ♀, same locality, 5.V.2000, S. LIN leg.

*Distribution.* Taiwan.

*Host plant.* Unknown.

*Note.* This new species is similar to *Ostedes (Ostedes) subrufipennis* BREUNING, 1963 described from Laos, but differs from the latter based on a comparison with the photo of its holotype (BPBM) in the following features: Head and pronotum black (light reddish brown in *O. (O.) subrufipennis*); elytra densely provided with short and obliquely erect setae throughout (sparsely provided with stouter setae in *O. (O.) subrufipennis*).

*Etymology.* The specific epithet of this new species is dedicated to Dr. Junsuke YAMASAKO who is one of the most active longicornists in Japan.

#### Key to the Japanese and Taiwanese Species of the Genus *Ostedes*

1. Body robust; pronotal disc usually with two large circular swellings ..... 2
- Body slender; pronotal disc nearly even ..... 5
2. Elytra dark reddish brown to blackish brown, each provided with two or three indistinct broad bands of whitish pubescence ..... *O. (O.) subfasciata* MATSUSHITA
- Elytra reddish brown to dark reddish brown, each provided with three black bands or transverse maculae ..... 3
3. Elytra rather sparsely provided with long erect setae; pronotum distinctly longer than the basal width in male (PL/PB = 1.29–1.36) ..... *O. (O.) inermis inermis* SCHWARZER
- Elytra densely provided with short obliquely erect setae throughout; pronotum slightly longer than the basal width in male (PL/PB = 1.04–1.23) ..... 4
4. Male 8th tergite triangular and deeply bilobed at apex, of which each extremity is narrowly rounded or bluntly pointed ..... *O. (O.) niisatoi* HASEGAWA, sp. nov.
- Male 8th tergite tongue-shaped and shallowly bilobed at apex, of which each extremity is widely rounded ..... *O. (O.) densepunctata* HAYASHI
5. Each elytron usually provided with a transversal oblong black macula just behind middle, and sometimes with indistinct zigzagged narrow black band at apical fifth ..... *O. (O.) sapporensis* (MATSUSHITA), comb. nov.
- Each elytron provided with three incomplete black bands ..... *O. (O.) yamasakoi* HASEGAWA, sp. nov.

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## A Revision of the Saperdine Genus *Dystomorphus* PIC (Coleoptera, Cerambycidae, Lamiinae)

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**Abstract** Chinese species of the genus *Dystomorphus* PIC are revised. Two new species, *D. diversus* n. sp. from Yunnan and Henan, and *D. niisatoi* n. sp. from Yunnan are described. A key to the species, habitus and terminalia of all the known seven species are presented.

### Introduction

*Dystomorphus* PIC, 1926 was established for *D. notatus* PIC, 1926. The second species, *D. esakii* was described from Taiwan (HAYASHI, 1974). The third species *D. sichuanensis* YU, 1994 is quite different from the previous species in color of integument and so is the fourth species *D. nigrosignatus* PU, WANG et LI, 1998. The fifth species *D. piceae* HOLZSCHUH, 2003 was often misidentified as *D. notatus* (CHIANG *et al.*, 1985; HUA, 2002). In this study, two new species belonging to the two species groups of different color of integument, respectively, are described. Totally seven endemic Chinese species of this genus are recognized.

### Materials and Methods

Photographs were taken with several different camera systems. Habitus were usually taken with a Sony T30, or Canon EOS 7D + Canon Macro 100 mm, and some terminalia were taken with Sony T30 + Leica S8AP0. Most of the photographs of terminalia and characteristic photographs were taken with a large depth of field 3D Digital Microscope (Keyence VHX-1000C).

Specimens studied are deposited in the following institutions, museums or private collections:

BITS: Bin Insect Taxonomy Studio, Beijing, China (will eventually be deposited in China Agricultural University, Beijing, China (CAU))

CBWX: Collection of Wen-Xuan BI, Shanghai, China

CCCC: Collection of Chang-Chin CHEN, Tianjin, China

CCH: Collection of Carolus HOLZSCHUH, Villach, Austria

CEK: Collection of Emil KUČERA, Soběslav, Czech Republic

CJY: Collection of Junsuke YAMASAKO, Kawasaki, Japan

CPS: Collection of Carlo PESARINI & Andrea SABBADINI, Milano, Italy

IZAS: Institute of Zoology, Chinese Academy of Sciences, Beijing, China

KUEC: Entomological Laboratory, Faculty of Agriculture, Kyushu University, Fukuoka, Japan

MNHN: Muséum National d'Histoire Naturelle, Paris, France

MSME: Muh Sheng Museum of Entomology, Taiwan, China

NHMB: Naturhistorisches Museum, Basel, Switzerland

SWU: Collection of Insects, Southwest University, Chongqing (*a.k.a.* South-west Agricultural University), Chongqing, China

## Taxonomy

### Genus *Dystomorphus* PIC, 1926

*Dystomorphus* PIC, 1926: 11. Type species: *Dystomorphus notatus* PIC, 1926, by monotypy.

*Dystomorphus*: GRESSITT, 1951: 586; BREUNING, 1954: 460; BREUNING, 1966: 740; CHIANG *et al.*, 1985: 170; NAKAMURA *et al.*, 1992: 107; LÖBL & SMETANA, 2010: 323; NAKAMURA *et al.*, 2014: 176; LIN, 2015: 272.

**Redefinition.** Body small sized (below 16 mm), body length more than three times as long as the humeral width of elytra. Head narrower than prothorax; frons usually longer than broad (male) or as broad as long (female); eyes deeply concave, with inferior lobe narrower than the half width of frons. Antennae longer (male) or slightly shorter (female) than body length; scape slightly expanded, without ridge; third antennomere always the longest, fourth longer than scape. Pronotum broader than long, provided with an obvious sharp or blunt tubercle on each side. Elytra gradually narrowed apically, with one or two lateral carinae, of which the internal one from base to near apex, and the external one (if present) quite weak and never reaching the apex; apex rounded, slightly truncated or emarginated. Procoxal cavity closed posteriorly. Metepisternum more than twice as wide anteriorly as posteriorly. Middle tibia with obvious oblique groove; hind femur reaching fourth ventrite; hind tarsus with first segment shorter than the following two combined. Female claw simple. Male claws basically simple, but anterior claw of mid tarsus with a small umbo at outer side (Fig. 3c, d), except for *D. esakii*.

Male terminalia: Apex of tergite VIII rounded, truncated or slightly emarginated; spiculum gastrale subequal to or longer than the length of ringed part of tegmen; spiculum relictum shorter than or subequal to the half length of spiculum gastrale. Tegmen with lateral lobes slender; ringed part elbowed in the widest point, converging apically; basal piece bifurcated distally. Median lobe slightly curved, subequal length to tegmen; median foramen strongly elongated; endophallus with four plate-like sclerites in basal 1/3 to 1/2, two banks of creating armature before the plate-like sclerites, and another two strongly sclerotized parts (usually provided with spine-like sclerites, one behind the plate-like sclerites, the other at apical end) and three rod-like sclerites at apical end.

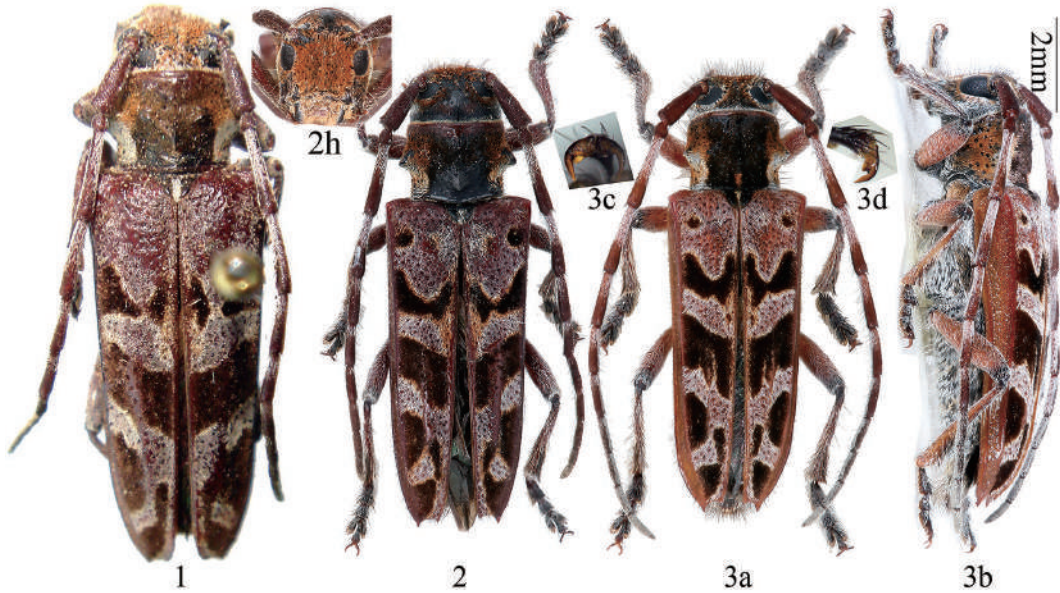
Female terminalia: Spermathecal capsule with stalk slightly shorter to longer than apical lobe; spiculum ventrale much longer than abdomen in ventral view.

**Diagnosis.** Differs from *Glenida* GAHAN by the specialized male claw of mid tarsus, more elongate body (body length more than three times as long as the humeral width of elytra), larger and shaper lateral tubercles of pronotum, and lateral carinae of elytra extend to before apex.

**Distribution.** China.

**Remarks.** Prior to this work, five species of this genus have been recorded from China (TAVAKILIAN & CHEVILLOTTE, 2017). Based on the present study, it increases to seven species, including two new species, all of which are endemic to China.

This genus can be divided into two subgroups: the *notatus* species group with red integument, including four species (*Dystomorphus notatus*, *D. esakii*, *D. piceae* and *D. diversus*); and the *sichuanensis* species group with black integument, including three species (*D. sichuanensis*, *D. nigrosignatus* and *D. niisatoi*).



Figs. 1–3. Habitus of *Dystomorphus notatus* PIC, 1926. — 1, Holotype ♀, from Yunnan; 2, ♀, from Yunnan; 3, ♂, from Yunnan. — a, Dorsal view; b, lateral view; c & d, left claw of male mid tarsus; h, head in frontal view. Scale: 2.0 mm.

### *Dystomorphus notatus* PIC, 1926

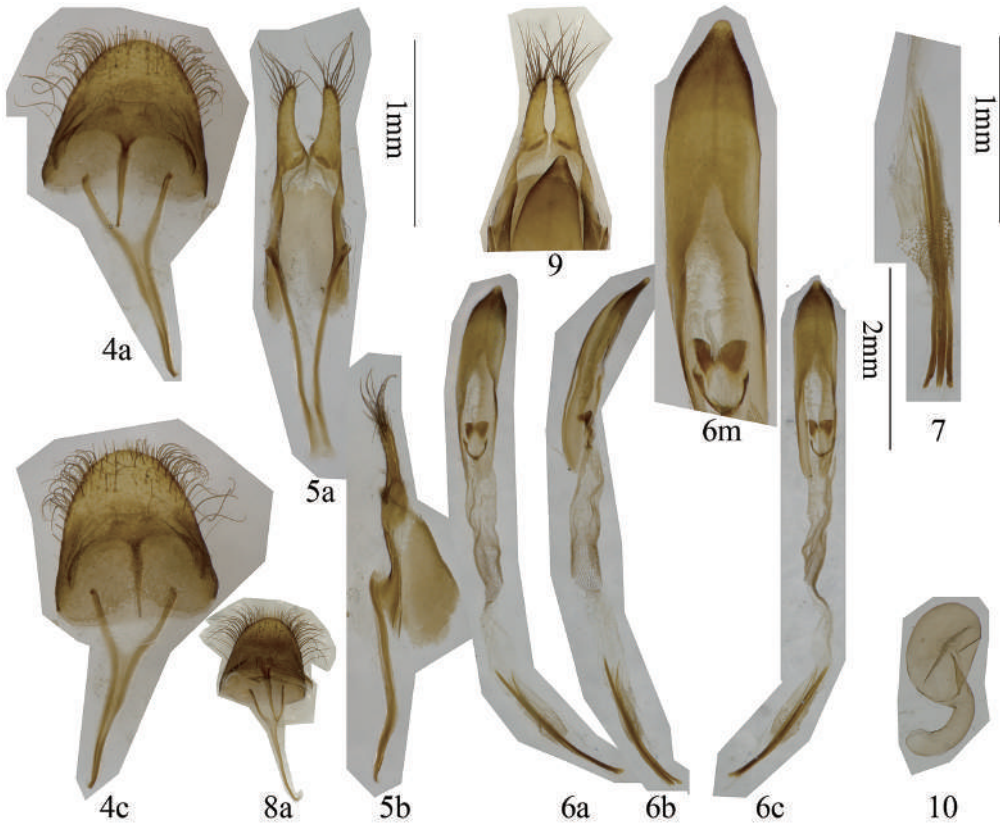
(Figs. 1–10)

*Dystomorphus notatus* PIC, 1926: 12. Type locality: China, Yunnan. Type depository: MNHN.

*Dystomorphus notatus*: GRESSITT, 1951: 586; BREUNING, 1954: 461; BREUNING, 1966: 740; HUA, 2002: 205 [partim]; HUA *et al.*, 2009: 210, 350 [partim]; LÖBL & SMETANA, 2010: 323 [partim].

**Supplementary description.** Body length 9.2–11.2 mm. Frons (Fig. 2h) densely covered with reddish brown pubescence; pronotum covered with reddish brown pubescence on the anterior half of disc and most of sides; scutellum only with grayish white pubescence along middle line; elytron almost always with only one small spot near base (Fig. 3a), sometimes with two small well separated spots (Fig. 2), last black macula partly reaching the apex (apex partly black); apex of femora and part of tarsi black (Figs. 2, 3a, b); underside of body with many small nude punctures, without rounded dark spots on ventrites (Fig. 3b). Elytra distinctly angulate at humeri, emarginated at each apex, with distinct apical teeth at outer angle; disc in apical half provided with quite clear punctures and indistinct erect hairs, the latter of which are shorter and much sparser than those on base.

Male terminalia (Figs. 4–9): Tergite VIII (Fig. 4a, c) nearly as broad as long, with apex rounded, densely with moderate length setae, which are sparser in middle. Spiculum gastrale subequal to the length of ringed part of tegmen; spiculum relictum shorter than the half length of spiculum gastrale. Tegmen (Fig. 5a, b) 2.00 mm in length; lateral lobes slender, with each lobe about 0.40 mm in length and 0.08 mm in width, provided with one finely setose ridge basally (in ventral view, Fig. 9); apex of lobe rounded, with setae which are as long as lateral lobes. Median lobe almost straight (Fig. 6b) and slightly longer than tegmen (21 : 20); median struts (Fig. 6c) about half of the whole length of median lobe; ventral plate gradually narrowed to rounded apex (Fig. 6m); endophallus about twice the length



Figs. 4–10. Genital organs of *Dystomorphus notatus* PIC, 1926. — 4–9, Male terminalia; 10, female spermathecal capsule. — 4, 8, Tergite VIII with sternites VIII & IX; 5, tegmen; 6, median lobe with endophallus; 7, rod-like sclerites; 9, apical part of tegmen and median lobe. — a, Ventral view; b, lateral view; c, dorsal view; m, magnified. (4–7, Yunnan, Baishui; 8–9, Yunnan, Jizushan; 10, Yunnan.) Scale: 6a–c, 2.0 mm; 6m, 8a, not to scale; others, 1.0 mm.

of median lobe, with four pieces of plate-like sclerites in basal 1/3, two bands of creating armature before the plate-like sclerites, and three rod-like sclerites at apical end (Fig. 7), of which two longer ones are about 1.60 mm and much shorter than tegmen in length, short one about 1.40 mm.

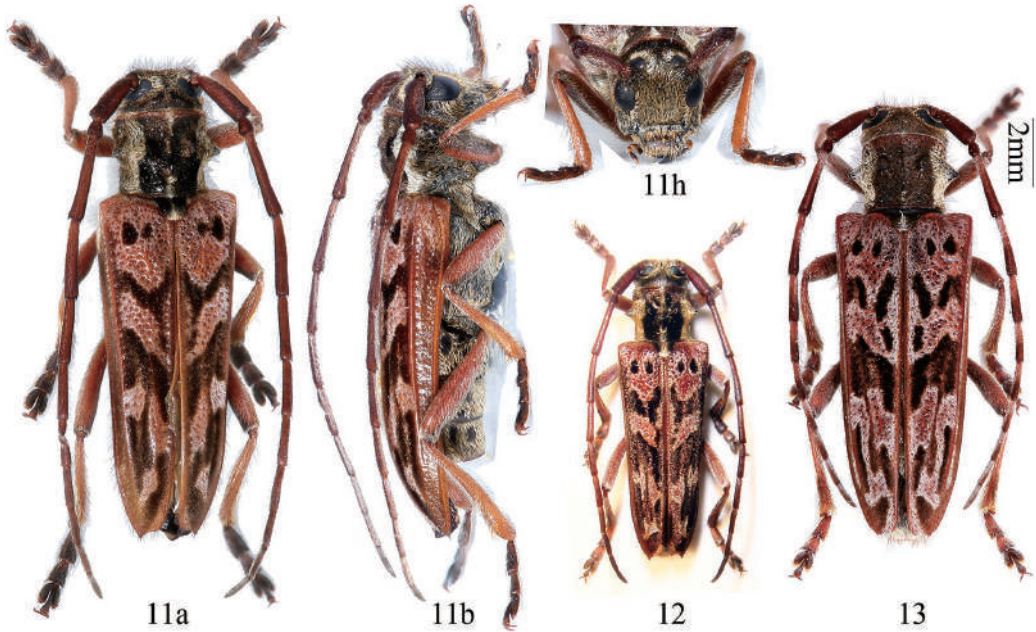
Female terminalia: Spermathecal capsule (Fig. 10) composed of an apical orb and a curved stalk, the latter of which is shorter than the former. Spiculum ventrale much longer than abdomen; in a specimen examined, spiculum ventrale 5.80 mm in length measured from ventral view while in abdomen 4.20 mm in length.

*Remarks.* The male specimens examined are very well identical with the female holotype in the elytral maculae. *Dystomorphus notatus* has so far been recorded based on the misidentification. The record from Shaanxi (CHIANG *et al.*, 1985) should be corrected as *D. piceae*; records from Sichuan (HUA, 2002; HUA *et al.*, 2009; LÖBL & SMETANA, 2010) could be *D. piceae* or *D. diversus*; records from Gansu and Qinghai (HUA, 2002; HUA *et al.*, 2009; LÖBL & SMETANA, 2010) are still doubtful.

The reported host plants of *D. notatus* (HUA, 2002; HUA *et al.*, 2009) could be hosts of *D. piceae*, though possibly they share some same host plants.

The first author collected an infested branch of *Pinus* sp. from Jizushan, Yunnan on 26–31, July,





Figs. 11–13. Habitus of *Dystomorphus piceae* HOLZSCHUH, 2003. — 11, Paratype, ♂, from Yunnan; 12, holotype ♂, from Yunnan; 13, paratype, ♀, from Shaanxi. — a, Dorsal view; b, lateral view; h, head in frontal view. Scale: 2.0 mm. 11h, 12, not to scale.

1993. This branch was kept under room condition, and six males and two females emerged from 27, December, 1993 to 15, January, 1994. Then the emerged adults copulated and laid eggs under the same room condition, and one male and six females emerged from 27, February to 30, March, 1995.

*Host plants.* *Pinus* sp. (Pinaceae), for larva based on the first author's observation and nurture.

*Distribution.* China: Yunnan.

*Type specimen examined.* Holotype: ♀, Yunnan (MNHN, ex Coll. M. Pic).

*Other specimens examined.* Yunnan: 6 ♂♂, 2 ♀♀, Jizushan, Binchuan county, Dali zhou, alt. 2,500–3,200 m, 26–31.VII.1993, emerged during 27.XII.1993 to 15.I.1994, leg. C. HOLZSCHUH (CCH, but 1 ♂ and 1 ♀ in IZAS, IOZ(E) 1904917–18); 1 ♂, 6 ♀♀, second generation of the previous adults, emerged during 27.II–30.III.1995 (CCH); 1 ♂, 1 ♀, Mts. Jizushan, 100°21'E, 15°58'E, 1–3.VI.1993, leg. Vit KUBÁŇ (CCH); 1 ♂, Yulongshan Mts. Baishui Village, 100.146°E, 27.086°N, alt. 2,900–3,500 m, 7–12.VII.1990, leg. D. KRÁL (IZAS, IOZ(E)1905494, ex CCH); 1 ♂, 1 ♀, Baishui, 1.VII.1994, leg. E. KUČERA (CPS).

### *Dystomorphus piceae* HOLZSCHUH, 2003

(Figs. 11–20)

*Dystomorphus piceae* HOLZSCHUH, 2003: 238, fig. 71. Type locality: China, Yunnan. Type depository: CCH.

*Dystomorphus notatus*: CHIANG *et al.*, 1985 (nec PIC, 1926): 170, pl. 13, fig. 205 [misapplied]; HUA, 2002: 205 [partim]; HUA *et al.*, 2009: 210, 350, pl. LXXVI, fig. 865 [misapplied]; LÖBL & SMETANA, 2010: 323 [partim].

*Dystomorphus piceae*: HUA *et al.*, 2009: 454; LÖBL & SMETANA, 2010: 323.

*Supplementary description.* Body length 12.4–15.3 mm. Elytral punctures dense and bigger near

bases, while becoming smaller and almost invisible near apices; black nude points on ventrites hardly visible. Each ventrite provided with four big round dark spots arranged in two rows on each side (in lateral view, Fig. 11 b).

Male terminalia (Figs. 14–19): Tergite VIII with apex truncated (Fig. 14a, c) to slightly emarginated (Fig. 19c), with sparse and short setae, which are much sparser in middle. Spiculum gastrale subequal to the length of ringed part of tegmen. Spiculum relictum shorter than half the length of spiculum gastrale. Tegmen 2.90 mm in length; lateral lobes slender, with each lobe 0.60 mm in length and less than 0.15 mm in width, apex with setae which are slightly shorter than the length of lateral lobes; base of each lateral lobe with one oblique finely haired ridge (in ventral view, Figs. 16a, 19d). Median lobe slightly curved (Fig. 17b), slightly longer than tegmen (31 : 29); median struts about half of the whole length of median lobe; dorsal plate slightly shorter than ventral plate; apex of ventral plate (Figs. 17a, 19d) gradually rounded apically; median foramen elongated, acutely angulate in about 30 degree; endophallus longer than twice the length of median lobe, with four pieces of plate-like sclerites in basal 1/3, two bands of supporting armature before the plate-like sclerites, and three subequal rod-like sclerites at apical end, each rod about 1.9 mm in length, much longer than half length of tegmen.

Female terminalia (Fig. 20c, d): Spermathecal capsule composed of an apical orb and a curved stalk which is shorter than apical orb. Spiculum ventrale longer than abdomen; in a specimen examined, spiculum ventrale 9.00 mm in length measured from ventral view while in abdomen 6.20 mm in length.

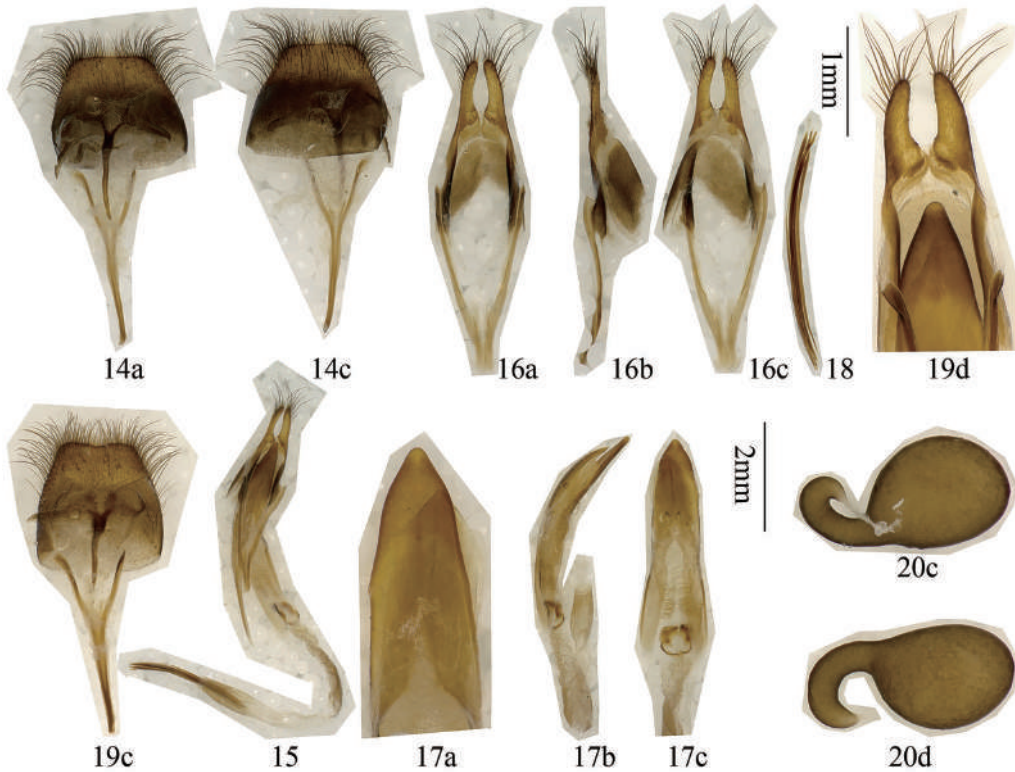
*Remarks.* According to our study, many previous records of *Dystomorphus notatus* PIC (e.g. CHIANG *et al.*, 1985; HUA, 2002; HUA *et al.*, 2009; LÖBL & SMETANA, 2010) were based on misidentifications of *D. piceae* HOLZSCHUH. Therefore, those host plant and distribution records of *D. notatus* would belong to that of *D. piceae*, though possibly they share the same host plants.

*Host plants.* *Picea* sp. (Pinaceae), for adult (HOLZSCHUH, 2003), *Pinus armandii* FRANCHET (Pinaceae), larva or adult unclear (CHIANG *et al.*, 1985), *Larix gmelini* LEDEBOUR ex GORDON (Pinaceae), larva or adult unclear, *Populus davidiana* DODE (Salicaceae), larva or adult unclear (HUA, 2002).

*Distribution.* China: Shaanxi, Henan (new province record), Hubei, Sichuan, Yunnan.

*Type specimens examined.* Holotype: ♂, Baishui Xian, Yunnan, China, 27°N, 100°12'E, 10–17.VI.1998, leg. E. KUČERA (CCH); 24 paratypes from China: Yunnan: 2 ♂♂, 1 ♀, same data as for the holotype (1 male in IZAS, IOZ(E) 1904919); 1 ♂, Dequen (Deqin), 1995.VI.21 (written as 20–24.VI.1995 in HOLZSCHUH, 2003), leg. E. KUČERA (CPS ex CEK); Sichuan: 1 ♂, 1 ♀, Jintiag (Tcho-nin), W. Sichuan, 15–20.VI.2002, leg. E. KUČERA (CCH); 1 ♀, Gongga Shan, VII.1992, leg. R. SAUER; Shaanxi: 9 ♀♀, Xunyangba S + W env., Qinling Mts., S slope, 1,400–2,100 m, 33°28–37'N, 108°23–33'E, 5–9.VI.1995, leg. L. & R. BUSINSKÝ (CCH, NHMB, one female in IZAS, IOZ(E)1905369 ex CCH); 1 ♂, 5 ♀♀, 12 km SW of Xunyangba, Qinling Shan, 1,900–2,250 m, 14–18.VI.2000, leg. L. & R. BUSINSKÝ (CCH); Hubei: 1 ♀, Yanzi Pass, Shennongjia Co., 2,200 m, 31°43'N, 110°28'E, 23–26.VI.1995, L. & R. BUSINSKÝ (CCH); 1 ♀, Dashennongjia mts., 2,500–3,000 m, 31°30'N, 110°30'E, 21–24.VI.2001, J. TURNA (CCH).

*Other specimens examined.* Shaanxi: 1 ♀, Pingheliang, Huoditang, Ningshan, alt. 2,016–2,448 m, 1.VI.2007, leg. Mei-Ying LIN (IZAS); 4 ♀♀, Mianxian, 5.VI.1959, host plant: *Pinus armandii* FRANCHET (Pinaceae), unknown collector (IZAS); 2 ♀♀, same data but 7.V.1959; 1 ♀, same data but 9.V.1958; 2 ♂♂, Hongshilianglinchang, Ningqiang, 28.X.2016, leg. Jin-Yu GUO (BITS, Ceram-323). Sichuan: 1 ♂, one Famuchang (Lumber Camp, the handwritten name unable to identify), 9.VI.1981, host plant: *Larix gmelini* LEDEBOUR ex GORDON (Pinaceae), leg. Fang-Xi XIAO (IZAS). Yunnan: 2 ♀♀, Menggaguo, Gongshan, Nujiang, 2,834 m, 11.VI.2016, leg. Xiao-Dong YANG at night but not light



Figs. 14–20. Genital organs of *Dystomorphus piceae* HOLZSCHUH, 2003. — 14–19, Male terminalia; 20, female spermathecal capsule. — 14, 19c, Tergite VIII with sternites VIII & IX; 15, whole of male terminalia; 16, tegmen; 17, median lobe and endophallus (imcomplete); 18, rod-like sclerites; 19d, apical part of tegmen and median lobe. — a, Ventral view; b, lateral view; c, dorsal view. (14–18, paratype, Yunnan; 19, Shaanxi; 20, Yunnan.) Scale: 15, 17c, 2.0 mm; 17b, 19d, 20, not to scale; others, 1.0 mm.

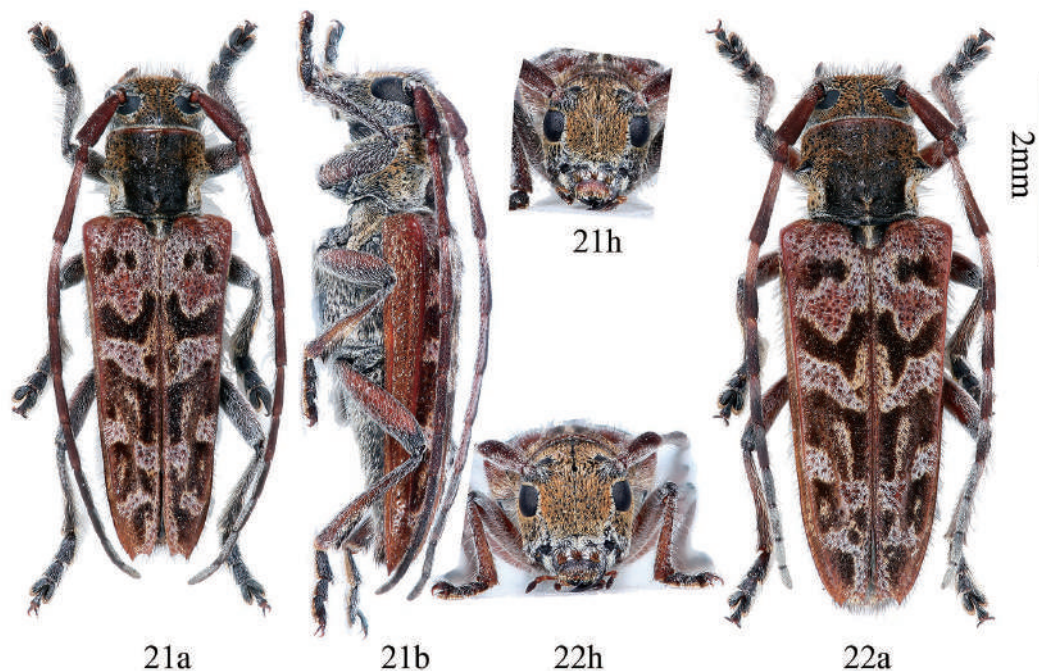
trap (CCCC, C16Y1802-03); 1 ♀, same date but in daytime (IZAS ex CCCC, C16Y1805); 1 ♀, Menggaguo, Gongshan, Nujiang, 2,843 m, 17.VI.2016, leg. Xiao-Dong YANG in daytime (IZAS ex CCCC, C16Y1817). Henan: 1 ♀, Funiushan, Nanzhao, alt. 1,170 m, 28.VI.2016, leg. Xuan GE (BITS).

***Dystomorphus diversus* n. sp.**

(Figs. 21–30)

*Description.* Body 9.4–11.6 mm in length, quite correspondently dark red-brown in color; head, most of antennae, pronotum except for front margin, underside of body except for last ventrite in female, and while apex of last ventrite in male, apex of femora, bases of tibiae and tarsi blackish; inside of femora often vast more darkly; antennomeres with bases of 3rd and 4th or up to 6th brighter than the rest.

Pubescent markings are similar to *Dystomorphus notatus* except for the following features: irregularly transverse five velvet-like bands on elytra a little brighter; first band behind base always consists of two round small spots which are sometimes connected with each other (Fig. 22a); basal half of dark fasciae on elytra rimed by pale yellowish pubescence; underside of body with predominantly



Figs. 21–22. Habitus of *Dystomorphus diversus* n. sp. — 21, Holotype, ♂, from Sichuan; 22, paratype, ♀, from Sichuan. — a, Dorsal view; b, lateral view; h, head in frontal view. Scale: 2.0 mm.

gray pubescence and intermixed with numerous nude black points; apical halves of elytra with long erect hairs numerous and conspicuously.

Head slightly smaller than prothorax; eyes deeply emarginated, with lower lobes less than half the length of frons, subequal to (male) or slightly shorter than (female) genae. Antennae slightly longer than (male) or subequal to (female) body length. Antennomere ratio: 12 : 3 : 17 : 15 : 13 : 12 : 11 : 10 : 9 : 8 : 9 (male); 14 : 4 : 20 : 17 : 12 : 10 : 9 : 8 : 7 : 6 : 7 (female). Pronotum with lateral tubercles conical in shape; disc with three swellings. Elytra with humeral angles clearly duller than *D. notatus*, as like that of *D. piceae*; punctures strong and clear; apices strongly emarginate, with distinct tooth at sutural and outer margin.

Male terminalia (Figs. 23–28): Tergite VIII (Fig. 23a, c) slightly broader than long, rounded without emargination on apex, provided with moderately long and dense setae, the setae being shorter near middle. Spiculum gastrale subequal in length to ringed part of tegmen; spiculum relictum shorter than half the length of spiculum gastrale. Tegmen (Fig. 24a–c) 1.70 mm in length; lateral lobes slender, about 0.40 mm in length and 0.10 mm in width; each lobe rounded at apex, provided with setae which are as long as the whole length of lobe, finely setose ridge on base (in ventral view, Fig. 25). Median lobe slightly curved (Fig. 24b) and slightly longer than tegmen (20 : 17); median struts (Fig. 24c) slightly shorter than half of the whole length of median lobe; apex of ventral plate (Fig. 25) gradually rounded; endophallus about twice the length of median lobe, with four pieces of plate-like sclerites in basal half, two bands of creating armature before the plate-like sclerites, and three rod-like sclerites at apical end (Fig. 27), of which two longer ones about 1.30 mm in length, much shorter than tegmen, and shorter one about 1.2 mm in length.

Female terminalia: Spermathecal capsule (Figs. 29, 30) composed of an apical orb and a curved

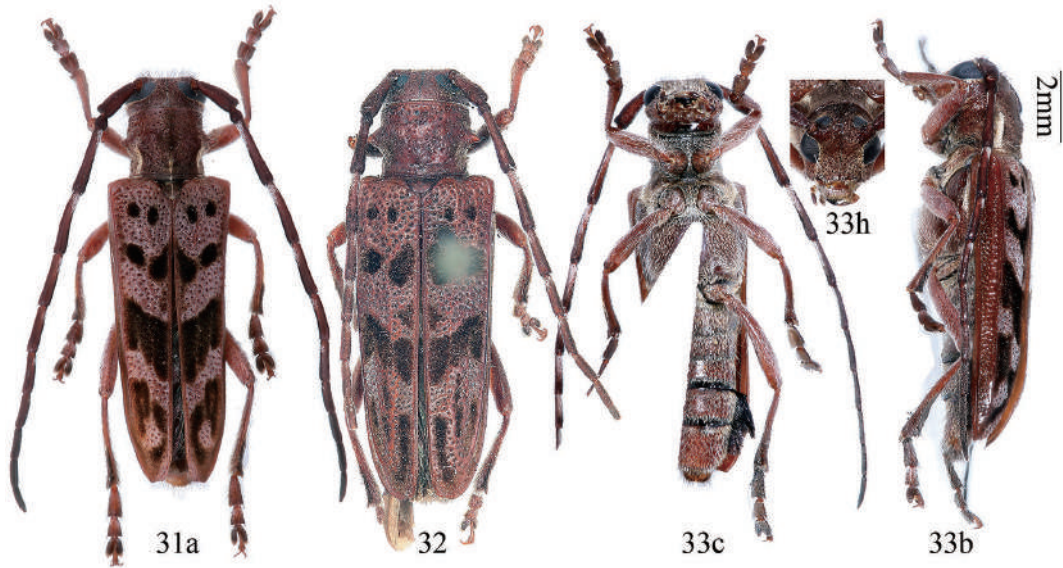


Figs. 23–30. Genital organs of *Dystomorphus diversus* n. sp. — 23–28, Male terminalia; 29, 30, female spermathecal capsule. — 23, Tergite VIII with sternites VIII & IX; 24, whole of male terminalia; 25, part of tegmen and median lobe; 26, median struts and a part of endophallus, showing basal plate-like sclerites and the tiny spine-like sclerites; 27, 28, rod-like sclerites. — a, Ventral view; b, lateral view; c, dorsal view. (23–30, Sichuan.) Scale: 25–30, not to scale; others, 1.0 mm.

stalk, which is shorter than apical orb. Spiculum ventrale much longer than abdomen; in a specimen examined, spiculum ventrale 6.0 mm in length measured from ventral view, while in abdomen 5.0 mm in length.

*Diagnosis.* *Dystomorphus notatus* differs from this new species by clearly recognizable angular shoulders; a little darker transverse bands on elytra, of which basal one consists of only one dark spot instead of two; dark transverse fasciae on basal half of elytra often rimed by rather clear orange pubescence; erect hairs of elytra almost disappeared on apical halves. *Dystomorphus piceae* differs from the new species by the bigger body, bigger lower eyelobes and shorter genae; apex of elytra not so very strongly and densely punctured; dark transverse fasciae on elytra always rimed by only whitish-gray pubescence; underside of body with only few nude points, and however, each side of ventrite with two bigger rounded dark maculae on sides of ventrites, though the latter of which are sometimes less clear; legs brighter. *Dystomorphus esakii* can be distinguish by the obliquely truncate apices of elytra without teeth at inner halves.

*Etymology.* The name “diversus” means many kinds of, which indicates that we are surprise to find this new species from the *notatus* species group, which are quite similar to each other at the first



Figs. 31–33. Habitus of *Dystomorphus esakii* HAYASHI, 1974. — 31, ♂, from Taiwan; 32, holotype, ♀, from Taiwan, taken by T. MITA; 33, ♂, from Taiwan. — a, Dorsal view; b, lateral view; c, ventral view; h, head in frontal view. Scale: 2.0 mm, 33h, not to scale.

glance.

*Distribution.* China: Henan, Sichuan.

*Type series.* Holotype: ♂, Jiajin Shan, Jintang, C-Sichuan, China, 2,300 m, 30°22'451"N 102°16'644"E, 1.VII.2007, leg. M. JANATA (CCH). Paratypes (17): Sichuan: 8 ♂♂, 4 ♀♀, same data as for the holotype (CCH, but 1 ♂ and 1 ♀ in IZAS, IOZ(E)1905496–97); 1 ♂, 2 ♀♀, W. Jintiang (Tchouin), Sechuan, 15–20.VI.2002, leg. E. KUČERA, e. l. ex *Pinus* (CCH, ♀ in IZAS, IOZ(E)1905495). Henan: 1 ♂, 1 ♀, Funiushan, Nanzhao, alt. 1,170 m, 28.VI.2016, leg. Xuan GE (BITS).

*Remarks.* This new species is very similar to *Dystomorphus notatus* PIC, 1926 and *D. piceae* HOLZSCHUH, 2003, therefore the main differences to both species are given. It shares the same host plant genus with *D. notatus* and *D. piceae*, indicated by the three specimens emerged from *Pinus* (“e. l. ex *Pinus*” on the label means emerged from larvae from *Pinus*).

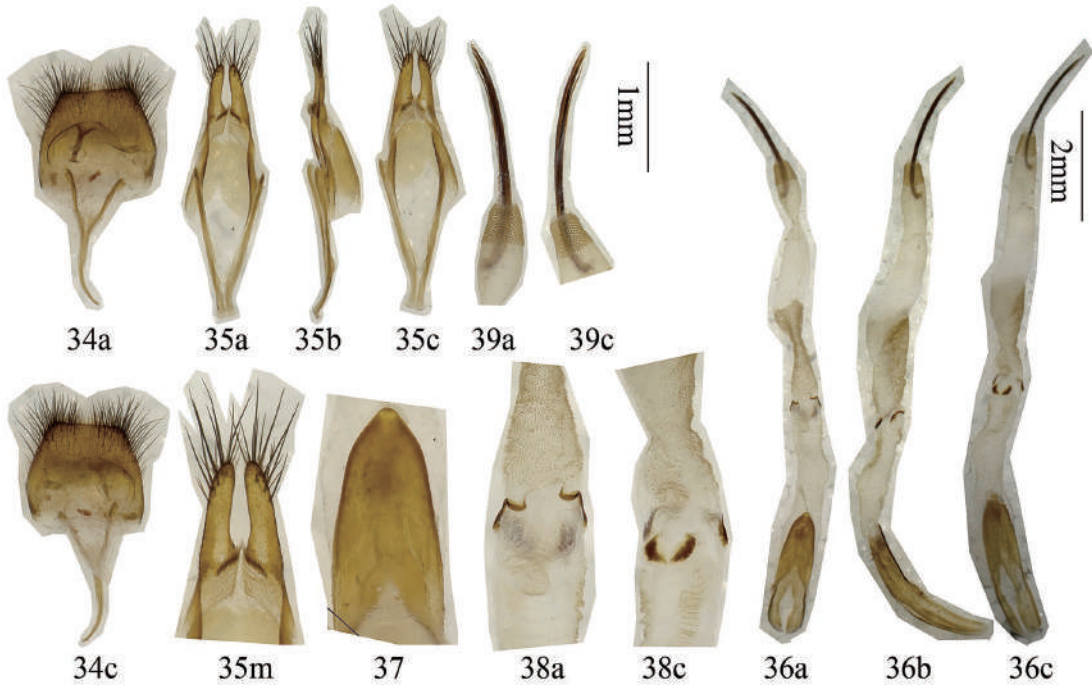
### *Dystomorphus esakii* HAYASHI, 1974

(Figs. 31–39)

*Dystomorphus esakii* HAYASHI, 1974: 59. Type locality: China, Taiwan, Saromao-Matsumine. Type depository: KUEC.

*Dystomorphus esakii*: NAKAMURA *et al.*, 1992: 107; HUA, 2002: 205; CHOU, 2008: 346, fig. female; HUA *et al.*, 2009: 454; LÖBL & SMETANA, 2010: 323; NAKAMURA *et al.*, 2014: 176.

*Supplementary description.* Body length 10.9–12.0 mm. Male well agrees with female in the maculae. Frons (Fig. 33h) densely covered with grayish brown pubescence; scutellum with longitudinal grayish brown pubescence along the middle line; elytra with two spot like maculae near bases, which are always well separated, last black maculae small and not reaching apices (elytral apices reddish brown with gray pubescence); all femora reddish brown; underside of body with small nude punctures, and without bigger rounded dark maculae on ventrites (Fig. 33c). Elytra with humeral an-



Figs. 34–39. Male genital organs of *Dystomorphus esakii* HAYASHI, 1974. — 34, Tergite VIII with sternites VIII & IX; 35, tegmen; 36, median lobe and endophallus; 37, apex of median lobe; 38, part of endophallus, showing basal plate-like sclerites and tiny spine-like sclerites; 39, rod-like sclerites. — a, Ventral view; b, lateral view; c, dorsal view; m, magnified view. Scale: 35m, 37–39, not to scale; 36, 2.0 mm; others, 1.0 mm.

gles angulate, inner half of each apex obliquely truncate, without distinct apical teeth. Male claws all simple.

Male terminalia (Figs. 34–39): Tergite VIII (Fig. 34a, c) broader than long, truncated at apex, with moderately long and dense setae, which are shorter and sparser in middle. Spiculum gastrale slightly shorter than the ringed part of tegmen. Spiculum relictum shorter than half the length of spiculum gastrale. Tegmen (Fig. 35a–c) 2.40 mm in length; lateral lobes slender, about 0.50 mm in length and 0.10 mm in width; lateral lobes each with one finely setose ridge in base (in ventral view, Fig. 35m), apex rounded, with setae which are as long as the length of lateral lobes. Median lobe slightly curved (Fig. 36b), slightly longer than tegmen (25 : 24); median struts (Fig. 36c) slightly longer than half of the whole length of median lobe; ventral plate rounded at apex (Fig. 37); endophallus more than twice the length of median lobe, with four pieces of plate-like sclerites in basal 1/3, two bands of creating armature before the plate-like sclerites, and three rod-like sclerites at apical end (Fig. 39), of which two longer ones each about 2.0 mm in length, shorter than tegmen.

*Remarks.* This species seems to be rare in Taiwan. It was not included in the three faunal book (YU & NARA, 1988; YU *et al.*, 2002; CHOU, 2004), but placed in two catalogues (NAKAMURA *et al.*, 1992; NAKAMURA *et al.*, 2014), and one faunal book (CHOU, 2008) with a picture. Three pictures of an alive male adult in nature are available on the website (Anonym: blog.xuite.net).

In spite of this species is quite similar to the previous three species by the general structure of the body, elytral maculae or male genital organs, all the male claws are simple and the claw of mid-tarsus does not specialized like the other species (Fig. 3d). The different structure of the claws had been



Figs. 40–43. Habitus of *Dystomorphus* spp. — 40, *D. sichuanensis* YU, 1994, ♂, from Sichuan; 41–43, *D. nigro-signatus* PU, WANG et LI, 1998. — 41, Holotype, ♀, from Gansu; 42–43, ♂♂, from Gansu. Scale: 2.0 mm.

thought to be one of the important feature to define the genera of Saperdini (LIN *et al.*, 2006; LIN, MONTREUIL *et al.*, 2009). However, the claws (especially in males) are rather variable in several genera of Saperdini, such as *Eutetrappa* (LIN *et al.*, 2017), *Glenea* (LIN *et al.*, 2009 a, b), or *Saperda* (unpublished) according to the second author's recent studies and observations. So the peculiar structure of male claw of this species is thought to be infrageneric variation.

*Host plant.* Coniferous tree (CHOU, 2008), *Pinus* sp. (Pinaceae) for larva by the observational information of Dr. J. YAMASAKO.

*Distribution.* China: Taiwan (Taitung County, Nantou County, Hualian County).

*Type specimen information.* Holotype: ♀, Saramao-Matsumine (Taichû-Shû), Taichung Xian, Taiwan (Formosa), 17.VII.1932, leg. Teiso ESAKI (KUEC, Type No. 2037, examined through a picture taken by Toshiharu MITA).

*Other specimens examined.* Taiwan: 1 ♂, Siangyang, Haiduan Township, Taitung County, alt. ca. 2,100–2,200 m, collected the host plant, 11.II.2016, and emerged 3.VII.2016, leg. J. YAMASAKO (CJY); 1 ♂, same data but em. 18.VII.2016; 1 ♂, Pihuhsi, Renai, Nantou, alt. 2,300 m, 24.VI.2007, leg. Chien-Jen CHEN (CCCC).

### *Dystomorphus sichuanensis* YU, 1994

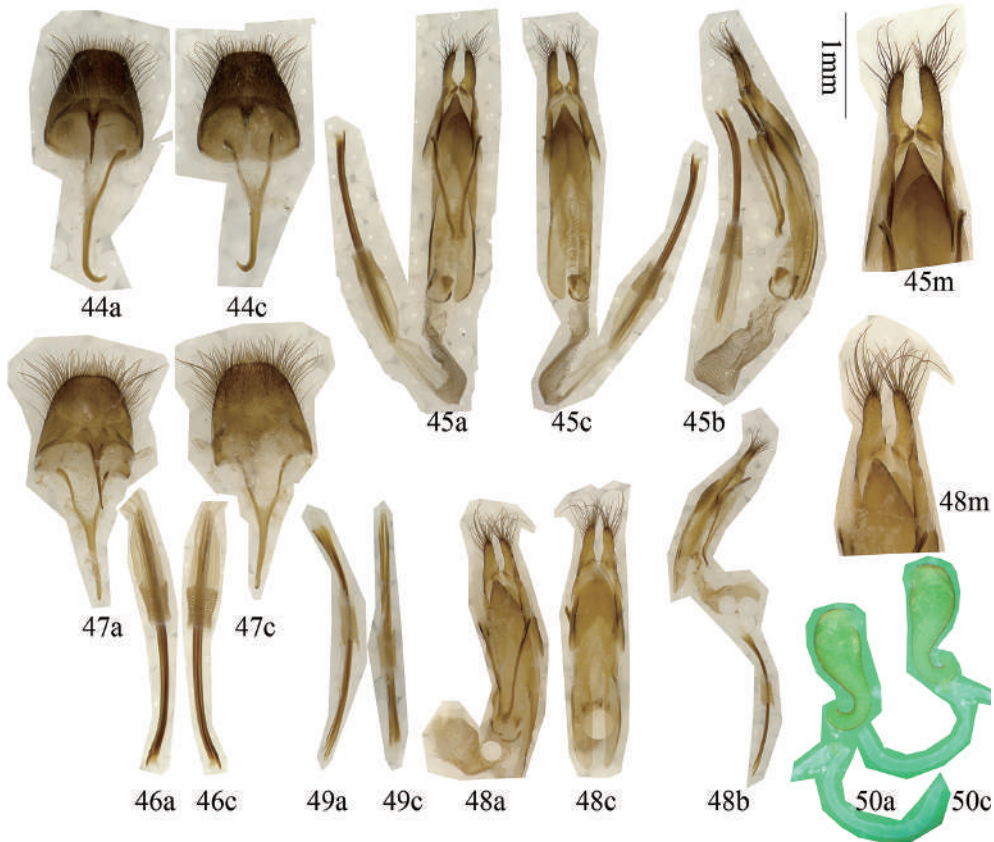
(Figs. 40, 44–46, 61)

*Dystomorphus sichuanensis* YU, 1994: 388, fig. 1. Type locality: China, Sichuan. Type depository: MSME.

*Dystomorphus sichuanensis*: HUA *et al.*, 2009: 454; LÖBL & SMETANA, 2010: 323.

*Supplementary description.* Body length 11.5–14.4 mm. Scutellum entirely covered with yellow brown pubescence (Fig. 61a); pronotal lateral tubercles robust (Fig. 61b); elytra with humeral angles blunt (Fig. 61c), apices emarginated (Fig. 61d).





Figs. 44–50. Genital organs of *Dystomorphus* spp. — 44–49, Male terminalia; 50, female spermathecal capsule. — 44–46, *D. sichuanensis* YU, 1994; 47–50, *D. nigrosignatus* PU, WANG et LI, 1998. — 44, 47, Tergite VIII with sternites VIII & IX; 45, 48, whole of male terminalia; 46, 49, rod-like sclerites. — a, Ventral view; b, lateral view; c, dorsal view; m, magnified view. Scale: 45m, 48b, 48m, 50, not to scale; others, 1.0 mm.

Male terminalia (Figs. 44–46): Tergite VIII (Fig. 44a, c) slightly longer than wide, almost rounded at apex, with moderately long and dense setae, which are shorter in middle. Spiculum gastrale longer than the ringed part of tegmen. Spiculum relictum shorter than half the length of spiculum gastrale. Tegmen (Fig. 45a–c) 2.20 mm in length; lateral lobes slender, about 0.40 mm in length and 0.10 mm in width, rounded at apex, with setae which are as long as lateral lobes, each lobe with one finely setose oblique ridge in base (in ventral view, Fig. 45m). Median lobe slightly curved (Fig. 45b) and slightly longer than tegmen (23 : 22); median struts (Fig. 45c) subequal to half the length of median lobe; ventral plate (Fig. 45m) gradually rounded to almost pointed apex; endophallus more than twice the length of median lobe, with four pieces of plate-like sclerites in basal half, two bands of creating armature before the plate-like sclerites, and three rod-like sclerites at apical end (Fig. 46), of which two longer ones each about 2.4 mm in length, longer than tegmen.

*Remarks.* The male (Fig. 40) from the type locality well matches with the female by the maculae. The holotype was supposed to be depositing in the collection of the Muh Sheng Museum, Puli, Taiwan (YU, 1994). However, it could not be found there (according to personal communication with Muh Sheng Museum of Entomology through Mr. Yu-Tang WANG, March to April of 2017). It might

has been transferred to the National Museum of Natural Science, Taiwan (NMNST), but the authors could not get it up to the publishing date of this paper, and it was not in the type list of NMNST (personal communication with Dr. Chi-Feng LEE and Mr. Yu-Long LIN, March to April of 2017). The body length was reported as 16 mm (YU, 1994), however, it was measured from frons to end of abdomen, which was longer than from frons to end of elytra.

*Distribution.* China: Sichuan.

*Type specimen information.* Holotype: ♀, Kangding, Sichuan, 14.VI.1990, leg. C. K. YU (MSME, not found).

*Other specimen examined.* Sichuan: 1 ♂, Yulincun, Kangding, Ganzizhou, 3,147 m, 30.IV.2014, leg. Xiao-Dong YANG (CCCC, C14Y0007).

### ***Dystomorphus nigrosignatus* PU, WANG et LI, 1998**

(Figs. 41–43, 47–50, 62)

*Dystomorphus nigrosignatus* PU, WANG et LI, 1998: 82, 83, fig. 1. Type locality: China, Gansu. Type depository: IZAS.

*Dystomorphus nigrosignatus*: HUA *et al.*, 2009: 454; LÖBL & SMETANA, 2010: 323; LIN, 2015: 272, fig. 1859484.

*Supplementary description.* Body length 11.0–12.0 mm. Antennomeres 1st, 2nd, basal halves of 3rd and 4th, and basal part of tibiae brown (Figs. 41, 43) or black (Fig. 42). Differs from *D. sichuanensis* YU, 1994 by the obviously smaller lateral tubercles of prothorax (Fig. 62b), distinctly angulate humeri of elytra (Fig. 62c), and ventral plate of median lobe (Fig. 48m) wider and gradually narrowed toward apex.

Male terminalia (Figs. 47–49): Tergite VIII (Fig. 47a, c) almost as long as wide, rounded at apex, with moderate long and dense setae, which are shorter in the middle. Spiculum gastrale longer than the ringed part of tegmen. Spiculum relictum shorter than half the length of spiculum gastrale. Tegmen (Fig. 48a–c) 2.10 mm in length; lateral lobes slender, about 0.40 mm in length and 0.10 mm in width, with each lobe rounded at apex, with setae which are as long as lateral lobes, one finely setose ridge in base (in ventral view, Fig. 48m). Median lobe slightly curved (Fig. 48b) and slightly longer than tegmen (22 : 21); median struts (Fig. 48c) subequal to half the length of median lobe; ventral plate gradually rounded toward apex (Fig. 48m); endophallus more than twice the length of median lobe, with four pieces of plate-like sclerites in basal half, two bands of creating armature before the plate-like sclerites, and three rod-like sclerites at apical end (Fig. 49), of which two longer ones each about 2.30 mm in length.

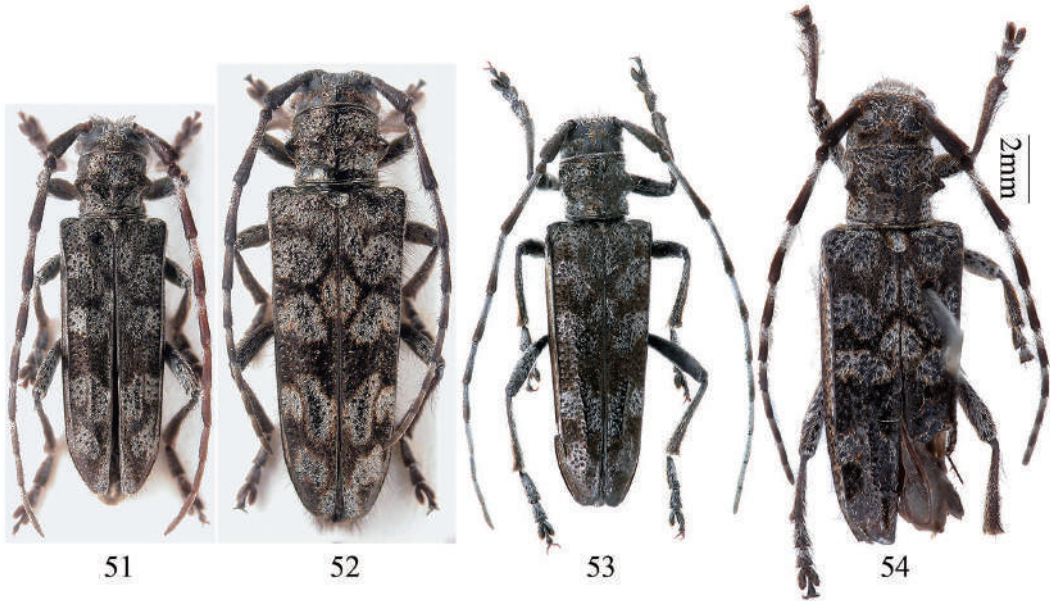
Female terminalia: Spermathecal capsule (Fig. 50a, c) composed of an apical orb and a curved stalk which is shorter than apical orb in length. Spiculum ventrale much longer than abdomen; in a female specimen examined, spiculum ventrale 6.0 mm measured in ventral view, while in abdomen 5.3 mm in length.

*Host plants.* *Picea crassifolia* KOM. (Pinaceae) (PU *et al.*, 1998).

*Distribution.* China: Gansu.

*Type specimen examined.* Holotype: ♀, Sidalong, Qilian Mountain, Gansu, host plant: *Picea crassifolia* KOM., VII.1992, leg. Xiaoming LI (IZAS, IOZ(E)1859484).

*Other specimens examined.* Gansu: 1 ♂, Shatanlinchang, alt. 2,357 m, 30.X.1999, leg. Xiu-Wen CAO (Agriculture College, Yangtze University, 99-387-18); 1 ♀, Xinglongshan, VII.1957 (SWU, as paratype of *D. nigrofasciata* WANG, in litt.); 1 ♂, 1 ♀, 50 km SE of Lanzhou, Xinlong Shan (= Xinglongshan), Gansu, 2,400 m, 30.VI.2009, leg. A. WRZECIONKO (CCH).



Figs. 51–54. Habitus of *Dystomorphus niisatoi* n. sp. — 51, Paratype, ♂, from Yunnan; 52, 54, paratypes, ♀♀, from Yunnan; 53, holotype, ♂, from Yunnan. — 51, 52, Taken by L. DEMBICKÝ. Scale: 2.0 mm.

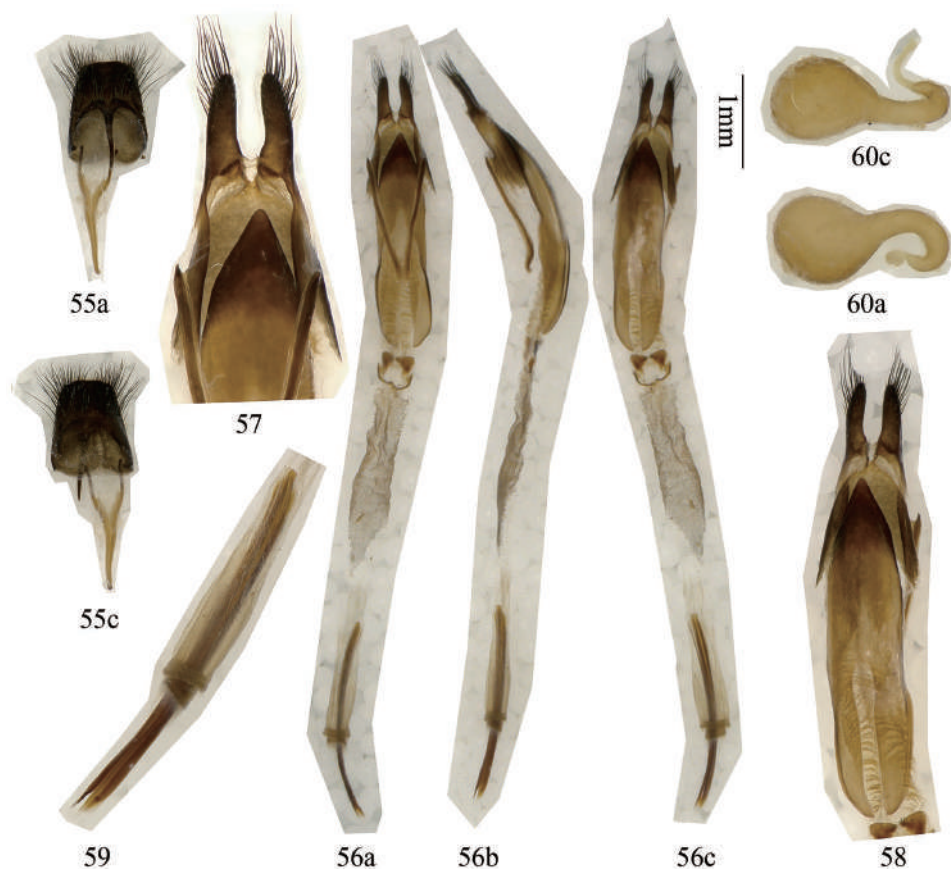
***Dystomorphus niisatoi* n. sp.**

(Figs. 51–60, 63)

*Description.* Male: length 10.9 mm; female: length 10.6–13.1 mm. Body uniformly black, and all antennomeres darkened basally. Color of hairs similar to that of *D. nigrosignatus* PU, WANG et LI, 1998, though ground hairs whitish-gray and mixed with more or less clear brownish hairs (especially in female, frons and underside of body often predominantly brownish), elytra with five very irregular, transverse dark bands. Big nude punctures on head, abdomen and femora relatively thick. Third to last antennomeres provided with grayish annulation in each base. Scutellum rather sparsely covered with whitish-gray hairs with black margins. Erect hairs on elytra are same to those of *D. nigrosignatus*.

Head with antennae longer in male, and shorter in female than body length. Antennomere ratio: 14 : 3 : 21 : 18 : 15 : 14 : 12 : 10 : 9 : 8 : 9 (male); 14 : 3 : 18 : 17 : 12 : 10 : 8 : 7 : 7 : 6 : 6 (female). Pronotum with lateral tubercles strongly dull (Fig. 63); disc with indistinct three swellings at middle. Elytra with humeri rather rounded, apices rounded or rather narrowly truncated without outer tooth.

Male terminalia (Figs. 55–59): Tergite VIII (Fig. 55a, c) longer than wide, with apex truncated, densely with moderately long setae which are shorter and sparser in middle. Spiculum gastrale slightly longer than the ringed part of tegmen. Spiculum relictum subequal to half the length of spiculum gastrale. Tegmen (Fig. 56a–c) 2.20 mm in length; lateral lobes slender, about 0.50 mm in length and 0.13 mm in width, with each apex rounded, provided with setae which are as long as lateral lobe, finely setose oblique ridge in base (in ventral view, Fig. 57). Median lobe slightly curved (Fig. 56b), slightly longer than tegmen (23 : 22); median struts (Fig. 56c) subequal to half the length of median lobe; ventral plate gradually rounded toward apex (Fig. 57); endophallus more than twice the length of median lobe, with four pieces of plate-like sclerites in basal 1/3, two bands of creating armature before the plate-like sclerites, and three rod-like sclerites at apical end (Fig. 59), of which two longer



Figs. 55–60. Genital organs of *Dystomorphus niisatoi* n. sp., from Yunnan. — 55–59, Male terminalia; 60, female spermathecal capsule. — 55, Tergite VIII with sternites VIII & IX; 56, whole male terminalia; 57, apical parts of tegmen and median lobe; 58, median lobe in dorsal view, showing the median struts; 59, rod-like sclerites. — a, Ventral view; b, lateral view; c, dorsal view. Scale: 55, 56, 1.0 mm; others, not to scale.

ones each about 2.10 mm in length, slightly shorter than tegmen.

Female terminalia: Spermathecal capsule (Fig. 60a, c) composed of an apical orb and a curved stalk, stalk longer than apical orb in length. Spiculum ventrale much longer than abdomen; in a specimen examined, 7.4 mm measured in ventral view, while in abdomen 5.0 mm in length.

*Diagnosis.* *Dystomorphus nigrosignatus* PU, WANG et LI, 1998 differs from the new species particularly by the clearly angulate shoulders (Fig. 62c), clearly smaller lateral tubercles of prothorax (Fig. 62b), dense yellow or yellowish white pubescent on scutellum (Fig. 62c).

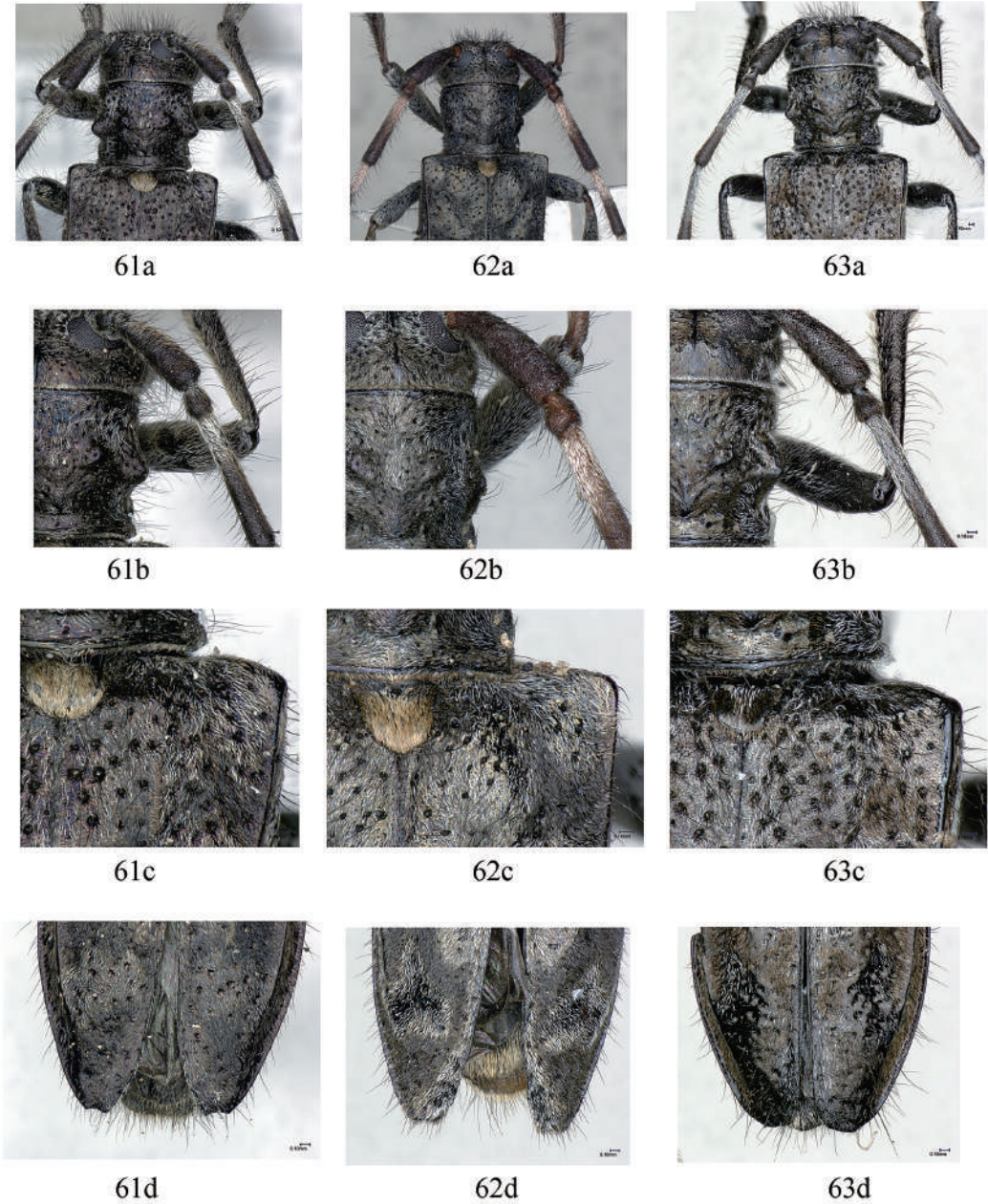
*Dystomorphus sichuanensis* YU, 1994 is very similar to the new species, but differs by the scutellum with dense yellow pubescence (Fig. 61c), emarginated elytral apex (Fig. 61d), and ventral plate of median lobe (Fig. 45m) narrowly constricted toward pointed apex.

*Etymology.* This species is named after Dr. Tatsuya NIISATO, who is a famous longicornist, to celebrate his 60th birthday in 2017. The epithet is a noun in the genitive case.

*Host plant.* *Pinus armandii* FRANCHET (Pinaceae) (from label information).

*Distribution.* China: Yunnan.

*Type series.* Holotype: ♂, Sendang-Dabadi, Gongshan, Yunnan, 2,840 m, 20.VI.2015, leg.



Figs. 61–63. Habitus of *Dystomorphus* spp., males. — 61, *D. sichuanensis* YU, 1994; 62, *D. nigrosignatus* PU, WANG et LI, 1998; 63, *D. niisatoi* n. sp. — a, Head, pronotum and base of elytra; b, showing lateral tubercles of prothorax, and part of antennomeres; c, showing scutellum and humeral angle of elytron; d, elytral apices.

Wen-Xuan BI (IZAS, ex CBWX, IOZ(E)1905500). Paratypes: Yunnan: 1 ♂, 2 ♀♀, Baishui, 27°N, 100°12'E, 10–17.VI.1998, leg. E. KUČERA (CCH); 3 ♀♀, Hengduan mts-part Baima, alt. 4,300 m, 28°20'N, 99°03'E, 23.VI–2.VII.1996, leg. Vít KUBAŇ (CCH); 1 ♀, Huaping, Lijiang, alt. 2,700 m, host plant: *Pinus armandii* FRANCHET (Pinaceae), V–VI.1955, leg. Shao-Tang HUO (IZAS, IOZ(E)1905498).

### Key to the Species of *Dystomorphus* PIC

1. Integument of body entirely reddish brown, or reddish brown and black; elytra with black pubescence markings (the *notatus* species group) ..... 2
- Integument of body entirely shining black, covered with whitish pubescence; elytra with black ground colored markings (the *sichuanensis* species group) ..... 5
2. Elytral punctures getting sparser toward apical area; underside of body hardly visible nude punctures; ventrites in most cases with four big round dark spots arranged in two rows in lateral view; body larger (typical length 12.4–15.3 mm) ..... *D. piceae* HOLZSCHUH, 2003
- Apical areas of elytra with distinct punctures; underside of body with nude punctures; ventrites without big rounded dark spots; body smaller (typical length less than 12.0 mm) ..... 3
3. Elytral apex with inner half obliquely truncate, without distinct apical teeth; elytral last black maculae small and never reaching apex which is reddish brown with gray pubescence; all femora reddish brown ..... *D. esakii* HAYASHI, 1974
- Elytral apex emarginated, with distinct apical teeth at outer angle; elytral last black maculae bigger and at least partly reaching elytral apex; apex of femora black ..... 4
4. Apical halves of elytra densely covered with long distinct erect hairs; elytral humeri rounded; elytron always with two spots near base, the spots larger and sometimes close to each other ..... *D. diversus* n. sp
- Apical halves of elytra sparsely covered with short indistinct erect hairs; elytral humeri angulate; elytron usually with only one small spot near base, but sometimes with two small well separated spots ..... *D. notatus* PIC, 1926
5. Scutellum covered with only white pubescence; elytral apex rounded ..... *D. niisatoi* n.sp.
- Scutellum densely covered with yellowish brown or yellowish white pubescence; elytral apex emarginated ..... 6
6. Pronotal lateral tubercles big and robust; elytral humeri bluntly angulate ..... *D. sichuanensis* YU, 1994
- Pronotal lateral tubercles small and weak; elytral humeri distinctly angulate ..... *D. nigrosignatus* PU, WANG et LI, 1998

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## Descriptions of Two New Asian Species of the Genus *Aphthona* CHEVROLAT (Chrysomelidae, Alticinae), Feeding on Euphorbiaceae

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**Abstract** Two new species of the genus *Aphthona* CHEVROLAT, *A. niisatoi* n. sp. and *A. slugensis* n. sp., are described from Japan and Sabah in Borneo. The former feeds on *Euphorbia sieboldiana* C. MORREN et DECAISNE, and the latter on an undetermined species of *Euphorbia* sp.

The genus *Aphthona* CHEVROLAT is one of the largest genera among the subfamily Alticinae, which was revised recently for the Palearctic and Oriental regions (KONSTANTINOV, 1996; KONSTANTINOV & LINGAFELTER, 2002). They enumerated ca. 160 and 93 species for the Palearctic and the Oriental region, respectively.

This genus is familiar in the field of biological control due to its usefulness on controlling leafy spurge, *Euphorbia esula* LINNÉ (Euphorbiaceae). Already six species of the genus has been introduced into USA and Canada for the control of this noxious weed pest (BOURCHIER *et al.*, 2006). With regard to this issue, KONSTANTINOV and VANDENBERG (1996) gave a useful taxonomic review of *Euphorbia*-feeding *Aphthona* species. Still our knowledge on the genus is however primitive. New species of the genus have been continuously described after their works (KIMOTO, 2001; BASERGA & NOVOA, 2002; PRATHAPAN & KONSTANTINOV, 2003, 2011; TAKIZAWA, 2011; DÖBERL, 2012). Herein, two new species of *Euphorbia*-feeding *Aphthona* are described from Japan and Sabah, Malaysia.

It is my pleasure to dedicate this paper to my old friend, Dr. Tatsuya NIISATO, a good researcher on the taxonomy of Cerambycidae.

### *Aphthona niisatoi* n. sp.

(Figs. 1a, 2a)

Male: Body oval, weakly widened posteriorly, 2.1–2.7 mm in length, dark blue with weak metallic luster; antennae and legs red brown, except for black hind femora; antennae infusate on four apical segments.

Head almost impunctate; frontal tubercles sub-ovate, united to each other, weakly raised, not delimited by furrows on all margins; frontal carina distinct; clypeus triangularly raised, rather deeply incised at anterior margin; eyes rather small, with longitudinal diameter almost half as long as inter-ocular space; labrum weakly convex; antennae filiform, 3/4 as long as body; 1st segment clavate, 1.5 times as long as either 2nd or 3rd, almost equal in length to either 4th or 11th. Pronotum shining, transverse, 1.3 times as wide as long, widest before middle, thence roundly narrowed to both ends, almost straight at apical margin, gently archedly produced at basal margin; anterior angles oblique and tuberculate, weakly angulate at posterior end; disc evenly convex from side to side, sparsely covered with fine punctures. Scutellum triangular, broadly rounded at apex. Elytra each 2.7 times as long as wide, widest near middle, thence gently narrowed anteriorly, strongly so to apex; humeri weakly delimited; disc densely covered with small punctures on basal half; punctuations becoming finer and sparser on apical half; interspaces shining; elytral epipleura subparallel-sided on basal 1/3, thence

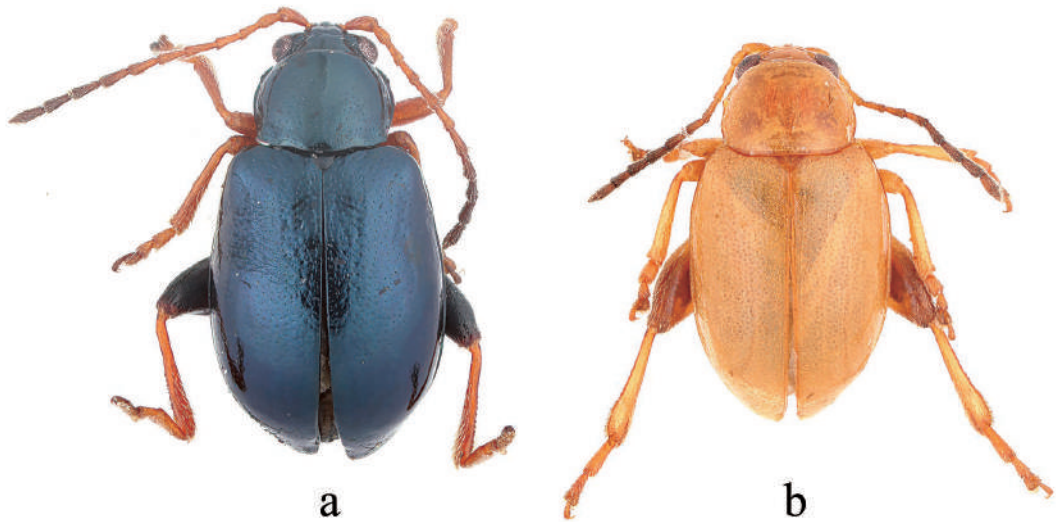


Fig. 1. Habitus of *Aphthona* spp. — a, *A. niisatoi* n. sp. (holotype); b, *A. slugensis* n. sp. (holotype).

gently narrowed and disappeared near apical 1/5; surface shining with a few weak punctures. Venter sparsely pubescent; last visible abdominal sternite weakly tri-lobed at apex; fore legs with 1st tarsal segment not enlarged; hind tarsi with 1st segment nearly 1/3 as long as tibiae. Aedeagus almost subparallel-sided behind subbasal constriction, broadly rounded at apex, rather flat and gently arched in lateral view, flat on ventral side (Fig. 2a).

Female: Body slightly larger, 2.3–2.8 mm in length; last visible abdominal sternite rather flat, archedly produced at apical margin.

*Type series.* Holotype: ♂, Gassan dam, Nishikawa, Yamagata Pref., Japan, 6–10.VIII.2013, H. TAKIZAWA leg. (Systematic Entomology, Hokkaido Univ., Sapporo). Paratypes: 1 ♂, 5 ♀♀, Gassan dam, Nishikawa, Yamagata Pref., 3–6.VI.2013, H. TAKIZAWA leg.; 14 ♂♂, 25 ♀♀, same data as the holotype.

*Distribution.* Japan (N. Honshu).

*Host plants.* *Euphorbia sieboldiana* C. MORREN et DECAISNE (Euphorbiaceae).

*Diagnosis.* This new species is characterized by its blackish blue body with reddish brown antennae and legs. It is somewhat similar to *A. erichsoni* (ZETTERSMTIDT) in the coloration, but the latter species is easily distinguished from *A. niisatoi* n. sp. by the following features: 2nd antennal segment distinctly shorter than 3rd; pronotum subquadrate, 1.4 times as wide as long; hind legs wholly reddish brown; male fore tarsus with first segment distinctly widened; aedeagus on apical half gently narrowed to apex. This species was found feeding on leaves of *Euphorbia sieboldiana* at a shadowy, wet site near a river.

This species is dedicated to Dr. T. NIISATO, commemorating his 60 year's anniversary.

***Aphthona slugensis* n. sp.**

(Figs. 1b, 2b)

Male: Body short and subparallel, 2.0–2.2 mm in length, yellowish brown; antennae on seven

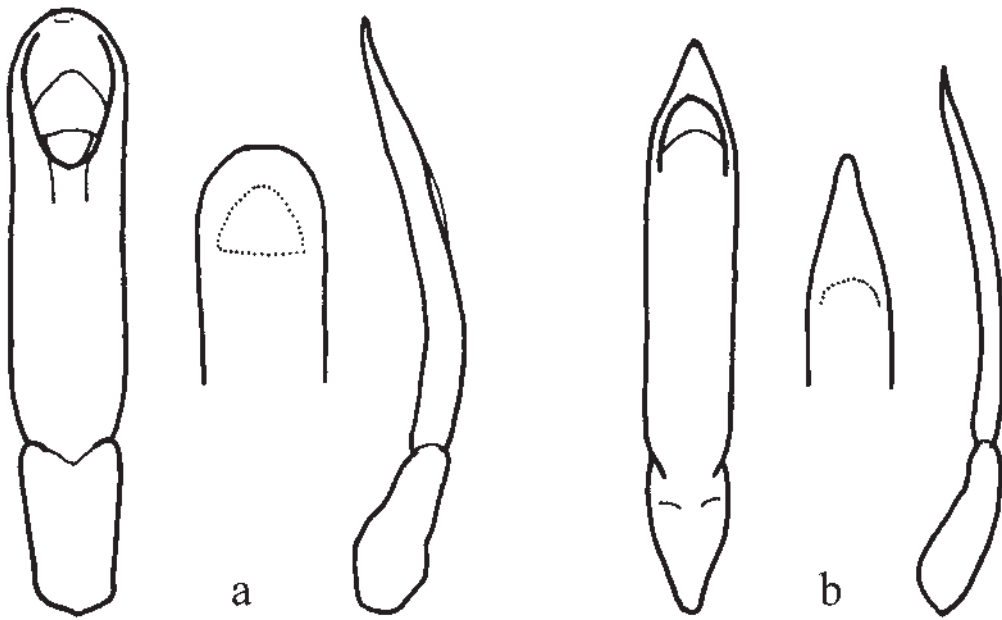


Fig. 2. Aedeagus of *Aphthona* spp. (left: dorsal view, middle: apical portion, right: lateral view). — a, *A. niisatoi* n. sp. (holotype); b, *A. slugensis* n. sp. (paratype).

apical segments dark brown; hind femur brown, with apical portion dark brown; labrum dark brown.

Head with vertex gently convex and shining, impunctate, delimited anteriorly by distinct furrow, which is archedly reaching to eye margin, slightly and rather acutely produced downward between frontal tubercles; frontal tubercles narrowly transverse and convex, hardly delimited laterally, narrowly separated from each other; frontal carina narrow and raised; frons raised into an inverted Y-shape; eyes small, with inter-ocular space 1.2 times as wide as longitudinal diameter of eye. Antennae filiform, 0.7 times as long as body; 1st segment clavate, almost twice as long as 2nd; 3rd slightly longer than 2nd, shorter than 4th. Pronotum transverse, subparallel-sided, 1.3 times as wide as long, widest at middle, straight at apical margin, broadly and archedly produced at basal margin; anterior angles oblique and wide, weakly angulate at posterior end; posterior angles slightly angulate; disc gently convex from side to side, with sparse and fine punctures; interspaces shining. Scutellum broadly triangular, rounded at apex. Elytra each 2.7 times as long as wide, widest at middle, thence gently narrowed anteriorly and posteriorly; humeri weakly delimited; disc shining, covered densely with small punctures; elytral epipleura wide on basal 1/3, thence gently narrowed to apical 1/4 and disappeared; surface weakly convex and shining. Last visible abdominal sternite distinctly tri-lobed at apex, with brown longitudinal line reaching to base of sternite. Fore and middle legs with each 1st tarsal segment distinctly widened, wider than 2nd segment. Aedeagus slightly curved in lateral view (Fig. 2b), subparallel-sided in dorsal view, narrowed to triangularly produced apex, which is bluntly rounded apically, with a short median impression on ventral side of produced apical portion.

Female: Body slightly larger, 2.0–2.3 mm in length; pronotum 1.4 times as wide as long; fore and middle legs with 1st tarsal segments slender; last visible abdominal sternite gently arched at apical margin.

*Type series.* Holotype: ♂, Pulau Slug, Kota Kinabalu, Sabah, Malaysia, 19.XII.2009, H. TAKIZAWA leg. (Institute for Tropical Biology and Conservation, Universiti Malaysia Sabah, Kota Kinabalu). Paratypes: 9 ♂♂, 18 ♀♀, same data as the holotype.

*Host plants.* *Euphorbia* sp. (Euphorbiaceae).

*Diagnosis.* This new species is characterized by the body pale yellowish brown, with labrum, seven apical segments of antennae and hind femur apically dark brown to blackish; pronotum subparallel-sided with anterior angles distinctly oblique; vertex shining, anteriorly delimited by arched furrow extending to eye margins. It is somewhat similar to *A. propaca* KONSTANTINOV et LINGAFELTER from India, but is easily distinguished from the latter by the body larger, frontal tubercles narrowly transverse, 2nd antennal segment shorter than 3rd, etc. Furthermore, the triangularly produced aedeagus of this new species is quite different form the widely truncate apex in the latter species. *Aphthona scutellata* (BALY) from Sabah is similar in having yellowish brown dorsum, but the latter is easily distinguished from this new species by its larger body size and hind femora distinctly stained with dark brown at apex.

This species was found on an *Euphorbia* species, sparsely growing on the bare sandy beach of a small island, Pulau Slug near Kota Kinabalu. This maritime habitat seems exceptional for an *Aphthona* species.

The specific name was derived from its type locality, Pulau Slug.

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## ***Echinomylocerus*, a New Genus for Three New Species of Cyphicerini (Coleoptera, Curculionidae, Entiminae) from Laos and China**

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**Abstract** *Echinomylocerus*, a new weevil genus is established in the tribe Cyphicerini, subfamily Entiminae for three new species from Laos and China: *E. niisatoi* sp. nov. (Laos), *E. dentipes* sp. nov. (Laos) and *E. gressitti* sp. nov. (China).

Weevils of the tribe Cyphicerini (Curculionidae, Entiminae) are usually furnished with two types of scales on their body surface, one is round and flat, and another is elongate and erect to subrecumbent. The former sometimes is designated as “ground” scales and the latter classically as “setae” (ex. MORIMOTO *et al.*, 2006), though both show striated surface structure, characteristic of scales, on SEM images and can easily be distinguished from true setae with smooth surface structure.

Among specimens of Asian Cyphicerini, we have found a small group of species that shows a peculiar development of erect scales on their surface and provides with more or less upturned rostrum on both sides of apex in males, and described them here as a new genus with three new species.

Type materials of the new species described herein are preserved in the Laboratory of Entomology, Tokyo University of Agriculture, Atsugi, unless otherwise mentioned.

### ***Echinomylocerus* gen. nov.**

Type species: *Echinomylocerus niisatoi* sp. nov.

Derm densely covered with round scales, scaling light to dark brown, with erect scales on head, rostrum, antennae, prothorax and legs, and conspicuous, longer ones on elytra.

Head with frons between eyes wider than eye length, with several erect scales along inner margin of eyes; eyes dorso-lateral in position, ovate, relatively convex laterally beyond side margin of head, highest slightly behind middle. Rostrum nearly as long as wide, slightly tapered apically and then distinctly dilated at pterygia; dorso-lateral carinae concealed by scales, but diverging posteriorly from narrowest portion; dorsal area in-between concave, forming central sulcus; lateral areas each with faint oblique carina; apex of rostrum transversely carinate and upturned on both sides in males or obtusely ridged triangularly in females; epistome very short, its posterior margin being anterior-most end of rostrum, barely reaching anterior margin of pterygia; swinging fossae reniform, posterior margin close to each other, separated by nearly half width of frons; dorsal area between posterior end of swinging fossae narrowest, slightly elevated transversely and forming obtuse ridge demarcated postepistomal area, with fine median carina; mandibles each with three setae; prementum with four setae. Antennae with scape thickened at apex, reaching anterior third of prothorax; funicle with 1st and 2nd segments each subequal in length, 3rd to 7th segments each longer than or nearly as long as wide; club almost twice as long as wide.

Prothorax nearly as long as wide, rounded laterally, widest at middle, narrower at apex than at

bisinate base, posterior angle slightly projected laterally. Scutellum trapezoidal to pentagonal, scaled. Elytra much wider at shoulders than base of prothorax, widest at shoulders in males or widest around middle in females; intervals each with row of conspicuous erect scales, lanceolate or spatulate, besides rounded ground scales. Legs stout in males or not so in females; femora each with sharp tooth; tibiae each bisinate internally, with distinct mucro at apex, on front legs often with triangular process at inner edge on basal third, process more developed in males than in females; tarsi with 1st segment slightly longer than wide, 2nd slightly shorter than 1st, 3rd deeply bilobed, twice as wide as 2nd; claws simple, free.

Venter with 1st ventrite depressed in middle in males or basal two ventrites inflated in middle in females.

Terminalia as illustrated (Figs. 9–17); aedeagus slender, with digitiform process at ostium; aedeagal apodemes nearly as long as its body; internal sac folded and densely asperate; spiculum gastrale slender, weakly curved. Ovipositor with bursa copulatrix simply bent, not Z-folded; spermatheca with cornu curved at base, ramus prominent.

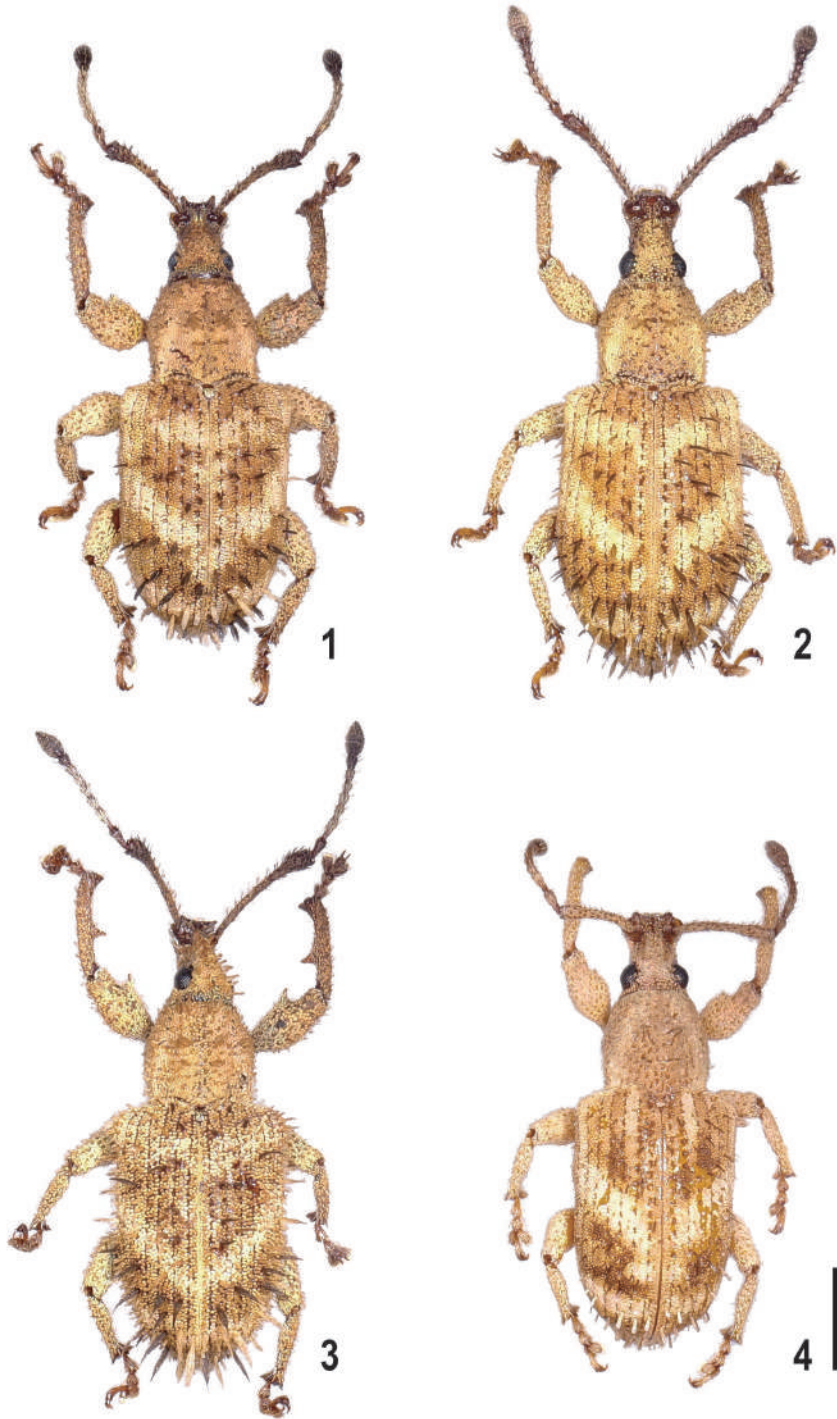
*Etymology.* *Echino* (spine) + *myllocerus* (name of the allied genus).

*Comments.* The present new genus belongs to the subtribe Myllocerina of the tribe Cyphicerini, due to the lack of distinct optic lobes and vibrissae. In overall appearance, *Echinomyllocerus* is somewhat similar to species of *Anosimus* ROELOFS, 1873 of the same subtribe, but the mouthparts of the latter are those of Adelognatha, and provided with six setae on the prementum. *Echinomyllocerus* is unique and easily identified as among such the genera of the subtribe by the following distinct characteristics: 1) Rostrum more or less upturned on both side of apex in males; 2) elytra with conspicuous lanceolate or spatulate erect scales, and 3) mouthparts having a characteristic of the Phanerognatha that mentum comparatively narrow and leaving maxillae largely exposed. The last point is very unusual in the tribe Cyphicerini and in common with adelognathous tribes as the Phyllobiini–Polydrusini group (cf. MORIMOTO & KOJIMA, 1994). However, it is apparent that *Echinomyllocerus* belongs to the tribe Cyphicerini judging from other features such as the free tarsal claws and the ovipositor divided into two parts (cf. MORIMOTO *et al.*, 2006).

*Distribution.* Laos and China.

### Key to the Species

- 1 (4) Rostrum slightly longer than wide. Elytra with three oblique bands of light brown scales; intervals each with lanceolate, long erect scales. Front tibiae each with tooth or angulate projection on inner margin.
- 2 (3) Front tibial tooth nearly as long (male) or half as long (female) as shortest width of front tibia. Elytra with single, irregularly two rows of short, truncate erect scales besides long erect conspicuous scales and ground ones. Length: 3.7–4.9 mm. Laos ..... *E. dentipes* sp. nov.
- 3 (2) Front tibial tooth less than half as long as shortest width of front tibia in both sexes. Elytra without short erect scales other than long erect conspicuous scales and ground ones. Length: 3.7–5.0 mm. Laos ..... *E. niisatoi* sp. nov.
- 4 (1) Rostrum slightly wider than long. Elytra with markings of light brown scales: two oblique bands and basal longitudinal patch on 3rd interval. Front tibiae unarmed. Length: 4.2 mm. China ..... *E. gressitti* sp. nov.



Figs. 1–4. Habitus photographs of *Echinomyllocerus* spp. — 1, *E. niisatoi* sp. nov., male; 2, ditto, female; 3, *E. dentipes* sp. nov., male; 4, *E. gressitti* sp. nov., male. Scale: 1.0 mm.

*Echinomylocerus niisatoi* sp. nov.

(Figs. 1, 2, 5–8, 12–17)

Male: Length: 3.7–5.0 mm; width: 1.5–2.1 mm. Derm dark brown, antennae and legs reddish brown; scaling light brown to brown or dark brown, with coppery, sometimes ash green metallic reflection in light brown scales, ash green metallic on scutellum and often on underside; elytra with three oblique light brown bands.

Head with frons slightly convex, 1.5 times as wide as eye length and nearly twice as wide as narrowest part of dorsal area; eyes distant from prothorax by three rows of scales at temples. Rostrum slightly longer than wide, apical margin pointed dorsally on both sides; swinging fossae with slight level difference between outer and inner walls. Antennae mostly covered with coppery scales except apical swollen part of scape which bears long, suberect dark scales; funicle with grayish white recumbent setae-like scales and long, suberect whitish ones on 2nd to 6th segments, 1st and 7th with dark recumbent and suberect setae-like scales, with proportions of length (width) of scape to club as: 69(9) : 13.5(5.5) : 13(5) : 7(5) : 7(5) : 6(5) : 6(5) : 6.5(5.5) : 21.5(10).

Prothorax as long as wide, widest at middle, narrowing posteriorly in faint curve, roundly curved anteriorly to faint subapical constriction, anterior margin weakly arcuate, posterior margin 1.5 times broader than anterior one; dorsum convex, with weak longitudinal depression on each side and faint one in middle, leaving two elevations in-between, with tufts of erect scales as follows: Pair of tufts behind anterior margin, four in transverse row in middle, and another pair just behind middle.

Elytra 1.4 times as long as wide, widest at humeri; striae subconfluently punctured, each visible as narrow black line; intervals each with single row of conspicuous, lanceolate erect scales, which are usually twice or less than twice as long as width of interval, either light brown or almost black, almost coincident with color of bands on which these scales lying. Legs with femora clavate, each with small outcurved tooth, which is greater on middle and hind pairs than on front one; inner margins of front tibiae each with small triangular tooth, which is less than half as long as shortest width of front tibia.

Terminalia as illustrated (Figs. 12–14); aedeagus roundly prominent at apex; internal sac with long flagellum, nearly as long as aedeagal body.

Female: Length: 4.0–4.9 mm; width: 1.6–2.0 mm. Resembles male except the following traits: Head with frons flat; rostrum with apex not pointed, obtusely triangularly ridged and forming very short epistome; elytra 1.5 times as long as wide, widest slightly behind middle; legs slender, front tibiae obtusely toothed along inner margins.

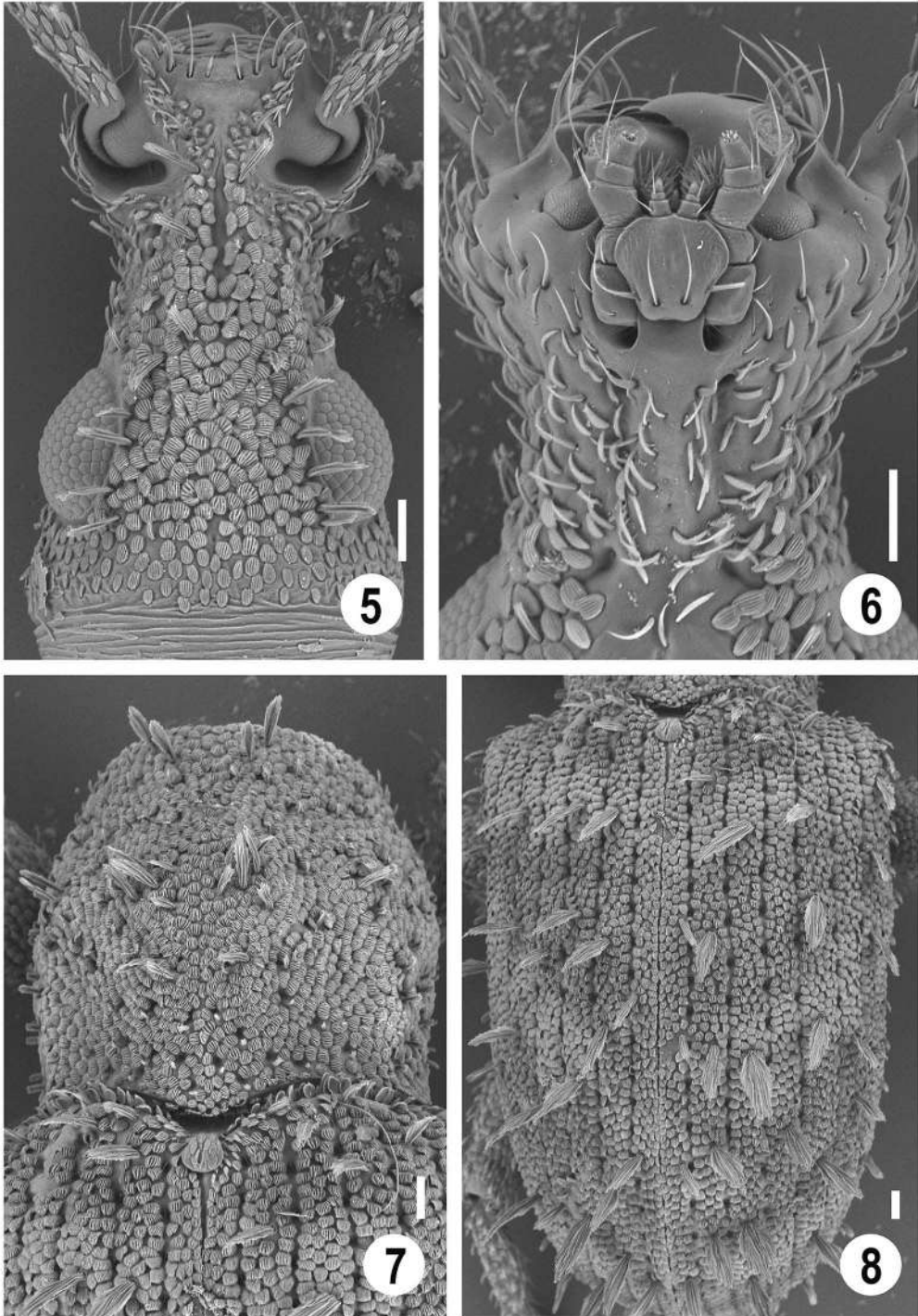
*Etymology.* The name is dedicated to Dr. Tatsuya NIISATO, a remarkable Japanese longicornist for his celebration for 60th birthday.

*Type material.* Holotype: male, Vientiane, 1.IV.2009, H. WAKAHARA. Paratypes: LAOS: Vientiane: 6 males & 6 females, same data as the holotype. Xiengkhouang: 1 male, Ban Mouang, 1,500 m, 5.III.2010, H. WAKAHARA; 1 male & 1 female, Ban Muang Noi (Phou San), 2.V.2011, T. YORO; 2 males & 1 female, Ban Namchak, NE. Ban Ban 25 km, alt. 1,500 m, 22.V.2011, H. WAKAHARA; 7 males & 5 females, Phou San, 11.IV.2012, H. WAKAHARA; 4 males & 3 females, 7.VI.2012, T. YORO; 1 male, near Phou San, alt. 1,240 m, 12.VI.2012, T. YORO; 3 males & 1 female, Ban Namchar, 8–12.VI.2012, T. YORO; 1 male, Nong Het, alt. 1,012 m, 10.VI.2012, T. YORO; 1 male, 25.III.2017, T. YORO. 1 male, Ban Dokmai, 8.III.2010, H. WAKAHARA; 1 male, Nam Chat, alt. 1,400 m, 21.IV.2013, T. YORO.

*Distribution.* Laos (Vientiane and Xiengkhouang Provs.).

*Remarks.* This species is very similar to the subsequent new species, but is distinguishable from it by the less developed internal dentation of the front tibiae and the absence of short, truncate erect scales on the elytral intervals that only bear conspicuous long erect scales and ground ones.





Figs. 5–8. SEM photographs of *Echinomyllocerus nisatoi* sp. nov., male. — 5, Head; 6, rostrum and mouth-parts; 7, prothorax and basal parts of elytra; 8, elytra. Scale: 0.1 mm.

*Echinomyllocerus dentipes* sp. nov.

(Figs. 3, 9–11)

Male: Length: 3.7–4.9 mm; width: 1.4–2.0 mm. Color pattern and general morphology is similar to those of the previous species, but differs from it in the following traits:

Apical margin of rostrum pointed dorso-laterally on both sides, with level difference between outer and inner walls of swinging fossae; prothorax with short, truncate erect scales besides long erect scales and ground ones; lanceolate erect scales on elytral intervals usually more than twice as long as width of interval, each interval with single, irregularly two rows of short, truncate erect scales besides ground ones; legs each with outcurved, sharp femoral tooth, front femoral tooth as great as or slightly greater than posterior pairs; fore tibiae each with distinct tooth, which is nearly as long as shortest width of tibia, along inner margin. Terminalia as illustrated (Figs. 9–11); aedeagus rounded at apex; internal sac with flagellum very short.

Female: Length: 4.2–4.6 mm; width: 1.7–1.8 mm. Resembles male but differs from it by the same traits as those of the previous species and also by front tibiae each with small triangular tooth.

*Etymology.* The specific name is derived from its distinctly dentate front tibiae.

*Type material.* Holotype: male, Lak 24 Antenna, 24 km SE from Oudomxay, Oudomxay Prov., 1,220 m alt., 4.X.2009, H. WAKAHARA. Paratypes: LAOS: Oudomxay: 1 male, same data as the holotype; 1 male, G. OISHI. Luangphrabang: 3 males & 1 female, Ban Houaykouk, 4.VI.2008, T. YORO; 3 males, Ban Kiewgna, 970 m, 4.VI.2008, T. YORO; 1 male, Ban Phou Yang, 15 km E. Salaphoukhan, 4.VI.2007, H. WAKAHARA; 1 female, Ban Phou Yang, alt. 1,300 m, 2.V.2010, T. YORO. Xiengkhouang: 5 males, near border of Luangphrabang (National Road 7), alt. 1,170 m, 19.VI.2009, H. KOJIMA.

*Distribution.* Laos (Oudomxay, Luangphrabang and Xiengkhouang Provs.).

*Remarks.* This species is distinguishable from the preceding species by the characters mentioned in the key. As far as we know, their distribution ranges are nearly contiguous, but not overlapped and are likely to be parapatric.

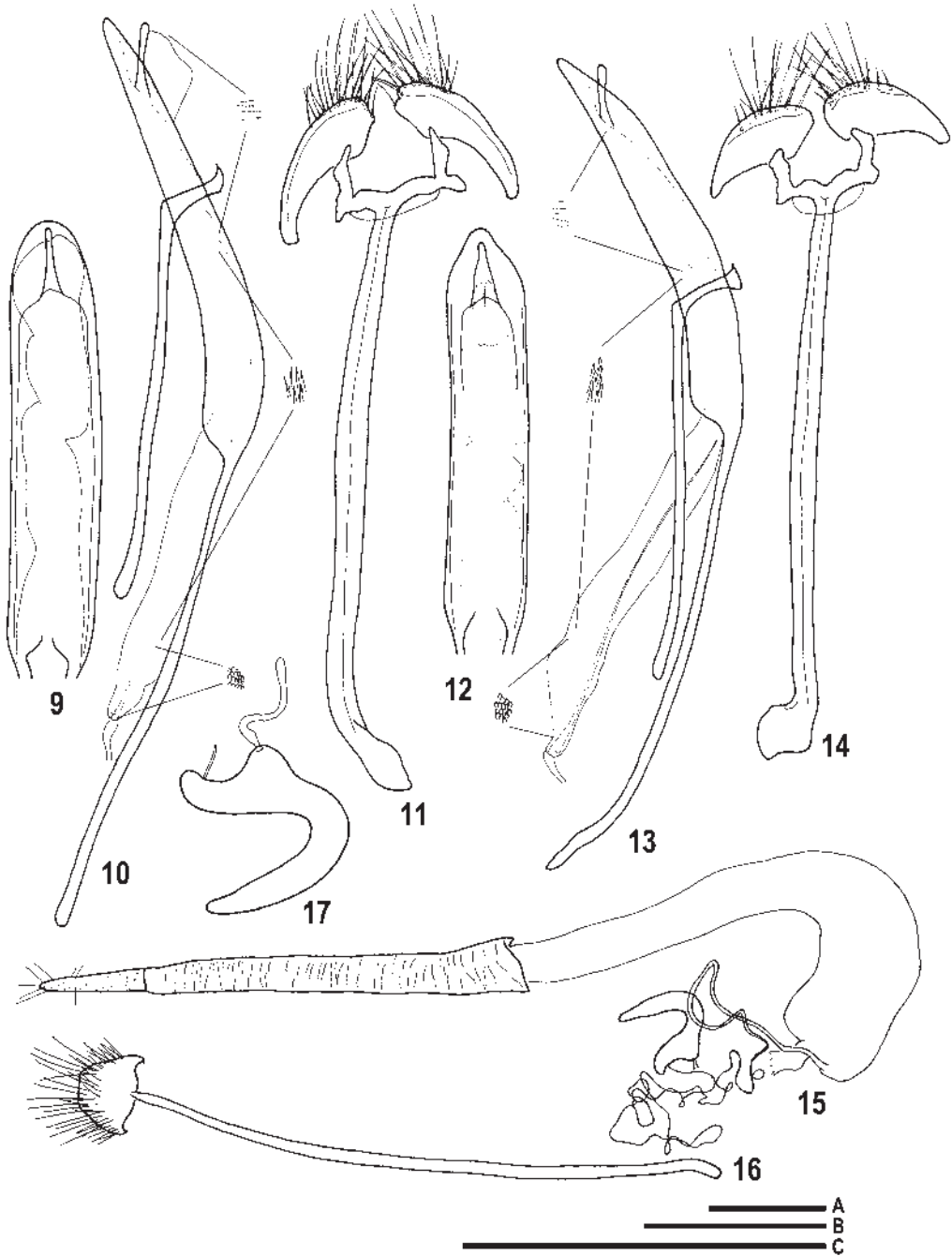
*Echinomyllocerus gressitti* sp. nov.

(Fig. 4)

Male: Length: 4.2 mm; width: 1.6 mm. Derm reddish brown; scaling light to dark brown, with coppery reflection on beneath; light brown scales forming maculation as follows: Prothorax with longitudinal lateral stripes, which are converging anteriorly, and elytra with two oblique bands and basal patches on 3rd intervals; scutellum covered with pale scales.

Head with frons weakly convex, slightly wider than eye length and about 1.5 times wider than narrowest part of dorsal area; eyes distant from prothorax by two rows of scales at temples. Rostrum slightly wider than long, apical margin upturned dorsally on both sides, with level difference between outer and inner walls of swinging fossae. Antennae with light brown recumbent and suberect scales on scape; funicle with light brown recumbent setae-like scales and long, suberect ones on basal six segments, 7th with dark recumbent and suberect setae-like scales, with proportions of length (width) of scape to club as: 60(7) : 12(5.5) : 12(5) : 5(5) : 5(5) : 4.5(5) : 4.5(5) : 4.5(5.5) : 18(9).

Prothorax as long as wide, widest at middle, nearly straightly narrowing posteriorly, slightly curved anteriorly, subapical constriction obscure, anterior margin weakly arcuate, posterior margin 1.3 times broader than anterior one; dorsum weakly convex, with weak longitudinal depression on each side, and furnished with several spatulate, erect scales on each side along midline behind anterior margin, around middle, and at sides in middle.



Figs. 9–17. Male and female terminalia of *Echinomylocerus* spp. — 9–11, *E. dentipes* sp. nov.; 12–17, *E. niisatoi* sp. nov. — 9, 12, Median lobe of aedeagus, dorsal; 10, 13, aedeagus and tegmen, lateral; 11, 14, sternite 8 and spiculum gastrale, dorsal; 15, ovipositor; 16, sternite 8, dorsal; 17, spermatheca. Scale: 0.5 mm; A for Figs. 9–14; B for Figs. 15, 16; C for Fig. 17.

Elytra about 1.5 times as long as wide, widest at humeri; striae with distant punctures, each visible as black dot line; intervals each with single row of spatulate erect scales, which are usually slightly longer than width of interval, either light brown or almost black, almost coincident with color of bands on which these scales lying. Legs with femora clavate, each with small sharp tooth, which is greater in middle and hind pairs than in front one; front tibiae each dilated internally on basal third.

Female. Unknown.

*Type material.* Holotype: male, "Kwantung Prov., S. China, Lung-tau Shan. Alt. 900 M. Exposed ridge. June 8, 1947 L. GRESSITT and T. S. LAM" (Bishop Museum).

*Etymology.* The name of the present species is dedicated to the late Dr. J. Linsley GRESSITT, a keen American entomologist.

*Remarks.* This species is easily distinguishable from the preceding two species by the stouter rostrum that is slightly broader than its length, the elytral maculation of light brown scales, and the inner margins of front tibiae lacking distinct teeth.

### Acknowledgments

The authors thank Mr. H. WAKAHARA and his family for their arrangement of our trips in Laos and Mr. James H. BOONE for his kind care at the Bishop Museum. This study was supported in part by the JSPS KAKENHI (21405019, 24405028; head investigator: S. OKAJIMA).

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## Two New *Pachyrhynchus* Jewel Weevils (Coleoptera, Curculionidae, Entiminae) from Northeast Luzon, the Philippines

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**Abstract** Two new Philippine species of the genus *Pachyrhynchus* GERMAR are described from the Cagayan Valley region in northeastern Luzon: *P. niisatoi* sp. nov. (Provinces of Aurora and Quirino) and *P. septentrionalis* sp. nov. (Province of Cagayan). A diagnosis, habitus photographs, and illustrations of male genitalia are provided for each species.

### Introduction

Presently, 133 *Pachyrhynchus* species are known mostly from the Philippines (YOSHITAKE, 2012; YUNAKOV, 2013; BOLLINO & SANDEL, 2015; BARŠEVSKIS, 2016; RUKMANE & BARŠEVSKIS, 2016; RUKMANE, 2016; CABRAS & RUKMANE, 2016; YOSHITAKE, 2016 a, b; YOSHITAKE, 2017 a, b, c). However, many remain undescribed due to the lack of sufficient research on this genus. Here I describe two new *Pachyrhynchus* species from the Cagayan Valley region of the Philippines.

It is my great pleasure to dedicate this small paper to Dr. Tatsuya NIISATO for his sixtieth birthday celebration.

### Material and Methods

This study was based on specimens deposited at the Kyushu University Museum, Fukuoka (KUM), Institute for Agro-Environmental Sciences, NARO, Tsukuba (NIAES), and Senckenberg Naturhistorische Sammlungen, Museum für Tierkunde, Dresden (SMTD). In addition, concerned specimens in the private collections of Maurizio BOLLINO, Lecce, Italy (MBLI) and Franco SANDEL, Miane, Italy (CFS) were examined by each of the private collector on behalf of myself. The methods used in this study were the same as those explained in YOSHITAKE (2017 b, c). The holotypes of *Pachyrhynchus niisatoi* sp. nov. and *P. septentrionalis* sp. nov. are preserved in KUM and in NIAES, respectively.

### Taxonomy

#### *Pachyrhynchus niisatoi* sp. nov.

(Figs. 1, 2, 5–8)

**Diagnosis.** *Pachyrhynchus niisatoi* is similar in general appearance and may have some relation to *P. callainimaculatus* YOSHITAKE, 2017 known from the Sierra Madre Mountain Range, Province of Cagayan, Cagayan Valley region, Northeast Luzon, Philippines. However, *P. niisatoi* differs from *P. callainimaculatus* mainly by the following features: Body with unique glittery markings of glossy vi-

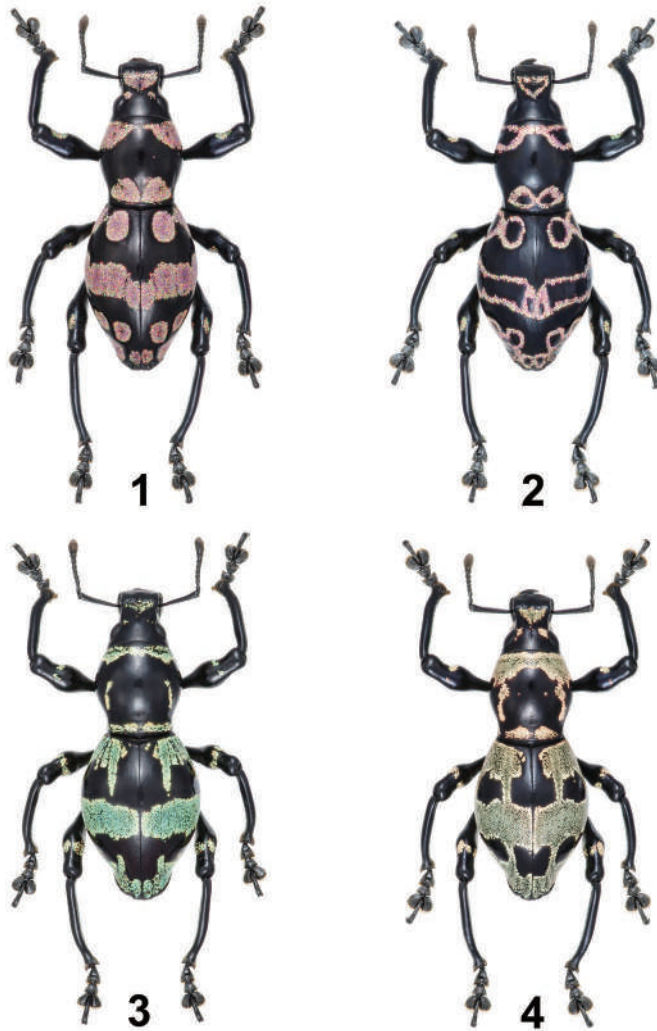
olet to pale green scales; antennal funicular segment II shorter and stouter, 1.50 times as long as wide; antennal club longer, subellipsoidal; prothorax dorsally more weakly convex; and elytra shiny, with smooth surface, dorsally more weakly convex. In contrast, *P. callainimaculatus* possesses the following features: Body with glittery markings of glossy blue to green scales; antennal funicular segment II slenderer, slightly less than twice as long as wide; antennal club shorter, subovoid; prothorax more strongly convex dorsally; and elytra subopaque, with weakly rugose surface, more strongly convex dorsally.

*Description.* Male: Dimensions: LB: 13.45–14.60 (holotype 13.45; mean 11.73). LR: 2.40–2.60 (holotype 2.40; mean 2.52). WR: 2.50–2.60 (holotype 2.50; mean 2.56). LP: 4.70–5.20 (holotype 4.70; mean 4.97). WP: 4.45–4.70 (holotype 4.45; mean 4.58). LE: 8.75–9.50 (holotype 8.75; mean 9.20). WE: 5.90–6.70 (holotype 5.90; mean 6.37). N = 5 for all measurements. Dorsal habitus as shown in Figs. 1 & 2.

Integument black. Body surface shiny, except ventrites III–V with weaker luster.

Body mostly subglabrous, with glittery markings of glossy violet to pale green recumbent round scales; each marking sometimes becoming only the contour. Forehead rarely with a pair of small scaly spots on apical part. Rostrum minutely pubescent dorsally, with widely subobtriangular scaly patch on basal half; latero-ventral parts just behind antennal scrobes with distorted subtriangular scaly patch on each side; latero-ventral parts before antennal scrobes mostly covered with scales, mingled with fine light-colored hairs, and fringed with long golden setae at apex on each side. Prothorax dorsally glabrous, except with the following three scaly markings: 1) A pair of large subtriangular patches on the middle of basal 1/3 before subbasal groove, 2) broad transverse apical band with posterior margin deeply arched anteriorly and anterior margin shallowly arched posteriorly, and 3) broad latero-ventral stripe extending from subbasal groove to apical margin on each side; apical band becoming very narrow medially, sometimes interrupted at middle, and confluent with latero-ventral stripes on sides. Each elytron with the following scaly markings: 1) Two elliptic patches on basal part, 2) four median round patches of irregular size, 3) smaller elliptic sutural patch on postmedian part, 4) two or three round patches on subapical part, and 5) elliptic sutural and larger lateral patches on apical part; each patch connected in varying degrees; median and postmedian patches usually merged into one, forming transverse oblique band across elytron. Fore coxae densely covered with scales on anterior parts, each with small scaly patch on middle of internal part. Mid coxae covered with scales on anterior and posterior parts, mingled with small short hairs, each with small scaly spot on internal part. Femora each with scaly band on subapical part; scaly band on fore pair widely interrupted on posterior parts and those on mid and hind pairs more or less interrupted on anterior parts. Tibiae fringed with dense light-colored hairs and sparse dark setae along internal margins, apically rather densely setiferous. Prosternum mostly covered with scales except intercoxal part only with small round scaly patch on basal part. Intercoxal part of mesosternum with narrowly subobtriangular patch. Mesepimera each with round scaly patch. Metasternum usually mostly covered with scales, mingled with fine pairs on sides. Venter sparsely pubescent. Ventrites I and II each with a pair of round to transversely elliptic scaly patches; paired patches on ventrite II larger than those on ventrite I and often connected with each other on middle. Ventrites III and IV covered with scales along apical margins; scales sometimes becoming sparser medially, forming indefinite paired patches. Ventrite V immaculate, more densely pubescent, and sparsely furnished with long suberect hairs along lateral and apical margins.

Head moderately and minutely punctured; forehead flattish, nearly three times as wide as eye width; eyes relatively small, weakly convex from lateral contour of head. Antennae with scape flattened, moderate in length, nearly as long as funicle, gradually widened apicad; funicular segment I 2.30 times as long as wide, slightly longer than II; segment II relatively short and stout, 1.50 times as



Figs. 1–4. Dorsal habitus of *Pachyrhynchus* spp. — 1, 2, *P. nisatoi* sp. nov.; 3, 4, *P. septentrionalis* sp. nov.  
 — 1, 3, Holotype male; 2, 4, paratype male.

long as wide, 1.50 times as long as III; segments III–VI subequal in length, subspherical, barely longer than wide except VI slightly wider than long; segment VII 1.25 times as long as VI, slightly wider than long; club subellipsoidal, relatively short, 1.65 times as long as wide, barely longer than funicular segments V–VII combined. Rostrum nearly as long as wide, LR/WR 0.96–1.00 (holotype 0.96); dorsum moderately and finely punctured, with shallow obtriangular concavity on middle of basal half, weakly bulging on apical half; apical bulge flattish dorsally, slightly depressed on middle of basal part; dorsal contour of frons and rostrum continuous; dorsal contour of rostrum gradually declined from base to middle, then weakly raised from middle to apical third, and finally gradually declined to apex; sides strongly dilated apically, subangulate in apicolateral parts; ventral surface simple, not convex along midline. Prothorax subspherical, barely longer than wide, WP/LP 0.88–0.95 (holotype

0.95); dorsum moderately and minutely punctured, moderately convex, with short costa on each side of basal part; dorsal contour highest before middle; lateral contour gently dilated from strongly constricted base, widest at apical third, gradually linearly convergent apicad, and then very weakly constricted near apex; basal margin subtruncate; apical margin subtruncate or shallowly arched anteriorly; subbasal groove entirely distinct, but interrupted dorso-laterally by basal costae; subapical groove becoming obscure dorsally. Elytra subellipsoidal, LE/WE 1.40–1.48 (holotype 1.48), less than twice as long as prothorax, LE/LP 1.79–1.91 (holotype 1.86), moderately wider than prothorax, WE/WP 1.33–1.43 (holotype 1.33), vestigially striate-punctured except outer two striae partially well-marked, with smooth and evenly flat intervals; dorsum moderately convex; dorsal contour highest at basal third; lateral contour gradually dilated from base, widest before middle, and then more strongly convergent to moderate subapical constriction. Legs slender; femora moderately clavate; anterior margins of fore femora and posterior margins of mid and hind femora moderately emarginate in subapical parts, respectively; tibiae moderately incurved, sparsely bluntly serrate along internal margins, mucronate at apices; tibial mucrones reduced on hind leg. Metasternum and ventrite I conjointly depressed on disc; discal depression moderate in depth on ventrite I, reaching its apical margin at apex. Ventrites I and II moderately and finely punctured on middle; ventrite II mostly flattish. Ventrite V relatively wide, 1.80 times as wide as long, slightly depressed on latero-marginal parts, shallowly rounded at apex. Genitalia as illustrated (Figs. 5–8).

Female: Dimensions: LB: 15.50–16.10. LR: 2.65. WR: 2.60–2.65. LP: 5.10–5.20. WP: 4.90. LE: 10.40–10.90. WE: 7.95–8.20. N = 2 for all measurements.

Rostrum LR/WR 1.00–1.02. Prothorax WP/LP 0.94–0.96. Elytra more strongly convex dorsally, wider, LE/WE 1.31–1.33, nearly twice as long as prothorax, LE/LP 2.04–2.10, and much wider than prothorax, WE/WP 1.62–1.67. Ventrites I and II slightly inflated. Ventrite V more strongly depressed on latero-marginal parts, more narrowly rounded at apex. Otherwise, essentially as in males.

*Type material.* Holotype: male (KUM), “Philippines: N Luzon, / Quirino, Nagtipunan, / IX. 2014, / Local collector” (typed on white card); “[ H O L O T Y P E ] Male / *Pachyrhynchus* / *niisatoi* / YOSHITAKE, 2017 / det. Hiraku YOSHITAKE, 2017” (typed on red card). Paratypes: 1 male from the same locality as the holotype (KUM), 2 males from “Tapsoy”, Nagtipunan, Quirino (KUM & MBLI), and 3 males and 2 females from “Demasisit”, Aurora (NIAES & KUM).

*Distribution.* The Philippines (Luzon: Central Luzon and Cagayan Valley regions).

*Etymology.* This species is named after Dr. Tatsuya NIISATO who has greatly contributed to the development of coleopterology in Japan.

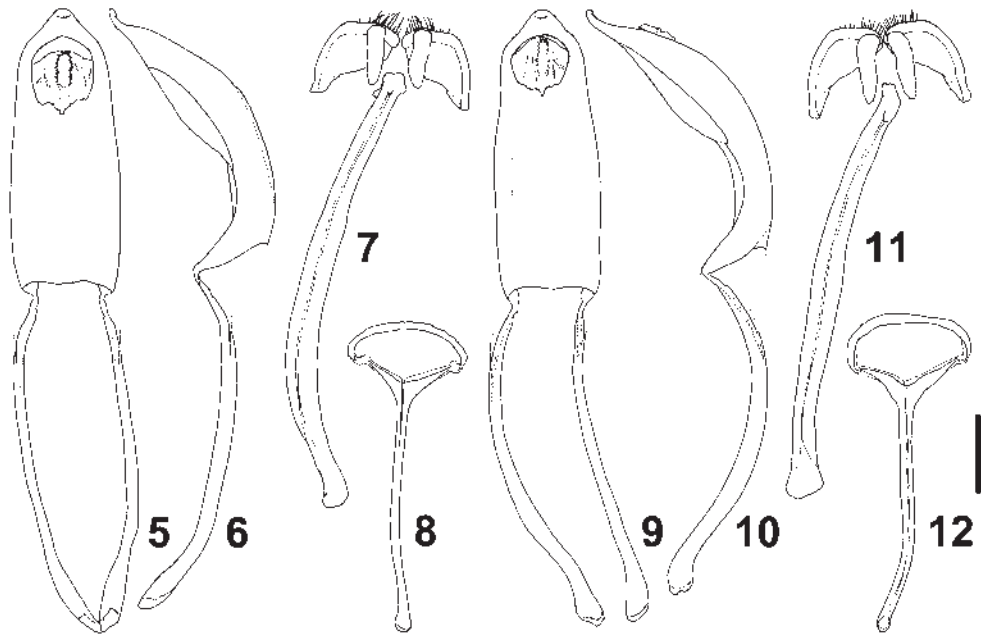
*Notes.* This new species was described in comparison with the male holotype of *Pachyrhynchus callainimaculatus* preserved in NIAES. As to the type locality of *P. niisatoi*, there is no barangay (= village) with an official name as “Tapsoy” in the municipality of Nagtipunan, Province of Quirino. Therefore, it may be the name of a local administrative unit smaller than a barangay or an unofficial, local name indicating a certain area. Also, “Demasisit” is probably a misspelling of “Demaset”, a barangay that belongs to the municipality of Dilasag, Province of Aurora.

### *Pachyrhynchus septentrionalis* sp. nov.

(Figs. 3, 4, 9–12)

*Diagnosis.* *Pachyrhynchus septentrionalis* is very similar in general appearance and may have a close relation to *P. callainimaculatus* from an uncertain type locality in the Sierra Madre Mountain Range, Province of Cagayan, Cagayan Valley region, Northeast Luzon, Philippines. However, *P. septentrionalis* differs from *P. callainimaculatus* mainly in having the following features: Unique





Figs. 5–12. Male genitalia of *Pachyrhynchus* spp. — 5–8, *P. niisatoi* sp. nov.; 9–12, *P. septentrionalis* sp. nov. — 5, 9, Aedeagus in dorsal view; 6, 10, ditto in lateral view; 7, 11, sternite IX in dorsal view; 8, 12, tegmen in dorsal view. Scale bar: 1.00 mm.

markings usually composed of glossy pale green scales and pale greenish grey or paler discolored ones; antennae with narrower funicular segments; antennal club longer, subellipsoidal; elytral surface smooth and shiny; and male ventrite V narrower, 1.50 times as wide as long. Whereas, *P. callainimaculatus* possesses the following features: Body with glittery markings of glossy blue to green scales; antennae with funicular segments III–VI subspherical; antennal club shorter, subovoid; elytral surface subopaque and weakly rugose; and male ventrite V wider, 1.76 times as wide as long. Also, *P. septentrionalis* resembles *P. niisatoi* at a glance, but is readily distinguishable from *P. niisatoi* mainly by the following points, in addition to remarkable differences in scaly markings: Antennae with narrower funicular segments; prothorax dorsally more strongly convex, with dorsal contour highest just before middle; elytra more strongly convex dorsally, with stronger subapical constriction; femora more strongly clavate; and male ventrite V narrower.

*Description.* Male: Dimensions: LB: 13.40–14.20 (holotype 13.40; mean 13.66). LR: 2.50–2.65 (holotype 2.50; mean 2.59). WR: 2.35–2.60 (holotype 2.35; mean 2.47). LP: 4.70–5.00 (holotype 4.80; mean 4.81). WP: 4.40–4.90 (holotype 4.50; mean 4.58). LE: 8.60–9.20 (holotype 8.60; mean 8.85). WE: 6.00–6.70 (holotype 6.20; mean 6.29). N = 5 for all measurements. Dorsal habitus as shown in Figs. 3 & 4.

Body with markings of glossy pale green recumbent round scales, which are often discolored in varying degrees, mostly becoming pale greenish grey or paler. Frons often with a pair of small scaly spots on apical part. Prothorax with the following four scaly markings: 1) Transverse subbasal band, which is interrupted at dorso-lateral angles and sometimes also at middle, separated into two patches

on middle, 2) fine linear parenthesis-shaped markings on pronotum, 3) transverse apical band with posterior margin deeply arched anteriorly and anterior margin shallowly arched posteriorly, and 4) broad latero-ventral stripe extending from subbasal groove to apical margin on each side; apical band sometimes becoming broad and confluent with parenthesis-shaped markings. Each elytron with transverse scaly bands on basal, median, and apical parts; basal band extending from interval II to lateral margin of elytron; posterior margin of basal band more or less arched anteriorly and produced posteriorly on intervals III and VII; median band slightly oblique; apical band oblique, with anterior margin more or less produced anteriorly on intervals III, V, and VII; each band connected longitudinally by scaly stripe on lateral margin of elytron and sometimes also by projecting parts of basal and apical bands. Mid coxae devoid of general scales on anterior and posterior parts. Scaly bands on subapical parts of fore femora more or less interrupted on posterior parts. Ventrite I with a pair of transversely subrectangular scaly patches. Ventrite II mostly covered with scales except baso- and latero-marginal parts. Ventrites III and IV mostly covered with scales except baso- and latero-marginal parts. Ventrite V with small scaly spot on middle.

Antennae with funicular segment I 2.25 times as long as wide; segment II relatively short but thin, twice as long as wide, 1.60 times as long as III; segments III–V subequal in length, as long as wide; segment VI slightly longer than wide, as wide as but slightly longer than V; segment VII nearly as long as VI, slightly wider than long. Rostrum barely longer than wide, LR/WR 1.02–1.08 (holotype 1.06). Prothorax nearly as long as wide, WP/LP 0.94–0.98 (holotype 0.94); dorsum strongly convex; dorsal contour highest just before middle. Elytra LE/WE 1.37–1.46 (holotype 1.39), less than twice as long as prothorax, LE/LP 1.79–1.89 (holotype 1.79), moderately wider than prothorax, WE/WP 1.36–1.39 (holotype 1.38); dorsum strongly convex; lateral contour more strongly dilated from base, widest before middle, and then more strongly convergent to strong subapical constriction. Femora strongly clavate. Ventrite V narrower, 1.50 times as wide as long. Genitalia as illustrated (Figs. 9–12). Otherwise, essentially as in *P. niisatoi*.

Female: Unknown.

*Type material.* Holotype: male (NIAES), “[ PHILIPPINES: Luzon ] / Cagayan Valley region, NE / Luzon Is., Prov. of Cagayan, / Sierra Madre Mountains, VI. / 2011, native collector leg.” (typed on white card); “HIRAKU YOSHITAKE / COLLECTION” (typed on white card); “[ H O L O T Y P E ] Male / *Pachyrhynchus* / *septentrionalis* / YOSHITAKE, 2017 / det. Hiraku YOSHITAKE, 2017” (typed on red card). Paratypes: 3 males from Cagayan (NIAES & CFS) and 7 males from Santa Ana, Cagayan (KUM & MBLI).

*Distribution.* The Philippines (Luzon: Cagayan Valley region).

*Etymology.* The species epithet refers to the location of the type locality in the northernmost part of the Sierra Madre Mountain Range.

*Notes.* This new species was described in comparison with the male holotype of *Pachyrhynchus callainimaculatus* preserved in NIAES and the type series of *P. niisatoi* in KUM.

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