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Studies on Scolytidae (Coleoptera)

XXII. Six New Species and Two New Females of the Genus *Xyleborus* ERICHSON from Japan

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Synopsis Eight Japanese species of *Xyleborus* ERICHSON are recognized. They are *Xyleborus kaimochii* sp. nov., *X. wakayamensis* sp. nov., *X. misatoensis* sp. nov., *X. bispinus* sp. nov., *X. ohtoensis* sp. nov., *X. japonicus* sp. nov., *X. laetus* NIJIMA, and *X. kirishimanus* MURAYAMA.

Xyleborus kaimochii sp. nov.

(Fig. 1)

Female. Body 2.5 mm long, oblong, narrowing in posterior half of elytra, about 2.6 times as long as wide, reddish brown; apical part of pronotum, posterior half of elytra and abdomen dark brown; eyes black.

Frons shining, moderately convex, minutely reticulate, with some small depressions above and very finely granules below, distinctly setigerous. Vertex finely reticulate, glabrous.

Pronotum shining, nearly as long as wide; base truncate; basal angles rounded; lateral sides widest in basal third of pronotal length, slightly narrowing posteriorly, then roundly narrowing towards apex, not forming antero-lateral angles; anterior margin broadly rounded from upper view, nearly triangularly produced downwards in middle, with four prominent marginal teeth, of which median two are larger, triangular; disc with a short transverse elevation just behind center; its anterior half gently slanting, finely asperate in concentric line before the elevation, the asperation becoming larger and wider anteriorly and laterally, sparsely covered with rather long setae; the posterior half shining, cylindrical, scantily and shallowly punctured, sparsely setigerous. Scutellum shining, triangular, rather large. Elytra shining, about 1.5 times as long as wide, nearly as wide as pronotum at base; lateral sides nearly parallel to middle, then gradually and slightly roundly narrowing towards apex; apical margin very narrow, rounded; disc cylindrical, gradually declivous in posterior half; striae narrow, slightly impressed; striae punctures somewhat large, shallow, separated by a distance smaller than their own diameters, each puncture with fine, erect, hair-like, striae seta; interstriae not or slightly elevated, with uniserial rows of rather large punctures, and long, erect, hair-like setae; interstriae punctures slightly smaller than striae punctures. Declivity gentle, convex; interstriae narrowing towards apex, the punctures replaced by uniserial rows of setigerous fine tuber-

cles; interstitial setae consisting of uniserial, rows of long erect, hair-like setae, and irregular rows of short, semi-decumbent, hair-like setae.

Holotype: ♀, Takimoto, Kumano, Wakayama, May 10, 1979, ex *Castanopsis cuspidata* (THUNB.) SCHOTTKY, M. KAIMOCHI leg.

Paratype: 1 ♀, the same data as the holotype.

The holotype and paratype are preserved in the collection of the Forestry and Forest Products Research Institute, Japan.

Host tree. *Castanopsis cuspidata* (THUNB.) SCHOTTKY.

Distribution. Japan (Honshu).

Japanese name. Kaimochi-zaino-kikuimushi.

Remarks. This new species is somewhat allied to *Xyleborus subnaevus* SCHEDL in the shape of the elytra, but may be distinguished by the absence of fovea on the base of the elytra and by the distinct scutellum.

Xyleborus wakayamensis sp. nov.

(Figs. 2-3)

Female. Body 2.5-2.7 mm long, oblong, about 2.6 times as long as wide, yellowish brown; mandibles and eyes black; elytra slightly darkened; in some paratypes elytra dark brown.

Frons shining, moderately convex, with a short longitudinal groove on upper portion, minutely reticulate, sparsely punctured above, finely and closely granulate below; vestiture sparse, rather long; mouth-ciliae very dense, long.

Pronotum shining, about 1.1 times as long as wide; base truncate; basal angles rounded; lateral sides widest in middle, weakly narrowing anteriorly and posteriorly, not forming antero-lateral angles; anterior margin broadly rounded, with four or five rounded submarginal teeth; disc with a short transverse elevation before middle, gently slanting and nearly concentrically asperate before the elevation, the asperation becoming larger towards apex; posterior area behind the elevation closely covered with comparatively large, shallow punctures, finely reticulate; vestiture short, becoming longer towards apical and lateral sides. Scutellum shining, rather large, triangular. Elytra shining, about 1.5 times as long as wide, nearly as wide as base of pronotum at base; lateral sides slightly dilated to basal two-thirds of elytral length, then roundly narrowing posteriorly, not forming postero-lateral angles; apical margin rather narrowly rounded, not carinate; disc cylindrical in basal five-sevenths, then declivous; striae not impressed, with rather small uniserial punctures, which are separated by a distance nearly as wide as their own diameters, each striae puncture with a fine, semi-decumbent, hair-like seta; interstriae nearly three times as wide as striae, almost flat, with irregular two or three rows of setigerous punctures, which are rather large, not or slightly smaller than striae punctures, first interstriae narrowing anteriorly; interstitial setae rather long, hair-like, not uniform in size, becoming longer towards declivity and lateral sides. Declivity shining, abrupt,

nearly circularly flattened, elevated on lateral and inferior sides, evenly elevated sutural interstriae, impressed along second striae, strial punctures as large as and somewhat closer than those on disc; interstriae finely granulate, first interstriae with two or three small tubercles near upper border, the second without tubercle, the third with one or two tubercles; inferior margin with four pairs of tubercles, of which median two pairs are very strong, conical, produced backwards.

Male. Body about 3.2 mm long, oblong, about 3.1 times as long as wide, yellowish brown; mandibles dark brown; eyes black; most parts of head and pronotum reddish brown.

Head large, nearly as wide as prothorax, not vertical, obliquely sloped in frontal face. Frons convex, without longitudinal median elevation, with a deep emargination between mandibles in anterior margin; surface finely reticulate evenly, minutely granulate and setigerous on antero-lateral areas. Mandibles distinctly large, stout, downwardly curved apically, pointed at apex, with a large triangular denticle near middle of inside and a large denticle near base. Antennal clubs smaller than those of female. Eyes small, elongate, not emarginate in anterior margin.

Pronotum shining, about 1.4 times as long as wide; base bisinuate; basal angles rounded; lateral sides gradually widened anteriorly, widest just before apex, forming rounded antero-lateral angles; anterior margin very broadly rounded, without marginal tubercle; disc cylindrical, without transverse elevation, only weakly slanting near anterior margin, covered with very fine asperation and short hair-like setae on the slanting area; entire surface covered with indistinct punctures and fine hair-like setae, the punctures distinct on lateral area, the setae on lateral area becoming longer. Scutellum strongly shining, semicircular. Elytra shining, somewhat longer than pronotum, about 1.4 times as long as wide, slightly wider than base of pronotum at base; lateral sides dilated to basal two-thirds of elytral length, then roundly narrowing posteriorly, not forming postero-lateral angles; apical margin rather narrowly rounded, not carinate; disc slightly elevated behind base, declivous behind middle; striae not impressed, with rather small uniserial punctures, which are separated by a distance nearly as wide as their own diameters; each strial puncture with a fine, semi-decumbent, hair-like seta; interstriae nearly three times as wide as striae, almost flat, with irregular two or three rows of indistinct setigerous punctures; first interstriae narrower than others. Declivity abrupt, with a circular flat area between third striae, weakly elevated on lateral and inferior margins of the area; striae slightly impressed, the punctures nearly equal to those on disc; interstriae with rather large granules; inferior margin with two vestigial tubercles on each side.

Holotype: ♀, Shionomisaki, Wakayama, Oct. 15, 1979, ex *Castanopsis cuspidata* (THUNB.) SCHOTTKY, M. KAIMOCHI leg.

Paratypes: 1 ♀, Kawada, Mikura Is., Tokyo, Jun. 13, 1959, Y. WATANABE leg.; 28 ♀♀, 3 ♂♂, Mt. Takao, Tokyo, Nov. 23, 1963, K. TAKAHASHI leg.; 4 ♀♀, the same data as the holotype; 1 ♀, Shionomisaki, Wakayama, Oct. 15, 1979, ex *Quercus phillyraeoides* A. GREY, M. KAIMOCHI leg.

The holotype and paratypes are preserved in the collection of the Forestry and Forest Products Research Institute, Japan.

Host trees. *Quercus phillyraeoides* A. GRAY, *Castanopsis cuspidata* (THUNB.) SCHOTTKY.

Distribution. Japan (Honshu).

Japanese name. Wakayama-zaino-kikuimushi.

Remarks. This new species is allied to *Xyleborus ganshoensis* MURAYAMA in the female, but may be distinguished by the rounded lateral margins of the pronotum, by having tubercles on the first interstriae of the elytral declivity and one or two tubercles on the third, by the presence of four pairs of distinct tubercles in the inferior margin of the elytral declivity, by the almost flattened declivity, and by the distinctly raised inferior and lateral sides of elytral declivity. This is also allied to *Xyleborus canus* NIJIMA, but may easily be separated by the absence of tubercles on the second declivital interstriae.

Xyleborus misatoensis sp. nov.

(Fig. 4)

Female. Body 1.8–1.9 mm long, oblong, about 2.9 times as long as wide, yellowish brown; eyes and apex of mandibles black; elytra dark brown.

Frons weakly shining, moderately convex, with an indistinct longitudinal elevation above, minutely reticulate, sparsely covered with fine granules, rather closely covered with hair-like setae; mouth-ciliae dense, long. Vertex weakly shining, convex, minutely reticulate, not granulate.

Pronotum shining, about 1.3 times as long as wide; base truncate, slightly rounded; basal angles rounded; lateral sides widest in middle, slightly narrowing posteriorly, roundly narrowing anteriorly, not forming distinct antero-lateral angles; anterior margin broadly rounded, minutely crenulate; disc with a weak transverse elevation before middle, rather slowly declivous in anterior third of pronotal length, rather finely asperate in nearly concentric line on anterior half, the asperation becoming larger towards apex; the posterior portion behind the asperate area cylindrical, minutely reticulate, very finely punctured, the punctures becoming closer towards lateral sides; vestiture very fine, hair-like, longer on apical and lateral sides. Scutellum shining, large, nearly triangular. Elytra shining, about 1.7 times as long as wide, nearly as wide as base of pronotum at base; lateral sides nearly parallel in basal two-thirds of elytral length, then weakly narrowing posteriorly; apical margin moderately rounded; disc cylindrical in basal three-fourths, then declivous posteriorly; striae not impressed, with uniserial, rather small, round punctures, which are separated by a distance nearly as wide as their own diameter, each puncture with a very fine decumbent hair-like seta; interstriae almost flat, with irregular one or two rows of rather large, round, setigerous punctures, which are distinctly smaller than striae punctures; interstitial setae rather long, hair-like, becoming longer towards

declivity. Declivity abrupt, mat, weakly convex; striae punctures denser than those on disc; interstriae impunctate, first interstriae feebly elevated, with about five small blunt tubercles, the second slightly impressed, with some fine granules, the third slightly convex, with two small tubercles and a few fine granules; inferior margin not carinate, with several fine tubercles; vestiture long, irregular.

Holotype: ♀, Misato, Wakayama, Aug. 2, 1979, ex *Castanopsis cuspidata* (THUNB.) SCHOTTKY, M. KAIMOCHI leg.

Paratypes: 1 ♀, the same data as the holotype; 2 ♀♀, Shionomisaki, Wakayama ex *Quercus phillyraeoides* A. GREY, M. KAIMOCHI leg.

The holotype and paratypes are preserved in the collection of the Forestry and Forest Products Research Institute, Japan.

Host trees. *Quercus phillyraeoides* A. GRAY, *Castanopsis cuspidata* (THUNB.) SCHOTTKY.

Distribution. Japan (Honshu).

Japanese name. Misato-zaino-kikuimushi.

Remarks. This new species is allied to *Xyleborus ganshoensis* MURAYAMA and *X. wakayamensis* sp. nov., but may be distinguished by the smaller and narrower body, and by the mat declivity of the elytra.

Xyleborus bispinus sp. nov.

(Figs. 5-6)

Female. Body 1.9-2.1 mm long, oblong, about 2.6 times as long as wide, yellowish brown; eyes and apex of mandibles black; frons and asperate areas of pronotum; elytra darkened.

Frons weakly shining, convex, without longitudinal elevation, semicircularly impressed above, finely and sparsely granulate, minutely reticulate, sparsely covered with short hair-like setae. Vertex weakly shining, convex, minutely reticulate, not granulate.

Pronotum shining, about 1.2 times as long as wide; base truncate, weakly rounded; basal angles rounded; lateral sides widest in middle, weakly narrowing posteriorly, roundly narrowing anteriorly, not forming distinct antero-lateral angles; anterior margin broadly rounded, trapezoidally produced in middle, with minute submarginal teeth; disc with a short transverse elevation just behind middle, rather slowly slanting in anterior third of pronotal length, rather finely asperate in near concentric line before the elevation, the asperation becoming larger towards apex; the posterior portion behind the elevation nearly cylindrical, minutely reticulate, rather finely punctured, the punctures somewhat denser towards base and lateral sides; vestiture very fine and hair-like, becoming longer on apical and lateral sides. Scutellum shining, rather large, nearly triangular. Elytra shining, about 1.4 times as long as wide, nearly as wide as base of pronotum at base; lateral sides widened posteriorly in two-thirds of elytral length, then roundly narrowing posteriorly, round-

ly continuous to broadly rounded apical margin; disc cylindrical in basal third, not or slightly elevated in median third, then declivous; striae usually not impressed, consisting of uniserial rows of small round punctures, which are separated by the distance slightly smaller than their own diameters, each puncture bears a very fine hair-like setae; interstriae almost flat, with two or three irregular rows of small setigerous punctures, which are distinctly smaller than striae ones; interstitial setae rather short, hair-like, becoming longer towards declivity. Declivity abrupt, shining, almost flat, elevated in first interstriae and inferior margin except near sutural area, confusedly punctured and setigerous, with fine granules on lower area; inferior margin not carinate, with a long upwardly recurvate, triangular teeth near second interstriae, and usually with some fine tubercles.

Male. Body 1.7–2.2 mm long, oblong, about 2.6 times as long as wide, reddish brown; mandibles blackish brown; eyes black.

Head distinctly visible from upper aspect; frons longer than that of female, convex, deeply and triangularly emarginate in anterior margin, obscurely shallowly punctured, sparsely covered with minute setigerous granules, which become denser towards anterior margin. Eyes very small, elongate, not emarginate in anterior margin.

Pronotum shining, about 1.3 times as long as wide; base truncate; basal angles rounded; lateral sides nearly parallel in basal two-thirds of pronotal length, slightly constricted before base, then forming rounded antero-lateral angles; anterior margin evenly rounded, obtusely crenulate; disc nearly cylindrical in basal two-thirds of pronotal length, without transverse elevation, slowly slanting in anterior third, finely asperate in nearly concentric line on the slanting area; the posterior portion behind declivity obscurely reticulate, covered with shallow but distinct punctures, which become larger on lateral and basal sides, finely setigerous; vestiture longer towards lateral and basal margins. Scutellum rather large, nearly triangular. Elytra shining, about 1.4 times as long as wide, not or slightly wider than base of pronotum at base; base truncate; basal angles rounded; lateral sides slightly widened to apical third of elytral length, then roundly narrowing posteriorly, not forming postero-lateral angles; apical margin rather broadly rounded; disc nearly cylindrical in basal two-thirds, then declivous posteriorly; striae not impressed, consisting of uniserial rows of rather large shallow punctures, which are separated by a distance nearly as wide as their own diameters, each puncture with a fine hair-like seta; interstriae almost flat, with one or two irregular rows of small setigerous punctures; interstitial setae long, close, erect, and hair-like. Declivity abrupt, shining, slightly convex, weakly elevated along sutures and latero-inferior margin, with uniserial punctures in first, second, and third striae, irregularly setigerous; inferior margin finely granulate, with a very small pointed conical tubercles near second interstriae.

Holotype: ♀, Kumano, Takimoto, Wakayama, May 10, 1979, ex *Castanopsis cuspidata* (THUNB.) SCHOTTKY, M. KAIMOCHI leg.

Paratypes: 18 ♀♀, 4 ♂♂, the same data as the holotype.

The holotype and paratypes are preserved in the collection of the Forestry and Forest Products Research Institute, Japan.

Host tree. *Castanopsis cuspidata* (THUNB.) SCHOTTKY.

Distribution. Japan (Honshu).

Japanese name. Futatoge-zaino-kikuimushi.

Remarks. The new species is allied to *Xyleborus wakayamensis* sp. nov. in the female, but may be distinguished by the smaller body, by the produced anterior margin and nearly straight lateral margins of pronotum, by having only two teeth in the inferior margin of elytral declivity, and by the less impressed elytral declivity.

Xyleborus ohtoensis sp. nov.

(Fig. 7)

Female. Body 2.1–2.2 mm long, about 2.9 times as long as wide, reddish brown; apical part of mandibles darkened; eyes black.

Frons shining, subconvex, with a longitudinal raised line, minutely reticulate, rather sparsely punctured above, minutely granulate below, rather sparsely covered with long hair-like setae.

Pronotum shining, about 1.2 times as long as wide; base truncate, slightly rounded; basal angles rounded; lateral sides widest in anterior third of pronotal length, weakly and strongly narrowing towards base, forming rounded antero-lateral angles; anterior margin broadly rounded, slightly crenulate; disc with a summit just before centre, gently slanting and finely asperate before the summit, the asperation extending to posterior area on lateral sides; the posterior area behind asperation shining, cylindrical, sparsely and finely punctured, the punctures larger and closer on lateral sides; vestitue consisting of sparse, fine hair-like setae, which become longer towards anterior and lateral sides. Scutellum shining, rather large, triangular. Elytra shining, about 1.8 times as long as wide, nearly equal to base of pronotum at base; lateral sides gradually widened to anterior two-thirds of elytral length, then slightly roundly narrowing towards apex; apical margin strongly carinate below for a short distance; disc cylindrical, gradually declivous in posterior third; striae rather wide, impressed, with uniserial rows of large round punctures, the punctures separated by a distance distinctly shorter than their own diameters and somewhat closer posteriorly, each puncture bearing a minute hair-like seta; interstriae elevated, nearly as wide as striae, with uniserial rows of very fine punctures and long erect hair-like setae, the punctures replaced by fine granules on posterior portion. Declivity rather steep, moderately convex; striae slightly impressed; second and third striae outcurved in middle, then incurved below; strial punctures smaller and closer than those of disc, distinctly smaller towards apex, bearing an indistinct hair-like seta; interstriae weakly elevated, sparsely covered with uniserial rows of setigerous fine granules.

Holotype: ♀, Mt. Ohto, Wakayama, Mar. 26, 1976, *Illicium religiosum* SIEB.

et ZUCC., A. NOBUCHI leg.

Paratypes: 18 ♀♀, the same data as the holotype.

The holotype and paratypes are preserved in the collection of the Forestry and Forest Products Research Institute, Japan.

Host tree. *Illicium religiosum* SIEB. et ZUCC.

Distribution. Japan (Honshu).

Japanese name. Ohto-zaino-kikuimushi.

Remarks. This new species is allied to *Xyleborus minutus* BLANDFORD, but may be distinguished by the larger body, by the slender elytra, and by a distinct but short carina of the declivity.

Xyleborus japonicus sp. nov.

(Fig. 8)

Female. Body 1.8–1.9 mm long, oblong, about 3.0 times as long as wide, yellowish brown; eyes black; apical part of pronotum and elytra reddish brown.

Frons shining, convex, with a weak longitudinal elevation in middle, minutely reticulate, shallowly punctured above, setigerous and finely granulate below, the granules denser on antero-lateral sides. Vertex finely reticulate, glabrous.

Pronotum shining, about 1.3 times as long as wide; base truncate; basal angles rounded; lateral sides somewhat ridged in basal half, widest in middle, slightly narrowing anteriorly and posteriorly, roundly connected with anterior margin; anterior margin narrowly rounded, finely crenulate; disc nearly cylindrical, gently declivous before middle, without transverse elevation, finely asperate on slanting area, the asperation larger and wider anteriorly and laterally; the posterior part behind asperate area strongly shining, distinctly punctured, the punctures closer laterally; vestiture sparse, fine, hair-like, but becoming longer and closer on apical and lateral sides. Scutellum shining, rather large, nearly semicircular. Elytra shining, about 1.7 times as long as wide, nearly as wide as base of pronotum at base; lateral sides nearly parallel to basal two-thirds, then roundly narrowing, forming strongly rounded postero-lateral angles; apical margin very slightly rounded, not carinate below; disc cylindrical before declivity; striae not impressed; striae punctures very large and close, becoming smaller and sparser on base and before declivity, with a fine hair-like seta; interstriae not or slightly elevated, nearly as wide as striae in middle, the punctures fine, usually uniseriate, but irregular on base and before declivity, bearing a hair-like seta. Declivity gently, deeply impressed elliptically along suture for posterior third of elytra, the impression shining, finely setigerous, with elevated callose sides; first and second striae distinctly punctured as on disc; first interstriae narrowly elevated along suture, the second rather wide, dilated in middle, irregularly covered with indistinct punctures, the third with three small conical tubercles; inferior and lateral sides of the declivity sparsely granulate, rather closely covered with uniform and long setae.

Holotype: ♀, Ohshima, Wakayama, Mar. 15, 1979, ex *Castanopsis cuspidata* (THUNB.) SCHOTTKY, M. KAIMOCHI leg.

Paratypes: 2 ♀♀, the same data as holotype; 2 ♀♀, Ohme, Tokyo, Feb. 11, 1952, ex *Quercus myrsinaefolia* BLUME, Y. KATO leg.

The holotype and paratypes are preserved in the collection of the Forestry and Forest Products Research Institute, Japan.

Host trees. *Quercus myrsinaefolia* BLUME, *Castanopsis cuspidata* (THUNB.) SCHOTTKY.

Distribution. Japan (Honshu).

Japanese name. Nihon-zaino-kikuimushi.

Remarks. This new species is closely allied to *Xyleborus laetus* NIIJIMA, but may be distinguished by the shorter body, by the shape of pronotum, by the slender elytra, by having only three tubercles on each lateral side of the declivital impression, and by more distinctly elevated sutural striae on the elytral declivity.

Xyleborus laetus NIIJIMA

(Fig. 9)

NIIJIMA, 1909, J. Coll. Agr. Tôhoku Imp. Univ., 3: 159 (Tafel 5, Fig. 5); HAGEDORN, 1910, Gen. Ins., 111: 155; SCHEDL, 1932, Cat. Coleopt. Reg. palaeart., F. 1645; MURAYAMA, 1965, Scolytid-beetles from Niigata Pref., Japan, 2: 34.

Female. Body 2.6–2.9 mm long, oblong, about 2.9 times as long as wide, reddish brown; mandibles and eyes black.

Frons shining, convex, with an indistinct longitudinal elevation in middle, minutely reticulate, finely granulate, shallowly punctured above, finely setigerous, the granules denser and larger on lateral sides. Vertex finely reticulate, glabrous.

Pronotum shining, about 1.2 times as long as wide; base truncate, not or slightly rounded; basal angles rounded; lateral sides somewhat ridged in basal half, widest behind middle, slightly narrowing towards base, gradually roundly narrowing anteriorly, roundly connected with anterior margin, not forming distinct antero-lateral angles; anterior margin narrowly rounded, finely crenulate; disc nearly cylindrical, gently slanting anteriorly before middle, without transverse elevation, finely asperate on slanting area, the asperation becoming larger and wider anteriorly and laterally; posterior part behind asperate area shining, distinctly punctured, the punctures denser towards lateral sides; vestiture sparse, fine, hair-like, becoming longer and closer on apical and lateral margins. Scutellum shining, rather large, nearly semicircular. Elytra shining, about 1.6 times as long as wide, nearly as wide as base of pronotum at base; lateral sides not or slightly widened in basal two-thirds of elytral length, then gradually roundly narrowing; postero-lateral angles strongly rounded; apical margin very slightly rounded, not carinate below; disc nearly cylindrical before declivity; striae not impressed, first and second striae outcurved from basal fourth; striae punctures large and dense, becoming smaller and sparser on base and before

declivity, bearing a hair-like seta; interstriae nearly flattened, distinctly wider than striae, first interstriae distinctly narrowing anteriorly; interstitial punctures rather large and close, irregularly seriate, bearing a hair-like seta. Declivity abrupt, deeply impressed on first to second or third interstriae, the impression rather shining, narrow pear-shaped, sparsely but distinctly setigerous, with strongly elevated calose sides; first and second striae with distinct punctures in a row on the impression, the third impressed, distinctly, vanished on apical part; first interstriae weakly elevated along suture, with a row of setigerous fine granules, the second elevated externally with the third, irregularly granulate and setigerous, the third elevated in upper third, with some black pointed tubercles in a row, the base of tubercles somewhat raised; lateral sides and inferior margin minutely granulate, with irregular long setae.

Specimens examined. 1 ♂, [Yoshikawa], VIII, 99, NIJIMA, No. 14, *Xyleborus nonstriatus* sp. MAST. (XVI-1-117) nach Y. NIJIMA* (This specimen is herewith designated as the lectotype); 1 ♀, Ura, Hoshino-mura, Fukuoka, May 21, 1959, Y. MIYAKE leg.; 1 ♀, Shimogamo, Kyoto, Jan. 5, 1959, ex *Castanea crenata* SIEB. et ZUCC., A. NOBUCHI leg.; 1 ♂, Hoda, Ohita, Jun., 1964, ex *Castanea crenata* SIEB. et ZUCC., Y. MURAKAMI leg.; 2 ♀♀, Utsunomiya, Tochigi, Apr. 27, 1966, ex bed log of "Shiitake" mushroom, Y. YOKOMIZO leg.; 2 ♀♀, Mt. Kinpo, Kumamoto, Apr. 22, 1980, Z. KURANAGA leg.

Host trees. *Quercus mongolica* FISH. var. *grosseserrata* REHD, et WILS., *Castanea crenata* SIEB. et ZUCC., *Prunus apetala* (SIEB. et ZUCC.) FR. et SAV. var. *pilosa* (KOIDZ.) WILSON.

Distribution. Japan (Hokkaido, Honshu, Kyushu).

Japanese name. Yoshikawa-kikuimushi.

Xyleborus kirishimanus MURAYAMA

(Fig. 10)

MURAYAMA, 1955, Bull. Fac. Agr. Yamaguti Univ., 6: 85 (pl. 3, figs. 10-12); MURAYAMA, 1961, Publ. Ent. Lab., Univ. Osaka Pref., 6: 101; MURAYAMA, 1965, Scolytid-beetles from Niigata Pref., Japan, 2: 34.

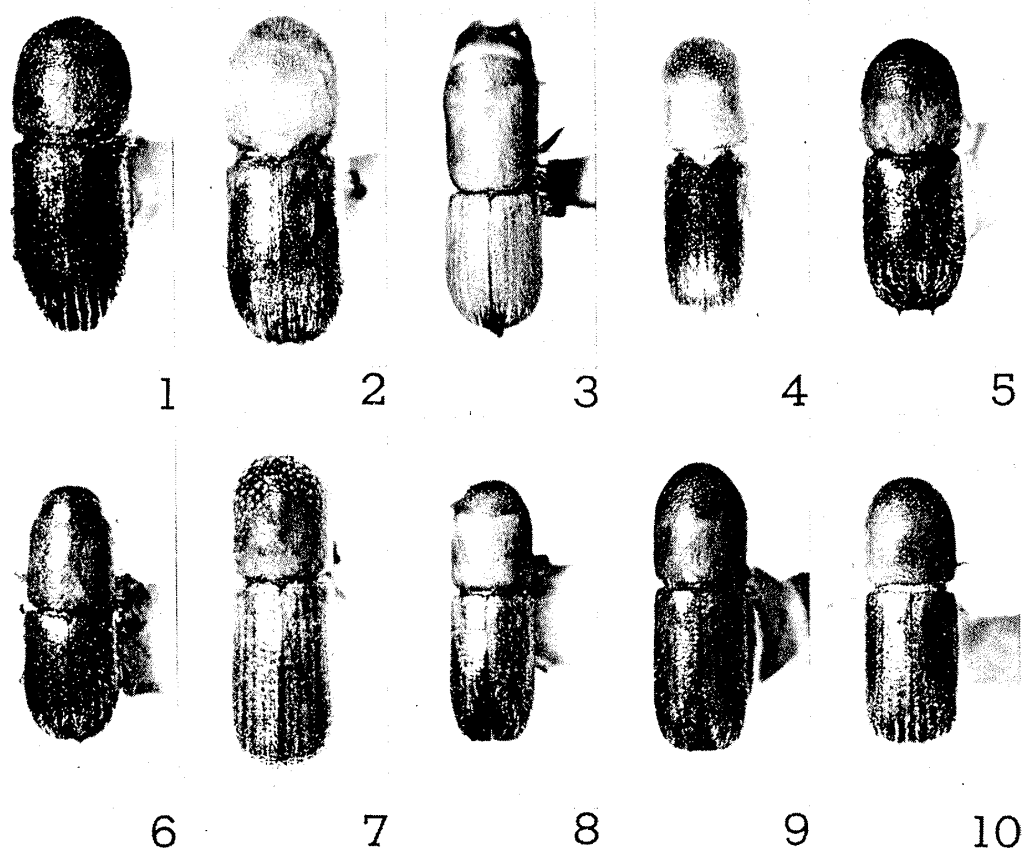
Female. Body 1.5-1.7 mm long, oblong, cylindrical, about 2.8 times as long as wide, yellowish brown; frons and elytral apex dark brown; eyes black.

Frons mat, moderately convex; median longitudinal line long, distinctly elevated in the middle; surface finely reticulate, sparsely covered with shallow punctures, scarcely setigerous. Vertex finely reticulate, glabrous.

Pronotum shining, 1.2 times as long as wide; base truncate; basal angles rounded; lateral sides widest in middle, not or slightly narrowing posteriorly, roundly narrowing towards apex, gradually continuous to anterior margin, which is broadly rounded without distinct marginal teeth; disc convex, with a weak short transverse elevation just behind centre; its anterior half gently declivous towards apex, finely

* This determination label was written by Dr. T. SAWAMOTO.

asperate in concentric line before the elevation, sparsely covered with rather short hair-like setae; the posterior half strongly shining, cylindrical, minutely reticulate, scantily covered with not indistinct but shallow punctures, setigerous on lateral sides. Scutellum invisible from upper view. Elytra shining except for posterior third, 1.7 times as long as wide, nearly as wide as base of pronotum at base; base with black bordered edge, closely setigerous; lateral sides widest in middle, slightly narrowing anteriorly and posteriorly, then suddenly curved to apex and continuous to posterior margin, which is broadly rounded; disc cylindrical, rather abruptly declivous in posterior third; striae rather wide, not impressed, seriate with rather large shallow punctures, which are separated by a distance somewhat smaller than their own diameters, each puncture bearing a very fine hair-like strial seta; interstriae slightly elevated, finely wrinkled, nearly glabrous, with a series of rather large conical tubercles on posterior area, each tubercle bearing a rather long hair-like seta; the posterior area mat, microscopically rugose, sparsely setigerous. Declivity mat,



Figs. 1-10. — 1. *Xyleborus kaimochii* sp. nov. ♀. — 2. *X. wakayamensis* sp. nov. ♀. — 3. *X. wakayamensis* sp. nov. ♂. — 4. *X. misatoensis* sp. nov. ♀. — 5. *X. bispinus* sp. nov. ♀. — 6. *X. bispinus* sp. nov. ♂. — 7. *X. ohtoensis* sp. nov. ♀. — 8. *X. japonicus* sp. nov. ♀. — 9. *X. laetus* NIJIMA ♀. — 10. *X. kirishimanus* MURAYAMA ♀.

rather abrupt, weakly convex, slightly elevated in sutural interstriae, not carinate below, microscopically rugose; strial punctures invisible, first striae impressed in upper two-thirds of declivital surface, each interstria with an uniserial row of fine tubercles, fourth rows of the tubercles ending in upper fourth; the outer and inferior edges with a series of close tubercles.

Specimens examined. 1 ♀, Hatsuno, Amamioshima, Kagoshima, Apr. 14, 1963 K. TAKAHASHI leg.; 8 ♀♀, Misato, Amamioshima, Apr. 18, 1963, K. TAKAHASHI leg.; 2 ♀♀, Tosashimizu, Kochi, Nov. 26, 1964, K. TAKAHASHI leg.; 2 ♀♀, Ohshima, Wakayama, ex *Quercus* sp., Mar. 15, 1979, M. KAIMOCHI leg.

Host trees. *Quercus acuta* THUNB., *Q. glauca* THUNB., *Q. sp.*, *Ilex macropoda* MIQ.

Distribution. Japan (Honshu, Kyushu).

Japanese name. Kirishima-kikuimushi.

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