

Notes on the Lepturine Genus *Pidonia* (Coleoptera, Cerambycidae) from East Asia

II. Redescription of *Pidonia orientalis* MATSUSHITA, 1933, and Some Notes on its Vertical Distribution and Habits

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Abstract *Pidonia orientalis* MATSUSHITA, 1933, is redescribed on the basis of the type specimen and newly collected material from the vicinities of the type locality. Its vertical distribution is noted with reference to the vertical vegetational zonation. Brief biological notes are given.

Pidonia orientalis MATSUSHITA, 1933, was originally described on the basis of the specimen collected from Kamikôchi, Nagano Prefecture. However, the taxonomic status of *orientalis* has been treated differently by various authors. It was regarded as a synonym of *P. bouvieri* PIC by MITONO (1940). On the other hand, it was regarded by TAMANUKI (1942) and HAYASHI (1968) as an infraspecific variation of *P. maculithorax*.

Recently, through the courtesy of Dr. M. SUWA and Mr. M. OHARA of the Entomological Institute, Faculty of Agriculture, Hokkaido University, Sapporo, I was able to examine the type specimen of *P. orientalis* MATSUSHITA, 1933, which is preserved in the collection of the Entomological Institute, Faculty of Agriculture, Hokkaido University. Further, I examined a number of specimens which were collected in various parts of Japan. After my study on these materials, I have come to the conclusion that *orientalis* is a good species.

In the present paper, I will redescribe *P. orientalis* and will also give some notes on its vertical distribution and habits.

Before going further, I wish to express my hearty thanks to Messrs. H. NAKABAYASHI, K. SUZUKI, S. TAKECHI and N. YOSHIZAWA who gave me opportunity to study on the interesting material. I am also indebted to Dr. M. SUWA and Mr. M. OHARA of the Entomological Institute, Faculty of Agriculture, Hokkaido University, for their kind help during the course of this study.

Pidonia (Pidonia) orientalis MATSUSHITA, 1933

[Japanese name: Kakumune-hime-hanakamikiri]

(Figs. 1, 3-10)

Pidonia orientalis MATSUSHITA, 1933, Ins. matsum., 7: 103, fig. 1 (♀, Kamikôchi, 2. VIII. 1931).

Body relatively large, elongate and furnished with pale fulvous pubescence.

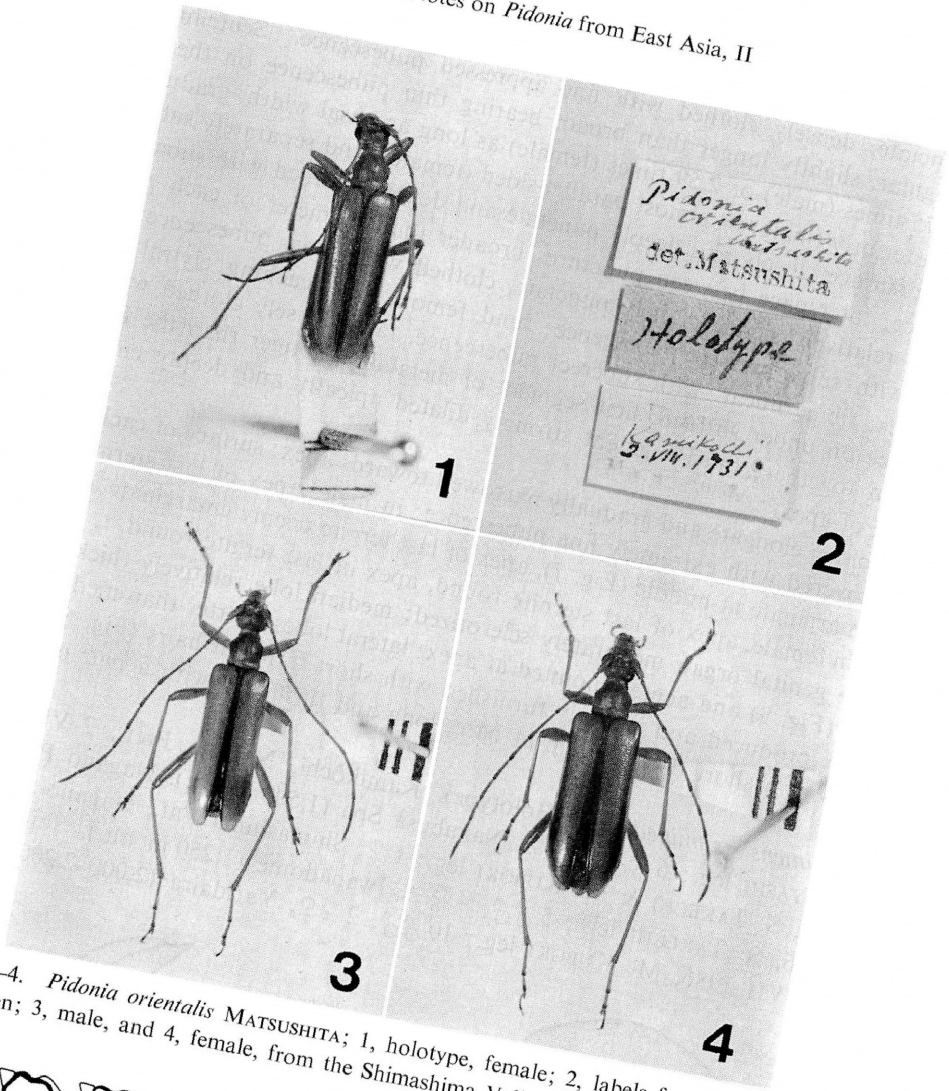
Length: 11.5–7.9 mm (male), 11.7–8.2 mm (female); breadth: 2.6–1.9 mm (male), 2.9–2.4 mm (female).

Color. Body fulvous to black; head fulvous, sometimes dark brown; mouth-parts yellowish fulvous except for reddish brown apex of each mandible; eyes black; antennae entirely fulvous, sometimes third and following segments faintly infuscated at their apices; prothorax fulvous, sometimes dark brown. Scutellum fulvous; coxae, trochanters, femora, tibiae and tarsi fulvous; claws reddish brown. Elytra yellowish fulvous with black markings, which are enlarged in female. Ventral surface:— head, thorax and abdomen fulvous in both sexes, sometimes first to fourth sternites dark brown to black in male, rarely meso- and metasterna darkened in male.

Elytral markings (Fig. 5):— in male, sutural marking, narrowly present, combining with basal marking, rarely entirely lacking, basal marking narrowly present, prolonging towards shoulder, latero-basal, latero-median and latero-posterior markings narrowly present, sometimes latero-median and latero-posterior markings lacking, rarely lateral three markings entirely lacking, apical band entirely lacking; in female, sutural marking distinctly present, joining basal band, latero-basal marking combining with basal marking, latero-basal, latero-median and latero-posterior markings frequently fused with one another, forming a narrow longitudinal submarginal vitta, apical band entirely lacking.

Structure. Head broader across eyes than basal width of prothorax (male, 1.12: 1; female, 1.01: 1); terminal segment of maxillary palpus broadened apically with straight outer margin; tempora narrowed posteriorly in anterior half and abruptly constricted in posterior half, almost impunctate and shining, with several setae; frons subvertical and transverse, covered with coarse punctures, bearing a fine but distinct median longitudinal furrow extending backwards to vertex; vertex convex above, coarsely punctured; two to five supraorbital setae present, one of them especially long; gula shining, very sparsely clothed with long pubescence. Eyes relatively prominent, moderately faceted, strongly emarginate at middle of internal margins. Antennae relatively long and slender, inserted just behind the level across frontal margins of eyes; apical one segment surpassing elytral apices in male; antennae barely attaining elytral apices in female; first segment distinctly dilated towards apex, weakly shining, sparsely clothed with fine pubescence, second to eleventh segments densely clothed with fine appressed pubescence and sparsely with fine erect pubescence; comparative length of each antennal segment as follow:— $5 > 3 \geq 6 > 4 \geq 1 + 2$ (male) or $5 > 3 \geq 1 + 2 = 6 > 4$ (female).

Prothorax longer than basal width (male, 1.18: 1; female, 1.09: 1), deeply constricted both behind apex and before base, and angularly prominent laterally just before the middle; breadth across prominent portions distinctly broader than length (male, 1.43: 1; female, 1.51: 1); disk of pronotum convex above, finely and closely punctured, sparsely clothed with fine pubescence; posterior lateral setae long; prosternum shining, extremely thinly clothed with short pubescence; meso- and metasterna



Figs. 1-4. *Pidonia orientalis* MATSUSHITA; 1, holotype, female; 2, labels for the same specimen; 3, male, and 4, female, from the Shimashima Valley in Nagano Prefecture.

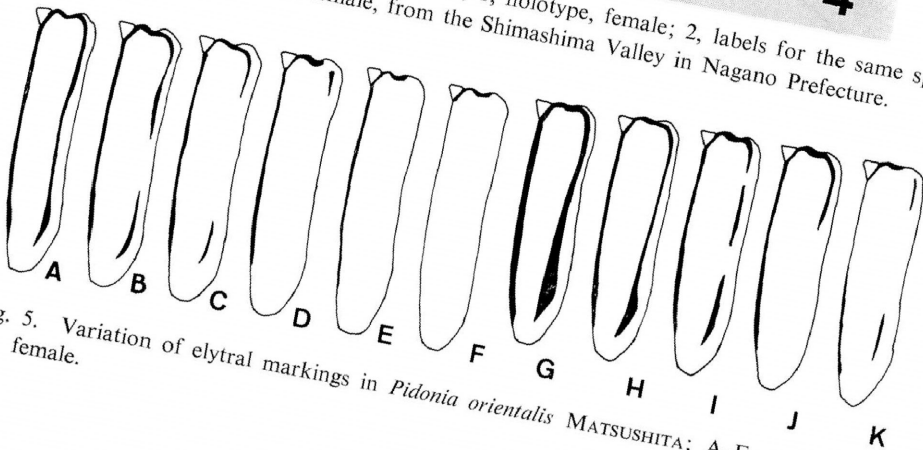


Fig. 5. Variation of elytral markings in *Pidonia orientalis* MATSUSHITA; A-F, male, G-K, female.

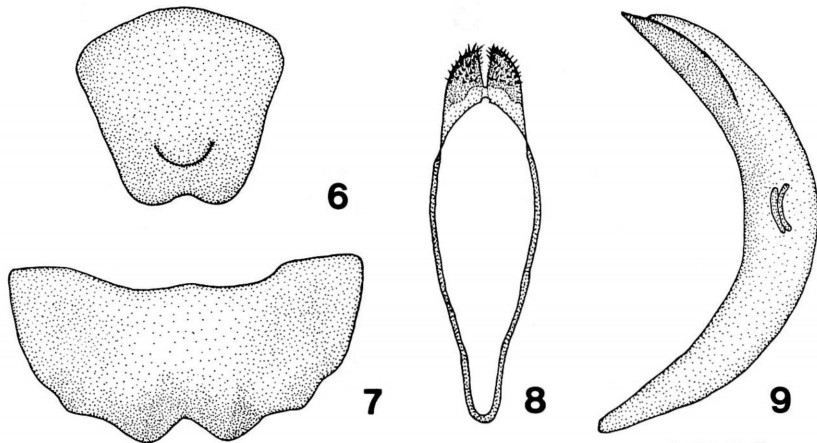
finely punctate, densely clothed with fine appressed pubescence. Scutellum small and triangular, slightly longer than broad, bearing thin pubescence on the surface. Elytra 2.75 times (male) or 2.59 times (female) as long as basal width, gradually narrowed posteriorly (male) or almost parallel-sided (female), and separately subtruncate at apices; surface closely and deeply punctate and densely clothed with subappressed pubescence; interspace between punctures broader than diameter of each puncture.

Legs relatively slender, finely punctate, clothed with short pubescence; femora clavate, with subappressed pubescence; hind femora not reaching elytral apex in both sexes; tibiae linear, with suberect pubescence, tarsi densely clothed with short pubescence on under surface; first segment of metatarsus longer than the following two taken together; third segment strongly dilated apically and deeply emarginate at middle of apex.

Abdomen elongate and gradually narrowed towards apex; surface of each sternite densely covered with extremely fine pubescence; in male, apex of last sternite triangularly emarginate at middle (Fig. 7), apex of last tergite deeply emarginate at middle (Fig. 6); in female, apex of last sternite round, apex of last tergite round.

Male genital organ moderately sclerotized; median lobe relatively thick, curved ventrally (Fig. 9) and acutely pointed at apex; lateral lobes shorter than median lobe, each apex produced and sparsely furnished with short terminal hairs (Fig. 8); endophallus with a short diverticulum at base, long and furnished with a pair of falcate sclerites.

Specimens examined. ♀ (Holotype), Kamikōchi, Nagano Pref., 2-VIII-1931, K. OHBAYASHI leg.; 6 ♂♂, 8 ♀♀, Nakabusa Spa (1,500 m alt.), Nagano Pref., 29-VII-1986, S. TAKECHI & M. KUBOKI leg.; 1 ♀, Shimashima Val., Nagano Pref., 2-VIII-1976, S. TAKECHI leg.; 5 ♂♂, 4 ♀♀, Iwanadome (1,250 m alt.), Shimashima Val., 21-VII-1986, M. KUBOKI leg.; 10 ♂♂, 2 ♀♀, Yaridaira (2,000-2,200 m alt.),



Figs. 6-9. *Pidonia orientalis* MATSUSHITA, ♂; 6, last tergite; 7, last sternite; 8, lateral lobes of male genitalia, ventral view; 9, median lobe of the same, lateral view. Scale: 0.3 mm.

Gifu Pref., 29-VII-1985, S. TAKECHI leg.; 15 ♂♂, 7 ♀♀, Mt. Norikura (1,800–2,500 m alt.), Nagano Pref., 28-VII-1985, S. TAKECHI leg.; 3 ♂♂, Tanohara (2,190 m), Mt. Ontake, Nagano Pref., 5-VIII-1985, S. TAKECHI leg.; 3 ♂♂, 2 ♀♀, Mt. Misaka, near Mt. Ontake, 31-VII-1988, S. TAKECHI leg.; 12 ♂♂, Kurokawa Val., Mt. Komagatake, Nagano Pref., 3-VIII-1986, H. NAKABAYASHI leg.; 10 ♂♂, 12 ♀♀, Higurashinotaki (1,800–1,900 m alt.), Mt. Komagatake, 1-VIII-1988, S. TAKECHI leg.; 13 ♂♂, 1 ♀, Mt. Enasan (1,400–1,600 m alt.), 22-VII-1989, S. TAKECHI leg.; 2 ♀♀, Kitazawa Pass (2,100 m alt.), Yamanashi Pref., 2~3-VIII-1983, S. TAKECHI leg.; 18 ♂♂, 16 ♀♀, Kitazawa Pass, 1-VIII-1986, M. KUBOKI leg.; 12 ♂♂, 5 ♀♀, Yabusawa (2,250 m alt.), Nagano Pref., 28~29-VII-1987, S. TAKECHI leg.; 1 ♂, 1 ♀, Yabusawa, near Umanose, Nagano Pref., 28~29-VII-1987, S. TAKECHI leg.; 2 ♂♂, 1 ♀, Ryomata, Yamanashi Pref., 29-VII-1984, S. TAKECHI leg.; 34 ♂♂, 13 ♀♀, Daisenjosawa (1,900 m alt.), Yamanashi Pref., 1-VIII-1986, S. TAKECHI leg.; 1 ♀, Suzuran Pass (1,700 m alt.), near Mt. Tadeshina, Nagano Pref., 12-VII-1986, M. KUBOKI leg.; 1 ♀, Shirakoma-rindô, Mt. Yatsugatake, 19-VII-1986, H. NAKABAYASHI leg.; 1 ♀, Shirakomaie (2,050 m alt.), Nagano Pref., em. 15-VII-1989, bred by M. KUBOKI; 4 ♂♂, 5 ♀♀, Shibunoyu (1,850 m alt.), Nagano Pref., 18-VII-1987, S. TAKECHI and M. KUBOKI leg.; 5 ♂♂, 1 ♀, Daibosatsu Pass (1,800–1,890 m alt.), Yamanashi Pref., 19-VII-1986, S. TAKECHI leg.; 6 ♂♂, Mt. Kumotori (1,830 m alt.), Saitama Pref., 5~6-VIII-1983, S. TAKECHI leg.; 1 ♂, 3 ♀♀, Hatchôdaira (2,100 m alt.), Yamanashi Pref., 21-VII-

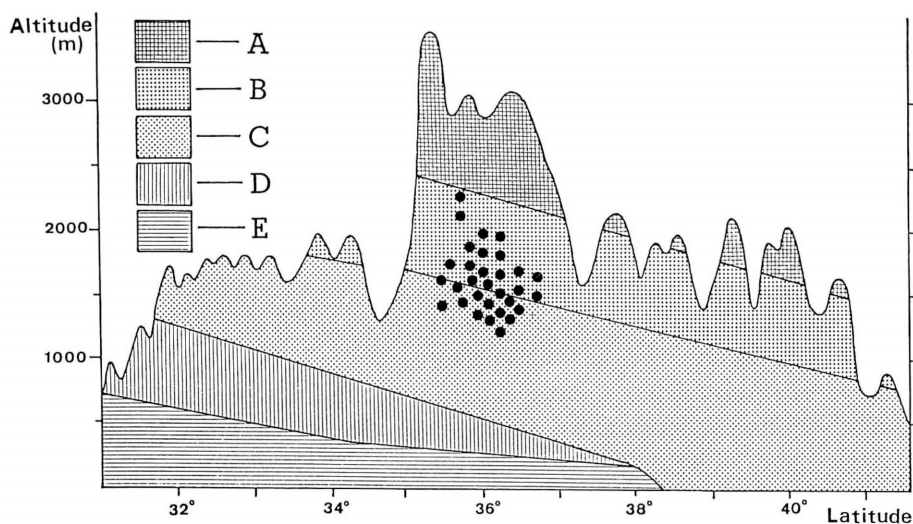


Fig. 10. Vertical distribution of *Pidonia orientalis* MATSUSHITA in connection with vertical vegetational zones of Honshu, Shikoku and Kyushu. — A, Climax of alpine desert, grassland and scrub (including *Pinus pumila* formation); B, climax of conifer forest (*Abies-Picea* formation); C, climax of deciduous broadleaved forest (*Fagus crenata* formation); D, climax of intermediate conifer forest (*Tsuga sieboldi* formation); E, climax of evergreen broadleaved forest (*Castanopsis cuspidata* formation).

1984, S. TAKECHI leg.; 3 ♀♀, Hatchôdaira (2,100 m alt.), em. 6-VI-1987, bred by S. TAKECHI.

Distribution. Japan (central Honshu).

The vertical distribution of this species is shown in Fig. 10 in connection with the vertical vegetational zones of Japan excluding Hokkaido. Its distributional range is vertically limited mainly to the upper part of the *Fagus* zone and evergreen conifer zone.

The author examined a number of specimens obtained on Mt. Daibosatsu, Yamashiro Prefecture, and considered that they could be classified into three good species belonging to the *bouvieri* group. These are *P. bouvieri* PIC, *P. sp.* (Japanese name: Tsumaguro-hime-hanakamikiri) and *P. orientalis* MATSUSHITA. According to investigation made on Mt. Daibosatsu, *P. sp.* widely occupies the broadleaved forest (represented by *Quercus* and *Castanea*); *P. orientalis* occurs from the upper part of the broadleaved forest (represented by *Fagus*) to the evergreen conifer forest, and *P. bouvieri* inhabits the conifer forest and is one of the most dominant species in the evergreen conifer zone.

Flight period. July to August.

Flower records. *Hydrangea*, *Filipendula*, *Angelica*, *Weigela*, *Sorbus*, *Veratrum*, *Rhododendron*.

Host plant. *Betula ermani*.

Biological notes. According to the investigation made at Hatchôdaira (2,000 m alt.), Nagano Prefecture, the larvae of *P. orientalis* feed on wet barks of dead birch trees in the evergreen conifer forest. In the autumn most mature larvae mainly pupate in the bark buried under the soil. When the bark is thin or when it has been removed prior to hibernation, the hibernaculum are formed in the soil around the roots. In the spring most larvae, which pupate in the soil, form circular cells. The adults which emerged in cells creep out to the surface of the earth.

In the spring immature small-sized larvae were found in the barks. This suggests that the larvae of *P. orientalis* must hibernate at least twice in the evergreen conifer forest till they reach the adult stage.

Remarks. This species is closely allied to *Pidonia bouvieri* PIC, but can be distinguished from the latter by the following key:

1. Antennae entirely fulvous, sometimes third and following segments faintly infuscated at their apices; longitudinal submarginal vitta of elytra prolonging at their apices; apex of last tergite of female round. *P. orientalis* MATSUSHITA.
- Antennae fulvous, third and following segments infuscated at their apices; longitudinal submarginal vitta of elytra obliquely subtruncate at their apices; apex of last tergite of female truncate, sometimes shallowly emarginate at middle. *P. bouvieri* PIC.

要 約

窪木幹夫：東アジア産ヒメハナカミキリ属の知見。II. カクムネヒメハナカミキリの再記載とその垂直分布と生態に関する知見。——カクムネヒメハナカミキリは、長野県上高地産の個体に基づいて新種として報告された。しかし、本種の分類学的取扱いは、それ以後の研究者によりさまざまで、独立種とした例もあるが、多くは *P. bouvieri* PIC や *P. maculithorax* PIC の同物異名とされてきた。筆者は、中部山岳地域の亜高山帯での *bouvieri* 種群の幼虫、成虫調査で、カクムネヒメハナカミキリが近縁種とは生息環境、訪花活動性、分布域が異なることに気づいた。本論文では、基準標本に加え、中部山岳地域で採集した個体を調べ、カクムネヒメハナカミキリの再記載を行い、雄交尾器、末端節腹板、背板、そして、雄雌の上翅斑紋の変異を図示した。

本種の幼虫はダケカンパの立ち枯れの樹皮中で生活する。秋、老熟幼虫は、おもに土に埋もれた樹皮中や根元付近の土中で越冬する。春には、土中に円形の蛹室をつくり、その中で蛹化する。蛹室内で羽化した成虫は、7月ごろ地表に這い出す。春の調査では、老熟幼虫のほかに小型の幼虫が樹皮内に見つかった。このことは、亜高山帯で生活するカクムネヒメハナカミキリの幼虫が、成虫になるのに、少なくとも二度越冬する必要があることを暗示している。なお、和名カクムネヒメハナカミキリは原記載時に指定されたもので、本種の形態的特徴をよく表している。これにともない、*P. bouvieri* PIC にはブービエヒメハナカミキリという和名をつけることを提唱する。

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