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Short communication

Aspergillus *arcoverdensis*, a new species of *Aspergillus* section *Fumigati* isolated from caatinga soil in State of Pernambuco, Brazil

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ABSTRACT

Aspergillus arcoverdensis, a new species isolated from semi-desert soil in a caatinga area, State of Pernambuco, Brazil, and a similar environment in the Xinjiang Uygur Autonomous Region, China, is described and illustrated. It is characterized by relatively long conidiophores for *Aspergillus* section *Fumigati*, and subglobose to broadly ellipsoidal and smooth conidia. The delimitation of this new species is supported further by phylogenetic analyses of the β-tubulin, calmodulin and actin gene sequences.

Several species of *Aspergillus* sect. *Fumigati*, including species formerly classified in *Neosartorya*, are distributed worldwide in soil, air, food, feed, compost and human habitations. The colonies of heterothallic *Neosartorya* species are similar to those of anamorphic species of sect. *Fumigati*. These species include *N. fennelliae* Kwon-Chung & S.J. Kim (Kwon-Chung and Kim 1974), *N. nishimurae* Takada, Y. Horie & Abliz (Takada et al. 2001), *N. spathulata* Takada & Udagawa (Takada and Udagawa 1985) and *N. udagawae* Y. Horie, Miyaji & Nishim. (Horie et al. 1995), *A. fumigatus* Fresen. (O'Gorman et al. 2009), *A. felis* Barrs, van Doorn, Varga & Samson (Barrs et al. 2013), *A. wyomingensis* A. Nováková, Dudová & Hubka (Nováková et al. 2013) and *A. lentulus* Balajee & K.A. Marr (Swilaiman et al. 2013). Some species of sect. *Fumigati* are reported as etiological

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agents of aspergillosis, an opportunistic fungal infection, namely *A. felis*, *A. fumigatiaffinis* S.B. Hong, Friavad & Samson, *A. fumigatus*, *A. fumisynnematus* Y. Horie, Miyaji, Nishim., Taguchi & Udagawa, *A. viridinutans* Ducker & Thrower and *N. udagawae* (Balajee et al. 2005, 2006; Yaguchi et al. 2007; Alcazar-Fuoli et al. 2008; Latgé and Steinbach 2009; Sugui et al. 2010; Barrs et al. 2013).

Conidiogenesis and conidial ornamentation are important morphological characters for distinguishing species within sect. *Fumigati*. Polyphasic analysis, based on phenotypic and molecular characteristics, is used for identification of species. In their revision of the group, Samson et al. (2007) described 23 *Neosartorya* species and 10 anamorphic species of sect. *Fumigati*. Yaguchi et al. (2010) described two new *Neosartorya* species isolated from soil at Xinjiang, China, namely *N. shendaweii* Yaguchi, Abliz & Y. Horie and *N. tsunodae* Yaguchi, Abliz & Y. Horie. Hubka et al. (2013) described a teleomorphic species, *A. waksmanii* Hubka, S.W. Peterson, Frisvad & M. Kolařík isolated from soil in New Jersey, USA, and an anamorphic species, *A. marvanovae* Hubka, S.W. Peterson, Frisvad & M. Kolařík isolated from water in the Czech Republic. Nováková et al. (2013) described two anamorphic species, *A. brevistipitatus* A. Nováková & Hubka and *A. conversis* Hubka & A. Nováková, from soil in Wyoming, USA. Barrs et al. (2013) described a heterothallic species isolated from cats in Australia as a cause of aspergillosis, calling it *A. felis*. Eamvijarn et al. (2013) discovered a teleomorphic species isolated from soil in Chonburi Province, Thailand, described as *A. siamensis* Manoch & Eamvijarn. Matsuzawa et al. (2014a) described a teleomorphic species isolated from desert soil in Xinjiang, China, as *A. huiyaniae* Y. Horie, Matsuzawa, Abliz & Yaguchi.

In a survey of pathogenic fungi in State of Pernambuco, Brazil, 11 isolates of anamorphic species of sect. *Fumigati* were isolated from semi-desert soil. They were identified by

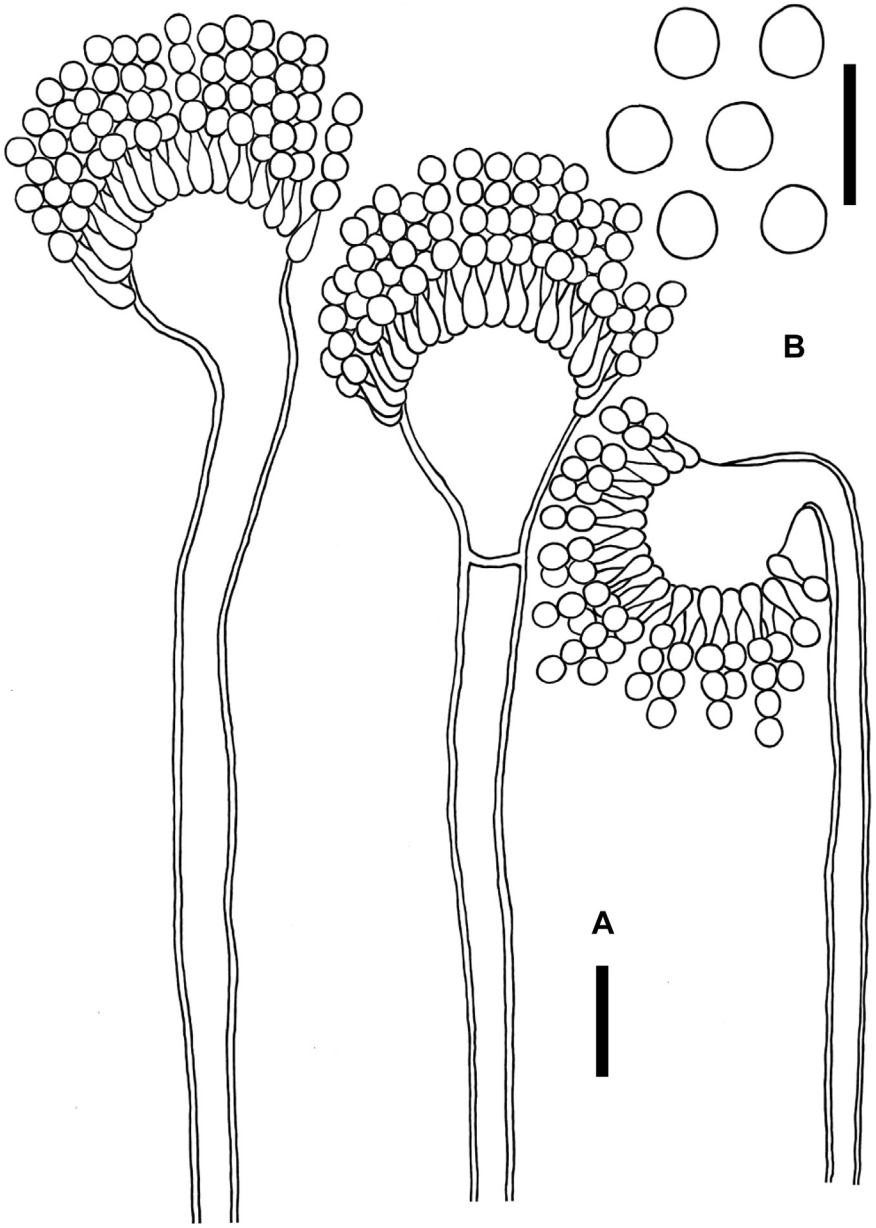

Fig. 1 – *Aspergillus arcoverdensis* (IFM 61334). A: Conidial heads. B: Conidia. *Bars*: A 10 μm; B 5 μm.