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NOTES ON THE SCALE INSECTS OF THE TRIBE
ODONASPIDINI OCCURRING IN JAPAN

(Homoptera, Coccoidea)

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At present the tribe Odonaspidini of the family Diaspididae is represented by four species in Japan including the Amami Islands. After his careful examination the writer has convinced that these species may belong to a single genus—*Odonaspis*.

Genus *Odonaspis* LEONARDI

Odonaspis LEONARDI (1897), Rivista di Patologia Vegetale, v, p. 284.

[Type: *Aspidiotus secretus* COCKERELL (1896)]

Dycryptaspis LEONARDI (1897), Rivista di Patologia Vegetale, v, p. 375.

[Type: *Aspidiotus secretus* COCKERELL (1896)]

Spatheaspis LEONARDI (1898), Rivista di Patologia Vegetale, vi, p. 115.

[Type: *Aspidiotus secretus* COCKERELL (1896)]

Froggattiella LEONARDI (1900), Rivista di Patologia Vegetale, viii, p. 298.

[Type: *Aspidiotus inusitatus* GREEN (1896)]

Anoplaspis LEONARDI (1900) (nec LEONARDI, 1898), Rivista di Patologia Vegetale, viii, p. 344.

[Type: *Aspidiotus bambusarum* COCKERELL (1898)]

Berlesaspidiotus MACGILLIVRAY (1921), The Coccidae, p. 389.

[Type: *Aspidiotus bambusarum* COCKERELL (1898)]

Bakeraspis MACGILLIVRAY (1921), The Coccidae, p. 395.

[Type: *Odonaspis schizostachyi* COCKERELL et ROBINSON (1914)]

There is no very good reason to distinguish *Froggattiella* and *Berlesaspidiotus* from *Odonaspis*. In the first two genera the pygidium lacks entirely a produced lobe at its apex, and this is the only character

for recognizing them. Of the other characters there is nothing particularly distinct, and the totality of characters indicates that they all belong probably to a homogenous common stock. It seems in this case that the presence or absence of the apical lobe has little significance in forming genera.

Odonaspis bambusarum and *Odonaspis penicillata*, which is much related to the type of *Froggatiella*, bear a close resemblance to *Odonaspis secreta* in the structure of the antennae of the first stage larva, having there no distinct difference sufficient to recognize any division. Of these species the antennae in this stage are five-segmented, with the basal segment robust, the terminal elongate and annulate, and the third elongate and distinctly longer than each of the second and third.

It is the opinion here adopted that *Froggatiella* and *Berlesaspidiotus* should be treated as synonyms of *Odonaspis* as already suggested by FERRIS¹⁾²⁾ and BALACHOWSKY³⁾, and the Japanese four species of the present tribe may be best regarded as members of this genus. These species may be distinguishable by the following key.

1. Pygidium with a produced lobe at its apex; perivulvar pores present in an almost or entirely continuous arch. 2.
- Pygidium without a produced lobe at its apex; perivulvar pores absent, or if present divided into three groups. 3.
2. Dorsal ducts of pygidium arranged in narrow bands; pores associated with each anterior spiracle less than ten in number; posterior spiracles without pores. *O. secreta*.
- Dorsal ducts of pygidium abundant, almost strewn; pores associated with each anterior spiracle more than twenty in number; a few pores occasionally associated with each posterior spiracle. *O. oshimaensis*.
3. Apex of pygidium slightly emarginate, provided with a tuft of six spines; perivulvar pores absent; pores associated with anterior spiracles not numerous (said to be occasionally absent); posterior spiracles without pores; entire dorsal surface of pygidium thickly strewn with minute ducts. *O. penicillata*.
- Apex of pygidium flatly rounded, lacking spines; perivulvar pores

1) FERRIS (1938), Atlas of the Scale Insects of North America, SII-164.

2) FERRIS (1955), Microentomology, Volume 20, Part 2, p. 33.

3) BALACHOWSKY (1953), Actualités Scientifiques et Industrielles, 1202, p. 739.

quite numerous, divided into three groups; a number of pores associated with each of anterior and posterior spiracles; dorsal ducts of pygidium abundant, almost strewn. . . *O. bambusarum*.

***Odonaspis secreta* (COCKERELL)**

Aspidiotus secretus COCKERELL (1896), Psyche, vii, Suppl. i, p. 20.

Odonaspis secreta KUWANA (1933), Ministry of Agriculture and Forestry, Japan, Scientific Bulletin No. 3, p. 36; FERRIS (1938), Atlas of the Scale Insects of North America, SII-165; BALACHOWSKY (1953), Actualités Scientifiques et Industrielles, 1202, p. 733.

Specimens examined (many specimens): Toyama, Toyama-ken, Honshu, 29. XII, 1954, 27. VIII, 1955; Idu-Ôsima, 24. V, 1955; Sumiyô, Amami-Ôsima, 15. V, 1957. S. TAKAGI leg., hosts—various bamboos.

***Odonaspis oshimaensis* KUWANA**

Odonaspis oshimaensis KUWANA (1933), Ministry of Agriculture and Forestry, Japan, Scientific Bulletin No. 3, p. 35.

Specimens examined (some specimens): Nase, Amami-Ôsima, 20. V, 1957, S. TAKAGI leg., host—an undetermined Gramineous grass.

This species is distinct from *O. secreta* in the arrangement of the pygidial ducts. Furthermore, the apical lobe of the pygidium is less protruded than in *O. secreta* as mentioned by KUWANA (1933).

This species is known at present only from Amami-Ôsima, a small island in the Ryukyu island group, feeding on Gramineous grasses.

***Odonaspis penicillata* GREEN**

Odonaspis penicillata GREEN (1905), Journal of the Bombay Natural History Society, xvi, p. 346; FERRIS (1938), Atlas of the Scale Insects of North America, SII-164; BALACHOWSKY (1953), Actualités Scientifiques et Industrielles, 1202, p. 736.

Froggatiella penicillata MACGILLIVRAY (1921), The Coccidae, p. 450.

Anoplaspis penicillata KUWANA (1933), Ministry of Agriculture and Forestry, Japan, Scientific Bulletin No. 3, p. 38.

Specimens examined (some specimens): Koniya, Amami-Ôsima, 17. V, 1957, S. TAKAGI leg., host—an undetermined bamboo.

***Odonaspis bambusarum* (COCKERELL)**

Aspidiotus (Odonaspis) bambusarum COCKERELL (1898), Psyche, viii, p. 191.

Berlesaspidiotus bambusarum MACGILLIVRAY (1921), The Coccidae,

p. 423.

Anoplasps bambusarum KUWANA (1933), Ministry of Agriculture and Forestry, Japan, Scientific Bulletin No. 3, p. 37.

Specimens examined (some specimens): Idu-Ôsima, 25. V, 1955, S. TAKAGI leg., host—an undetermined bamboo.

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