

Validation of the names of five species of fossil fungi

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ABSTRACT

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The objective of the present paper is to validate names of five species of fossil fungi. These names were not validly published by their original authors because they were not registered with any recognized nomenclatural repository and therefore lacked citation of the registration identifier, which is a mandatory requirement for valid publication of the name of a fungal taxon (Article F.5.1, Turland et al. 2018). To validate these names, the senior author registered the taxa names with Index Fungorum and obtained a unique Registration Identifier for each of them and these are cited with each taxon. The name of the species validated here are *Botryodiplodia deccanii* Puranik ex R.K. Saxena & P.M. Kirk, sp. nov., *Meliolinites bhutanensis* M. Bera, M.A. Khan & S. Bera ex R.K. Saxena & P.M. Kirk, sp. nov., *Stomiopeltites shangcunicus* N. Maslova & A. Tobias ex R.K. Saxena & P.M. Kirk, sp. nov., *Zygosporium miochinensis* M. Bera, S. Basak, M.A. Khan, D.K. Paruya, B. Goswami, K. Acharya & S. Bera ex R.K. Saxena & P.M. Kirk, sp. nov., *Zygosporium palaeotuberculatum* M. Bera, S. Basak, M.A. Khan, D.K. Paruya, B. Goswami, K. Acharya & S. Bera ex R.K. Saxena & P.M. Kirk, sp. nov.

Keywords: Fossil fungi, validation of taxa names, *Botryodiplodia*, *Meliolinites*, *Stomiopeltites*, *Zygosporium*, India, China.

INTRODUCTION

During the course of studies on fossil fungi, the authors came across names of five species, proposed by Puranik (2015), Maslova et al. (2020) and Bera et al. (2022, 2023), that were not validly published because their authors did not register them with any of the recognized nomenclatural repositories, which is a mandatory requirement for valid publication of a fungal taxon (Art. F.5.1, Turland et al. 2018). Of these, one species (*Botryodiplodia deccanii*) was described from the Deccan Intertrappean Beds of Mohgaonkalan, Chhindwara District, Madhya Pradesh (Puranik 2015),

three species (*Meliolinites bhutanensis*, *Zygosporium miochinense* and *Z. palaeotuberculatum*) from the Neogene sediments of eastern Himalaya (Bera et al. 2022, 2023) and one species (*Stomiopeltites shangcunicus*) from the Shangcun Formation (Early Oligocene) of the Maoming Basin, Guangdong Province, South China (Maslova et al. 2021). All these species are based on sound morphological features and are well recognizable and therefore were correctly designated as new species. These taxa names are validated below, by citing Index Fungorum Registration Identifier and reference of validating description and

illustrations. The holotype, as designated by their original authors, is also provided for each species name.

VALIDATION OF TAXA NAMES

Genus: *Botryodiplodia* Sacc.

Index Fungorum Registration Identifier: 7420.

Type species: Not indicated. Saccardo accepted the type of *Diplodia* b *Botryodiplodia* as *Diplodia juglandis* (Fr.) Fr.

Classification: Phylum: *Ascomycota*, Subphylum: *Pezizomycotina*, Class: *Sordariomycetes*, Subclass: *Diaporthomycetidae*, Order: *Diaporthales*, Family: *Incertae sedis*.

Botryodiplodia deccanii Puranik ex R.K. Saxena & P.M. Kirk, **sp. nov.**

Index Fungorum Registration Identifier: IF 901653.

Validating description and illustration: In: Puranik, International Research Journal of Science & Engineering 3(1): 25–27, text-figure 1, figure 2 (2015).

Holotype: Text-figure 1, figure 2, SDP. Department of Botany, Shri Shivaji Science College, Nagpur, India.

Type locality, horizon and age: Mohgaonkalan, Chhindwara District, Madhya Pradesh, India; Deccan Intertrappean Series; Upper Cretaceous.

Etymology: The specific epithet is derived from the horizon name Deccan Intertrappean Series, from where the type specimen was collected.

Genus: *Meliolinites* Selkirk ex Janson. & L.V. Hills

Index Fungorum Registration Identifier: 21162).

Type species: *Meliolinites spinksii* (Dilcher) Selkirk.

Classification: Phylum: *Ascomycota*, Subphylum: *Pezizomycotina*, Class: *Sordariomycetes*, Subclass:

Meliolomycetidae, Order: *Meliolales*, Family: *Meliolaceae*.

Meliolinites bhutanensis M. Bera, M.A. Khan & Bera ex R.K. Saxena & P.M. Kirk, **sp. nov.**

Index Fungorum Registration Identifier: IF 901668.

Validating description and illustration: In: Bera et al., *Fungal Biology* 126: 578, figures 2, 3, 4 (2022).

Holotype: CUH/PPL/BH/31/S3, figures 2E, F; 3A, C, E. Repository: Herbarium and Museum, Department of Botany, University of Calcutta, India (CUH).

Type locality, horizon and age: Darranga River Traverses in the eastern part of Bhutan. Latest Miocene-Pliocene (ca. 6 Ma).

Etymology: The specific epithet is after Bhutan where the type locality of the present fossil species is situated.

Genus: *Stomiopeltites* Alvin & M.D. Muir

Index Fungorum Registration Identifier: 21322.

Type species: *Stomiopeltites cretacea* Alvin & M.D. Muir

Classification: Phylum: *Ascomycota*, Subphylum: *Pezizomycotina*, Class: *Dothideomycetes*, Subclass: *Incertae sedis*, Order: *Microthyriales*, Family: *Micropeltidaceae*.

Stomiopeltites shangcunicus N. Maslova & A. Tobias, in Maslova et al. ex R.K. Saxena & P.M. Kirk, **sp. nov.**

Index Fungorum Registration Identifier: IF 901671.

Validating description and illustration: In: Maslova et al., *Journal of Systematics and Evolution* 59(5): 965, figures 1B, 1E, 1F (2021).

Holotype: Specimen MMB 013a (shoot), FCun1 (stub for SEM), mature ostiolate thyriothecium (Figures 1B, 1E, 1F). Repository: The Museum of Biology of Sun Yat sen University, Guangzhou, China.

Type locality, horizon and age: Lishan Village vicinity, approximately 25 km northwest of Maoming City, the Maoming Basin, Guangdong Province, South China. Stratigraphic horizon: Shangcun Formation. Early Oligocene.

Etymology: The specific epithet is derived from the Shangcun Formation.

Genus: *Zygosporium* Mont.

Index Fungorum Registration Identifier: 10473.

Type species: *Zygosporium oscheoides* Mont.

Classification: Phylum: *Ascomycota*, Subphylum: *Pezizomycotina*, Class: *Sordariomycetes*, Subclass: *Xylariomycetidae*, Order: *Xylariales*, Family: *Zygosporiaceae*.

Zygosporium miochinense M. Bera, S. Basak, M.A. Khan, D.K. Paruya, B. Goswami, K. Acharya & S. Bera ex R.K. Saxena & P.M. Kirk, **sp. nov.**

Index Fungorum Registration Identifier: IF 901672.

Validating description and illustration: In: Bera et al., Review of Palaeobotany and Palynology (Amsterdam) 309: 2, Plate I, figures 2–6. (2023).

Holotype: CUH/PPL/BH1, Herbarium and Museum, Department of Botany, University of Calcutta (CUH), Kolkata, India.

Type locality, horizon and age: Darranga River Traverse, South-eastern Bhutan (situated between latitudes 26°40' and 28°25' N and longitudes 88°40' and 92°10' E). Stratigraphic horizon: Formation II. Middle Miocene to Early Pliocene.

Etymology: The species name was derived by

adding the prefix 'mio' to the epithet of extant species *Zygosporium chinense* A.D. Khalkho et al.

Zygosporium palaeotuberculatum M. Bera, S. Basak, M.A. Khan, D.K. Paruya, B. Goswami, K. Acharya & S. Bera ex R.K. Saxena & P.M. Kirk, **sp. nov.**

Index Fungorum Registration Identifier: IF 901673.

Validating description and illustration: In: Bera et al., Review of Palaeobotany and Palynology (Amsterdam) 309: 4, Plate II, figures 3–6. (2023).

Holotype: CUH/PPL/G/4/2, Herbarium and Museum, Department of Botany, University of Calcutta (CUH), Kolkata, India.

Type locality, horizon and age: Gish River Traverse, Darjeeling, West Bengal (26°54'22.33" N, 88°37'16.94" E) and Road Section, Bhalukpong area, West Kameng District, Arunachal Pradesh (27°01'09.8" N, 92°38'11.7" E). Stratigraphic horizon: Lower part of the Siwalik succession (Gish Clay Formation). Middle Miocene to Early Pliocene.

Etymology: The species name was derived by adding the prefix 'palaeo' to the epithet of extant species *Zygosporium tuberculatum* Subram. & Bhat.

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