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SHORT RESEARCH NOTES

First record of *Aecidium* sp. on *Marsdenia* sp. in Australia

J. R. Liberato[A], *P. M. Stephens*[B] *and R. G. Shivas*[A,C]

[A]Department of Primary Industries and Fisheries, Plant Pathology Herbarium, 80 Meiers Road, Indooroopilly, Qld 4068, Australia.
[B]AQIS (NAQS), PO Box 3000, Darwin, NT 0801, Australia.
[C]Corresponding author. Email: roger.shivas@dpi.qld.gov.au

Abstract. *Aecidium* sp. (*Pucciniaceae*) on *Marsdenia* sp. is reported for the first time from Australia.

In Kakadu National Park, Northern Territory, plants of the genus *Marsdenia* R. Br. (*Asclepiadaceae*) infected by a rust fungus, were found during a plant disease survey in 2003. *Marsdenia* are climbing perennial herbs or shrubs. This genus is widespread in tropical regions and there are 38 species occurring in Australia (Australian Plant Name Index 2003). The rust fungus was identified as *Aecidium* sp., according to Cummins and Hiratsuka (2003) and its description is given below.

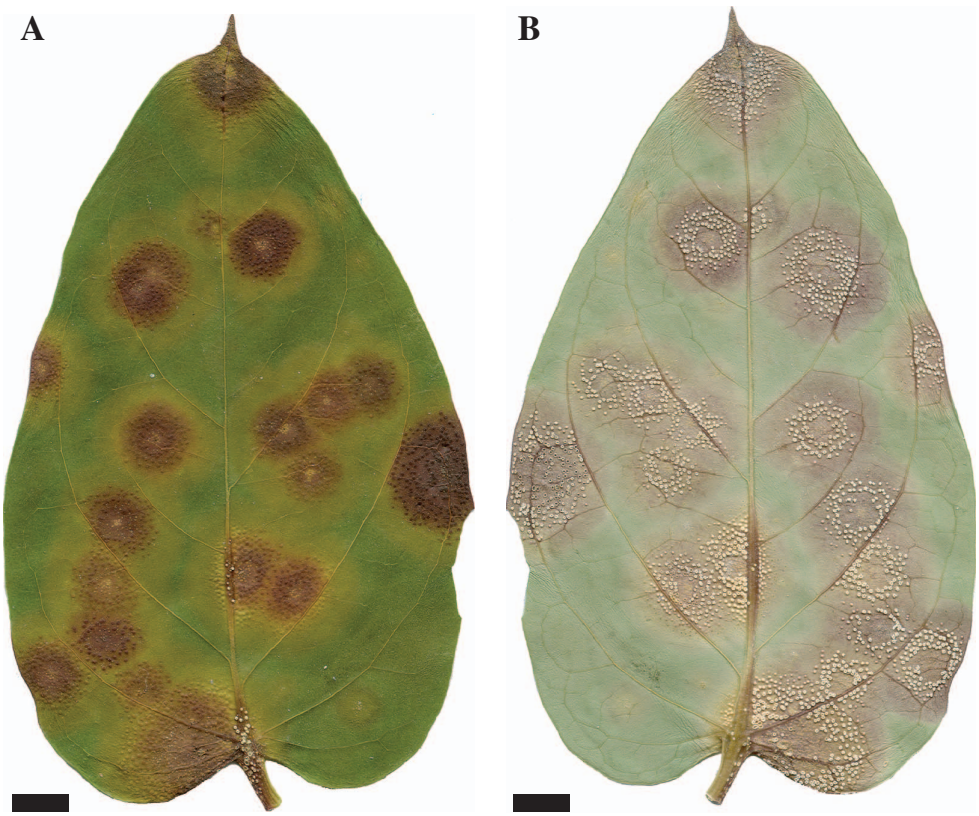

Fig. 1. Symptoms of *Aecidium* sp. on *Marsdenia* sp. (*A*) Adaxial surface. (*B*) Abaxial surface with aecia surrounding pycnia on the lesions (bar = 5 mm).

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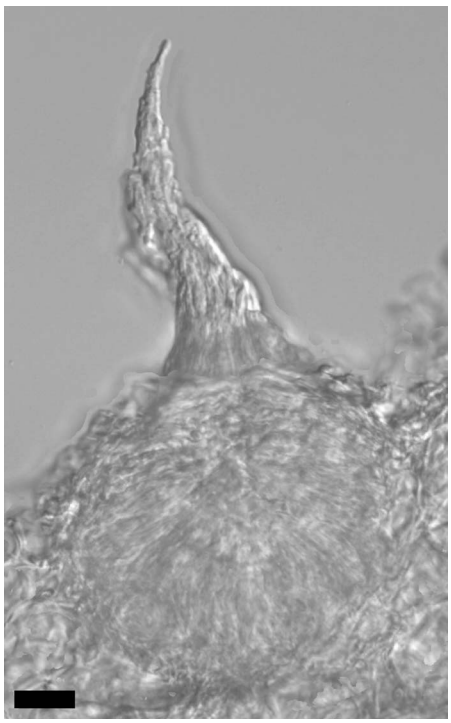

Fig. 2. *Aecidium* sp. (from BRIP 45186). Pycnium (bar = 20 µm).

Aecidium sp. (Figs 1–5)

Lesions on living leaves, rounded, chlorotic, measuring 5–15 mm in diameter, becoming dark and coalescing with age, affecting large areas of the lamina adaxially; disease areas corresponding to areas with fungal spores abaxially. Pycnia subepidermal, type IV, surrounded by aecia. Aecia hyphophyllous, forming concentric circles around pycnia, up to 380 µm wide and up to 420 µm long, cylindrical, becoming lacerate, yellowish. Peridial cells 20–34 × 14–28 µm, walls 2–5 µm thick, hyaline, polyhedral, outer surface smooth, inner surface densely and minutely verrucose. Aeciospores catenulate, discoid to pentagonal in shape, 18–26 × 16–20 µm, minutely verrucose, yellowish, wall 1–2 µm thick. Uredinia and telia unknown.

Material examined: **Australia** — On *Marsdenia* sp. Nulanghi Rock, Kakadu National Park, Northern Territory, December 2003, P.M. Stephens, BRIP 45186.

Three rust fungi have been described on *Marsdenia*: *Puccinia aequatoriensis* Syd. (Sydow and Sydow 1903), *Puccinia marsdeniae* Dietel & Holw. (Sydow and Sydow 1904) and *Aecidium marsdeniae* Syd. (Sydow 1937). The pycnia and aecia of *P. aequatoriensis* and *P. marsdeniae* were not described. *P. marsdeniae* occurs on *Marsdenia mexicana* Decne. in Mexico (Sydow and Sydow 1904), Guatemala (SBML 2003) and South America (Viégas 1961). *P. aequatoriensis* occurs on *Marsdenia* sp. in Ecuador (Sydow and Sydow 1903) and *A. marsdeniae* has been found only in Sierra Leone (Sydow 1937). *P. aequatoriensis* and *A. marsdeniae* are known only from the type collection. *A. marsdeniae* T.S. Ramakr. & K. Ramakr., described on *Marsdenia volubilis* (L. f.) Cooke in India, is a later homonym of *Aecidium marsdeniae* Syd. and is therefore illegitimate (ICBN 2000, Art. 53.1). According to Ramakrishnan and Ramakrishnan (1949), the Indian specimen has aeciospores (7–14 µm) and peridial cells (11–22 µm) that are narrower than the Australian specimen.

The Australian specimen bears type IV pycnia, which is characteristic of rusts in the *Pucciniaceae*. As it produces only aecia and pycnia, it is included in the form genus *Aecidium*. It resembles the type description of *A. marsdeniae*, which has aecia becoming lacerate, peridial cells subrhomboidal, 27–34 × 13–18 µm, walls 3–4.5 µm thick, outer surface smooth to finely striate, inner surface intensely verrucose; aeciospores polygonal, minutely verrucose, 18–23 × 15–17 µm, wall 1.5–2 µm thick. We cannot confidently assign it to any of the

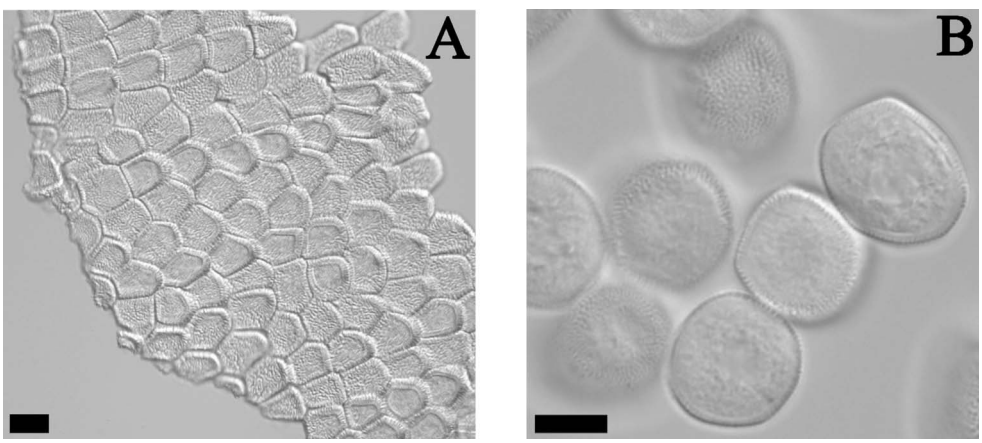

Fig. 3. *Aecidium* sp. (from BRIP 45186). (*A*) Inner surface of peridium (bar = 20 µm). (*B*) Aeciospores (bar = 10 µm).

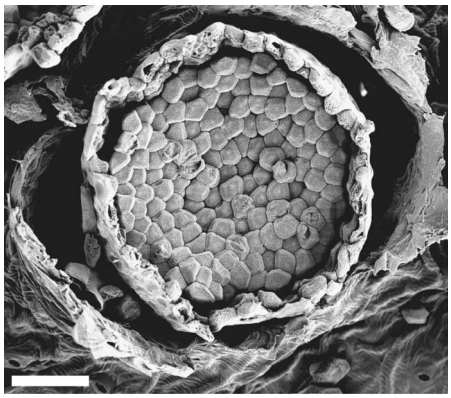

Fig. 4. *Aecidium* sp. (from BRIP 45186). Aecium (bar = 50 µm).

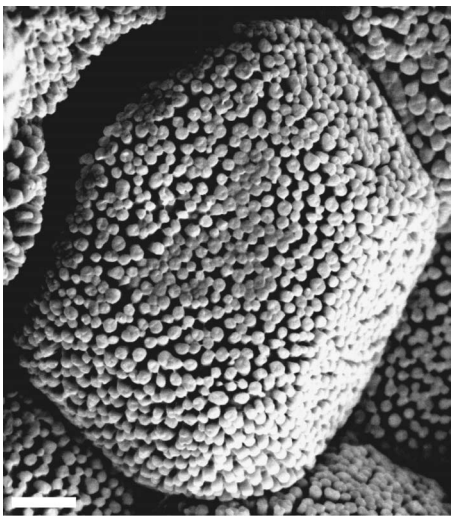

Fig. 5. *Aecidium* sp. (from BRIP 45186). Aeciospore (bar = 2 µm).

aecidial rusts on *Asclepiadaceae* because it is possible that aecial stages exist for the two known species of *Puccinia* on *Marsdenia*. We were unable to locate the type of *Aecidium marsdeniae* Syd.

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