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THREE NEW SCALE INSECTS OF *PINNASPIS* (Homoptera : Coccoidea)

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In the following lines are given descriptions of three new scale insects of the genus *Pinnaspis* on the basis of the material which were offered by Prof. H. L. McKenzie, University of California, Davis, Dr. J. Munting, Department of Agricultural Technical Services, Pretoria, and Mr. M. Yamamoto, Plant Quarantine Service, Kôbe, and collected by myself in connection with a survey supported by the Forestry Bureau of Japan. This opportunity is taken of acknowledging my indebtedness to Prof. C. Watanabe, Hokkaido University, for his kindness in continuous guidance, to the above gentlemen for the material and to the Forestry Bureau for financial help. Most of the present material are in the collection of the Entomological Institute of the Hokkaido University.

Pinnaspis muntingi n. sp. (Fig. 1)

Adult female fusiform; prepygidial abdominal segments well lobed laterally. Antennae with a seta. Anterior spiracles with accompanying disc pores in a cluster; posterior spiracles with none. Dorsal macroducts only in submarginal series, their numbers in 15 individuals are as follows: 2-5 (average 3.5) on 3rd abdominal segment, 2-3 (2.07) on 4th and 0-2 (1.2) on 5th. Submedian dorsal microducts scattered on 2nd to 4th abdominal segments. Some macroducts along lateral margins of metathorax and 3 basal abdominal segments. Gland spines absent or a quite small one on metathorax and 1 or 2 short ones on 1st abdominal segment; 2 or 3 similar ones on 2nd; 2 or 3 marginal ones on 3rd and 2 on 4th. A submarginal dorsal boss on 1st abdominal segment; a much smaller one at times discernible on prosoma opposite anterior spiracle and also on 3rd abdominal segment just anteriorly to the macroducts. Median lobes moderate in size, closely appressed together mesally, notched several times laterally, with median basal zygonis apparently protruding anteriorly beyond their bases. Second lobes well developed, the inner lobule with a pair of basal paraphyses. Third lobes reduced to mere marginal serrations. Preanal scars absent, a pair of sclerotized patches of derm being seen where these scars should be expected. Perivulvar pores in 5 groups. Scale brown.

Male scale not found.

Described from many specimens collected at Umkomaas, Natal, S. Africa, on *Abutilon* sp. (J. Munting; holotype in the collection of Dr. Munting). Other specimens collected at Peradeniya, Ceylon, on *Anthurium* sp. (E. E. Green) and at Kôbe Port on banana imported from Formosa (K. Matsushima). The specimens from Ceylon deviate in lacking gland spines on the metathorax and 2 basal abdominal segments and having a single gland spine on the 3rd abdominal segment. In some specimens

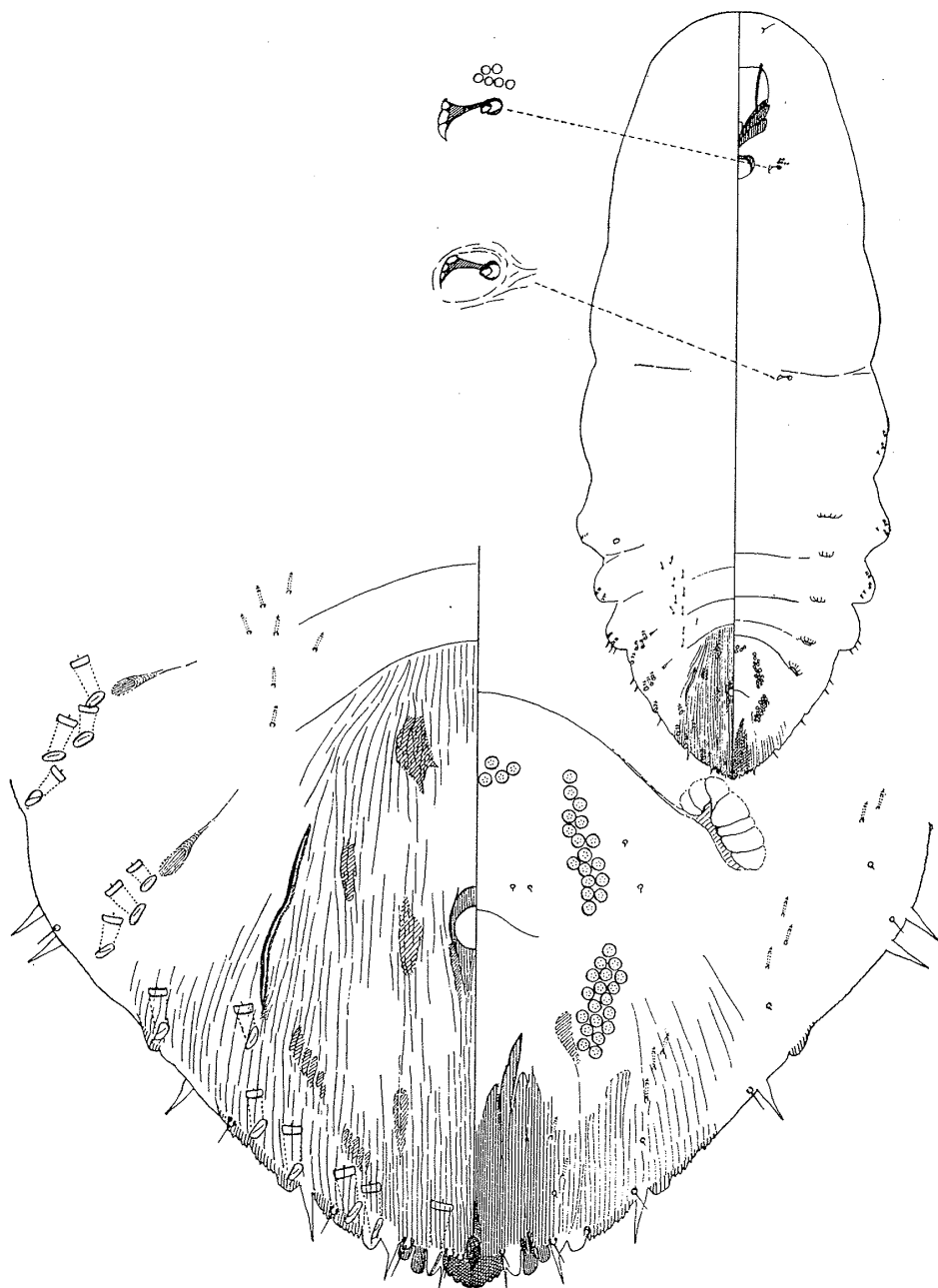


Fig. 1. *Pinnaaspis muntingi* n. sp., adult female, figured from specimens from Natal.

from Ceylon and Formosa are seen very fine preanal scars.

This scale insect is very close to *P. aspidistrae* Signoret and *P. strachani* Cooley. It may be distinguishable from *aspidistrae* by lacking disc pores in association with the posterior spiracles and from *strachani* by lacking distinct preanal scars and by the brown female scale. Further studies are, however, necessary in order to have a definite conclusion concerning the taxonomic position of this scale insect.*

***Pinnaspis yamamotoi* n. sp. (Fig. 2)**

Adult female fusiform, rather robust; metathorax and 3 basal abdominal segments more or less strongly lobed laterally. Antennae with a seta. Anterior spiracles with a cluster of disc pores; posterior spiracles with a cluster of 3-6 disc pores. Dorsal macroducts only in submarginal series, 6-9 on 3rd abdominal segment, 3-5 on 4th and 1 or 2 on 5th. Submedian dorsal microducts present in prepygidial abdominal region, yet variable in number and distribution, at times quite few. Some macroducts along lateral margins of metathorax and 3 basal abdominal segments. Gland spines 1-3 on 2nd abdominal segment, 3-5 on 3rd, 2-4 on 4th. A submarginal dorsal boss on 1st and 3rd abdominal segments each. Median lobes prominent, closely appressed together mesally, notched 3 or 4 times laterally, with median basal zygois much protruding anteriorly beyond their bases. Second lobes much reduced, yet somewhat variable, in size; inner lobule with basal paraphyses rudimentary or practically obsolete. Third lobes reduced to mere marginal serrations. Preanal scars present and well developed. Perivulvar pores in 5 groups. Scale brown.

Male scale unknown.

Described from some specimens collected at Kôbe Port on *Dracaena* imported

* *P. aspidistrae* and its related forms need to be revised in detail, both morphologically and biologically. In the present state of my knowledge, however *aspidistrae* and *strachani* might be defined as follows:

In *P. aspidistrae* the dorsal macroducts are few exclusively in the submarginal series and often absent on the 5th abdominal segment, the posterior spiracles always accompanied with disc pores, the 2nd lobes well developed and the female scale brown. The preanal scars are present or absent and if present various in development, although in most cases they are rather rudimentary or in fine crescents. Since the character of these scars varies at times in the same colonies or even on the sides of the same individual, it is apparently not always useful in identifying this species. *P. ophiopogonis* Takahashi has been treated as a synonym of *aspidistrae* by authors. According to the literature, however, *ophiopogonis* is unisexual (Takahashi, 1952), whereas *aspidistrae* is bisexual (Signoret, 1869).

In *P. strachani* the posterior spiracles normally lack disc pores, the preanal scars are normally present and well developed and the female scale is white. I have now some doubt that part of the specimens examined in my previous paper (1963) are real representatives of *strachani*: these specimens normally have distinct, though fine, preanal scars, and yet they have also several disc pores in association with the posterior spiracles without exception. The colour of their scales is unknown, for I could examine them only on mount. The form described by Schmutterer (1959) as *strachani* also comes into question, for it has a good number (6-12) of disc pores in association with the posterior spiracles. The female scale is, however, stated to be white or grayish white and the figure of the pygidium drawn by him shows a well-developed preanal scar.

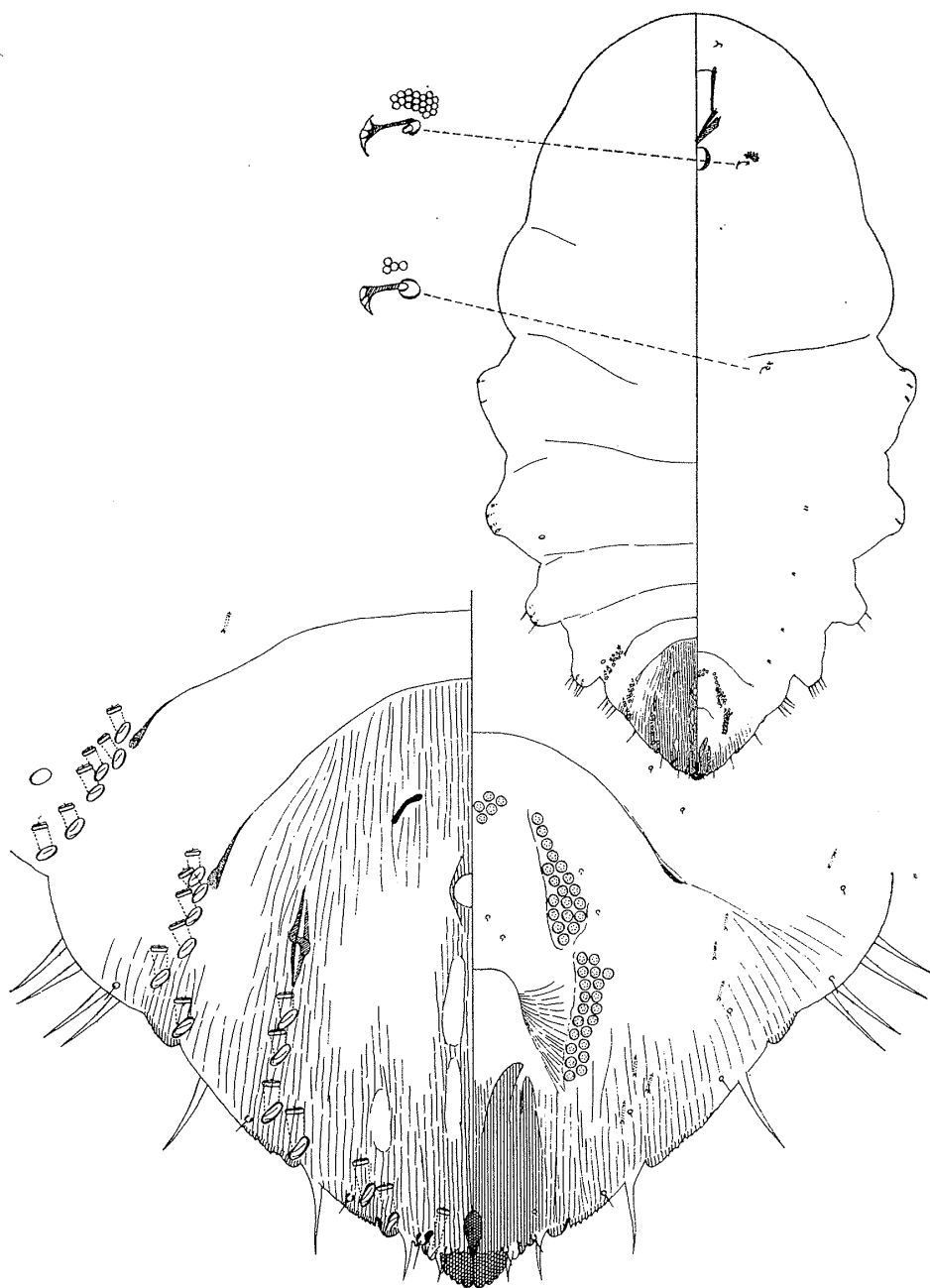


Fig. 2. *Pinnaspis yamamotoi* n. sp., adult female.

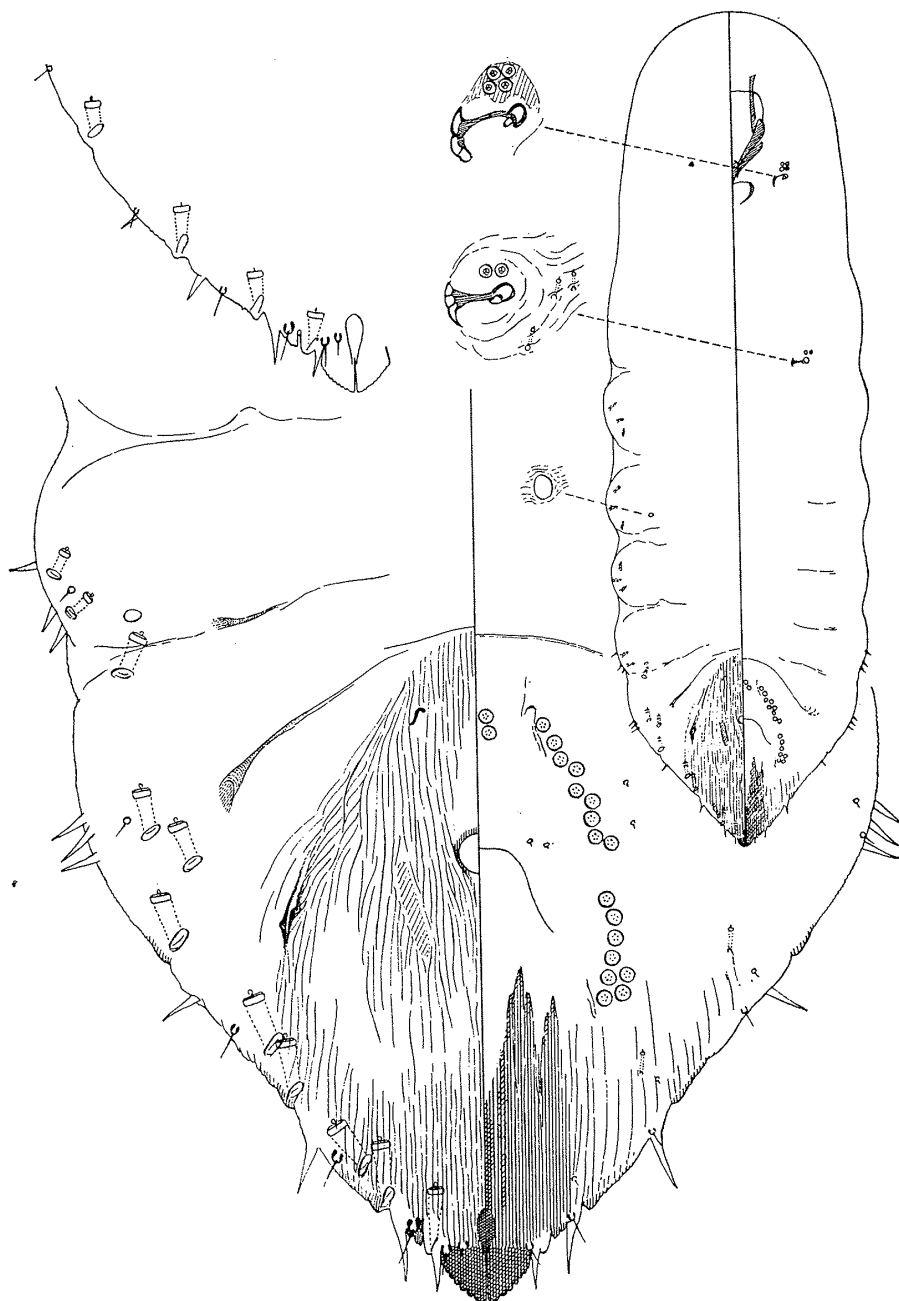


Fig. 3. *Pinnaspis sciadopityos* n. sp., adult female; pygidial margin of second exuvium of female (upper left).

from Venezuela (M. Yamamoto).

On account of the 2nd lobes much reduced in size this species is somewhat similar to *P. hikosana* Takagi, from which it is distinguishable by having more numerous submarginal dorsal macroducts. Although the present material was introduced from Venezuela, this insect may be not a Venezuelan species, but of Asiatic origin.

***Pinnaspis sciadopityos* n. sp. (Fig. 3)**

Adult female much elongate, practically parallel-sided; metathorax and 3 basal abdominal segments weakly lobed laterally; pygidium acute. Antennae with a seta. Anterior spiracles with 4 or 5 accompanying disc pores; posterior spiracles with 2. Submarginal dorsal macroducts 1 on 3rd abdominal segment in latero-caudal corner and 2 on 4th just inside the marginal macroduct. Submedian dorsal ducts of any size absent. Some macroducts along lateral margins of metathorax and 3 basal abdominal segments. Gland spines rather short, 3 on 3rd and 4th abdominal segments each. A submarginal dorsal boss on 1st and 3rd abdominal segments each. Median lobes quite prominent, closely appressed together mesally, serrate laterally, with median basal zygois much protruding anteriorly beyond their bases. Second lobes quite reduced in size. Third lobes obsolete. Preanal scars normally present. Perivulvar pores not numerous in 5 groups. Scale elongate, thin and white.

Male scale of the type common in the genus.

Described from some specimens collected at the Wakayama Experiment Forest of the Hokkaido University (S. Takagi) and at Omogo-Kei (S. Takagi), Japan, on leaves of *Sciadopitys verticillata*.

This scale insect is unique by the acute pygidium which terminates in the prominent median lobes. By these lobes it is readily distinguishable from the other conifer-infesting species *P. juniperi* Takahashi and *P. chamaecyparidis* Takagi.

ハマキアリガタバチの新寄主

立 川 哲 三 郎

長野県園芸試験場の広瀬健吉技師は、長野県須坂市においてリンゴを加害中のコカクモンハマキ *Adoxophyes orana* Fischer von Röslerstamm の幼虫から2頭の寄生蜂を昭和40年8月下旬に羽化させた。この寄生蜂を私が検した所、ハマキアリガタバチ *Goniozus japonicus* Ashmead (Bethyridae) の雌であつた。本寄生蜂はわが国にのみ産し、今までハイイロウスモンハマキ *Capua flavillaceana* Hübner, クワノメイガ *Glyphodes pyloalis* Walker, およびホソミスジノメイガ *Phostria chlorophanta* Butler に寄生することが知られていた。ここにコカクモンハマキを新寄主として記録しておく。