NOTES ON THE JAPANESE SPECIES OF THE GENUS *PSEUDAULACASPIS* MACGILLIVRAY, WITH DESCRIPTION OF A NEW SPECIES

(Homoptera, Coccoidea)

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As far as the writer is aware, only one species belonging to the genus *Pseudaulacaspis* has been known in Japan. On this occasion may be added to the fauna another species, which will be described as a new species herein after. Furthermore, KUWANA (1926) treated *Chionaspis difficilis* COCKERELL (1896) as a member of *Sasakiaspis* (=*Pseudaulacaspis*), but that species should be, in reality, referred to *Aulacaspis* COCKERELL (1893).

The opportunity is here taken to express the writer's sincere thanks to Professor Dr. T. UCHIDA and Dr. C. WATANABE for their kind guidance and continuous encouragement.

Genus *Pseudaulacaspis* MACGILLIVRAY

1921 *Pseudaulacaspis* MACGILLIVRAY, The Coccidae, p. 305. (Genotype: *Diaspis pentagona* TARGIONI, 1885).

1926 *Sasakiaspis* KUWANA, Imp. Plant Quar. Serv., Tech. Bull., No. 4, p. 7. (Genotype: *Diaspis pentagona* TARGIONI, 1885).

The two species occurring in Japan may be distinguishable by the following key:—

Key to the Japanese species

Dorsal macroducts in 4 rows; median lobe triangular, rounded apically, inner and outer margins being convergent and deeply notched 2 or 3 times . . . . . *P. pentagona* (TARGIONI)

Dorsal macroducts in 5 rows; 2 types of median lobes present, one like in *P. pentagona* and the other semicircular, almost entire . . *P. biformis* sp. nov.

Pseudaulacaspis pentagona (TARGIONI)

1885 *Diaspis pentagona* TARGIONI, Revista di Bacch., No. 11.

1921 *Pseudaulacaspis pentagona* MACGILLIVRAY, The Coccidae, p. 315.

1926 *Sasakiaspis pentagona* KUWANA, Imp. Plant Quar. Serv., Tech. Bull., No. 4, p. 9, figs.

1937 *Pseudaulacaspis pentagona* FERRIS, Atlas Scale Insects N. Amer. SI-109.

This well-known species is widely distributed over the world, attacking various plants. It should be, however, mentioned here that in all the examined adult females (15♀♀) taken on the bark of *Prunus Sargentii* REHDER in Sapporo the loosely scattered parastigmatic pores are apparently seen around the posterior stigma (Fig. 1).

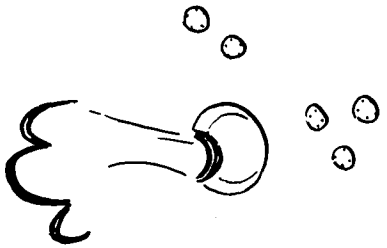

Fig. 1.
Pseudaulacaspis pentagona (TARGIONI)
Posterior stigma.

Pseudaulacaspis biformis sp. nov.

Adult female—Body broadly ovate, broadest in thoracic region; prosoma equal to or shorter than postsoma; segmentation distinct. About 1.5 mm. long and 1.0 mm. wide.

Rudimentary prosomatic tubercles sometimes present. Lateral regions of mesothorax lobed, provided with a few ventral microducts. Antennae located within frontal margin, composed of a stout unilobed or bilobed tubercle and a seta; interantennal distance narrower than width of mouth-parts. Anterior parastigmatic pores present, closely clustered, numbered on level of 20; posterior stigma without pores.

Lateral regions of metathoracic and free abdominal segments strongly lobed, provided with some microducts and short gland spines on ventrum. Dorsal macroducts present in well-defined crescent rows along caudal margins of second to sixth abdominal terga; each row on second to fifth segments divided into submedian and submarginal series, while row on the sixth represented only by submedian series. Usual numbers of dorsal macroducts as follows: 14–17 ducts in submarginal series (a few of them often appearing at margin) and 7–10 in the submedian on second abdominal tergum, 10–13 (usually 1 of them marginal with a pore prominence) and 8 on the third, 8–10 and 7 or 8 on the fourth, 6–8 and 5 or 6 on the fifth, and 4 in submedian series on the sixth. Perivulvar pores in 5 groups; pores for median group numbered on level of 10, for the laterocephalic and the laterocaudal on level of 20 or 30. Anus located about mid-pygidium.

Lobes in 2 pairs. Median lobes prominent, strongly zygotic basally. 2 types of median lobes present; one of them (Fig. 2) approximately triangular, rounded apically, inner and outer margins being convergent and deeply notched 2 or 3 times; the other type (Fig. 3) semicircular, almost entire; these 2 types of median lobes not found together in a single individual. A pair of setae present between median lobes. Second lobe bilobed; inner lobule much smaller than median lobe, larger than outer lobule, more or less spatulate, rounded apically, apical margin sloping; outer lobule sometimes triangular, pointed apically, sometimes rounded apically, lateral margins being almost parallel; both inner and outer lobules longer than wide. Pygidial marginal macroducts arranged as follows: 1 on seventh abdominal tergum, 2 on the sixth, 2 on the fifth, and usually 2 on the

fourth; each duct or pair of ducts with a pore prominence. First pore prominence small, pointed apically; the second trilobed, median lobule being largest, the inner triangular, the outer smallest, triangular or bicuspid or sometimes obsolete; third and fourth pore prominences trilobed, inner lobule being largest, the median and the outer small, triangular or irregularly dentate. Marginal gland spines arranged as follows: 1 laterad of median lobe, 1 of the second, 2-4 of second pore prominence, 3-5 of the third, and 5-7 of the fourth.

Fig. 2. *Pseudaulacaspis biformis* sp. nov.
Pygidial margin with triangular median lobe.

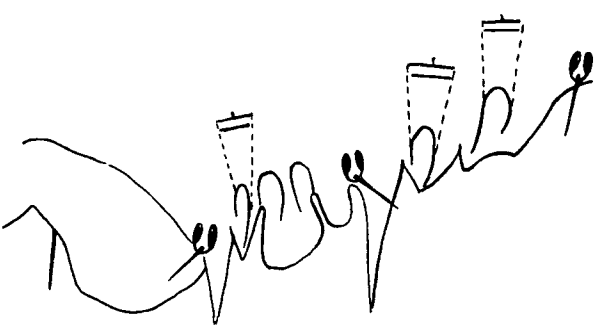

Fig. 3. *Pseudaulacaspis biformis* sp. nov.
Pygidial margin with semicircular median lobe.

Scale subcircular, white, convex at dorsal aspect; ventral scale thin, remaining on host plant. Second exuvium brown, marginal or submarginal. First exuvium pale yellow, translucent, sometimes projecting beyond margin of scale. Diameter about 2.0 mm. at maximum.

Holotype (♀) & Paratypes (7♀♀): Sapporo, Japan, 17. V, 1954, S. TAKAGI leg., host—*Cercidiphyllum japonicum* SIEBOLD et ZUCCARINI. Deposited in the

collection of the Entomological Institute, Hokkaido University.

Host plants—Found on the branches of the following plants in Sapporo:—

Cercidiphyllum japonicum SIEBOLD et ZUCCARINI; *Cornus controversa* HEMSLEY; *Kalopanax septemlobus* (THUNBERG) KOIDZUMI; *Ligustrum Tschonoskii* var. *glabrescens* KOIDZUMI; *Magnolia Kobus* var. *borealis* SARGENT; *Sorbus* sp.; *Syringa vulgaris* LAMARCK; *Ulmus Davidiana* var. *japonica* REHDER.

Notes—This new species is undoubtedly very close to *P. pentagona,* from which it may be easily distinguishable by the arrangement of the dorsal macroducts as mentioned in the preceding key. The presence of two different types (triangular and semicircular) of the median lobes may be one of the remarkable features of this species. Both types are always found even in a single colony. The holotype is represented by the semicircular type.