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Studies on Scolytidae IX

(Coleoptera)

Key to the Subfamilies, Tribes and Genera of Japan

By

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Summary: A key for the separation of the subfamilies, tribes and genera of the Japanese Scolytidae is provided. In addition, *Pseudohylesinus yasumatsui* is described as new to science. *Kissophagus tiliae* NIIJIMA is transferred to *Hylesinus* FABRICIUS.

In Japan, Scolytidae is a comparatively large family, comprised of four subfamilies, fourteen tribes and fifty genera, and is one of the most complicated and difficult beetle groups to classify for the lack of a complete key to the genera. I have published a systematic study of the Japanese Scolytidae in a series of papers under the title "Studies on Scolytidae". The present study is an attempt to make a key to all the known subfamilies, tribes and genera of the Japanese Scolytidae. This study may be an important contribution not only to entomology, but also to forestry.

I wish to offer my sincere thanks to Prof. Dr. M. SASAKAWA of Kyoto Prefectural University and Dr. M. INOUYE of Ebetsu City for their guidance in the course of the present study, and also to Dr. D. E. BRIGHT, Entomological Research Institute of Canada, for his helpful advice.

Key to Japanese subfamilies

1. Pronotum with lateral margins emarginated in basal half (Fig. 37); fore tibiae with prominent rugosities on ventral side (Fig. 49), which are distinct in female but nearly obsolete in male; in female pronotum with a conspicuous elongate pore before center (Fig. 37); maxillary lobes with both spines and setae on inner edge (Fig. 3); xylo-mycetophagous ..... Scolytoplatypinae
   - Pronotum with lateral margins not emarginated in basal half, without central pore in both sexes (Figs. 1～2, 38～42); fore tibiae without prominent rugosities on ventral side (Figs. 50～56); maxillary lobes with either spines or setae on inner edge (Fig. 4～5)……2
2. Fore tibiae with an incurved process on outer apical angle (Fig. 50); eyes not divided into two parts; pronotum strongly ridged in lateral margins; proventriculus without masticatory brush*; phloeophagous ..... Scolytinae
   - Fore tibiae usually with a row of several small tooth-like processes on outer side (Figs. 53～56); if outer apical angle projected outwardly or backwardly, eyes divided into two

* The structure of the proventriculus of this family has already been illustrated in the previous report[2] (1969, Bull. Gov. For. Exp. St., 224)

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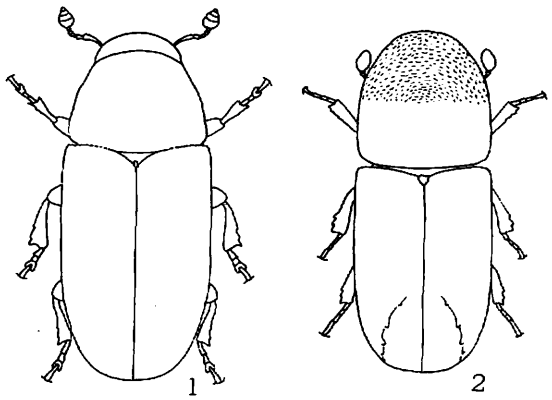
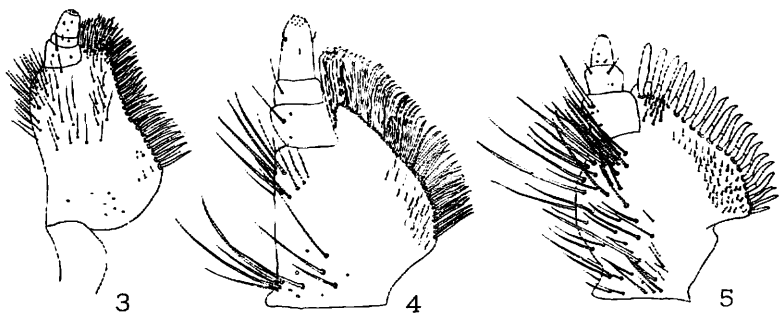
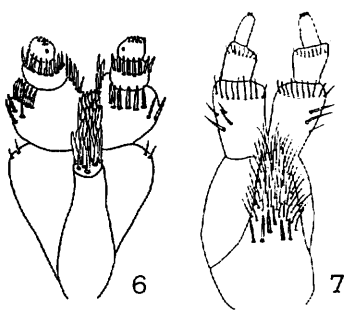
(1) Forest Protection Division

Fig. 1. *Tomicus piniperda* (Linné), dorsal aspect.

Fig. 2. *Ips typographus japonicus* Niijima, dorsal aspect.







Figs. 3～5. Maxilla.
3. *Scolytoplatypus mikado* Blandford.
4. *Xyleborus atratus* Eichhoff.
5. *Ips acuminatus* (Gyllenhal).

Figs. 6～7. Labium, dorsal aspect.
6. *Hylastes parallelus* Chapuis.
7. *Pseudohylesinus yasumatsui* sp. nov.

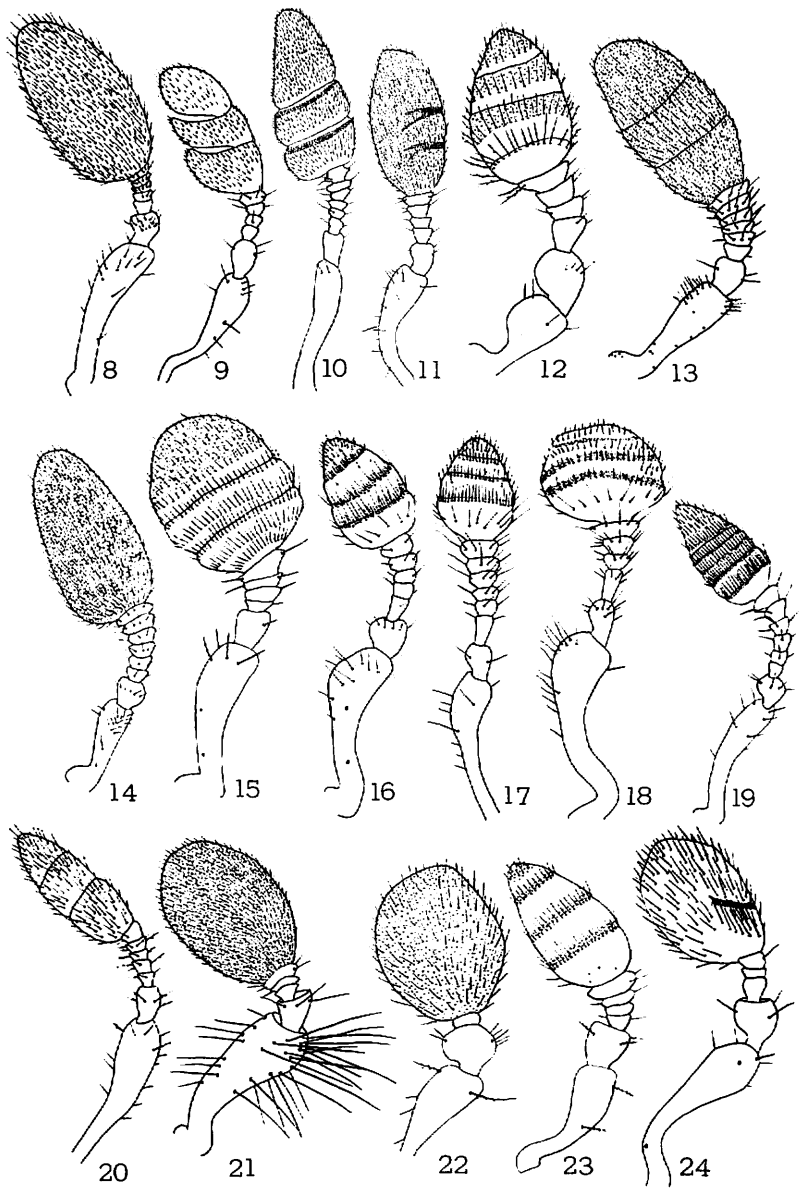
parts; pronotum ridged or not in lateral margins; proventriculus with masticatory brush···3

3. Head suboblong and prominent, partially visible from above; pronotum nearly evenly punctured, usually not asperate on anterior portion; basal margins of elytra usually elevated and transversely crenulate (Fig. 1) (except Hylastini)·····Hylesininae

- Head globose, not visible from above, almost entirely concealed by pronotum; pronotum usually distinctly roughened, with backwardly directed spines in front (except *Crypturgus* and a few species of *Poecilips* in Crypturgini); basal margins of elytra smooth, neither elevated nor crenulate (Fig. 2)·····Ipinae

Subfamily Scolytinae

A single genus, *Scolytus* Geoffroy, has been found from Japan.



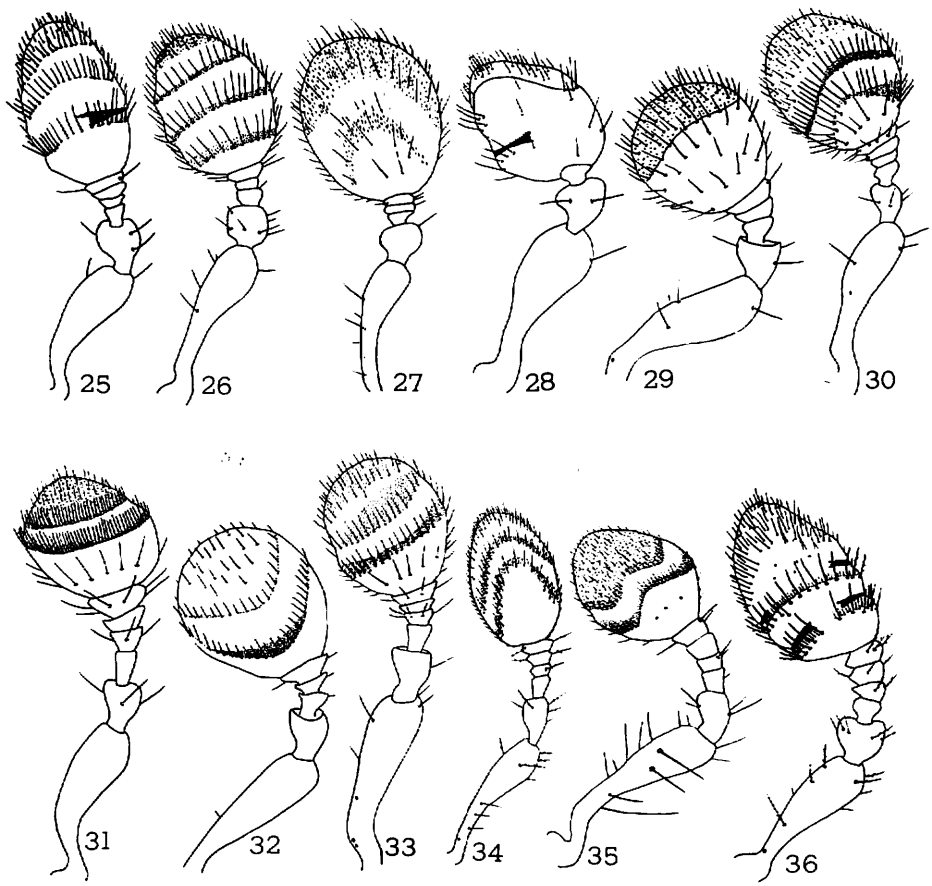
Figs. 8～24. Antenna.

8. *Polygraphus proximus* Blandford. 9. *Phthorophloeus spinulosus* Rey. 10. *Hylesinus tristis* Blandford. 11. *Phloeosinus izuensis* Nobuchi. 12. *Neohyorrhynchus niisimai* (Eggers). 13. *Hyorrhynchus lewisi* Blandford. 14. *Pseudohyorrhynchus wadai* Murayama. 15. *Sphaerotrypes pila* Blandford. 16. *Tomicus piniperda* (Linné). 17. *Pseudohylesinus yasumatsui* sp. nov. 18. *Dendroctonus pseudotsugae* Hopkins. 19. *Alniphagus alni* (Niijima). 20. *Neopteleobius scutulatus* (Blandford). 21. *Indocryphalus pubipennis* (Blandford). 22. *Cosmoderes consobrinus* Blandford. 23. *Cryphalus kurenzovi* (Nunberg). 24. *Cryphalomorphus birosimensis* (Murayama).

Subfamily Hylesininae

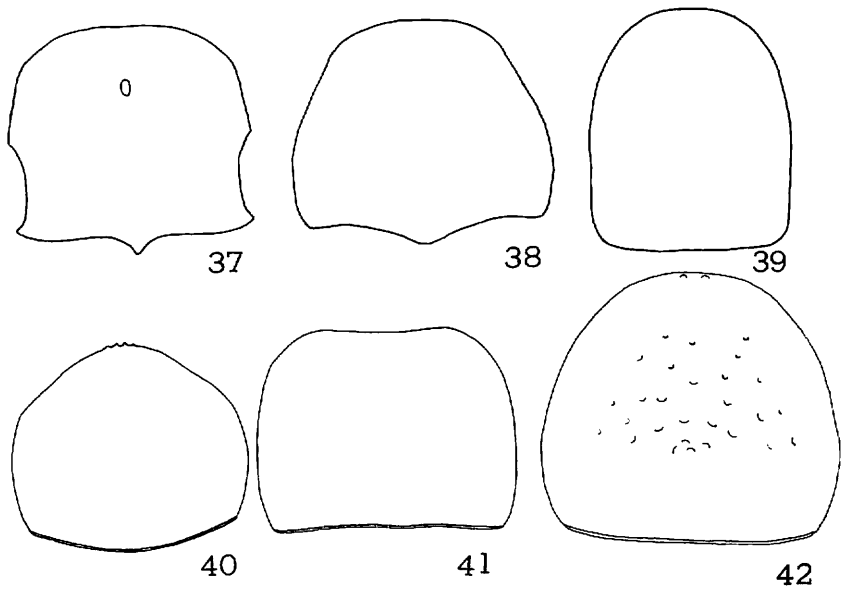
Key to Japanese tribes

1. Fore tibiae with a row of several tooth-like processes on outer side, not projected on outer apical angle; eyes usually undivided into two parts (except Polygraphini); phloeophagous ……2
- Fore tibiae strongly projected outwardly or backwardly on outer apical angle (Figs. 51～52); eyes completely divided into two parts……7
2. Antennal clubs annulated or sublamellate (Figs. 9～11, 16～20); eyes not divided into two parts, but sometimes deeply emarginated on anterior margin; anterior margin of proventriculus indistinct……3



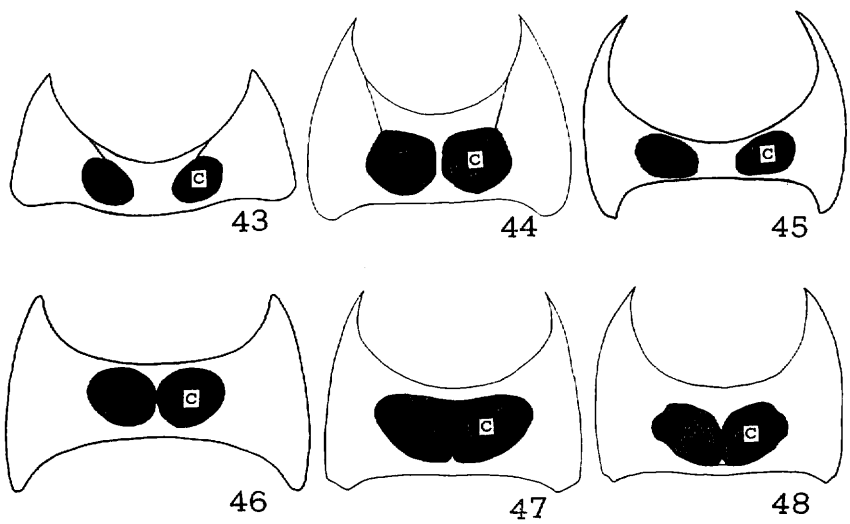
Figs. 25～36. Antenna.

25. *Hypothenemus expers* Blandford. 26. *Taenioglyptes fulvus* (Niijima). 27. *Ernoporus japonicus* Nobuchi. 28. *Crypturgus tuberosus* Niijima. 29. *Cyrtogenius philippinensis* (Eggers). 30. *Pseudopoecilips pilosus* (Blandford). 31. *Dryocoetes hectographus* Reitter. 32. *Cnestus murayamai* Schedl. 33. *Xyleborus validus* Eichhoff. 34. *Acanthotomicus spinosus* Blandford. 35. *Ips cembrae* (Heer). 36. *Pityophthorus jucundus* Blandford.



Figs. 37～42. Pronotum.

37. *Scolytoplatypus mikado* Blandford, female. 38. *Hylurgops interstitialis* (Chapuis). 39. *Hylastes parallelus* Chapuis. 40. *Indocryphalus pubipennis* (Blandford), male. 41. *Trypodendron proximum* (Niijima), male. 42. *Taenioglyptes fulvus* (Niijima).



Figs. 43～48. Prosternum, c: coxal cavity.

43. *Hylesinus tristis* Blandford. 44. *Hylurgops interstitialis* (Chapuis). 45. *Xylosandrus brevis* (Eichhoff). 46. *Xyleborus validus* Eichhoff. 47. *Pityogenes chalcographus* (Linné). 48. *Orthotomicus golovjankoi* Pjatnitzky

- Antennal clubs not annulated, solid (Fig. 8); eyes biparted; anterior margin of proventriculus distinct and deeply emarginated in a trumpet-form……Polygraphini

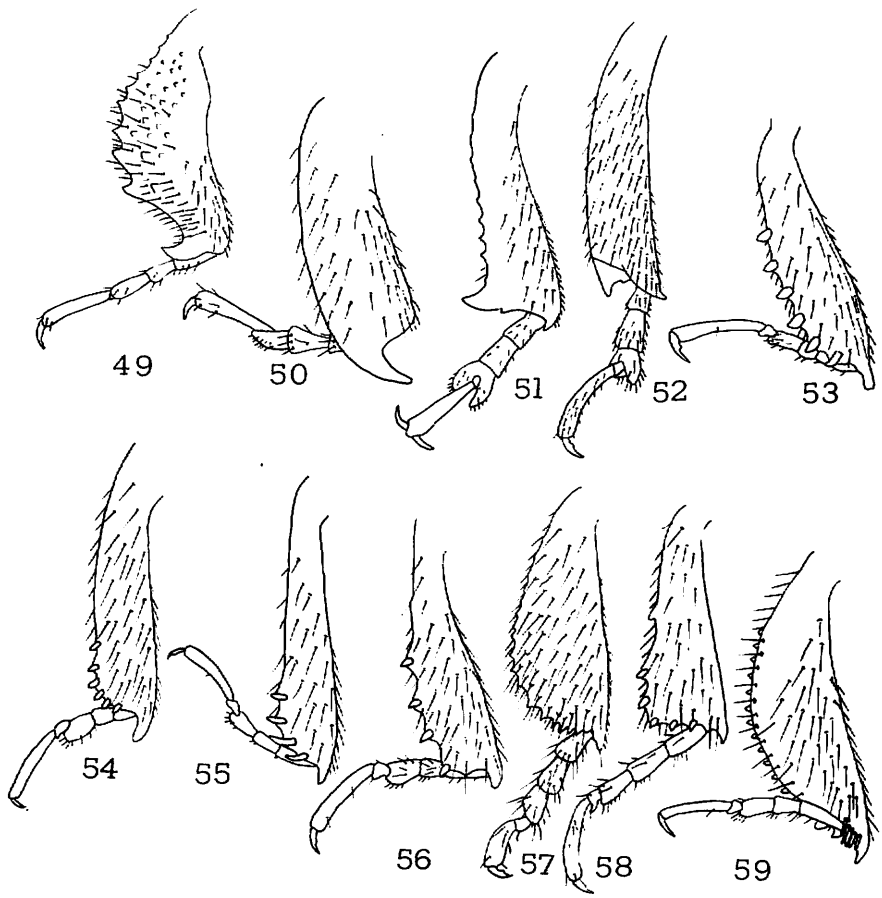
3. Fore coxae rather widely separated at base by a broad prosternal process (Fig. 43); Proventriculus without lateral teeth of serration on anterior plate……4

- Fore coxae almost touching each other (Fig. 44) (with an exception of *Hylurgops inouyei* in Hylastini); proventriculus with lateral teeth of serration……6

4. Antennal clubs loose, with three distinctly separated segments which are produced on frontal side, sublamellate (Fig. 9)……Phloeotribini

- Antennal clubs connate, with segments equal sided (Figs. 10～11, 19～20)……5

5. Antennal clubs with two septa; funicles five-segmented (Fig. 11); eyes distinctly emargi-



Figs. 49～56. Fore tibia and tarsus.

49. *Scolytoplatypus mikado* Blandford, female. 50. *Scolytus frontalis* Blandford. 51. *Sphaerotrypes pila* Blandford. 52. *Hyorrhynchus lewisi* Blandford. 53. *Cryphalomorphus birosimensis* (Murayama). 54. *Hypothemenus expers* (Blandford). 55. *Taphrorychus coffeae* (Eggers). 56. *Pseudopoecilips pilosus* (Blandford).

Figs. 57～59. Middle tibia and tarsus.

57. *Neohyorrhynchus niisimai* (Eggers), female. 58. *Ips cembrae* (Heer). 59. *Xyleborus validus* Eichhoff, female.

nated in anterior margin; the emargination extending to middle of eyes; pronotum devoid of asperities……Phloeosinini

- Antennal clubs without septum; funicles five- to seven-segmented (Figs 10, 19~20); eyes usually not emarginated in anterior margin; if eyes emarginated the emargination not extending to middle (*Ficiphagus*, *Alniphagus* and *Neopteleobius* in Hylesinini); pronotum usually with a few asperities on antero-lateral portion……Hylesinini

6. Basal margins of elytra elevated and crenulate (Fig. 1); prosternum not elevated on lateral sides……Hylurgini
- Basal margins of elytra not elevated, nor crenulate; prosternum sharply elevated from base of coxae to anterior margin (Fig. 44)……Hylastini

7. Antennal clubs less than five-segmented (Figs. 12~14); pronotum not marginated in basal and lateral margins; metasternum long; middle and hind coxae widely separated at base; xylophagous or xylo-mycetophagous……Hyorrhynchini
- Antennal clubs multi-segmented appearance by two sutures and some rows of setae (Fig. 15); pronotum marginated in basal and lateral margins; metasternum very short; middle and hind coxae narrowly separated at base; phloeophagous……Sphaerotrypini

Tribe Sphaerotrypini

Key to Japanese genera

1. Body oval; antennal insertion situated near upper angle of lower division of eyes; pronotum rugose, opaque, closely covered with granulate punctured…*Sphaerotrypes* Blandford
- Body elongate oval; antennal insertion situated near underside of mandibles; pronotum smooth and shining, sparsely covered with fine punctures……*Parasphaerotrypes* Murayama

Tribe Hyorrhynchini

Key to Japanese genera

1. Antennal funicles five-segmented; scapes not or slightly longer than first and second segments of funicles united (Fig. 12); middle and hind tibiae dilated laterally and armed with a row of fine tooth-like processes outside (Fig. 57); fore coxae widely separated at base; male conspicuously smaller than female…*Sueus* Murayama and *Neohyorrhynchus* Schedl*
- Antennal funicles seven-segmented; scapes distinctly longer than first and second segments of funicles united (Figs. 13~14); middle and hind tibiae not dilated laterally and without tooth-like process outside; fore coxae narrowly separated at base; male not smaller than female……2

2. Antennal clubs divided into three segments by two straight sutures (Fig. 13); elytra without uniseriate tubercles on interstriae……*Hyorrhynchus* Blandford
- Antennal clubs solid, not marked by suture (Fig. 14); elytra with indistinctly uniseriate tubercles on interstriae……*Pseudohyorrhynchus* Murayama

* It seems to be difficult to separate these two genera by the original descriptions only.

Tribe Hylastini

Key to Japanese genera

1. Third tarsal segment bilobed, much broader than the preceding ones; basal margins of elytra strongly curved; pronotum almost transverse, strongly narrowed on anterior half and usually constricted before middle (Fig. 38); mesosternum usually protuberant in front margin.……*Hylurgops* LECONTE
- Third tarsal segment emarginated, very slightly broader than the preceding ones; basal margin of elytra nearly straight; pronotum as long, or longer, than wide, appreciably narrowed anteriorly but never constricted (Fig. 39); mesosternum not protuberant……*Hylastes* ERICHSON

Tribe Hylurgini

Key to Japanese genera

1. Antennal funicles five-segmented (Fig. 18); anterior margin of pronotum roundly emarginated in middle……*Dendroctonus* ERICHSON
- Antennal funicles six- or seven-segmented (Figs. 16～17); anterior margin of pronotum not emarginated in middle……2
2. Antennal funicles six-segmented (Fig. 16); elytra covered with erect setae……3
- Antennal funicles seven-segmented (Fig. 17); elytra densely covered with decumbent white and brown squamous setae……*Pseudohylesinus* SWAINE
3. First segment of antennal clubs short, nearly equal to second segment; pronotum quadrate or slightly transverse (Fig. 1); metasternum shorter than abdomen; elytra shining, without tuft of setae, strongly elevated in basal margin……*Tomicus* LATREILLE (= *Myelophilus* EICHHOFF and *Blastophagus* EICHHOFF)
- First segment of antennal clubs long, nearly equal to the succeeding three united; pronotum elongate; metasternum as long as abdomen; elytra almost matt, covered with tufts of setae on apical third, not or slightly elevated in basal margin……*Hylurgus* LATREILLE

Tribe Hylesinini

Key to Japanese genera

1. Antennal insertion situated near base of mandible……2
- Antennal insertion situated near anterior margin of eyes; eyes not emarginated in anterior margin……*Hylesinus* FABRICIUS
2. Antennal funicles five-segmented; eyes rounded, never emarginated in anterior margin……*Pruniphagus* MURAYAMA
- Antennal funicles six- or seven-segmented (Figs. 19～20); eyes emarginated in anterior margin……3
3. Elytral declivity gradually oblique; abdominal sternites ascending posteriorly……*Ficiphagus* MURAYAMA
- Elytral declivity distinctly and abruptly arched; abdominal sternites almost horizontal…4
4. Antennal funicles seven-segmented; segments of clubs distinctly subdivided by some rows of setae (Fig. 19); elytra sparsely covered with short erect setae……*Alniphagus* SWAINE

- Antennal funicles six-segmented; segments of clubs not subdivided (Fig. 20); elytra closely covered with decumbent setae……*Neopteleobius* Nobuchi

Tribe Phloeotribini

One genus, *Phthorophloeus* Rey, has been found from our country.

Tribe Phloeosinini

One genus, *Phloeosinus* Chapuis, has been known from our country.

Tribe Polygraphini

One genus, *Polygraphus* Erichson, has been known from our country.

Subfamily Ipinae

Key to Japanese tribes

1. Eyes biparted; antennal clubs elongate oval, solid, unmarked by suture (Fig. 21); xylomycetophagous…… Xyloterini
- Eyes not divided into two parts, not or deeply emarginated in anterior margin; antennal clubs oval, usually with evident sutures or rows of setae (Figs. 23, 25～36) (except *Orosiotes* in Crypturgini, *Cosmoderes* and *Cryphalomorphus* in Cryphalini and *Eidophelus* in Pityophthorini) ……2
2. Pronotum with comparatively few, large, isolated asperities (Fig. 42), with a distinctly elevated summit behind center; elytra usually covered with fine squamiform setae (except *Taenioglyptes montanus* and *Hypothenemus expers*)……Cryphalini
- Pronotum not or very closely covered with numerous and small asperities (Fig. 2); with a weakly elevated summit; elytra usually devoid of squamiform setae (except a few species of *Xyleborus* in Xyleborini) ……3
3. Pronotum finely marginated in basal margin; metepisternum largely covered by elytra, only anterior portion visible (except *Eidophelus*); antennal clubs compressed……Pityophorini
- Pronotum usually not emarginated in basal margin (except *Coccotrypes* in Crypturgini); if basal margin emarginated, antennal clubs subtruncate; metepisternum distinctly visible for entire length ……4
4. Pronotum punctured or irregularly covered with small granulate punctures, not strongly declivous on anterior portion; phloeophagous, spermatophagous, xylophagous…Crypturgini
- Pronotum with short transverse asperities arranged in concentric and parallel rows on anterior half, usually punctured or granulate on posterior third, strongly declivous on anterior portion……5
5. Maxillary lobes with radiating spines on inner edge (Fig. 5); middle and hind tibiae rather slender, abruptly narrowing apically, covered with some teeth outside (Fig. 58); anterior plate of provenriculus well developed. Male usually similar to female in size and general shape; phloeophagous; monogamous or moderately polygamous……Ipini
- Maxillary lobes pilose, without radiating spine on inner edge (Fig. 4); middle and hind tibiae rather broadly dilated in middle, gradually narrowing apically, armed with many teeth (Fig. 59); anterior plate of proventriculus very small and nearly vestigial. Male

usually differs from female in size and general shape; xylo-mycetophagous; extremely polygamous ·····Xyleborini

Tribe Cryphalini

Key to Japanese genera

1. Antennal funicles two-segmented; clubs devoid of septum or suture (Fig. 22)·····*Cosmoderes* Blandford
- Antennal funicles more than three-segmented; clubs with septum or sutures indicated by rows of setae (Figs. 23～27)·····2
2. Antennal funicles three- to five-segmented; if funicles five-segmented, clubs oval, distinctly septate on one side (Figs. 24～27)·····3
- Antennal funicles five-segmented; clubs lanceolated, oblong, pointed at tip, not septate (Fig. 23); phloeophagous·····*Cryphalus* Erichson
3. Antennal clubs with a distinct septum (Fig. 24～25)·····4
- Antennal clubs devoid of septum (Figs. 26～27); phloeophagous·····5
4. Antennal clubs with an oblique septum on one side, no suture indicated by row of setae, evenly rounded on sides; fore tibiae rather broad, dilated in middle (Fig. 53); phloeophagous·····*Cryphalomorphus* Schaufuss
- Antennal clubs with a norrow septum between first and second sutures, three distinct, straight or procurved sutures indicated by rows of setae, sinuate on sides (Fig. 25); fore tibiae slender, gradually increasing in width distally (Fig. 54); phloeophagous, spermatophagous or xylophagous·····*Hypothenemus* Westwood
5. Eyes distinctly emarginated in anterior margin; fourth segment of antennal funicles usually broadened (Fig. 26) (except *Taenioglyptes babai* and *T. kyotoensis*); asperities on anterior margin of pronotum not projected beyond the margin; anterior plate of proventriculus well developed, with apical teeth·····*Taenioglyptes* Bedel
- Eyes not emarginated; fourth segment of antennal funicles scarsely broadened, nearly as wide as the preceding segments (Fig. 27); asperities on anterior margin of pronotum projected beyond the margin; anterior plate of proventriculus short, without apical teeth and with only a few transverse sutures·····*Ernoporus* Thomson

Tribe Xyloterini

Key to Japanese genera

1. Elytra with distinct strial punctures through entire surface. In male head prolonged anteriorly; frons widely and deeply excavated; pronotum produced on lateral sides of anterior margin, which is roundly emarginated in middle (Fig. 41)·····*Trypodendron* Stephens
- Elytra without distinct strial punctures, covered irregularly with distinct granules on declivity. In male head not prolonged anteriorly; frons slightly impressed; pronotum acuminate in anterior margin (Fig. 40)·····*Indocryphalus* Eggers

Tribe Crypturgini

Key to Japanese genera

1. Pronotum punctured through entire upper surface……2
- Pronotum granulate, asperate or roughly granulate punctured anteriorly……3
2. Antennal funicles two-segmented, much shorter than clubs; clubs with a septum (Fig. 28); proventriculus without median longitudinal suture and emargination in anterior margin……*Crypturgus* Eichhoff
- Antennal funicles five-segmented, longer than clubs; clubs not septate; proventriculus with a median longitudinal suture and emargination in anterior margin……*Poecilips* Schaufuss (in a part)
3. Antennal clubs compressed or slightly thickened at base, usually with procurved sutures on both surfaces, but which are absent in *Orosiotes* ……4
- Antennal clubs obliquely truncate on outer surface, thickened at base, with straight or recurved sutures on outer surface……7
4. Antennal funicles four-segmented……5
- Antennal funicles five-segmented……6
5. Antennal clubs with two sutures on outer surface and a suture on inner surface; eyes not emarginated; proventriculus without apical tooth……*Lymantor* Lowendal
- Antennal clubs without suture; eyes emarginated in anterior margin; proventriculus with apical teeth……*Orosiotes* Nijima
6. Fore tibiae wide, gradually dilated apically (Fig. 56); pronotum roundly narrowing anteriorly; summit situated behind middle and rather weakly elevated; basal area almost not impressed behind summit; proventriculus without emargination in anterior margin……*Pseudopoecilips* Murayama
- Fore tibiae slender, abruptly dilated at apex (Fig. 55); pronotum slightly narrowing anteriorly; summit situated in middle, and rather strongly elevated; basal area impressed behind summit; proventriculus with a deep emargination in anterior margin……*Taphrorychus* Eichhoff
7. Antennal funicles four-segmented (Fig. 29)……*Cyrtogenius* Strohmeyer
- Antennal funicles five-segmented (Fig. 31)……8
8. Pronotum not acute in lateral margins; phloeophagous……*Dryocoetes* Eichhoff
- Pronotum acute at least in basal half of lateral margins; phloeophagous or spermatophagous ……9
9. Pronotum strongly convex, shorter than broad, asperate on base, indistinctly marginated in basal margin……*Coccotrypes* Eichhoff
- Pronotum weakly convex, nearly as long as wide, usually not asperate on base, not marginated in basal margin……*Poecilips* Schaufuss

Tribe Xyleborini

Key to Japanese genera

1. Antennal funicles four-segmented (Fig. 32); elytra almost transparent except for darkened lateral sides and median part along suture……*Cnestus* Sampson
- Antennal funicles five-segmented (Fig. 33); elytra not transparent……2

2. Fore coxae widely separated from each other at base (Fig. 45)……*Xylosandrus* Reitter
- Fore coxae approximated contiguous at base (Fig. 46)……*Xyleborus* Eichhoff

Tribe Ipini

Key to Japanese genera

1. Prosternal process short and wide, not extending far between coxae (Fig. 47); elytral declivity narrowly excavated along suture; eyes not emarginated; closing teeth of proventriculus reaching to end of masticatory brush. In male head usually with a deep emargination ……*Pityogenes* Bedel
- Prosternal process long and acute (Fig. 48); elytral declivity broadly excavated; eyes emarginated in anterior margin; closing teeth of proventriculus not reaching to end of masticatory brush; head without excavation in both sexes……2
2. Antennal clubs compressed with strongly procurved sutures ornamented by long setae, which reach apical third (Fig. 34). In male elytral teeth much longer; in *Quercus* spp. ……*Acanthotomicus* Blandford
- Antennal clubs obliquely truncate or flattened, with straight or bisinuate sutures, of which basal one does not reach middle (Fig. 35). In male elytral teeth not so long; in coniferous trees ……3
3. In female frons with a close tuft of golden setae. In male elytral teeth very stout, thickened and horn-like. Seventh abdominal tergite without spiracle……*Pityokleines* Fuchs
- In female frons without tuft of golden setae. In male elytral teeth usually not strong, broad, obtuse at apices. Seventh tergite with spiracles……4
4. Elytral declivity obliquely sloping and strongly excavated, usually distinctly produced and raised apically……*Ips* Degeer
- Elytral declivity subvertical and rather weakly excavated, slightly produced, almost not raised at apical margin……*Orthotomicus* Ferrari

Tribe Pityophthorini

Key to Japanese genera

1. Antennal clubs septate on lateral sides of first and second sutures (Fig. 36)…… ……*Pityophthorus* Eichhoff
- Antennal clubs not septate……2
2. Antennal funicles four-segmented……*Eidophelus* Eichhoff
- Antennal funicles five-segmented……*Myeloborus* Blackman

Subfamily Scolytoplatypinae

A single genus, *Scolytoplatypus* Schaufuss, has been found from our country.

Pseudohylesinus yasumatsui sp. nov.

Male: Length 3.7 mm., 2.14 times longer than wide; body color black; epistoma, antennae, elytra and tarsi reddish brown; elytra clothed with dark brown to white scales and hairs.

Frons distinctly longer than wide, slightly tumescent below arcuate impression, with a distinct median carina sparsely punctured below impression, distinctly and densely above, not granulate; sparsely covered with short setae. Antennal clubs with first segment longer than second. Pronotum 1.38 times wider than long, widest just behind middle, moderately arcuate behind constriction on lateral sides; surface with a shining median line, closely covered with large, shallow punctures, which are somewhat smaller and sparser on anterior portion, asperate on antero-lateral and frontal portions, clothed with erect, yellowish brown setae and rather narrow recumbent scales, which are narrower and longer than those of *nobilis*. Elytra wider than pronotum, 1.57 times longer than wide; crenulations on base low and blunt; sides subparallel on basal two-thirds rather narrowly rounded behind; surface with narrow and impressed striae, closely covered with large and deep strial punctures; interstriae about 2.5 times as wide as striae, finely rugose, with a median row of large asperities, which are somewhat confused on anterior fourth; vestiture consisting of a row of long median interstrial setae and numerous elongate scales, which are about three times longer than wide and distinctly narrower than those of *nobilis*; declivity sloping, first and third interstriae elevated, second narrow apically, depressed below level of first and third and devoid of setae or tubercles, nineth more strongly elevated and bearing prominent sharp teeth; scales wider than those on disk.

Female: Length 3.5 to 4.3 mm., 2.15 times longer than wide; frons somewhat broader; pronotum widest at base, less arcuate on sides, clothed with recumbent setae on entire surface and recumbent long white scales on lateral and basal protions, some of them distinctly forked apically. Elytra with shorter strial setae, nineth interstriae less elevated and with smaller tubercles on declivity.

Holotype male, 1 paratype male and 5 paratype females, Takanishi, Nagano, *Abies Veitchii* Lindl., July 30, 1965 (K. Takahashi); 2 paratype females, Oze, Gunma, *Picea jezoensis* Carr. var. *hondoensis* Rehd., Aug. 12, 1952 (Y. Kato); 2 paratype females, Tokugotôge, Nagano, *Abies Mariesii* Mast., Sept. 9, 1958 (A. Noguchi).

Two paratypes (1♂, 1♀) are in the Canadian National Collection and the others in the Collection of Government Forest Experiment Station.

These specimens were misidentified as *Hylurgops niponicus* Murayama in my previous paper (1966, Bull. Gov. For. Exp. St., 185: 13, Fig. 3). Previously this genus has been known only from North America and may be distinguished from *Hylurgops* Leconte by the shape of the ligula, by the short first abdominal segment and by the characters given in the key.

This Japanese species belongs to the *tsugae-nobillis* group and is more closely allied to *P. nobillis* Swaine than other known species. From *nobilis* it is distinguished by the weak elevation of the frons below the arcuate impression, by the wider pronotum, by the more elongate scales on the elytral interstriae and by the more distinctly pointed tubercles on the nineth interstriae.

Hylesinus tiliae (Niijima) comb. nov.

Kissophagus tiliae Niijima, 1909, Trans. Sapporo Nat. Hist. Soc., 3: 2.

The type series of *Kissophagus tiliae* Niijima were examined. I was able to determine that it belongs to the genus *Hylesinus* Fabricius. This species possesses seven segments of the antennal funicles, whereas *Kissophagus* Chapuis have six segments.

The types of *Hylesinus elatus* Niijima (1913, Trans. Sapporo Nat. His. Soc., 5 (1): 2) could

not be found in NIIJIMA's collection and may never have been designated. The description, however, suggests it may be very similar to *tiliae*.

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キクイムシ科の研究　第9報
日本産亜科，族，属の検索表

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摘　要

日本のキクイムシ科には完全な属の検索表がなく，キクイムシを同定するために著しく不便であり，また困難であった。本報はこれらの不便をなくすため，日本から知られている4亜科，14族，50属のものについて検索表を作成し発表した。ここで対象としたものは表1のとおりである。

Tomicus 属はマツノキクイムシ類で従来 *Blastophagus*, *Myelophilus* として使用されていた群に，*Taenoglyptes* 属はこれまで *Cryphalus* として使用されていた1群に，*Trypophloeus* として使用されていたものは *Cryphalus* 属とした。*Indocryphalus* 属は *Dendrotrypum* と一部の *Xyloterus* のものに使用した。*Cyrtogenius* は *Carposinus* の，*Cnestus* は *Tosaxyleborus* のシノニムである。

従来，北米からだけ知られていた *Pseudohylesinus* 属の1種が本州の亜高山帯の針葉樹から発見され，検討した結果，翅鞘の鱗毛の形から北米のものと全く異なり，ヤスマツキクイムシ *Pseudohylesinus yasumatsui* の名称で新種として記載した。

Kissophagus tiliae Nijima のタイプ標本を検討したところ，触角の中間節の数から *Hylesinus* 属に所属することが判明した。

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(1) 保護部

表 1.　日本産キクイムシ科（亜科，族，属）の一覧表

Subfamilies 亜科	Tribes 族	Genera 属
Scolytinae		*Scolytus*
Hylesininae	Sphaerotrypini	*Sphaerotrypus*
		Parasphaerotrypes
	Hyorrhynchini	*Sueus*
		Neohyorrhynchus
		Hyorrhynchus
		Pseudohyorrhynchus
	Hylastini	*Hylurgops*
		Hylastes
	Hylurgini	*Dendroctonus*
		Pseudohylesinus
		Tomicus
		Hylurgus
	Hylesinini	*Hylesinus*
		Pruniphagus
		Ficiphagus
		Alniphagus
		Neopteleobius
	Phloeotribini	*Phthorophloeus*
	Phloeosinini	*Phloeosinus*
	Polygraphini	*Polygraphus*
Ipinae	Cryphalini	*Cosmoderes*
		Cryphalus
		Cryphalomorphus
		Hypothenemus
		Taenioglyptes
		Ernoporus
	Xyloterini	*Trypodendron*
		Inocryphalus
	Crypturgini	*Crypturgus*
		Poecilips
		Lymantor
		Orosiotes
		Pseudopoecilips
		Taphrorychus
		Cyrtogenius
		Dryocoetes
		Coccotrypes
	Xyleborini	*Cnestus*
		Xylosandrus
		Xyleborus
	Ipini	*Pityogenes*
		Acanthotomicus
		Pityokteines
		Ips
		Orthotomicus
	Pityophthorini	*Pityophthorus*
		Eidophelus
		Myeloborus
Scolytoplatypinae		*Scolytoplatypus*