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Description of the Larva of *Xylotrechus villioni* (VILLARD) (Coleoptera, Cerambycidae)[1)]

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Abstract The larva of *Xylotrechus villioni* (VILLARD) (Coleoptera, Cerambycidae) is described. It is distinguishable from larvae of the other species of the genus in that 1) the head is 1.3× as wide as long, 2) the mediopraesternum bears a pair of large, yellow, micro-asperate blotches, 3) the mouth frame and the prothorax bear darker pigmentation, and 4) vestigial legs are present.

Xylotrechus villioni (VILLARD) is a cerambycid species distributed in Japan (Kunashiri, Hokkaido, Honshu and Shikoku Islands), and only very rarely found in various localities. The species is known to be a borer of coniferous trees, especially of the genera *Picea* and *Abies*, occasionally causing severe damage to them. An outline of the larval habits was clarified recently (IWATA *et al.*, 1990).

The senior author had an opportunity of collecting larvae of the species on the northern slope of Mt. Fuji, central Honshu, which enabled us to describe their morphology. The morphological nomenclature used herein is almost based upon that by ŠVÁCHA and DANILEVSKY (1987).

We wish to express our sincere thanks to Messrs. Tomio KINOSHITA (Chigasaki), Yûichi MATSUMOTO (Tokyo) and Kazuki MORI (Kagoshima) for their kind help in collecting materials, providing us with useful information, and preparing photographs.

Xylotrechus villioni (VILLARD)

Larva (Figs. 1–17)

Description. Body (Figs. 1–3) robust, 38.0 mm long at the most, while the pronotal width is 8.7 mm at the most (4.4: 1).

Head (Figs. 4–5) glabrous, trapezoidal in shape, with more than the half retracted into prothorax. Mouth frame (surrounding the mouth parts) (Fig. 6) dark brown, broadly strongly pigmented. Cranium (Fig. 4) about 1.3 times wider than long, with

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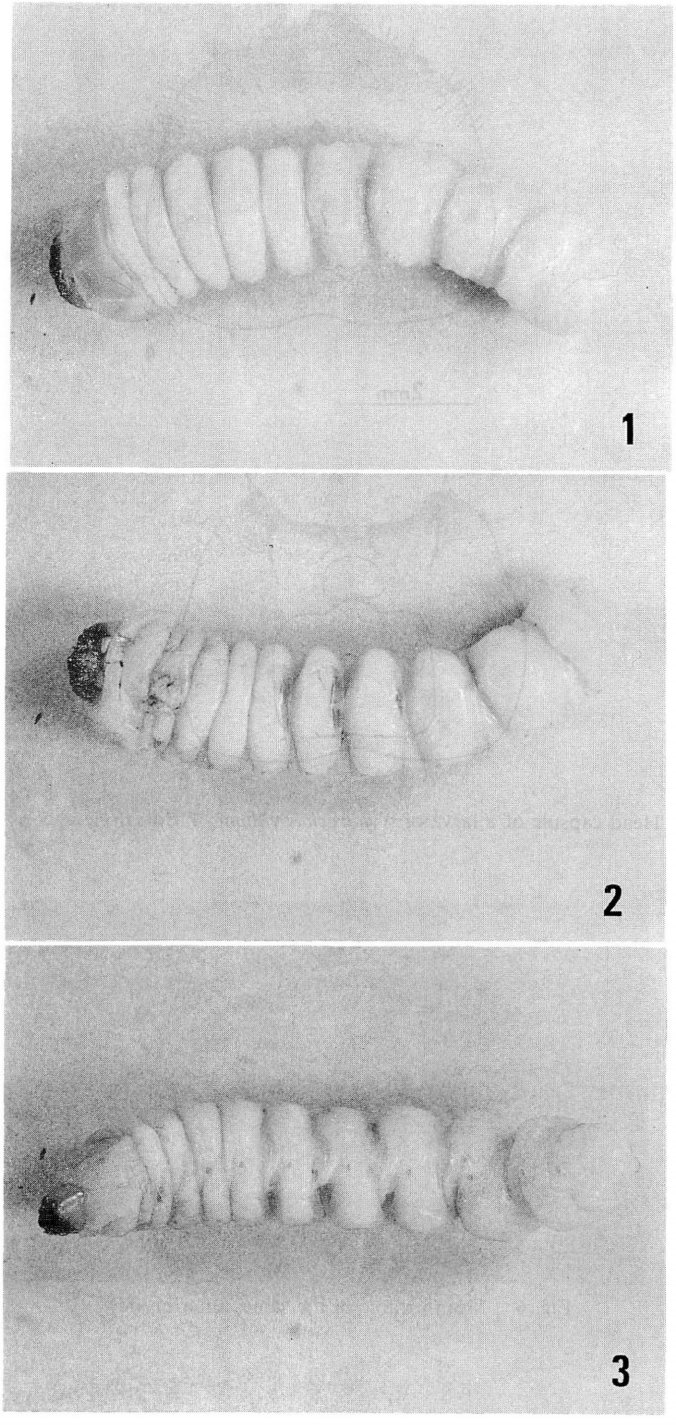
sides slightly rounded, widest near posterior 2/5, with posterior margin almost straight. Anterior margin of frons recurved and pigmented almost back to the row of prefrontal setae, which occur in 3–4 pairs along the frontier between mouth frame and unpigmented white part, each seta occurring from a depression; epistoma transverse, indistinct, each usually bearing 2 setae; pigmented triangular area present and visible *in situ* uncovered by pronotum, situated near anterior 1/5 of cranium; frontal lines and medial frontal line indistinct; epicranium glabrous and white. Occipital foramen (Fig. 5) ventrally divided into 2 parts by a very narrow, anteriorly curved and internally recurved metatentorial bridge, with anterior occipital foramen subcircular (reniform as seen perpendicularly) and posterior one trapezoidal (subrectangular as seen perpendicularly).

Antennae (Figs. 6–7) 3-segmented, relative lengths of antacoria, segment 1, segment 2 and segment 3 approximating 4: 1: 2.6: 1, and relative widths approximating 8: 5: 3.7: 1; visible portion of segment 1 and the tip of segment 2 whitish; antacoria and the basis of segment 1 light brown; segments 2 and 3 rusty except for their tips; segment 1 short, bearing several spines on its basis; segment 2 about twice longer than wide, bearing 3–4 fine hairs on its tip, in addition to a protuberance and segment 3; segment 3 bearing a single spine of 3/5 length and a minute protuberance.

A pair of main stemmata (Fig. 6) located near and off the antennal bases, surrounded by pigmentation of gena; corneae convex. Gena (Fig. 6) widely pigmented, with the most pigmented area (I) bearing no setae, which is laterally surrounded by less pigmented area (II) with sparser setae, followed by the least pigmented area (III) with denser and long setae; antennal ring open at the less pigmented area (II); subfossal process distinct. Hypostoma (Fig. 5) glabrous, with hypostomal line brown and distinct anteriorly; a row of setae and seta-depressions present oblique from hypostomal line up to main stemmata; hypostomal lines indistinct posteriorly; anterior portion of hypostoma smooth and slightly curved, broadly pigmented, bearing transverse furrows on its surface; gula (Fig. 5) subquadrate, pigmented, not interrupting pigmentation of hypostomal anterior margin, bearing 2–4 transverse grooves. Pleurostoma, a region surrounded by main stemmata, mandibles and hypostoma, slightly convex, lightly through heavily pigmented toward hypostoma.

Labrum (Figs. 6, 8) whitish, transverse, convex, about twice wider than long, feebly sclerotized basally, bearing short dense setae, each of which occurs on basal ring, with the median surface lacking setae. Mandibles (Figs. 6, 9–10) brown, with dark brown basal parts, bearing coarse contour-like furrows, basally bearing a row of 3–4 setae. Labiomaxillary complex attached to ventral sclerite by about 3 widths of gula. Maxilla (Fig. 11) whitish, with segment 1 of maxillary palpus longer than segment 2, followed by segment 3; bases of palpiger and segments 1–2 brown, bearing setae on non-brown surfaces; segment 3 light-brown, with a single short seta and, at its tip, several fine hairs; segment 1 and maxillary palpiger with long setae; mala

Figs. 1–3. Body of a larva of *Xylotrechus villioni*; 1, dorsal view; 2, ventral view; 3, lateral view.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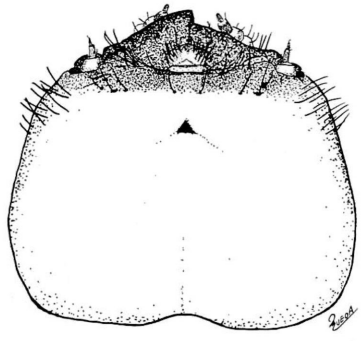

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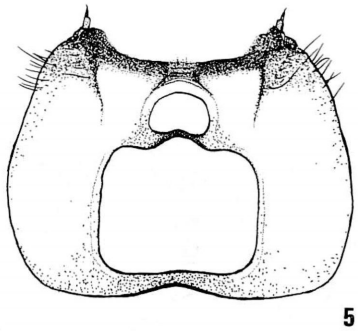

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Figs. 4–5. Head capsule of a larva of *Xylotrechus villioni*; 4, dorsal view; 5, ventral view.

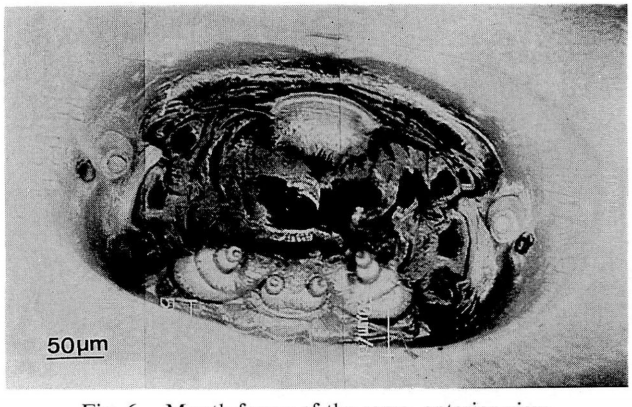


Fig. 6. Mouth frame of the same, anterior view.

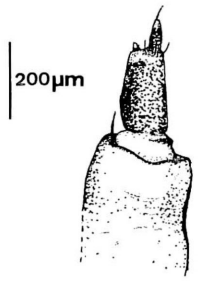


Fig. 7. Right antenna of a larva of *Xylotrechus villioni.*

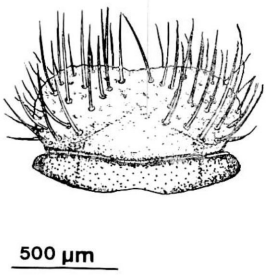
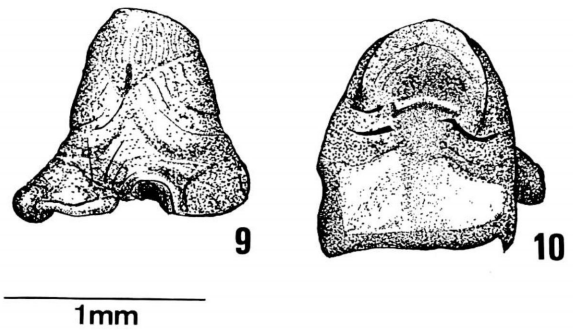


Fig. 8. Labrum of the same.



Figs. 9–10. Mandible of the same; 9, external surface; 10, internal surface.

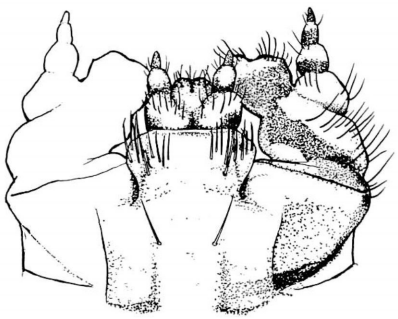


Fig. 11. Maxillae and labium of the same.

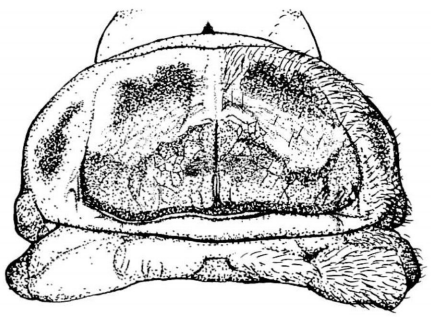


Fig. 12. Pronotum and allar lobes of the same, dorsal view.

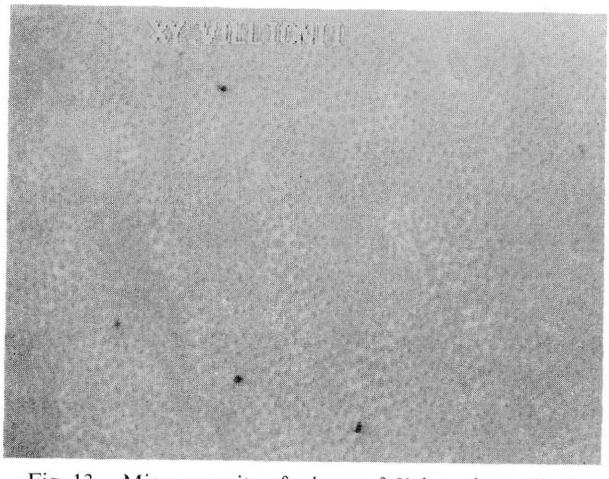


Fig. 13. Micro-asperity of a larva of *Xylotrechus villioni*.

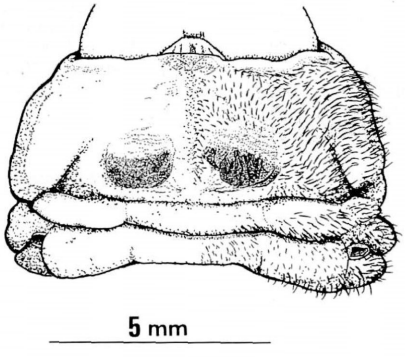


Fig. 14. Pronotum and allar lobes of the same, ventral view.

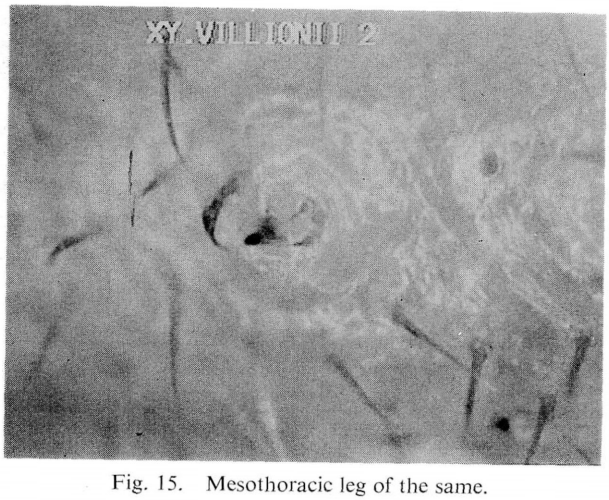


Fig. 15. Mesothoracic leg of the same.

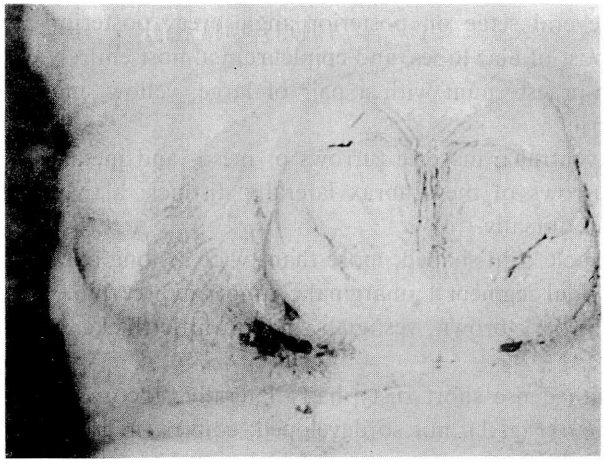


Fig. 16. Locomotory ampulla of abdominal tergite 4 of a larva of *Xylotrechus villioni*, dorsal view.

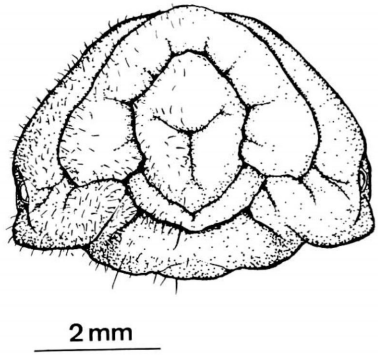


Fig. 17. Anus of the same.

subquadrate, distanced from maxillary palpus by the width of palpal segment 3. Labium (Fig. 11) whitish; submentum feebly sclerotized, with a pair of setae off the median line; mentum without lateral sclerites, bearing a pair of areas laterally furnished with spine-like setae; praementum with basal pigmentation; labial palpi separated by more than the width of segment 1, segment 1 longer than segment 2, with anterior paler portion as long as segment 2, furnished with surrounding setae; segment 2 and basal portion of segment 1 light-brown; palpiger bearing setae, light-brown basally and laterally; ligula wider than width of segment 1 of labial palpus.

Pronotum and alar lobes (Fig. 12) with yellow pigmentation partially, furnished with light-brown hairs with unconspicuous basal rings partially but densely; median groove of pronotum conspicuous, deeply excised except for anterior portion; lateral furrows conspicuously excised; posterior area of pronotum covered with micro-asperities (Fig. 13), bearing furrows, rugae and a pair of setae off the median groove,

in addition to several setae on posterior angle area; posterior area of pronotum, sternellar fold, most of alar lobes, and epipleurum almost entirely covered with micro-asperities; medio-praesternum with a pair of large, yellow, micro-asperate, hairless blotches (Fig. 14).

Dorsal and ventral transverse furrows of meso- and metathoraces almost indistinct; oblique furrows of mesothorax laterally distinct; alar-lobe distinctly defined both ventrally and dorsally.

Thoracic spiracle oval-shaped, more than twice as long as wide, twice as long as spiracle of abdominal segment 1; marginal chamber indiscernible.

Legs (Fig. 15) dark-brown, vestigial, small, a little thicker and shorter than surrounding setae.

Abdomen with dense short rusty hairs laterally; locomotory ampullae present on segments 1 to 7 (Fig. 1), not so developed, convex, micro-asperate, divided by a deep medial longitudinal impression, furnished with hairs on anterior and posterior margins, laterally defined by longitudinal furrows; several transverse furrows only dorsally present (Fig. 16); anus (Fig. 17) triradiate.

Abdominal spiracles present on segments 1 to 8, oval-shaped; spiracles on segment 1 developed, 1.4× as large as the others; all spiracles without marginal chambers, pleural discs absent.

Materials. Employed for morphological observations are three larvae, one of which has been damaged at the posterior half of abdomen, all being collected on 17–V–1992, at Nigô, on the northern slope of Mt. Fuji, Narusawa, Yamanashi Pref., Central Honshu. They were found under the bark of *Abies veitchii* LINDL. live tree, about 20 cm in diameter, and are supposed to be at the final stage because they had already made whirlpools, the final phase of larval boring (IWATA *et al.*, 1990). The senior author succeeded in breeding another individual (male), found at the same time under the same condition, from the larval stage to adult to verify the specific identification of the larvae employed for the observation. The larval specimens had been preserved by soaking them into Pampel's fluid according to ŠVÁCHA and DANILEVSKY (1987).

Remarks. Larva of this species is distinguishable from those of the other species of the genus by 1) the proportion of length and width of the head (1 : 1.3), 2) the medio-praesternum with a pair of large, yellow, micro-asperate blotches, 3) the darker pigmentation of mouth frame and prothorax, 4) the presence of vestigial legs, and some others. The species is known to be a primary borer of coniferous trees (IWATA *et al.*, 1990), and thus the host tree species can also be a criterion for the identification.

要　　約

武田雅志・上田　大・岩田隆太郎: オオトラカミキリの幼虫の記載. —— オオトラカミキリ *Xylotrechus villioni* (VILLARD) の幼虫を記載した. 本種幼虫は同属の他種の幼虫とは, 1) 頭部の幅が長さの 1.3 倍となること, 2) 真腹板に 1 対の黄色い大型の刺針状表面構造の領域を有すること, 3) ロ

器周辺部および前胸に色素沈着の濃い部分を有すること，4) 痕跡的な脚が存在すること，などにより区別が可能である．

References

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ŠVÁCHA, P., & M. L. DANILEVSKY, 1987. Cerambycoid larvae of Europe and Soviet Union (Coleoptera, Cerambycoidea). Part I. *Acta Univ. Carol.*, (Biol.), **30**: 1–176.

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新 刊 紹 介

Fauna Iberica, Vol. 0, Coleoptera, Ptinidae, Gibbiinae. By Xavier BELLÉS. 43 pp., 1990. Museo Nacional de Ciencias Naturales, CSIC, Madrid.

Fauna Iberica, Vol. 2, Coleoptera, Anobiidae. By Francisco ESPAÑOL Coll. 195 pp. 1992. Museo Nacional de Ciencias Naturales, CSIC, Madrid.

最近のスペインにおける自然史研究の興隆はめざましいものがある．甲虫学においても同様で，1985年発足した欧州甲虫学会 (Asociación Europea de Coleopterología) の会員は，もちろんスペインに事務局を持ち，スペインの研究者の呼びかけで発足したとはいえ，全会員の 43% (1988 年の名簿による) がスペイン人会員である．ここに紹介する本も，スペインにおける自然史研究の実力をかいま見せてくれるものである．

Fauna Iberica シリーズは 1989 年に企画され，1900 年その sample issue として X. BELLÉS による Vol. 0, Ptinidae, Gibbiinae (写真左) が発行された．この本はあくまで sample issue であって，イベリア半島のヒョウホンムシ科，セマルヒョウホンムシ亜科の 2 族，2 属，6 種を扱っただけのものであるが，いまや世界のヒョウホンムシ科の分類は彼の独壇場であるだけに，文章も挿図も自信に満ちたものであり，すばらしい出来である．そして昨年 (1992 年)，Vol. 1, Mollusca, Cephalopoda (軟体動物門，頭足綱) と Vol. 2, Coleoptera, Anobiidae (甲虫目，シバンムシ科) (写真右) とが上梓された．Vol. 2 の著者 Dr. F. ESPAÑOL は，いうまでもなくスペイン甲虫界の大御所である．正確な年齢は存じ上げないが，80 才を優に超すほどのご高齢でありながら，いまもかくしゃくとして論文を書いておられる．10 年近く前，2~3 年別刷の送付が途絶え，論文発表もほとんどなくなったので，心配していたら，つい先年，「入院していたが，無事退院できたので研究を再開する」という元気なお手紙をいただいて，なにか熱いものを感じてしまった．ESPAÑOL はゴミ