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Occurrence of *Parendaeus abietinus* (Coleoptera: Curculionidae: Ochyromerini) in Kyushu, Japan and Its Host Range*

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Abstract. The occurrence of *Parendaeus abietinus* in Kyushu is reported for the first time, and its potential for outbreak is discussed. In addition to a previously known host, *Abies homolepis*, a congeneric tree species *Abies firma* was newly regarded as a host plant of the weevil.

Key words: Coleoptera, Curculionidae, *Parendaeus abietinus*, *Abies*, distribution record, host record, Kyushu.

Collection Records

Parendaeus abietinus Kojima & Morimoto, 1996 is a small weevil, which has been recorded from some localities in Honshu and Shikoku (Kojima & Morimoto, 1996) (Table 1). Yamashita (1978) applied a name *Nanophyllobius yamashitai* Nakane to this weevil, but that name is invalid since there is no original description of the weevil.

The adults of this weevil have been captured on the leaves of *Abies homolepis* Sieb. et Zucc. (Pinaceae), which the larva inhabits as a leaf-miner (Kojima & Morimoto, 1996). Some adults were captured around the leaves of *Picea jezoensis* Carr. var. *hondoensis* Rehd., and *Larix leptolepis* Gord., but these collection records from *Picea* and *Larix* are dubious (see below).

Abies homolepis is distributed in mountain areas (700-2000 m high) of Honshu and Shikoku, and its congeneric relative, *Abies firma* Sieb. et Zucc. is distributed in upland of Honshu, Shikoku, and Kyushu (Farjon, 1990). Such a wide distribution pattern of *Abies* trees has made us expect the discovery of this weevil from Kyushu sooner or later, and finally we confirmed the existence of this species in Kyushu as we have expected (Table 1). First we found, in the collection of Hikosan Biological Laboratory, Kyushu University, a specimen of *P. abietinus* that had been collected in 1978 at Mt. Hikosan, Fukuoka Prefecture, northern Kyushu. Thereafter, H. Kojima, the second author, collected this weevil from *A. firma* in Miyazaki Prefecture, southern Kyushu. More recently, M. Tokuda and J. Yukawa found old mines of this species together with scars of adult feeding on the leaves of *A. firma* on Mt. Hikosan. Later, M. Tokuda and J. Yukawa observed many adults feeding on, and larvae mining in, the leaves of *A. firma* at Mt. Unzen, Nagasaki Prefecture, western Kyushu. Thus in this paper we record the existence of *P. abietinus* in Kyushu, for the first time, and remark that it is widely distri-

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buted in Japan except Hokkaido. In addition, *A. firma* is noted as a new host plant of the weevil.

Potential for Outbreak

According to Katsura Morimoto (2000, personal communication), a large number of adults were collected from *A. homolepis* in 1970 at various localities in Shikoku and in 1972 at Ohdaigahara, Nara Prefecture, central Honshu. In 1993, H. Kojima collected 109 individuals at one time in Mezurudaira-Tengukohgen, Shikoku. These data suggest that *P. abietinus* may have a potential for outbreak and becoming a serious pest of *Abies* stands. Actually some *Abies* trees were observed dying at Mt. Unzen, probably due to the infestation by this weevil together with other pests.

Host Range

In addition to *A. homolepis*, there are collection records of many individuals from *P. jezoensis* var. *hondoensis* at Ohdaigahara in 1984. It is, however, unlikely that *P. jezoensis* is a host plant, since the adults and larvae have never been confirmed feeding

Table 1. Collection records of *Parendaeus abietinus* from various localities in Japan.

	Prefecture	Locality	Year	Collector	Specimens
[Honshu]	Nagano	Inago, Koumi-machi	1961	Y. Ariga	6
		Nara	Ohdaigahara	1954	Y. Shibata
			1972	F. Kobayashi	4
			1984	A. Amagasu	14
	Wakayama		Mt. Gomanodanzan	1976	H. Hiramatsu
	Yamanashi	Masutomi	1957	S. Kimoto	1
[Shikoku*]	Ehime	Komenono	1976	Y. Notsu	1
		Mt. Ishizuchi	1958	T. Ishihara <i>et al.</i>	1
			1993	H. Kojima	19
			1993	H. Kojima	109
	Kochi	Omogokei	1993	H. Kojima	1
		Kuroson, Tosa	1956	T. Hidaka	1
		Tokushima	Mt. Tsurugisan	1993	H. Kojima
[Kyushu]	Fukuoka	Mt. Hikosan	1978	K. Takeno	1
	Miyazaki	Ebinokohgen	1997	H. Kojima	13
	Nagasaki	Mt. Unzen	1999	M. Tokuda <i>et al.</i>	5

* Thirteen specimens of *P. abietinus* are kept in the collection of Entomological Laboratory, Kyushu University. The labels show that these specimens were collected in the forest of *A. homolepis* and forwarded in 1970 to the laboratory from Ochi who was working for Shikoku Branch, Forest and Forest Products Research Institute, but do not indicate the name of locality.

on this plant and the genus *Abies* is known to be phylogenetically apart from the genus *Picea* in the family Pinaceae (Frankis, 1989; Farjon, 1990). Therefore they might be collected accidentally in a *P. jezoensis* stand where some *A. homolepis* trees were possibly growing mixed.

According to the collection record by Y. Ariga in 1961, this weevil was captured from *L. leptolepis* as well as from *A. homolepis* in Nagano Prefecture. However, he did not distinguish between these plants when he collected this weevil. Katsura Morimoto (2000, personal communication), who identified this weevil, considers that *L. leptolepis* should be excluded from the host plants of *P. abietinus*, because he has never found the adults on this tree during his long career.

Thus, *A. homolepis* and *A. firma* are regarded as only host plants of *P. abietinus* at present.

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