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A Study on Three Species of Cryptomeria Twig Borers, *Anaglyptus subfasciatus* Species Group (Col., Cerambyc.) Japan and Taiwan, with Description of A New species.

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Abstract In the present paper, the result of our recent study on three species of cryptomeria twig borers, *Anaglyptus subfasciatus* species group in Japan and Taiwan are presented. Until now this species group have been known to only two species, *A. subfasciatus* PIC from southern part of Hokkaido, Honshu, Shikoku, northern part of Kyushu ? and *A. yakushimanus* HAYASHI from southern part of kyushu (Kagoshima city) and Yakushima I. A new species *Anaglyptus hirsutus* collected at Osaka Port in Formosan cypress, *Chamaecyparis obtusa* S. et Z. var. *formosa* HAYATA, Cupressaceae imported from Keelung, Taiwan is described. Formosan cypress is endemic species of Taiwan, distributes from 1500–2500 m above the sea level. And then we suppose that this new species distributes in high mountain area of Taiwan.

Key to three species of *Anaglyptus subfasciatus* group in Japan and Taiwan

1. Frons with sparse whitish yellow pubescence (Figs. 8, 9); apices of antennal segments with dense brown pubescence; pronotum with sparse or rather sparse short golden yellow pubescence (Figs. 11, 12); apical width of pronotum as wide as basal one (Figs. 11, 12); apical spines of elytra not so strongly developed and short or rather short (Figs. 14, 15); abdominal sternites with dense white pubescence on lateral side (Figs. 5, 6); 7th abdominal sternite semicircular (Figs. 20, 21) · · · · · · · · · · 2
– Frons with dense short whitish yellow pubescence (Fig. 7); apices of antennal segments without brown pubscence; pronotum with dense rather short golden yellow pubescence (Fig. 10); apical width of pronotum wider than basal ones (Fig. 10); apical spines of elytra strongly developed and long (Fig. 13); abdominal sternites

without white pubscence (Fig. 4); 7th abdominal sternite trapeziform (Fig. 19); length about 9.0 mm . . . . . *A. hirsutus* sp. nov.

2. Vertex with rather sparse short pubescence; pronotum with rather sparse short yellow pubescence (Fig. 11); pronotum circular, longer and not so wide (Fig. 11); basal half of elytra pitchy black; antennae long, relative length of body 1.1–1.2 (in male) or 0.9 (in female); apical parts of antennal segments 4–6 not so wide (Fig. 17); apical spines of elytra shorter (Fig. 14); larval head wide and front part of frons strongly sclerotized, and lateral projections developed (Fig. 22); length 7.5–10.0 mm . . . . . *A. yakushimanus* HAYASHI

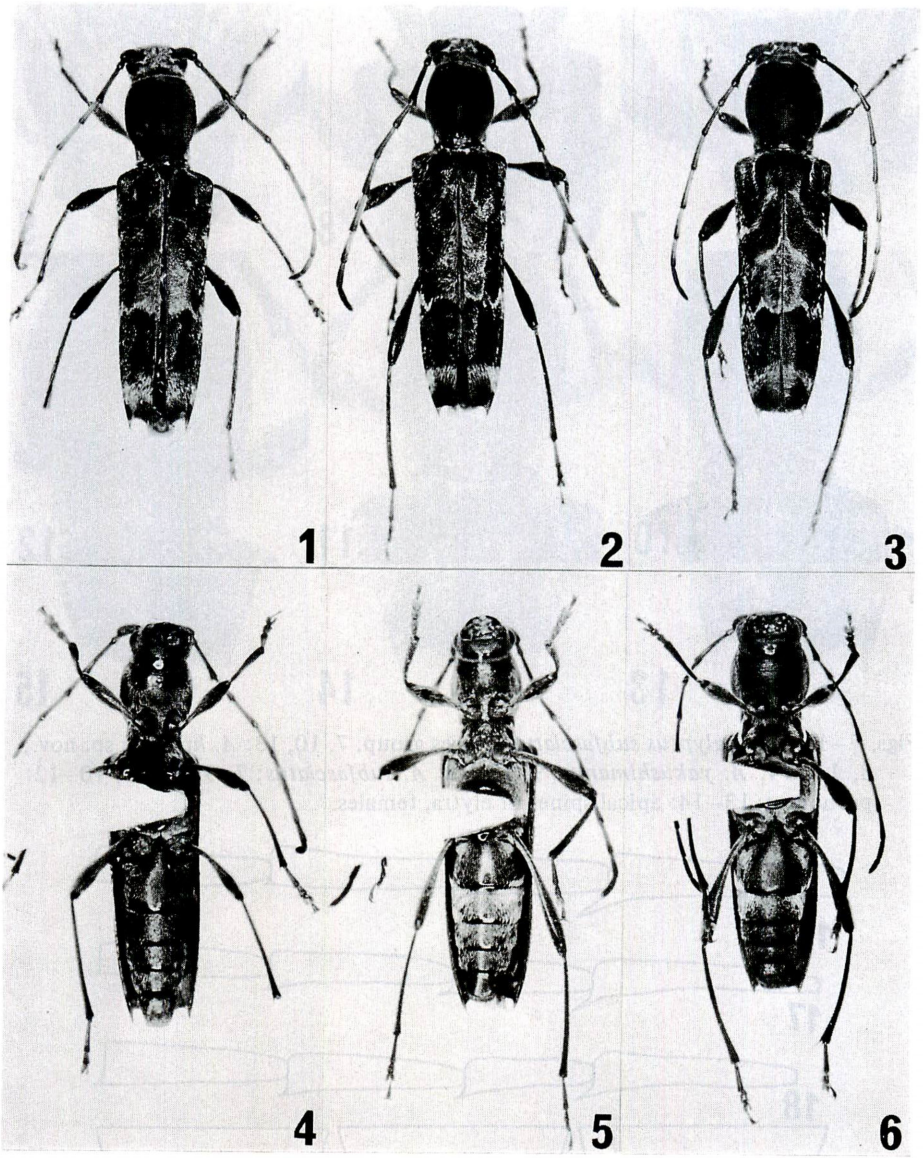
– Vertex with sparse rather short pubescence; pronotum with sparse very short pubescence (Fig. 12); pronotum circular and wide (Fig. 12); basal half of elytra blackish brown and reddish brown; antennae rather short, relative length of body 1.0 (in male) or 0.8 (in female); apical parts of antennal segments 4–6 wider (Fig. 18); apical spines of elytra short (Fig. 15); larval head not so wide and front part of frons weakly sclerotized, and lateral projections weakly developed (Fig. 22); length 7.5–13.0 mm . . . . . *A. subfasciatus* PIC

Anaglyptus subfasciatus PIC
(Japanese name: Sugi-no-akane-tora-kamikiri)

Anaglyptus subfasciatus PIC, 1906, Mat. Long. **6**(1): 17; MATSUSHITA, 1933, Ins. Mats., **7**(3): 107; MITONO, 1940, Cat. Col. Japon. **94**: 127; ibid., 1942, Bull. School Agr. For. Taihoku Imp. Univ., **34**(2): 113; OHBAYASHI, 1963, Icon. Ins. Japon. nat. edit., 2: 295, pl. 148, fig. 10; KOJIMA et HAYASHI, 1969, Ins. Life Japan **1**: 86, pl. 26, fig. 10; NAKANE, 1977, Nat. & Ins., **12**(6): 6; KIYOSAWA et al., 1981, Illust. Cerambyc. Nagano Pref.: 129, 1 fig.; MAKIHARA, 1983, For. Pests **32**(3): 13, fig. 1H; MAKIHARA et TANIGUCHI, 1983, Trans. 94th Mtg. Jap. For. Soc.,:499.

Anaglyptus (s. str.) *subfasciatus* PIC var. *rufescens* HAYASHI, 1955, Col. Illust. Ins. Japan, 2: 49; TAKIZAWA et al., 1982, Borers of Japanese ceder and cypress: 59.

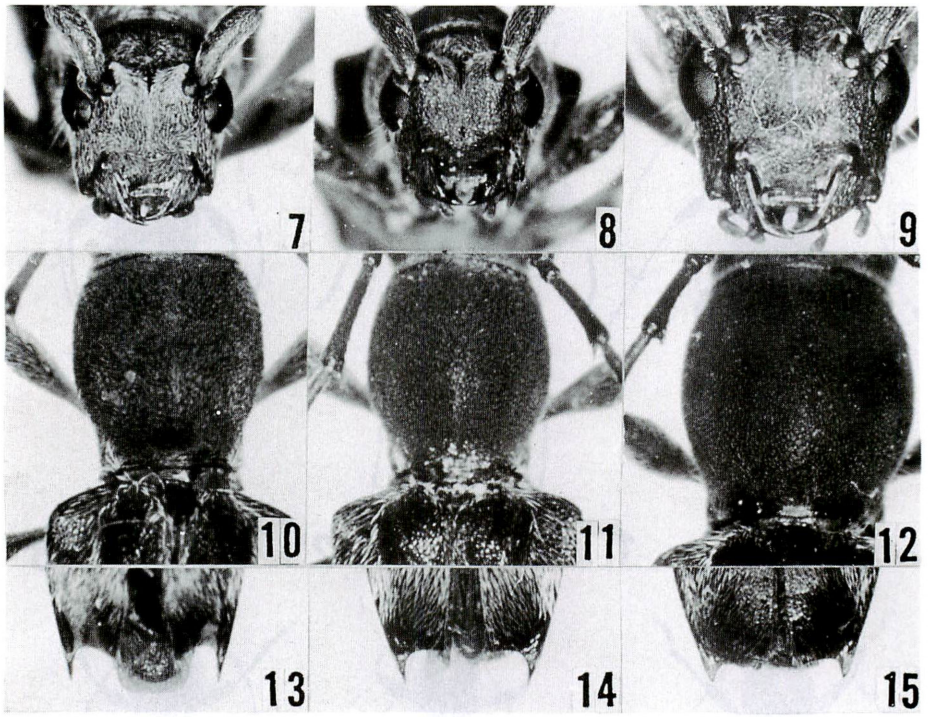
Specimens examined: 1♀, Tsugawa, Niigata Pref., 8. V. 1976, K. BABA leg.; 1♀, Mt. Washigasu, Niigata Pref., 28. V. 1976, K. BABA leg.; 1♀, Mt. Mikuni, Niigata Pref., 4. VII. 1976, K. BABA leg.; 85♂, 85♀, Odawara, Kanagawa Pref., 13–14. V. 1982, A. NOBUCHI, N. ENDA & H. MAKIHARA leg., on the flowers of *Stephanandra incisa* ZABEL, Rosaceae; 1♀, Mt. Hayachine, Iwate Pref., 3. VIII. 1982, H. MAKIHARA leg., on the flowers of *Hydrangea paniculata* SIEB., Saxifragaceae; 4♀, Nanai, Hokkaido Pref., 15. VI. 1982, K. TATE leg., by trap of barrier board type baited with Hodlon (Izutsuya style); 1♂, 4♀, Matsumae, Hokkaido Pref., 15. VI. 1982, K. TATE leg., by same trap as above; 23♂, 41♀, Odawara, Kanagawa pref., 12–14. V. 1983, N. ENDA & H. MAKIHARA leg., on the flowers of *Stephanadra incisa* ZABEL, Rosaceae, *Staphylea Bumalda* DC., Staphylaceae and *Spiraea cantoniensis* LOUR., Rosaceae; 2♂, 11♀, same locality as above, 17. V. 1983, H. MAKIHARA leg., on the flowers of *Stephanandra incisa* ZABEL, Rosaceae; 7♂, 28♀, same locality as above, N. ENDA & H. MAKIHARA leg., on same flowers as above; 1♀, same locality as above, 1. VI. 1983, H. MAKIHARA leg., on the



Figs. 1–6. *Anaglyptus subfasciatus* species group. 1, 4: *A. hirsutus* sp. nov.; 2, 5: *A. yakushimanus*; 3, 6: *A. subfasciatus*, females.

flowers of *Viburnum dilatatum* THUNM., Caprifoliaceae; 1♀, same locality as above, 3. VI. 1983, H. MAKIHARA leg., on same flowers as above.

Distribution: Southern part of Hokkaido, Honshu, Shikoku, Northern part of Kyushu ?



Figs. 7–15. *Anaglyptus subfasciatus* species group. 7, 10, 13: *A. hirsutus* sp. nov.; 8, 11, 14: *A. yakushimanus*; 9, 12, 15: *A. subfasciatus*; 7–9: Frons, 10–12: pronotum; 13–14: apical spines of elytra, females.

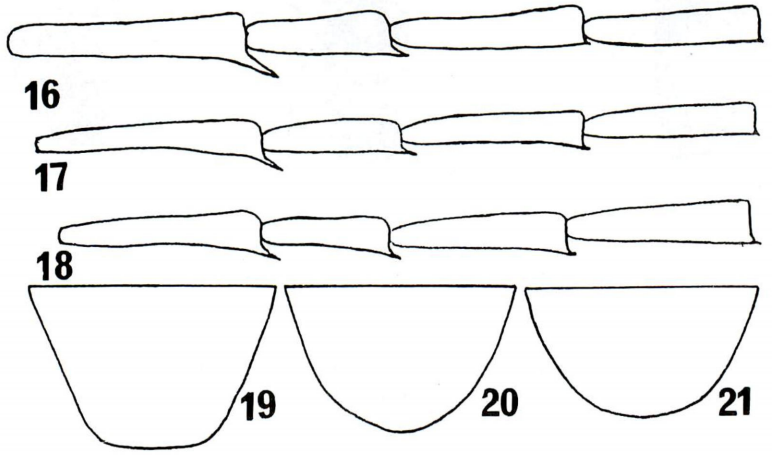


Fig. 16–21. *Anaglyptus subfasciatus* species group. 16–18: Antennal segments 3–6, 19–21: 7th abdominal sternites; 16, 19: *A. hirsutus* sp. nov.; 17, 20: *A. yakushimanus*; 18, 21: *A. subfasciatus*, females.

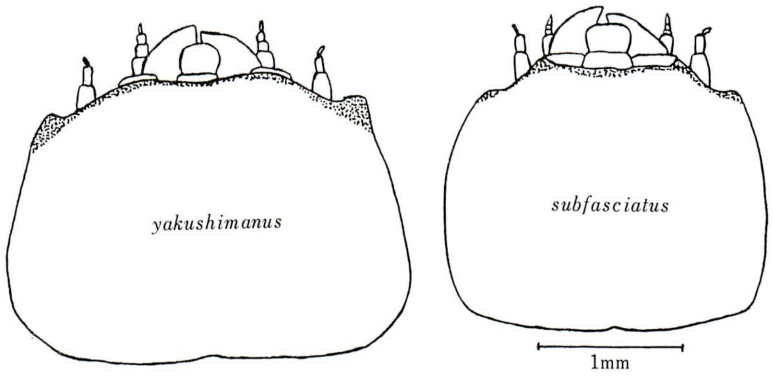


Fig. 22. Larval head of *Anaglyptus yakushimanus* and *A. subfasciatus*, dorsal view.

Anaglyptus yakushimanus HAYASHI
(Japanese name: Satsuma-sugi-no-akane-tora-kamikiri)

Anaglyptus subfasciatus yakushimanus HAYASHI, 1968, Ent. Rev. Japan, **21**(1): 14; KOJIMA et HAYASHI, 1969, Ins. Life Japan, **1**: 86, pl. 26, fig. 10a; NAKANE, 1977, Nat. & Inst., **12**(6): 6; MAKIHARA, 1983, For. Pests, **32**(3): 14, fig. 1G.
Anaglyptus yakushimanus: MAKIHARA et TANIGUCHI, 1983, Trans. 94th Mtg. Jap. For. Soc.,:499.

Specimens examined: 1♀, Shiroyama, Kagoshima city, 16. IV. 1967, H. MAKIHARA leg., on the flowers of *Viburnum japonicum* SPRENG, Caprifoliaceae; 1♂, 2♀, same locality and collector as above, on the flowers of *Acer palmatum* THUNB., Aceraceae; 1♂, Kosugidani, Yakushima I., Kagoshima pref., 24. V. 1963, N. OHBAYASHI leg.; 1♂, Mt. Ishizukadake (1000–1500 m), Yakushima I., Kagoshima pref., 16. VII. 1970, K. TOBI leg.; 1♀, Shiroyama, Kagoshima city, Kagoshima pref., 2. XI. 1982, H. MAKIHARA leg., in the died branch of *Cryptomeria japonica* D. DON, Taxodiaceae.

Distribution: Southern part of Kyushu (Shiroyama, Kagoshima city), Yakushima I.

Anaglyptus hirsutus sp. nov.
(Japanese name: Taiwan-sugi-no-akane-tora-kamikiri)

Body black; antennae, apical spines of elytra, basal parts of femora, basal halves of tibiae and tarsi light brown; inner parts of humeri, middle parts of near suture dark reddish brown.

Head roughly punctured, with a median short furrow on vertex, covered with sparse

long erect white hairs on frons and genae, with dense prostrate short whitish yellow pubescence. Antennae short, relative length to body 1.05 (male) or 0.84 (female), relative relative length of each segment 8.0 : 2.5 : 11.4 : 8.0 : 10.0 : 10.0 : 10.4 : 10.4 : 9.5 : 9.0 : 10.9 (in male) or 10.5 : 3.3 : 13.2 : 7.9 : 10.9 : 10.5 : 10.9 : 10.2 : 8.6 : 6.9 : 7.2 (in female); 3–6 segments with endoapical spines as follows: 3 segments with long ones, 4 segments with rather long ones, 5 segments with short ones, 6 segments with very short ones (Fig. 16); 1–7 segments with sparse long suberect white hairs, sparser towards apical segments; 1–11 segments with dense prostrate short whitish yellow pubescence, denser and smaller towards apical segments.

Pronotum circular, closely punctured, apical width wider than basal ones, with sparse long erect white hairs, with dense short prostrate golden yellow pubescence, with dense prostrate rather short white hairs on lateral parts at base.

Scutellum triangular, with dense rather short prostrate black pubescence.

Elytra prominent at humeri, rather strongly narrowed apically, carinate behind humeri, with a pair of tubercles at near base, apical parts truncate with external rather long spines, with three white pubescent markings as follows: a narrow one extending obliquely backwards from suture behind tubercles to basal 1/4, and a irregular hexagonal one centered at middle of suture and a wide one at apical parts. Another parts with dense prostrate stout short black pubescence.

Legs long, with sparse long erect white hairs and dense short suberect white hairs on femora and tibiae, with rather long suberect brown hairs on tarsi.

Ventral side with dense short prostrate whitish yellow pubescence; abdominal sternites with sparse long erect white hairs; 7th abdominal sternite trapeziform.

Length: 9.1 mm (male) or 9.0 mm (female).

Distribution: Taiwan.

Type material: Holotype, ♂, Osaka port, Japan, 21. I. 1963, collected from formosan cypress, *Chamaecyparis obtusa* S. et Z. var. *formosana* HAYATA, Cupressaceae imported from keelung, Taiwan, S. YOSHIMURA leg.; paratype, ♀, Osaka port, Japan, 12. II. 1978, collected from as same as above tree, S. FUJISAWA leg.

Type depository: The holotype is preserved in HAYASHI's collection.

Note: Formosan cypress, *Chamaecypris obtusa* S. et Z. var. *formosana* HAYATA

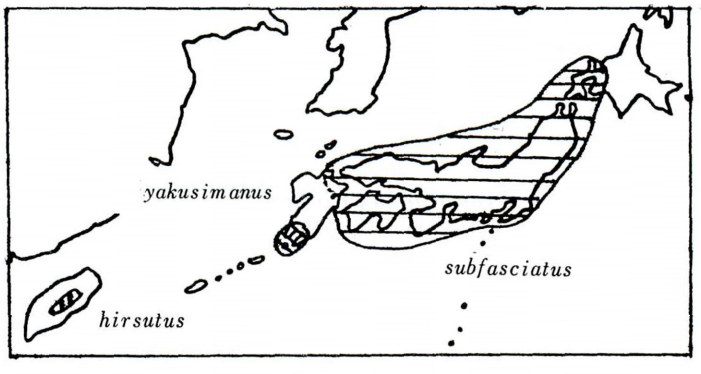


Fig. 23. Distribution map of *Anaglyptus subfasciatus* species group.

is endemic variety of Taiwan, distributes from 1500–2500 m above the sea level. And then we suppose that this new species distributes in high mountain areas of Taiwan.

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I wish to my sincere to Mr. N. HIGASHIYAMA of Institute of Kobe Plant protection, Osaka branchi for the loan of valuable specimen for our study.

摘　要

スギ，ヒノキの害虫として著名なスギノアカネトラカミキリ *Anaglyptus subfasciatus* PIC には近縁な別種サツマスギノアカネトラカミキリ *A. yakushimanus* HAYASHI が知られ(槇原・谷口, 1983により鹿児島市，屋久島に産するものは，その成虫，幼虫の形態の差異によりスギノアカネトラカミキリとは別種として扱かうとの報告がある,) スギ,ヒノキを食害するスギノアカネトラカミキリ種群と呼べるような仲間は日本から上記の2種のみが知られるだけであった．今回，筆者らは台湾基隆港より大阪港に輸入されたタイワンヒノキより発見されていたこの1種を調べる機会を持ち，新種と判定したので，タイワンスギノアカネトラカミキリ *A. hirsutus* と命名し，発表した．なおタイワンヒノキは台湾特産で標高1500～2500m に分布することから本新種は台湾高地に分布していると推定される．またあわせてスギノアカネトラカミキリ種群3種の検策表と既知の2種の検視個体のうち，訪花していた植物の種類などが明らかなものについては報告した．

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