Formosan Scolytoidea (Coleoptera)*

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I have recently had an opportunity to study the materials collected by entomologists who visited Formosa under the project of Japan-U. S. Co-operative Science Program, and discoveries made on imported logs from Formosa in Japanese ports.

In this paper as a result of my study on these materials, I record three new species, and four species which have been unrecorded from Formosa. Additionally, I append a check list of Formosan species.

Before going further I wish to express here hearty thanks to the following entomologists for their kindness in offering the materials : Prof. Takashi SHIROZU of Kyushu University, Prof. Mitsuhiro SASAKAWA of Kyoto Prefectural University, Dr. Takehiko NAKANE of National Science Museum, Mr. Akira YAMASAKI of Osaka Branch, Kobe Plant Protection Station, Mr. Shizuo ÔNO of Nagoya Plant Protection, Dr. Katsura MORIMOTO of Government Forest Experiment Station.

Historical Review

Numerous Formosan species briefly described or recorded by some entomologists. The first species was described as *Crossotarsus sauteri* by H. STROHMEYER (1913). In 1921, he published "SAUTER's Formosan-Ausbeute" and in this paper the following species were contained :—

1. *Ozopemon tuberculatus* sp. n.
2. *Xyleborus validus* EICHHOFF
3. *Crossotarsus flavomaculatus* sp. n.
4. *C. formosanus* sp. n.
5. *Platypus solidus* WALKER

In 1929, J. MURAYAMA published a paper "On the Platypodidae of Formosa" and the following three new species, one subspecies, and nine unrecorded species were enumerated :—

1. *Crossotarsus externe-dentatus* FAIRMAIRE
2. *C. niponicus* BLANDFORD
3. *C. piceus* CHAPUIS
4. *C. rengetensis* NIIJIMA et MURAYAMA sp. n.
5. *C. wallacei* THOMSON
6. *Platypus formosanus* NIIJIMA et MURAYAMA sp. n.
7. *P. lepidus* CHAPUIS
8. *P. lepidus formosanus* NIIJIMA et MURAYAMA subsp. n.
9. *P. lewisi* BLANDFORD

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* Studies on Scolytidae Ⅶ. Part of this was read at the fifth meeting of Kanto Block of Japanese Entomological Society held at Tokyo University of Agriculture on Dec. 12, 1966

** Second Laboratory of Forest Entomology, Division of Forest Protection.

10. *P. severini* BLANDFORD
11. *P. solidus* WALKER
12. *Diapus formosanus* NIIJIMA
13. *D. quinquespinatus* CHAPUIS

In addition to this work, he added the following species to the Platypodid-fauna of Formosa in "Supplementary notes on the Platypodidae of Formosa Ⅱ, Ⅲ":—

1. *Crossotarsus emancipatus* sp. n.
2. *C. koryoensis* MURAYAMA
3. *C. terminatus* CHAPUIS
4. *C. taiheizanensis* sp. n.
5. *Platypus arisannensis* sp. n.
6. *P. horishensis* sp. n
7. *P. modestus* BLANDFORD
8. *P. niijimai* sp. n.
9. *Diapus truncatus* sp. n.

And he erroneously proposed *Platypus lepidus flectus* NIIJIMA et MURAYAMA for *P. lepidus formosanus* NIIJIMA et MURAYAMA as a homonym of *P. formosanus* NIIJIMA et MURAYAMA described on the next page. In 1960, K. E. SCHEDL transfered *Crossotrasus formosanus* STROHMEYER to the genus *Platypus* and he also gave *P. taiwansis* for *P. formosanus* NIIJIMA et MURAYAMA as a homonym of STROHMEYER's *P. formosanus*.

In 1926, H. EGGERS described *Xyleborus amorphus* as a new species in a paper "Japanische Borkenkäfer I". In 1929, J. MURAYAMA gave Formosa as the locality of the following species in a table of Korean Scolytidae :—

1. *Hylurgops glabratus* ZETTERSTEDT
2. *Myelophilus piniperda* LINNÉ
3. *M. minor* HARTIG
4. *Sphaerotrypes pila* BLANDFORD
5. *Hylesinus tristis* BLANDFORD
6. *Crypturgus pusillus* GYLLENHAL
7. *Ips cembrae* HEER
8. *Eidophelus imitans* EICHHOFF
9. *Dryocoetes autographus* RATZEBURG
10. *D. nubilus* BLANDFORD
11. *Xyleborus mutilatus* BLANDFORD
12. *X. brevis* EICHHOFF
13. *X. atratus* EICHHOFF
14. *Scolytoplatypus mikado* BLANDFORD
15. *S. tycon* BLANDFORD

In 1930, H. EGGERS described a new variety, which he named *Xyleborus mancus* var. *formosanus*. J. MURAYAMA added the following species to the Scolytid-fauna of Formosa between 1930 and 1936 : —

1. *Xyleborus lewisi* BLANDFORD
2. *X. germanus* BLANDFORD
3. *X. saxeseni* RATZEBURG
4. *Ips angulatus* EICHHOFF

5. *Phloeosinus perlatus* CHAPUIS
6. *Xyleborus amputatus* BLANDFORD
7. *X. ebriosus* NIIJIMA
8. *X. interjectus* BLANDFORD
9. *X. perforans philippinensis* EICHHOFF
10. *X. sexspinosus* (MOTSCHULSKY)
11. *Scolytoplatypus pubescens* HAGEDORN
12. *S. shogun* BLANDFORD

In 1936, K.E. SCHEDL described a new species *Xylechinus formosanus*. In 1939, H. EGGERS published a second part of "Japanische Borkenkäfer", and dealt with the following twelve unrecorded species and eight new species in this paper : —

1. *Xyleborus sobrinus* EICHHOFF
2. *X. semiopacus* EICHHOFF
3. *Scolytoplatypus raja* BLANDFORD
4. *S. darjeelingi* STEBBING
5. *Xyleborus formosanus* EGGERS
6. *X. haberkorni* EGGERS
7. *X. testaceus* WALKER
8. *X. ursus* EGGERS
9. *X. hirtuosus* BEESON
10. *X. morigerus* BLANDFORD
11. *X. subnepotulus* EGGERS
12. *Hylesinus philippinensis* EGGERS
13. *Xylechinus arisanus* sp. n.
14. *Phloeosinus pertuberculatus* sp. n.
15. *Scolytus formosanus* sp. n.
16. *X. testudo* sp. n.
17. *X. taitonus* sp. n.
18. *X. metanepotulus* sp. n.
19. *X. posticestriatus* sp. n.
20. *X. xyloteroides* sp. n.

Among the above-mentioned species the following three have already become synonyms : —

1. *Xyleborus ursus* EGGERS=*X. globus* BLANDFORD
2. *X. posticestriatus* EGGERS=*X. discolor* BLANDFORD
3. *Hylesinus philippinensis* EGGERS=*H. porcatus* EICHHOFF

Xyleborus formosanus EGGERS which is not a published name, has been given as a synonym of *Xylosandrus discolor* BLANDFORD by K.E. SCHEDL (1958).

In 1942, Y. NIIJIMA wrote on a new species, *Phloeosinus arisanus* NIIJIMA. In the same year, K.E. SCHEDL described a new Formosan species, *Cryphalus formosanus*, among the descriptions of tropical Asian bark-beetles. In 1949, he recorded a seed beetle, *Coccotrypes pygmaeus* EICHHOFF. In 1951, he originated three new species, *Xyleborus barbatomorphus*, *X. chujoi* and *X. nitidipennis* from Formosa. In 1952, he published a paper "Formosan Scolytoidea I". In this paper he recorded or described the following six species and five new species : —

1. *Stephanoderes javanus* EGGERS
2. *Xyleborus metacuneolus* EGGERS

3. *X. formicatus* EICHHOFF
4. *X. sexspinosus* MOTSCHULSKY
5. *X. similis* FERRARI
6. *X. mancus* BLANDFORD
7. *Hypocryphalus formosanus* sp. n.
8. *Stephanoderes taihokuensis* sp. n.
9. *Orosiotes formosanus* sp. n.
10. *Xyleborus taichuensis* sp. n.
11. *X. taboensis* sp. n.

In 1953, J. MURAYAMA recorded the following fifteen species for the first time : —

1. *Xyleborus aquilus* BLANDFORD
2. *Hylastes parallelus* CHAPUIS
3. *H. plumbeus* BLANDFORD
4. *Hylurgops interstitialis* CHAPUIS
5. *Hyorryhnchus lewisi* BLANDFORD
6. *Phloeosinus lewisi* CHAPUIS
7. *Xyloterus pubipennis* BLANDFORD
8. *Xyleborus attenuatus* BLANDFORD
9. *X. kadoyamaensis* MURAYAMA
10. *X. rubricollis* EICHHOFF
11. *X. schaufussi* BLANDFORD
12. *X. seriatus* BLANDFORD
13. *X. glabratus* EICHHOFF
14. *Dryocoetes luteus* BLANDFORD
15. *Coccotrypes perditor* BLANDFORD

And he described *Platypus kusukusensis* MURAYAMA from Formosa as a new species in 1956 and recorded *Crossotarsus simplex* MURAYAMA on the imported Lauan wood from Formosa in 1957.

In 1966 and 1967, K.E. SCHEDL recorded the following eight species intercepted from imported logs from Formosa in Japanese ports : —

1. *Xylosandrus germanus* BLANDFORD
2. *Xyleborus satoi* sp. n.
3. *X. semiopacus* EICHHOFF
4. *X. torquatus* EICHHOFF
5. *Platypus indicus* STROHMEYER
6. *P. murayamaensis* SCHEDL
7. *Phloeosinus perlatus* CHAPUIS
8. *Polygraphus taiwanensis* sp. n.

In 1966, A. YAMASAKI published a paper "A list of the injurious insect found on imported logs at Osaka Port", and in this paper he recorded *Crossotarsus contaminatus* BLANDFORD and *Diapus aculeatus* BLANDFORD from Formosa for the first time. In 1967, S. ÔNO reported *Crypturgus tuberosus* NIIJIMA and *Hylurgops spessiwzeffi* EGGERS found on imported logs from Formosa.

Scolytoidea taken in Formosa by Members of Japan-U.S. Co-operative Science Program

1. *Scolytus nakanei* sp. n.

1 ex. Alisan, 2,300 m, Nantou Hsien, July 5~6, 1965, T. NAKANE.

2. *Phloeosinue arisanus* NIIJIMA

1 ♂ Alisan, Chia Yi Hsien, April 9, 1965, Y. HIRASHIMA ; 1 ♂ Fenchihu, Chia Yi Hsien April 10, 1965, S. MIYAMOTO.

3. *Ficiphagus goliatoides* (MURAYAMA)

2 exs. Chiao Li Ping, Ciayi Hsien, April 13, 1965, S. UÉNO ; 21 exs. Hombukei, June 4, 1965, T. SHIROZU.

This is recorded for the first time from Formosa. SCHEDL treated *F. goliatoides* MURAYAMA as a synonym of *Hylesinus porcatus* K.E. CHAPUIS, but *F. goliatoides* MURAYAMA is distinguishable from *Hylesinus* by its having emarginate eyes.

4. *Taphrorychus coffeae* (EGGERES)

1 ex. Sungkang, June 30, 1965, S. KIMOTO.

This species is new to Formosan Scolytid-fauna but widely distributed in tropical Asia to Japan.

5. *Xyleborus amorphus* EGGERS

1 ♀ Nanshanchi, 800 m, Nantou Hsien, June 30, 1955, T. NAKANE.

6. *X. formicatus* EICHHOFF

1 ♀ Tattaka, May 31, 1965, T. SHIROZU

7. *X. interjectus* BLANDFORD

1 ♀ Wulai near Taipei, May 27, 1965, K. MORIMOTO.

8. *X. lewisi* BLANDFORD

1 ♀ Kenting, Ping Tung Hsien, April 3, 1965, S. UÉNO.

This specimen is smaller than the Japanese ones, but may be regarded an infraspecific variation.

9. *X. perforans* (FABRICIUS)

1 ♀ Honbukei, June 4, 1965, T. SHIROZU.

10. *X.* sp.

1 ♀ Keito, June 27, 1961, M. OGATA.

This specimen was broken.

11. *Cnestus murayamai* SCHEDL

1 ♀ Chiao Li Ping, Chiayi Hsen, April 14, 1967, S. UÉNO.

This species is recorded from Formosa for the first time.

12. *Hypothenemus taihokuensis* SCHEDL

1 ex. Wulai near Taipei, May 27, 1965, K. MORIMOTO

13. *Scolytoplatypus pubescens* HAGEDORN

1 ♂ Fenchihu, 1,400 m, Natou Hsien, July 7~8, 1965, T. NAKANE.

14. *S. raya* BLANDFORD

1 ♂ Arisan, Chiai Hsien, April 8, 1965, M. SASAKAWA ; 1 ♂ 3 ♀♀ Tattaka, May 31 to June 24, 1965, T. SHIROZU ; 3 ♀♀ Kunyang 3,100 m, June 1, 1965, T. NAKANE ; 1♂ 4 ♀♀ Sungkang, 2,000 m—Tsifeng, 2,300 m, June 29, 1965,T. NAKANE.

15. *Crossotarsus externedentatus* FAIRMAIRE

1 ♂ Urai, July 7, 1961, T. SHIROZU.

16. *C. flavomaculatus* STROHMEYER

1 ♂ Tattaka, June 10, 1965, T. SHIROZU.

17. *C. koryoensis* MURAYAMA

1 ♂ Yank-ming Shan, env. Taipei, May 25, 1965. K. MORIMOTO ; 1 ♂ 1 ♀ Tattaka. May 31, 1965, T. SHIROZU.

18. *Platypus modestus* BLANDFORD

1 ♂ Tattaka, June 11, 1965, T. SHIROZU.

19. *P. lepidus* CHAPUIS

19 ♂♂ 4 ♀♀ Tattaka, June 10, 1956, T. SHIROZU.

20. *P. solidus* WALKER

1 ♂ Honbukei, June 4, 1965, T. SHIROZU.

21. *Diapus truncatus* NIIJIMA et MURAYAMA

21 ♂♂ 3 ♀♀ Tattaka, June 10, 1965, T. SHIROZU.

Descriptions of New Species

Scolytus nakanei sp. n.

Oblong, cylindrical ; strongly shining, black, mouth-parts, antennae, anterior margin of prothorax, elytra and legs reddish brown.

Head weakly convex ; frons finely but closely aciculate, with rather long curled hairs above each mandible, vertex convex, finely punctured, nearly glabrous. Eyes oblong, widely emarginate at anterior margin. Antennal funicles 7-segmented. Prothorax slightly wider than long (2.1 : 2.0), basal margin slightly bisinuate, narrowly marginate, basal corners obtusely angulate, lateral margins edged behind front, not or slightly widened at basal half and thence roundly narrowing anteriorly, apical margin rounded ; disk convex, sparsely covered with rather oblong fine punctures and very fine hairs. Scutellum triangular, rough, covered with fine hairs. Elytra nearly equal in width to base of prothorax, 1.32 times as long as wide, lateral margins almost parallel at basal half of elytral length and thence slightly narrowing posteriorly, apical margin rounded, retuse at middle, not serrate ; upper surface convex, impressed behind scutellum, striae slightly impressed and narrower, with rather small and shallow punctures, interstriae wider, slightly elevated, with a row of fine punctures and very short hairs, tending to become double on 2nd interstriae. Abdomen weakly convex, without tubercle, last abdominal segment with a tuft of golden hairs at apex.

Body length : 3.1 mm

Holotype : 1 ex. (probably male) Alisan, 2,300 mm, Nantou Hsien, July 5~6, 1965, T. NAKANE

The type specimen is preserved in National Science Museum, Tokyo.

This new species is allied to *Scolytus betulae* NIIJIMA (the types preserved in 2nd Laboratory of Forest Entomology, Government Forest Experiment Station), but may be differentiated by the smaller body, smaller punctation on the prothorax, the absence of abdominal tubercle and having a tuft of golden hairs at the last abdominal segment.

Polygraphus formosanus sp. n.

Oblong, cylindrical ; opaque, prothorax shining, black, mouth-parts (except apex of mandibles), antennae and legs yellowish brown, closely covered with scales and hairs.

Male : Head with vertex finely reticulate posteriorly, frons weakly impressed circularly, with two blunt tubercles at upper level of eyes, punctures closer and vestiture shorter. Eyes biparted, upper division semicircular, lower one nearly rhombic. Antennal funicles 6-segmented ; clubs

larger, oblong-oval, about 1.45 times as long as wide, wider at middle, not pointed at apex. Prothorax wider than long (2.1 : 1.5), wider before base, basal margin truncate and weakly sinuate, lateral margins rounded, constricted behind apex, apical margin weakly retuse at middle ; disk strongly convex, transversely impressed behind anterior area, with a distinctly elevated line from base to over middle, closely and distinctly punctured, the punctures replaced by close granules at lateral areas, vestiture consisting of close setae and scales intermixed. Elytra nearly equal in width to base of prothorax, 1.67 times as long as wide, lateral margins parallel at basal two-thirds and thence roundly narrowing ; upper surface strongly convex, declivity beginning at two-thirds of elytral length, basal margin slightly curved and with a row of narrow asperities, basal area rather closely tuberculate, striae deeply and widely impressed, with a row of distinct punctures and very fine hairs, interstriae wide and elevated, distinctly rugose and finely punctured, 1st interstriae with a row of granules and others with irregular row of granules, declivity elevated at 1st interstriae and impressed at 2nd, striae narrower and impressed with fine punctures, interstriae armed with a row of granules, which are obliterated at 2nd.

Female : Similar to the male except in the following points : Frons flattened, not or slightly impressed at anterior area, without tubercle, closely punctured and densely setigerous, the setae longer at upper and lateral areas. Antennal clubs narrower than that of male, about 1.62 times as long as wide.

Body length : 3.1mm

Holotype : ♂ Nagoya Port, on pine wood imported into Nagoya from Formosa, June 22, 1965, S. ÔNO.

Paratypes : 3 ♂♂ 9 ♀♀ same as Holotype.

The type specimens are in the collection of Second Laboratory of Forest Entomology, Government Forest Experiment Station.

This new species is allied to *Polygraphus jezoensis* NIIJIMA, but may be distinguished by

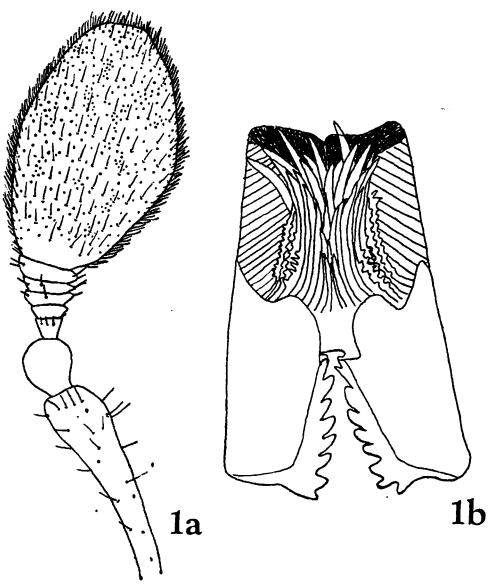

Fig. 1 *Polygraphus formosanus* sp. n.
a : antenna b : proventricular plate

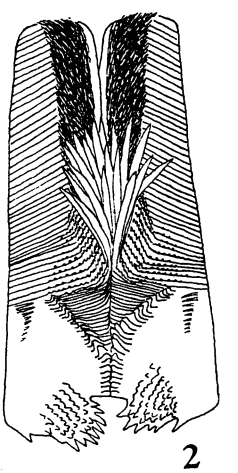

Fig. 2 *Dryocoetes formosanus* sp. n.
Proventricular plate

the shape of the antennal clubs, the wider and more impressed elytral striae and the irregularly seriate granules on the elytral interstriae.

Dryocoetes formosanus sp. n.

Oblong, cylindrical, slightly widened posteriorly; shining, pale brown, mandibles and eyes black, sparsely covered with long hairs.

Head finely granulate; frons slightly impressed triangularly at front, weakly elevated longitudinally at anterior margin. Antennal funicles 5-segmented, clubs oval. Prothorax wider than long (2.6 : 2.4), basal margin truncate and almost straight, lateral margins nearly parallel at basal half and thence narrowly rounded anteriorly, anterior margin strongly rounded; disk convex, gradually declivous at anterior half, finely but closely asperate, which are replaced by shallow punctures at base. Scutellum shield-shaped, smooth and strongly shining, impunctate. Elytra wider than base of prothorax, 1.5 times as long as wide, lateral margins feebly widened posteriorly, posterior margin strongly rounded; upper surface strongly convex, humeral callosities strongly elevated, striae narrower, with shallow and round punctures, 1st striae weakly impressed anteriorly; interstriae wider, about 3 times as wide as striae, slightly convex, 3rd interstriae with irregular double rows of punctures, others with a row of small and indistinct punctures and long hairs, which are distinct laterally and posteriorly, 1st striae narrower anteriorly; declivity somewhat opaque, weakly impressed at 2nd interstriae, striae with distinct punctures, which are the same as those on disk, 1st and 2nd striae impressed, interstriae wide, seriate with setigerous granules and punctures.

Body length : 4.4 mm

Holotype : ♂ Nagoya Port, April 18, 1964, on Niitaka spruce wood imported into Japan from Formosa, S. ÔNO.

Paratype : 1 ex., same as Holotype

The type specimens are in the collection of Second Laboratory of Forest Entomology, Government Forest Experiment Station.

This new species is allied to *Dryocoetes hectographus* REITTER, but may be distinguished by the smaller punctures on the elytral striae, the larger strial punctures on the declivity and the larger body.

A Check List of Formosan Species

Family Scolytidae

1. *Scolytus frontalis* BLANDFORD, 1894
   Trans. Ent. Soc. London, 1894 : 79
   Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu)
2. *S. nakaei* sp. n.
   Distr. : Formosa
3. *Hyorrhynchus lewisi* BLANDFORD, 1894
   Trans. Ent. Soc. London, 1894 : 60
   Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku)
4. *Sphaerotrypes pila* BLANDFORD, 1894
   Trans. Ent. Soc. London, 1894 : 62
   Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu), Korea
5. *Hylesinus porcatus* CHAPUIS, 1873

Synopsis des Scolytides : 239

Distr. : Formosa, Philippines, Malaya, Borneo, Sumatra, Java, India, Ceylon, New Guinea, Australia, Fiji, Samoa

6. *H. tristis* BLANDFORD, 1894

Trans. Ent. Soc. London, 1894 : 66

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea

7. *Hylurgops glabratus* (ZETTERSTEDT, 1828)

Fauna Insectorum Lapponica : 343

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Saghalien, Siberia, Korea, China, Europe

8. *H. interstitialis* (CHAPUIS, 1875)

Ann. Soc. Ent. Belg., 18 : 195

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), China

9. *H. spessiwzeffi* (EGGERS, 1914)

Ent. Blätt., 10 : 187

Distr. : Formosa, Japan (Hokkaido, Honshu), China

10. *Hylastes parallelus* CHAPUIS, 1875

Ann, Soc. Ent. Belg., 18 : 196

Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu)

11. *H. plumbeus* BLANDFORD, 1894

Trans. Ent. Soc. London, 1894 : 57

Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu), Korea, Europe

12. *Blastophagus minor* (HARTIG, 1834)

Forstliches und forstnaturwissenschaftliches Conversations-Lexicon : 413

Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu), Siberia, Korea, China, Europe

13. *B. piniperda* (LINNÉ, 1758)

Systema Naturae, 10 : 563

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Siberia, Korea, China, Europe

14. *Polygraphus formosanus* n. sp.

Distr. : Formosa

15. *P. taiwanensis* SCHEDL, 1966

Kontyû, 35 : 128

Distr. : Formosa

16. *Xylechinus arisanus* EGGERS, 1939

Arb. morph. tax. Ent., 6 : 114

Distr. : Formosa

17. *X. formosanus* SCHEDL, 1935

Philip. Jour. Sci., 57 : 479

Distr. : Formosa

18. *Phloeosinus arisanus* NIIJIMA, 1949

Trans. Sapporo Nat. Hist. Soc., 17 : 73

Distr. : Formosa

19. *P. lewisi* CHAPUIS, 1875

Ann. Soc. Ent. Belg., 18 : 198

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), China

20. *P. perlatus* CHAPUIS, 1875
Ann. Soc. Ent. Belg., 18 : 198
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea

21. *P. pertuberculatus* EGGERS, 1939
Arb. morph. tax. Ent., 6 : 114
Distr. : Formosa

22. *Ficiphagus goliatoides* (MURAYAMA, 1955)
Bull. Fac. Agr. Yamaguti Univ., 6 : 94
Distr. : Formosa, Japan (Honshu, Kyushu)

23. *Crypturgus pusillus* (GYLLENHAL, 1813)
Insecta suecia descripta, 3 : 371
Distr. : Formosa, Japan (Hokkaido, Honshu), Saghalien, Kurile Is., Siberia, Korea, Europe, Africa, Himalaya

24. *Crypturgus tuberosus* NIIJIMA, 1909
Jour. Coll. Agr. Tohoku Imp. Univ. 3 : 139
Distr. : Formosa, Japan (Hokkaido, Honshu), Saghalien, Siberia

25. *Ozopenon tuberculatus* STROHMEYER, 1912
Ent. Mitt., 1 : 38
Distr. : Formosa

26. *Carposinus formosanus* (SCHEDL, 1952)
Philip. Jour. Sci., 81 : 62
Distr. : Formosa

27. *Dryocoetes autographus* (RATZEBURG, 1837)
Die Forstinsekten, 1 : 160
Distr. : Formosa, Japan (Hokkaido, Honshu), Saghalien, Siberia, Korea, China, Europe

28. *D. formosanus* sp. n.
Distr. : Formosa

29. *D. luteus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 94
Distr. : Formosa, Japan (Hokkaido, Honshu, Kyushu)

30. *Eidophelus imitans* EICHHOFF, 1875
Ann. Soc. Ent. Belg., 18 : 200
Distr. : Formosa, Japan (Honshu, Kyushu), Korea

31. *Coccotrypes pygnaeus* EICHHOFF, 1879
Ratio, descriptio, emendatio eorum Tomicinorum : 310
Distr. : Formosa, Madagascar, Africa

32. *Taphrorychus coffeae* (EGGERS, 1923)
Zool. Meded. R. Mus. Nat. Hist. Leiden, 7 : 161
Distr. : Formosa, Japan (Honshu, Kyushu), Malaya, Borneo, Java, India

33. *Poecilips nubilus* (BLANDFORD, 1894)
Trans. Ent. Soc. London, 1894 : 95
Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu)

34. *Xylosandrus brevis* (EICHHOFF, 1877)
Deut. Ent. Zeitschr., 21 : 211

Distr. : Formosa, Thailand, Japan (Honshu, Shikoku, Kyushu), Korea

A female was collected in Mae Klang, Water Fall, North Thailand on June 11, 1965 by K. MORIMOTO. This species to be recorded from Thailand for the first time.

35. *X. discolor* (BLANDFORD, 1898)

Trans. Ent. Soc. London, 1898 : 429

Distr. : Formosa, Burma, Sumatra, Java, India, Ceylon, Assam

36. *X. germanus* (BLANDFORD, 1894)

Trans. Ent. Soc. London, 1894 : 106

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea, China, Europe, North America

37. *X. morigerus* (BLANDFORD, 1894)

Ins. Lif., 6 : 260

Distr. : Formosa, Indo-China, Burma, Philippines, Borneo, Sumatra, Java, Ceylon, New Guinea, Celebes, Samoa, Fiji, Madagascar, Africa

38. *Xyleborus amorphus* EGGERS, 1926

Ent. Blätt., 22 : 147

Distr. : Formosa

39. *X. amputatus* BLANDFORD, 1894

Trans. Ent. Soc. London, 1894 : 575

Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu)

40. *X. aquilus* BLANDFORD, 1894

Trans. Ent. Soc. London, 1894 : 109

Distr. : Formosa, Loochoo Is., Japan (Honshu, Shikoku, Kyushu), Korea

41. *X. atratus* EICHHOFF, 1879

Ann. Soc. Ent. Belg., 18 : 201

Distr. : Formosa, Burma, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea, China, Philippines, Borneo, Sumatra, Java, New Guinea

42. *X. attenuatus* BLANDFORD, 1894

Trans. Ent. Soc. London, 1894 : 114

Distr. : Formosa, Japan (Honshu, Shikoku), Korea

43. *X. barbatomorphus* SCHEDL, 1951

Tijdschr. Ent., 93 : 72

Distr. : Formosa

44. *X. chujoi* SCHEDL, 1951

Tijdschr. Ent. 93 : 73

Distr. : Formosa

45. *X. formicatus* EICHHOFF, 1868

Berl, Ent. Zeitschr., 12 : 151

Distr. : Formosa, Indo-China, Burma, Philippines, Malaya, Borneo, Sumatra, Java, Caroline Is., Hawaii, Ceylon, Australia, New Guinea, Fiji

46. *X. haberkorni* EGGERS, 1920

Ent. Blätt., 16 : 43

Distr. : Formosa, Burma, Malaya, Java, India, Ceylon, Africa

47. *X. hirtuosus* BEESON, 1930

Ind. For. Rec., 14 (10) : 41

Distr. : Formosa, India, Assam

48. *X. interjectus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 576
Distr. : Formosa, Indo-China, Japan (Kyushu), China, Malaya, Borneo, Sumatra, Java, Mentawai, India, Ceylon

49. *X. glabratus* EICHHOFF, 1879
Ratio, descriptio, emendatio eorum Tomicinorum : 381
Distr. : Formosa, Japan (Honshu, Kyushu), India, Assam

50. *X. globus* BLANDFORD, 1896
Trans. Ent. Soc. London, 1896 : 208
Distr. : Formosa, Philippines, Malaya, Borneo, Sumatra, Java, New Guinea, Solomon

51. *X. kadoyamaensis* MURAYAMA, 1934
Ann. Zool. Jap., 14 (3) : 290
Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu)

52. *X. lewisi* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 104
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea, Malaya Is., Borneo, Sumatra, Java.

53. *X. metacuneolus* EGGERS, 1940
Tijdschr. Ent., 83 : 150
Distr. : Formosa, Malaya, Java

54. *X. metanepoturus* EGGERS, 1940
Arb. morph. tax. Ent., 6 : 119
Distr. : Formosa

55. *X. mutilatus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 103
Distr. : Formosa, Burma, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Loochoo Is., Broneo, Sumatra, Java, Anderman, India, Ceylon

56. *X. nitidipennis* SCHEDL, 1951
Tijdschr. Ent., 93 : 88
Distr. : Formosa, Java

57. *X. perforans* (WOLLASTON, 1857)
Catalogue of the Coleopterous insects of Madeira in the collection of the British Museum : 96
Distr. : Formosa, Indo-China, Burma, Philippines, Malaya, Borneo, Sumatra, Java, Sumba, Caroline Is., Marianas Is., Marshall Is., India, Ceylon, Australia, Madagascar, Africa, Canary Is., America, West Indian Is.

58. *X. perforans philippinensis* EICHHOFF, 1879
Ratio, descriptio, emendatio eorum Tomicinorum : 373
Distr. : Formosa, Philippines, Malaya, Sumatra, Java

59. *X. rubricollis* EICHHOFF, 1875
Ann. Ent. Soc. Belg., 1875 : 202
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea

60. *X. satoi* SCHEDL, 1966
Kontyû, 34 (1) : 39
Distr. : Formosa

61. *X. saxeseni* (RATZEBURG, 1837)
Die Forstinsekten, 1 : 167
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Saghalien, Siberia, Korea, Europe, America

62. *X. schaufussi* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 117
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku)

63. *X. semiopacus* EICHHOFF, 1879
Ratio, descriptio, emendatio eorum Tomicinorum : 334
Distr. : Formosa, Indo-China, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea, China, Malaya, Borneo, Caroline Is., India, Ceylon, New Guinea, Samoa, Madagascar, Africa
According to my study on the type preserved in Government Forest Experiment Station, *X. ebriosus* NIIJIMA is the same as this species.

64. *X. seriatus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 111
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu)

65. *X. sexspinosus* (MOTSCHULSKY, 1863)
Bull. Soc. Imp. Nat. Mosc., 36 (1) : 515
Distr. : Formosa, Indo-China, Burma, Philippines, Malaya, Borneo, Sumatra, Java, Ceylon, Africa

66. *X. similis* FERRARI, 1867
Die forst- und baumzuchtschädlichen Borkenkäfer : 24
Distr. : Formosa, Indo-China, Burma, Philippines, Malaya, Borneo, Sumatra, Java, Caroline Is., Marianas Is., India, Ceylon, Seychelles, Australia, New Guinea, Celebes, Solomon Is., Guam, Samoa, Tahiti, Madagascar, Africa

67. *X. subnepotulus* EGGERS, 1930
Ind. For. Rec., 14 : 178
Distr. : Formosa, India

68. *X. taboensis* SCHEDL, 1952
Philip. Jour. Sci., 81 : 65
Distr. : Formosa

69. *X. taichuensis* SCHEDL, 1952
Philip. Jour. Sci., 81 : 61
Distr. : Formosa

70. *X. taitonus* EGGERS, 1939
Arb. morph. tax. Ent., 6 : 118
Distr. : Formosa

71. *X. testaceus* WALKER, 1859
Ann. Mag. Nat. Hist., 3 : 260
Distr. : Formosa, Ceylon

72. *X. testudo* EGGERS, 1939
Arb. morph. tax. Ent., 6 : 116
Distr. : Formosa, Tonkin

73. *X. torquatus* EICHHOFF, 1868

Berl. Ent. Zeit., 12 : 146

Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu), Korea, America, Malaya and almost cosmopolitan in tropics.

74. *X. validus* EICHHOFF, 1865

Ann. Soc. Ent. Belg., 18 : 202

Distr. : Formosa, Burma, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea, China, Borneo, Sumatra, India, Ceylon, Celebes

75. *X. xyloteroides* EGGERS, 1939

Arb. morph. tax. Ent., 6 : 114

Distr. : Formosa

76. *Cnestus murayamai* SCHEDL, 1962

Ent. Blätt., 58 (5) : 207

Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu), Loochoo Is.

77. *Ips cembrae* (HEER, 1836)

Observations entomologicae : 28

Distr. : Formosa, Japan (Hokkaido, Honshu), Saghalien, Kurile Is., Siberia, Manchuria, Korea, Europe

78. *Orthotomicus angulatus* (EICHHOFF, 1877)

Deut. Ent. Zeitschr., 21 (1) : 119

Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu), Loochoo Is., China

79. *Hypothenemus javanus* (EGGERS, 1909)

Ent. Blätt., 5 : 215

Distr. : Formosa, Malaya, Java, India

80. *H. taihokuensis* (SCHEDL, 1952)

Philip. Jour. Sci., 81 : 63

Distr. : Formosa

81. *Hypocryphalus formosanus* SCHEDL, 1952

Philip. Jour. Sci., 81 : 62

Distr. : Formosa

82. *Cryphalus formosanus* SCHEDL, 1942

Kol. forstl. Mitt., 5 : 175

Distr. : Formosa

83. *Trypodendron pubipenne* BLANDFORD, 1894

Trans. Ent. Soc. London, 1894 : 125

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea

84. *Scolytoplatypus darjeelingi* STEBBING, 1914

Indian Forest Insects : 607

Distr. : Formosa, India

85. *S. mikado* BLANDFORD, 1893

Trans. Ent. Soc. London, 1893 : 437

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Korea

86. *S. pubescens* HAGEDORN, 1914

Bull. Mus. d'Hist. Nat. Paris, 1914 : 123

Distr. : Formosa, Himalaya

87. *S. raja* BLANDFORD, 1893

Trans. Ent. Soc. London, 1893 : 440
Distr. : Formosa, Indo-China, Malaya, India

88. *S. shogun* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 126
Distr. : Formosa, Japan (Hokkaido, Honshu, Kyushu)

89. *S. tycon* BLANDFORD, 1893
Trans. Ent. Soc. London, 1893 : 432
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu), Saghalien, Siberia, Korea

Family Platypodidae

1. *Crossotarsus contaminatus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 131
Distr. : Formosa, Japan (Honshu, Shikoku, Kyushu)

2. *C. emancipatus* MURAYAMA, 1934
Jour. Fac. Agr. Hokkaido Univ., 35 : 138
Distr. : Formosa, Japan (Kyushu)

3. *C. externedentatus* FAIRMAIRE, 1850
Rev. Mag. Zool., 1850 : 51
Distr. : Formosa, Indo-China, Caroline Is., Hawaii, Samoa, Fiji, Society Is., Madagascar

4. *C. flavomaculatus* STROHMEYER, 1912
Ent. Mitt., 1 : 40
Distr. : Formosa, Japan (Kyushu)

5. *C. korycensis* MURAYAMA, 1930
Jour. Chosen Nat. Hist. Soc., 11 : 39
Distr. : Formosa, Korea

6. *C. niponicus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 130
Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu)

7. *C. piceus* CHAPUIS, 1865
Monographie des Platypides : 56
Distr. : Formosa, Molukkas, Arrou Is., Sunda Is.

8. *C. rengetensis* NIIJIMA et MURAYAMA, 1925
Jour. Coll. Agr. Hokkaido Imp. Univ., 15 : 208
Distr. : Formosa

9. *C. sauteri* STROHMEYER, 1913
Ent. Blätt., 9 : 163
Distr. : Formosa

10. *C. simplex* MURAYAMA, 1925
Jour. Coll. Agr. Hokkaido Imp. Univ., 15 : 231
Distr. : Formosa, Japan (Kyushu)

11. *C. taiheizanensis* MURAYAMA, 1932
Trans. Nat. Hist. Soc. Formosa, 22 : 485
Distr. : Formosa

12. *C. terminatus* CHAPUIS, 1865

Monographie des Platypides : 82
Distr. : Formosa, Malaya, Borneo, Java

13. *C. wallacei* THOMSON, 1858
Arch. Ent., 1 : 343
Distr. : Formosa, Borneo, Sumatra, Malacca

14. *Platypus arisannensis* MURAYAMA, 1934
Jour. Fac. Agr. Hokkaido Univ., 35 : 135
Distr. : Formosa

15. *P. curtus* CHAPUIS, 1865
Monographie des Platypides : 261
T. NODA has taken three examples on Formosan log imported into Hiroshima Port. This is a first record from Formosa.

16. *P. formosanus* (STROHMEYER, 1912)
Ent. Mitt., 1 : 40
Distr. : Formosa, Japan (Kyushu)

17. *P. horishensis* MURAYAMA, 1928
Jour. Coll. Agr. Hokkaido Imp. Univ., 19 : 284
Distr. : Formosa

18. *P. kusukusensis* MURAYAMA, 1956
Coleop. Bull., 10 : 13
Distr. : Formosa

19. *P. indicus* STROHMEYER, 1910
Ent. Blätt., 6 : 131
Distr. : Formosa, India

20. *P. lepidus* CHAPUIS, 1865
Monographie des Platypides : 282
Distr. : Formosa, Philippines, Malaya, Java, New Guinea, Celebes, Moluccas, Sunda Is.

21. *P. lepidus flectus* NIIJIMA et MURAYAMA, 1931
Jour. Coll. Agr. Hokkaido Imp. Univ., 30 : 197
Distr. : Formosa

22. *P. lewisi* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 134
Distr. : Formosa, Japan (Hokkaido, Honshu, Kyushu), Korea

23. *P. modestus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 136
Distr. : Formosa, Japan (Honshu)

24. *P. murayamensis* SCHEDL, 1941
Ent. Blätt., 37 : 43
Distr. : Formosa, China

25. *P. niijimai* MURAYAMA, 1931
Jour. Coll. Agr. Hokkaido Imp. Univ., 30 (4) : 197
Distr. : Formosa

26. *P. severini* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 136

Distr. : Formosa, Japan (Hokkaido, Honshu, Shikoku, Kyushu)

27. *P. solidus* WALER, 1859
Ann. Mag. Nat. Hist., 3 (2) : 268
Distr. : Formosa, Tonkin, Japan (Shikoku), Korea, Philippines, Malaya, Sumatra, Java, Caroline Is., Marianas Is., India, Ceylon, Australia, New Guinea, Aroe, Solomon Is., Guam

28. *P. taiwansis* SCHEDL, 1960
Ent. Blätt., 56 : 111
Distr. : Formosa

29. *Diapus aculeatus* BLANDFORD, 1894
Trans. Ent. Soc. London, 1894 : 139
Distr. : Formosa, Japan (Shikoku, Kyushu), Java

30. *D. formosanus* NIIJIMA et MURAYAMA, 1925
Jour. Coll. Agr. Hokkaido Imp. Univ., 15 : 217
Distr. : Formosa

31. *D. quinquespinatus* CHAPUIS, 1865
Monographie des Platypides : 334
Distr. : Formosa, Indo-China, Burma, Philippines, Malaya, Borneo, Sumatra, Java, India, Madagascar, Africa

32. *D. truncatus* NIIJIMA et MURAYAMA, 1934
Jour. Fac. Agr. Hokkaido Univ., 35 : 143
Distr. : Formosa

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2) ———— : Neue *Xyleborus*-Arten (Col., Scolytidae) aus Indien, Ind, For. Rec., **14**, 9, pp. 177～208, (1930)
3) ———— : Japanische Borkenkäfer II, Arb. morph. tax. Ent. Berline, **6**, pp. 114～123, (1939)
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5) ———— : Supplementary notes on "The Platypodidae of Formosa", t. c., **15**, 4, pp. 229～236, (1925)
6) ———— : Supplementary notes on the Platypodidae of Formosa II, t. c., **19**, 5, pp. 283～292, (1928)
7) ———— : The mode of attack and tunnelling by *Crossotarsus rengetensis* NIIJIMA et MURAYAMA, Ins. Mats., **3**, 1, pp. 26～35, (1929)
8) ———— : Les espèces, la distribution géographique et les plantes décorées par les Scolytes de Corée (in Japanese), 16 pp., (1929)
9) ———— : Révisions des familles des Ipides et des Platypides de Corée, Jour. Chosen Nat. Hist. Soc., **11**, pp. 1～34, (1930)
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34) STROHMEYER, H. : SAUTER's Formosan-Ausbeute, Ent. Mitt., **1**, 2, pp. 40～41, (1921)
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Explanation of Plates

Plate 1 Fig. 1 *Scolytus nakanei* sp. n.
Fig. 2 *Phloeosinus arisanus* NIIJIMA
Fig. 3 *Ficiphagus goliatoides* (MURAYAMA)
Fig. 4 *Hylurgops spessiwzeffi* (EGGERS)
Fig. 5 *Polygraphus formosanus* sp. n.
Fig. 6 *Dryocoetes formosanus* sp. n.
Fig. 7 *Taphrorychus coffeae* EGGERS
Fig. 8 *Hypothenemus taihokuensis* SCHEDL
Fig. 9 *Xyleborus interjectus* EICHHOFF
Fig. 10 *X. formicatus* EICHHOFF
Fig. 11 *X. lewisi* BLANDFORD
Fig. 12 *X. amorphus* EGGERS

Plate 2 Fig. 13 *X. perforans* EICHHOFF
Fig. 14 *Cnestus murayamai* SCHEDL
Fig. 15 *Scolytoplatypus pubescens* HAGEDORN
Fig. 16 *S. raja* BLANDFORD
Fig. 17 *Crossotarsus externedentatus* FAIRMAIRE
Fig. 18 *C. contaminatus* BLANDFORD
Fig. 19 *C. koryoensis* MURAYAMA
Fig. 20 *C. flavomaculatus* STROHMEYER
Fig. 21 *Platypus modestus* BLANDFORD
Fig. 22 *P. solidus* WALKER
Fig. 23 *P. lepidus* CHAPUIS
Fig. 24 *Diapus truncatus* NIIJIMA et MURAYAMA

台湾産キクイムシ上科*

野　淵　　輝**

台湾のキクイムシは専門家によって採集されていないため，日本にいる種類数の半分に満たない状態である。わが国にかなりの南洋材が輸入されているが，これに寄生したキクイムシが生きたまま輸入港で発見され，日本に定着する危険性がある。このようなキクイムシの侵入土着の可能性を論ずる場合，台湾のような中間地域のファウナが重要な資料となる。

筆者は日米科学協力研究による台湾調査隊によって採集された標本と，台湾から輸入された材について日本の港で発見された標本を同定する機会をえた。この中から次の種類を記録した。

新　種

ナカネキクイムシ　*Scolytus nakanei* NOBUCHI

タイワンヨツメキクイムシ　*Polygraphus formosanus* NOBUCHI

タイワンアトマルキクイムシ　*Dryocoetes formosanus* NOBUCHI

新記録

ゴリアテキクイムシ　*Ficiphagus goliatoides* (MURAYAMA)

コーヒーキクイムシ　*Taphrorychus coffeae* (EGGERS)

ウスキイロキクイムシ　*Cnestus murayamai* SCHEDL

クルツゥスナガキクイムシ　*Platypus curtus* CHAPUIS

同物異名

サクキクイムシ　*Xyleborus semiopacus* EICHHOFF ＝ サカクレノキクイムシ *X. ebriosus* NIIJIMA

終わりに台湾のキクイムシ相から考えて不完全であるが，これまで記録された種類を整理しリストを作成した。

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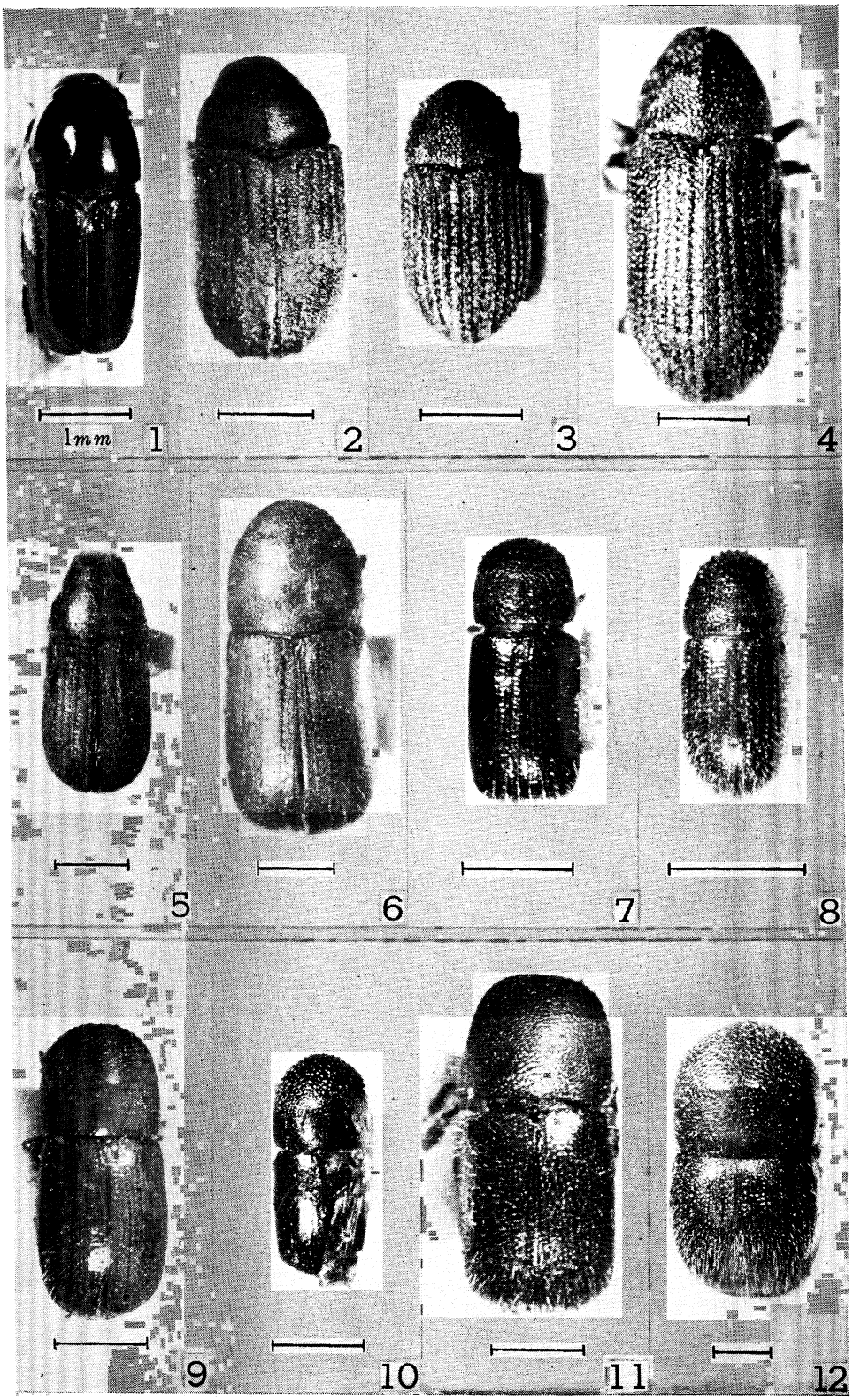
* キクイムシ科の研究　第7報

** 保護部昆虫科昆虫第2研究室長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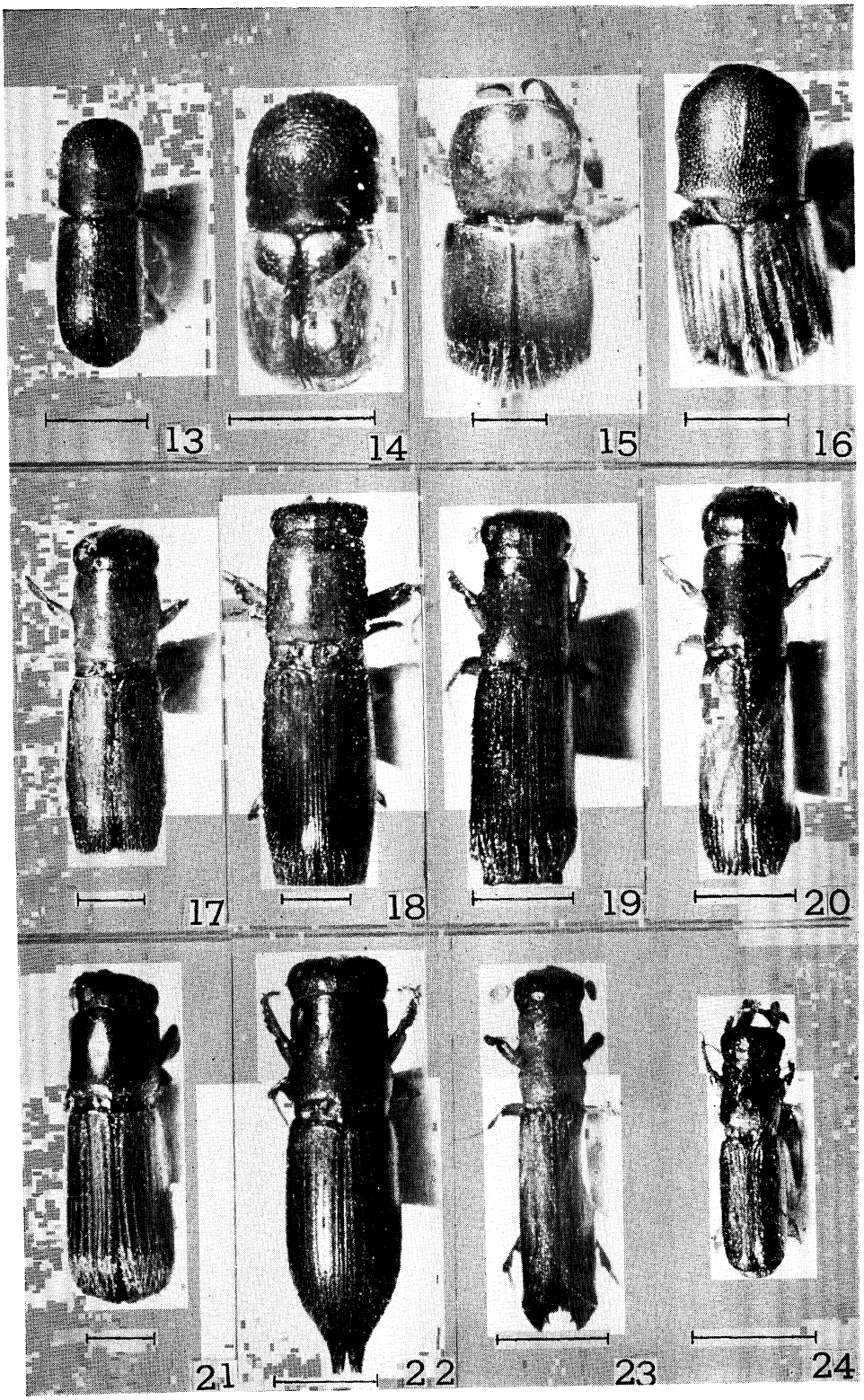
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