

DISEASE NOTES OR NEW RECORDS

***Bougainvillea glabra* and *Bougainvillea spectabilis*: new hosts of *Glomerella cingulata* in Argentina**H. E. Palmucci^{A,C} and S. M. Wolcan^B^AFacultad de Agronomía de la Universidad Nacional de Buenos Aires, Avenida San Martín 4453, (1416) Buenos Aires, Argentina.^BCIC – CIDEFI, Facultad de Ciencias Agrarias y Forestales, UNLP, 60 y 119, (1900) La Plata, Provincia Buenos Aires, Argentina.^CCorresponding author. Email: palmucci@agro.uba.ar

Abstract. Anthracnose of *Bougainvillea glabra* and *B. spectabilis* caused by *Glomerella cingulata* (*Colletotrichum gloeosporioides*) was recorded for the first time in Argentina. This appears to be the first isolation and description of the causal agent of this disease on these hosts in the world.

Bougainvillea spp. (flower paper, bougainvillea, *Nyctaginaceae*) are native shrubs from tropical forests of Ecuador, Peru, Colombia, Venezuela, Bolivia and mostly Brazil. They are ornamental plants that are popular worldwide for long-lasting colourful flower bracts, which appear periodically throughout the year and are especially plentiful from spring to autumn. They are used as wall shrubs, to cover fences, climb up into trees or trained over arches and pergolas in gardens and parks. Also, some varieties can be grown in large pots. *Bougainvillea spectabilis* has thorny stems, with thick, large and hairy leaves.

Bougainvillea glabra has smooth and harder leaves, and it is less thorny.

Since 2001, during spring and mostly summer, plants with leaf spots were observed in gardens and nurseries located around Buenos Aires and La Plata cities. Light brown, irregular spots with darker borders and light to dark brown V-shaped leaf spots (0.5–5 cm of length), surrounded by a chlorotic halo developed on both young and old plants (Fig. 1). The leaves then turned yellowish and fell prematurely. Twigs and stems showed scattered black points (1–2 mm). In some cases, acervuli containing

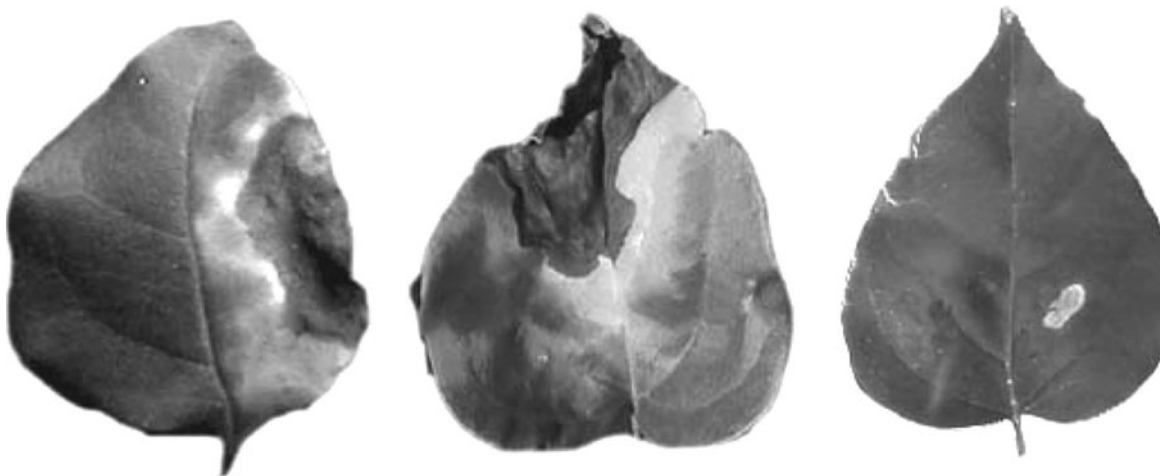


Fig. 1. Leaf spots on *Bougainvillea glabra* naturally infected by *Glomerella cingulata*. Some spots are surrounded by chlorosis.

orange–yellowish masses of conidia emerged from the lesion (Fig. 2).

Isolations from leaf spots were performed by disinfecting small pieces of lesions and cultivation on potato dextrose agar (PDA) in an alternating light and dark chamber at 25°C. Stem and twig sections with black points were incubated in a moist chamber. Cultures of *Colletotrichum* sp. were obtained from the isolations. After four days in the humid chamber, perithecia of an Ascomycete developed from some stem sections. Colonies developing on PDA were greyish-white and contained masses of orange conidia, sometimes accompanied by setae. Conidia were straight, hyaline with rounded ends, 10.7–16.5 µm (average 13.4) × 3.7–6 µm (average 3.8). Black perithecia were scarce (90–220 µm). Asci were not conspicuous, and ascospores measured 10.3–22 × 3.5–7 µm.

Based on morphology and size of teleomorphic and anamorphic stages, the pathogen was identified as *Glomerella cingulata* (anamorph *C. gloeosporioides*) (Von Arx 1987). The isolate of *C. gloeosporioides* was lodged in the Instituto Spegazzini de La Plata, Buenos Aires, Argentina, with the accession number 826. To complete Koch's postulates, pathogenicity tests were carried out using six young plants of *B. glabra* and six of *B. spectabilis*. Conidia of two isolates obtained from 10-day-old PDA cultures from each *Bougainvillea* species were mixed and used as inoculum. Three plants of each species were previously wounded in the leaves and stems with a fine scalpel and three others were not wounded. Plants were sprayed with a conidial suspension (5×10^6 conidia/mL) of the inoculum. Non-inoculated plants

were sprayed with distilled water and served as controls. Inoculated and control plants were covered with plastic bags to maintain high relative humidity for 48 h at $25 \pm 2^\circ\text{C}$. Plants were then kept in a greenhouse at high humidity and 22–28°C. Seven days after the inoculation, the first symptoms on leaves were observed. Irregular light brown anphigenous spots developed on the laminas. On stems the symptoms developed later. *Colletotrichum* was consistently reisolated from leaves and stem lesions fulfilling Koch's postulates. Non-inoculated plants remained symptomless.

Although these shrubs are widely cultivated in Argentina, there is only one previous disease reported on this ornamental. In 2000, leaf and stem spots caused by *Phomopsis* sp. was recorded on *B. glabra* in Corrientes Province (Sosa de Castro *et al.* 2000). Two *Colletotrichum* spp. were previously recorded on *Bougainvillea*, both of them from Brazil. Mariano *et al.* (1989) mentioned *C. gloeosporioides* associated with *Bougainvillea* sp. and Bastos and Bezerra (1999) reported *C. capsici* causing spots on leaves and wilting of flowers on *Bougainvillea* sp. The pathogenicity test confirmed that *G. cingulata* (*C. gloeosporioides*) was identified as the causal agent of anthracnose. This is the first report of *G. cingulata* affecting plants of *B. glabra* and *B. spectabilis* in Argentina and this appears to be the first description of the disease on these hosts in the world.

Acknowledgements

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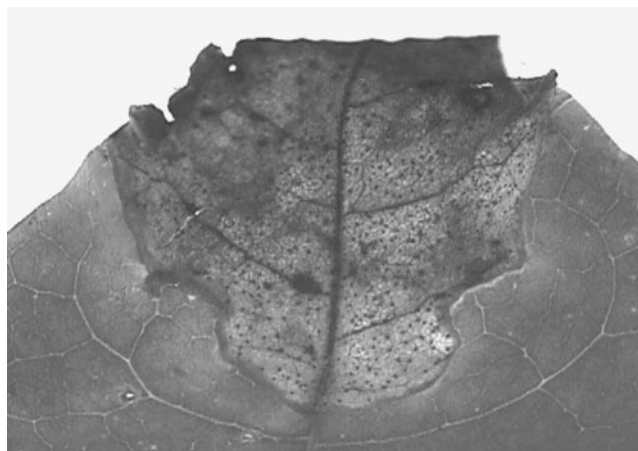


Fig. 2. Detail of leaf spot with definite borders and punctuations corresponding to *Glomerella cingulata* acervuli.

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