

TAXONOMY, PHYLOGENY AND NOMENCLATURE OF THE *OPHIOSTOMA PICEAE* MORPHOLOGICAL SPECIES COMPLEX

Keith A. Seifert¹, Z. Wilhelm de Beer², Colette Breuil³, Sepideh Massoumi Alamouti³, Hayato Masuya⁴, Gen Okada⁵, Adnan Uzunovic⁶ and Yuichi Yamaoka⁷

¹ Biodiversity Team (Mycology & Botany), Agriculture and Agri-Food Canada, 960 Carling Ave., Ottawa, Ontario K1A 0C6, Canada. ² Department of Microbiology and Plant Pathology, Forestry and Agricultural Research Institute (FABI), University of Pretoria, Pretoria 0002, South Africa. ³ Department of Wood Science, Faculty of Forestry, University of British Columbia, Vancouver, BC, V6T 1Z4, Canada. ⁴ Forestry and Forest Products Research Institute (FFPRI), Tsukuba, Ibaraki, 305-8687, Japan. ⁵ Microbe Division / Japan Collection of Microorganisms, RIKEN BioResource Center, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan. ⁶ Forintek Canada Corp. Durability and Protection, 2665 East Mall, Vancouver, B.C. Canada, V6T 1W5. ⁷ Graduate School of Life & Environmental Sciences, University of Tsukuba, Tsukuba, Ibaraki 305-8572, Japan.

seifertk@agr.gc.ca

Pesotum was the first of several synnematosus genera segregated from *Graphium* based on variations in conidium ontogeny, and was resurrected when the type species of *Graphium* (*G. penicillioides*) was shown to belong to the *Microascales*. The *Ophiostoma piceae* complex was originally considered one species with *P. piceae* as its anamorph. The revision of this complex by Harrington *et al.* (2001) accepted nine species, including the Dutch Elm disease fungi, with several additional species described by subsequent authors. Synnemata of these species are variously pigmented, with a terminal capitulum of divergent, branched conidiophores and percurrently proliferating conidiogenous cells that appear sympodial and white to grayish, or sometimes coloured, slimy, aseptate conidia. Most species also have a *Sporothrix* synanamorph. Molecular phylogenies confirm that the group includes several species, many recognizable morphologically, but that it is not strictly monophyletic because the clade includes several species lacking synnematosus anamorphs. ITS data suggest that *O. piceae* and *O. quercus* may still be complexes of morphologically cryptic species. The anamorph of *O. canum* (*P. canum*) has different conidium ontogeny than *O. piceae*: the two have identical ITS sequences but distinct β -tubulin sequences. There is a tendency for species favoring softwoods to occur in different subclades than species favoring hardwoods.