



Suillus adhikarii, a new species from the subalpine Himalaya of India and Nepal associated with *Larix*

KANAD DAS¹*, DYUTIPARNA CHAKRABORTY¹ & HENRY VAN TUYL COTTER²

¹Botanical Survey of India, Cryptogamic Unit, P.O. Botanic Garden, Howrah 711103, India ²Department of Biology, Duke University, Durham, North Carolina 27708, USA

*Corresponding author: e-mail: daskanadbsi@gmail.com

Abstract

Suillus adhikarii is described and illustrated as a new species based on morphology and ecology from the subalpine regions of Nepal and India. It is presumably an ectomycorrhizal fungus in association with *Larix griffithiana* and *L. himalaica*. This species is compared with the other closely related taxa of *Suillus* which have been reported in association with *Larix* from the Himalaya. A key to the *Suillus* species associated with *Larix* known from the Himalaya is provided.

Key words: Boletales, Cultural characteristics, Pinaceae, Suillaceae, Taxonomy

Introduction

In India and Nepal, fungi belonging to the genus *Suillus* Gray are found mostly in the temperate to subalpine Himalayan region and have great ecological importance. *Suillus* forms mycorrhizal associations with a number of trees in the Pinaceae, specifically in this region with the genera *Pinus* L. and *Larix* Mill. *Suillus* is represented by nearly 400 taxa across the globe and is well represented in the Himalaya (Kretzer *et al.* 1996; Kirk *et al.* 2008; Bruns *et al.* 2010; Verma & Reddy 2014a–c; Sarwar *et al.* 2015; Adamčík *et al.* 2015; indexfungorum.com). Macrofungal explorations focusing on Boletaceae and Suillaceae to subalpine Himalayan regions of Nepal and India have been undertaken by the authors since 1985. Thorough morphological and cultural examinations of these samples uncovered a number of new and interesting taxa (Cotter 1987; Das 2012, 2013; Das *et al.* 2012, 2014, 2015; Das & Chakraborty 2014; Parihar *et al.* 2014; Das & Dentinger 2015). In the present communication a new species of *Suillus*, *S. adhikarii*, is described and detailed macro- and micromorphological descriptions, including culture characters and illustrations, are given.

Materials and methods

Morphology

Macro-morphological characterization was done from the fresh basidiomata in the field and basecamp. After recording the macro-morphological characters and macrochemical (with KOH, FeSO₄, NH₄OH,) color-reactions, basidiomata were dried with field driers. Photographs of these fresh and dry basidiomata were taken with the aid of Nikon D300s, Olympus C-5060 and Stereo Zoom Dissecting Microscope (Nikon SMZ 1500). Color codes and terms are according to Kornerup & Wanscher (1978). Micro-morphological characters were observed with the help of compound microscope (Olympus CX 41 and Nikon Eclipse Ni-U) from free hand sections of dry samples mounted in 5% KOH, or stained in a mixture of 5% KOH and phloxin and mounted in 30 % glycerol and Melzer's reagent. Drawings were made with a drawing tube (attached to the Olympus CX41 microscope) at 1000×. Basidiospore measurements were noted in profile view from 40 basidiospores (of spore print). Dots are given in the cystidia to show the pigmentation and in the gluten of pileipellis. Basidiospore measurements and length/width ratios (Q) are given here as: minimum–mean–maximum. Herbarium codes follow Holmgren *et al.* 1990.