

## New species of the genus *Gnomoniopsis* isolated from Chestnut rot with notes on its life-cycle

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**Purpose:** Rotted chestnuts (*Castanea* sp.) harvested were found in several areas of Japan. From the chestnuts, an unknown *Gnomoniopsis* species was repeatedly isolated. The goal of this study was to identify this fungus and to know its life-cycle.

**Methods:** The fungus was isolated from the rotted fruits, young fruits, male flowers, overwintered burrs and galls made by *Dryocosmus kuriphilus* during continuous survey in chestnut fields. Its morphological examination was performed on PDA at 25°C after 10 days. Molecular phylogenetic trees were produced based on five loci.

**Results and Conclusions:** The fungus is characterized by conidiomata with cream conidial droplets. Conidia are ellipsoid to oblong and 4.5-6.4 x 1.6-2.7 µm in size. We compared these morphological characters with *G. smithogilvyi*, which causes chestnut rot or brown rot in Oceania, Europe and United States. The conidial size easily distinguished the fungus from *G. smithogilvyi*. Our phylogenetic trees also showed that the fungus was distantly separated from *G. smithogilvyi* within the genus *Gnomoniopsis* and made a monophyletic clade. The fungus was not only isolated from harvested fruits but several parts of the chestnuts. These results suggest that the fungus produces conidia on overwintered burrs in early spring, then the conidia spread to male flowers, female flowers and the galls in late spring. Extra conidia are probably produced on these infected tissues, subsequently spread to young fruits, and finally the infected fruits rotted in autumn. Additional observation and examination using several tools such as molecular analyses are needed to demonstrate the hypothesis.