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DISEASE NOTES OR NEW RECORDS

First record of *Erysiphe aquilegiae* on a host outside the *Ranunculaceae*

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Abstract. *Erysiphe aquilegiae* (*Erysiphaceae*) is found for the first time on *Catharanthus roseus*, in the *Apocynaceae*. This fungus is previously known only on the *Ranunculaceae*. A detailed description of this teleomorphic Australian specimen is given, along with its rDNA internal transcribed spacer sequence.

Fresh leaves of *Catharanthus roseus* (L.) G. Don (*Apocynaceae*) with powdery mildew were collected in a home garden in Brisbane, Queensland, in July 2005. A rDNA internal transcribed spacer (ITS) sequence was obtained according to the method of Cunnington *et al*. (2003). The 541-bp ITS sequence (GenBank DQ335569) was identical to the *Erysiphe aquilegiae* DC sequences obtained from a range of teleomorphic and anamorphic specimens on several genera in the *Ranunculaceae* by Cunnington *et al*. (2004). Morphological examination confirmed the identity of the fungus. A description of the specimen, which contains the anamorph and teleomorph, is given below. The features of the specimen were measured in lactic acid.

Erysiphe aquilegiae *DC.*, *Nouv. Flore des Environs de Paris*, *Edn 2: 1132 (1815)*, *on* Catharanthus roseus (Fig. 1)

On living leaves, flowers and fruits. Mycelium epiphyllous on the leaves, conspicuous. Superficial hyphae thin-walled, hyaline, branched, septate, straight to flexuous, 3–6 µm wide; mycelial appressoria lobed. Conidiophores produced from the external primary mycelium, hyaline, erect, smooth, foot-cells cylindrical, 30–54(–70) × 5–8 µm, followed by 1–2(–3) shorter cells. Conidia formed singly at the apex of the conidiophore, ovoid or mostly cylindric, 28–52 × 10–16 µm, hyaline, with no fibrosin bodies. Germ tubes small, terminating with a lobed appressorium. Cleistothecia on leaves and fruits, gregarious, embedded in hyphal masses, 68–116 µm in diameter. Peridial outer cells reddish brown, irregularly polygonal, up to 20 µm diameter. Appendages numerous, up to 20, in the lower half of the ascocarp, mycelioid, flexuous, somewhat

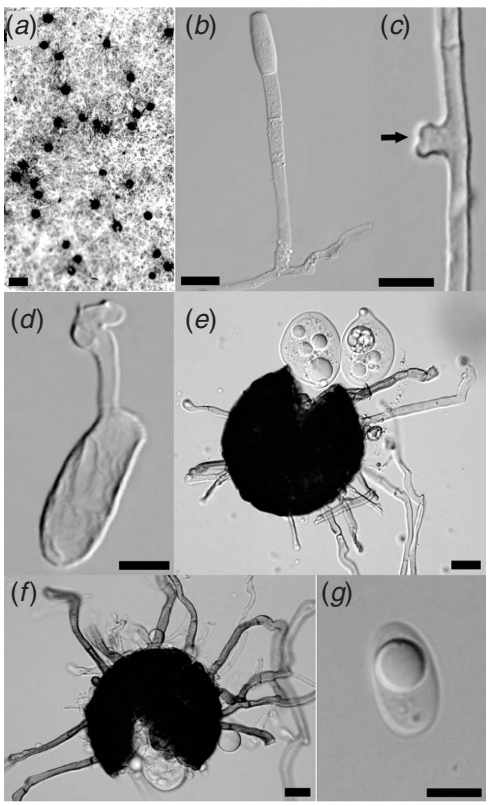

Fig. 1. *Erysiphe aquilegiae* on *Catharanthus roseus* (BRIP 46649). (*a*) Cleistothecium embedded in mycelium on leaf (bar = 200 µm). (*b*) Conidiophore (bar = 20 µm). (*c*) Mycelial appressorium (arrow) (bar = 10 µm). (*d*) Conidium and germ tube with lobed appressorium (bar = 10 µm). (*e*, *f*) Cleistothecium and asci (bar = 20 µm). (*g*) Ascospore (bar = 10 µm).

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geniculate, unbranched, having a simple apex, septate, thick-walled, up to 510 × 4–9 µm, entirely brown or brown at the base to subhyaline towards the apex. Asci 3, sessile or shortly stalked, 42–64 × 38–50 µm, wall 2–3 µm wide, 4–5 spored. *Ascospores* ovoid-ellipsoid, 14–22 × 8–12 µm, subhyaline.

Material examined: **Australia**—On *Catharanthus roseus* (L.) G.Don, Chapel Hill, Brisbane, Queensland, 10 July 2005, J.L. Alcorn (BRIP 46649 = VPRI 32380).

Erysiphe aquilegiae has previously been reported only on plants in the *Ranunculaceae* (Braun 1987). A search of *E. aquilegiae* specimens in databases for herbaria BRIP, DAR and VPRI revealed 10 specimens on *Aquilegia*, *Clematis*, *Delphinium* and *Ranunculus*, all genera in the *Ranunculaceae*. *Erysiphe aquilegiae* has been reported previously in Australia (Cunnington *et al*. 2004).

The occurrence of powdery mildew fungi on plants outside their normal host range is not uncommon. For example, Cunnington *et al*. (2005) recently reported *Golovinomyces biocellatus*, normally found on members of the *Lamiaceae*, on *Lycopersicon esculentum*. Occurrences such as these were termed 'accidental infections' by Blumer (1967). They are characterised by slight to moderate infections and an absence of the sexual state. Braun (1987) noted, however, that the sexual state could be formed, albeit rarely. In these respects, this record of *E. aquilegiae* on *C. roseus* is quite unusual, as the growth of the fungus was vigorous and the ascomata were produced in abundance.

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